U.S. Department of Education

Washington, D.C. 20202-5335

APPLICATION FOR GRANTS UNDER THE

STATEWIDE LONGITUDINAL DATA SYSTEMS
CFDA # 84.372A
PR/Award # R372A090054
Grants.gov Tracking#: GRANT10076359

OMB No. 1890-0004, Expiration Date:
Closing Date: SEP 25, 2008

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OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify)

* 3. Date Received: 09/25/2008

4. Applicant Identifier:

5a. Federal Entity Identifier:

* 5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: State of Missouri Department of Elem. and Sec. Education

* b. Employer/Taxpayer Identification Number (EIN/TIN): 44-6000987

* c. Organizational DUNS: 093746923

d. Address:

* Street1: 205 Jefferson Street
Street2:
* City: Jefferson City
County:
* State: MO: Missouri
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 65102

e. Organizational Unit:

Department Name: MO Department of Elem & Sec Ed

Division Name: Deputy Commissioner

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:
* First Name: Leigh
Middle Name: Ann
* Last Name: Grant-Engle
Suffix:

Title: Data Manager

Organizational Affiliation:

* Telephone Number: 573 522-8310
Fax Number: 573 526-6898

* Email: leighann.grantengle@dese.mo.gov

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OMB Number: 4040-0004
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Application for Federal Assistance SF-424 Version 02

9. Type of Applicant 1: Select Applicant Type:

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

U.S. Department of Education

11. Catalog of Federal Domestic Assistance Number:

84.372

CFDA Title:

Statewide Data Systems

*** 12. Funding Opportunity Number:**

ED-GRANTS-062608-001

* Title:

Statewide Longitudinal Data Systems Grant Program CFDA 84.372

13. Competition Identification Number:

84-372A2009-1

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

*** 15. Descriptive Title of Applicant's Project:**

MOSIS Longitudinal Data System

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

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OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

16. Congressional Districts Of:

* a. Applicant: MO-All
* b. Program/Project: MO-All

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 03/02/2009
* b. End Date: 03/01/2012

18. Estimated Funding ($):

* a. Federal	8,967,685.00
* b. Applicant	0.00
* c. State	1,363,434.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	10,331,119.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .

☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)**

☐ Yes ☒ No Explanation

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix:
* First Name: Leigh
Middle Name: Ann
* Last Name: Crante-Engle
Suffix:

* Title: Data Manager

* Telephone Number: 573 522-8310
Fax Number:

* Email: leighann.grantengle@dese.mo.gov

* Signature of Authorized Representative: Leigh Grant
* Date Signed: 09/25/2008

Authorized for Local Reproduction

Standard Form 424 (Revised 10/2005)
Prescribed by OMB Circular A-102

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

*** Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.

U.S. DEPARTMENT OF EDUCATION

BUDGET INFORMATION

NON-CONSTRUCTION PROGRAMS

OMB Control Number: 1890-0004

Expiration Date: 06/30/2005

Name of Institution/Organization:
State of Missouri Department of ...

Applicants requesting funding for only one year should complete the column under "Project Year 1." Applicants requesting funding for multi-year grants should complete all applicable columns. Please read all instructions before completing form.

SECTION A - BUDGET SUMMARY

U.S. DEPARTMENT OF EDUCATION FUNDS

Budget Categories	Project Year 1(a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
2. Fringe Benefits	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
3. Travel	$ 7,450	$ 17,500	$ 17,568	$ 0	$ 0	$ 42,518
4. Equipment	$ 150,000	$ 25,000	$ 25,000	$ 0	$ 0	$ 200,000
5. Supplies	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
6. Contractual	$ 4,092,080	$ 2,241,332	$ 1,825,834	$ 0	$ 0	$ 8,159,246
7. Construction	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
8. Other	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
9. Total Direct Costs (lines 1-8)	$ 4,249,530	$ 2,283,832	$ 1,868,402	$ 0	$ 0	$ 8,401,764
10. Indirect Costs*	$ 282,867	$ 155,859	$ 127,194	$ 0	$ 0	$ 565,921
11. Training Stipends	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
12. Total Costs (lines 9-11)	$ 4,532,397	$ 2,439,691	$ 1,995,596	$ 0	$ 0	$ 8,967,685

***Indirect Cost Information** ***(To Be Completed by Your Business Office)*:**

If you are requesting reimbursement for indirect costs on line 10, please answer the following questions:

(1) Do you have an Indirect Cost Rate Agreement approved by the Federal government? [X] Yes [ ] No
(2) If yes, please provide the following information:
Period Covered by the Indirect Cost Rate Agreement: From: 7/1/2008 To: 6/30/2009 (mm/dd/yyyy)
Approving Federal agency: [X] ED [ ] Other (please specify): _____
(3) For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:
[X] Is included in your approved Indirect Cost Rate Agreement? or, [ ] Complies with 34 CFR 76.564(c)(2)?

ED Form No. 524

U.S. DEPARTMENT OF EDUCATION

BUDGET INFORMATION

NON-CONSTRUCTION PROGRAMS

OMB Control Number: 1890-0004

Expiration Date: 06/30/2005

Name of Institution/Organization:
State of Missouri Department of ...

Applicants requesting funding for only one year should complete the column under "Project Year 1." Applicants requesting funding for multi-year grants should complete all applicable columns. Please read all instructions before completing form.

SECTION B - BUDGET SUMMARY

NON-FEDERAL FUNDS

Budget Categories	Project Year 1(a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel	$ 127,490	$ 127,490	$ 127,490	$ 0	$ 0	$ 382,470
2. Fringe Benefits	$ 26,403	$ 26,403	$ 26,403	$ 0	$ 0	$ 79,209
3. Travel	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
4. Equipment	$ 494,500	$ 0	$ 0	$ 0	$ 0	$ 494,500
5. Supplies	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
6. Contractual	$ 129,822	$ 135,664	$ 141,769	$ 0	$ 0	$ 407,255
7. Construction	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
8. Other	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
9. Total Direct Costs (lines 1-8)	$ 778,215	$ 289,557	$ 295,662	$ 0	$ 0	$ 1,363,434
10. Indirect Costs	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
11. Training Stipends	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
12. Total Costs (lines 9-11)	$ 778,215	$ 289,557	$ 295,662	$ 0	$ 0	$ 1,363,434

OMB Approval No.: 4040-0007
Expiration Date: 04/30/2008

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.

2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.

3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.

4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.

5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).

6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C.§§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee- 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.

8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.

10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).

12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).

14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.

15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.

16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.

17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

* SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	* TITLE
Leigh Grant	Data Manager
* APPLICANT ORGANIZATION	* DATE SUBMITTED
State of Missouri Department of Elem. and Sec. Education	09/25/2008

Standard Form 424B (Rev. 7-97) Back

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, ''Disclosure of Lobbying Activities,'' in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,00 0 and not more than $100,000 for each such failure.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, ''Disclosure of Lobbying Activities,'' in accordance with its instructions. Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subjec t to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

* APPLICANT'S ORGANIZATION

State of Missouri Department of Elem. and Sec. Education

* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

Prefix: | * First Name: Leigh | Middle Name: Ann

* Last Name: Grante-Engle | Suffix:

* Title: Data Manager

* SIGNATURE: Leigh Grant | * DATE: 09/25/2008

Close Form

SUPPLEMENTAL INFORMATION
REQUIRED FOR
DEPARTMENT OF EDUCATION GRANTS

1. Project Director:

Prefix:	* First Name:	Middle Name:	* Last Name:	Suffix:
	Leigh	Ann	Grant-Engle	

Address:

* Street1: 205 Jefferson St.
Street2:
* City: Jefferson City
County:
* State: MO: Missouri
* Zip Code: 65102
* Country: USA: UNITED STATES

* Phone Number (give area code): 573 522-8310
Fax Number (give area code):

Email Address: leighann.grantengle@dese.mo.gov

2. Applicant Experience:

Novice Applicant ☐ Yes ☐ No ☒ Not applicable to this program

3. Human Subjects Research

Are any research activities involving human subjects planned at any time during the proposed project Period?

☐ Yes ☒ No

Are ALL the research activities proposed designated to be exempt from the regulations?

☐ Yes Provide Exemption(s) #:

☐ No Provide Assurance #, if available:

Please attach an explanation Narrative:

Add Attachment | Delete Attachment | View Attachment

Project Narrative

Abstract Narrative

Attachment 1:
Title: Pages: Uploaded File: **1234-1_Abstract.pdf**

ABSTRACT
Title of the Project: MOSIS Longitudinal Data System

The Missouri Department of Elementary and Secondary Education (DESE) seeks $8,967,685 funding for foundation and expansion components for its MOSIS system. MOSIS will define, collect, store, and provide access to education data that support data-driven decision making from the classroom to the Legislature. Significant work is required to convert fully from our aggregate reporting to the required unit records.

DESE will use the funds to build a functional longitudinal data system; to build the infrastructure for interoperability between DESE and individual districts and schools, postsecondary education, and workforce data; and to rebuild the EDFacts reporting system after the conversion from aggregate to unit record source data.

Major deliverables include: 1) a training and support system for teachers and other users; 2) a data repository to consolidate longitudinal data; 3) portal to manage collection, access, and reporting of data; 4) a set of standards for all agencies sharing data through interoperability including alignment of individual identifiers (e.g., student, teacher, staff), and; and 5) a teacher certification system to keep pace with the increased demands for verification and reporting.

This project will be governed by the P-20 Council and managed by DESE. The Council which, was created in statute in 2006, has dedicated staff and active participation from the Commissioners of Education (P-12) and Higher Education, the Director of the Department of Economic Development, as well as the chairs of the two education governing boards. The collaborative work toward P-20 longitudinal data and analysis began in earnest in 2006 when Governor Blunt convened a task force consisting of representatives from DESE, DHE, DED, and the University of Missouri (UM) to make recommendations for coordinating data throughout the education continuum. This important work in has continued to-date and has resulted in significant commitments of time, talent and resources. This interagency support helps ensure sustainability while creating a true P-20 perspective. The focus of the grant activities is on the K-12 longitudinal data foundation needed to support the eventual P-20 solution.

Missouri knows the solution. State funds have been used to implement it slowly on a voluntary basis. With an initial investment of $3 million over the past three years, we have made a significant start. We have begun to convert from aggregate records to unit records for students and teachers. However, this conversion causes us to reconstruct our current processes for EDFacts, FERPA compliance, and sharing data with schools and districts. This grant will provide the resources over the next three years both to accelerate our progress and to ensure our success. DESE has pre-arranged for procurements and has planned a timely start and implementation. Project objectives have been tied to benchmarks so our annual evaluation of the project can determine our success. The broad-based support for this project, from schools, the Legislature, Governor's Office, UM, and multiple state-level departments gives us confidence that we are targeting the right objectives and deliverables.

Project Narrative

Project Narrative

Attachment 1:
Title: Pages: Uploaded File: **1237-2_ProjectNarrative.pdf**

MOSIS Longitudinal Data System
Submitted by the Missouri Department of Elementary and Secondary Education
Application for Statewide Longitudinal Data Systems Grant CFDA #: 84.372A

Introduction

The State of Missouri educates 900,000 students. Our diverse students, 42% low income, attend over 500 districts. In each of the past three years, the State has managed to invest only $1 per student to improve data for supporting classroom instruction, school improvement, and longitudinal analyses. Missouri ranks among the very lowest states in the capacity of our data systems to meet the needs of students, teachers, and decision makers. However, we are poised to improve. We have invested our resources well. Our schools have voluntarily converted to new processes. We know what needs to be done. Missouri is committed to producing maximum benefit from a longitudinal data systems grant.

SECTION 1: Need for the Project

The State of Missouri considers its education data to be sufficient for funding our schools and satisfying the basic requirements for Federal reporting. In fact, Missouri has been recognized for having an exemplary Core Data System for collecting basic aggregate data; however, aggregate data collections are no longer adequate to meet the greatly expanded State and Federal mandates for data. Our vision for education data includes supporting schools and districts with added value from longitudinally matched individual records for students and teachers. We have a long way to go to reach this vision, but as a State, we have the commitment from the Legislature, Governor's Office, higher education, other state departments, and the Department of Elementary and Secondary Education (DESE) to get there.

This needs assessment has been focused with the direction of Missouri's P-20 Council. DESE represents the PK-12 perspective as gathered through the Core Data User Group and meetings with LEAs. The Governor's Office has a designated staff person to coordinate the P-20 Council. The Department of Higher Education (DHE) and the Department of Economic Development (DED) vetted the needs from their perspectives. The University of Missouri contributed a research view of the needs for longitudinal data. As shown by the letters of support in Attachment 1; together, we have identified the needs from both a broad and an in-depth perspective for a longitudinal data system.

With limited State resources, we have made early progress to initiate the conversion from aggregate statistics to unit-level records. However, our progress has been deliberate but not expedient. For example, we have spent $3 million in State funds over three years to implement a student identifier system and to begin the conversion from aggregate data collections to individual records. We are seeking Federal assistance to complete the building of the foundation of a modern interoperable, longitudinal data system that will support data-driven decision making for our schools and districts.

The Data Quality Campaign (DQC) rated Missouri's 2007-08 data system as having only 4 of 10 essential elements.

Missouri will not be able to report NGA graduation rates until 2011. DQC said "No" to all six of its questions about whether Missouri had addressed key issues using student-level P-12 longitudinal data. The new ratings to be released momentarily by the DQC will show improvement because we have begun to build individual student data collections for implementation in the 2008-09 school year. However, we have not built the longitudinal data stores nor the access systems that will allow us to conduct those longitudinal analyses and to begin to benefit from these data. Our improved rating will be from taking initial steps, not having completed the foundation for the full system.

The improvement of student learning in PK-12, the improvement of the graduation rate, and the extension of that success throughout higher education and into the workplace are the goals of the Missouri Student Information System (MOSIS). Missouri needs MOSIS to be fully implemented and functional in order to receive maximum use from the data in which the schools and districts invest so much effort. As a by-product, Missouri's reporting of official data to the public and EDFacts will improve.

From the perspective of the LEAs, especially the classroom teacher, MOSIS is an improvement over the aggregate Core Data collections and the web reports generated from those data. However, the timeliness, added value from longitudinal analysis of individual records, and *ad hoc* queries envisioned in a longitudinal data system are crucial needs for instructional planning and improvement. A missing foundational component of MOSIS is the ability to allow teachers to regroup student-level data by the students who are in their classes each day. Last year's groupings of students are not useful to teachers, counselors, and other school staff when current-year activities are being planned and conducted. The proposed portal and associated reporting services are significant needs. Along with the expansion of data use, the need for training and support of teachers, school staff, and district personnel is evident.

From the perspective of the University of Missouri (UM), the lack of longitudinally linked student and staff records has limited research into best practices and evaluation of the effectiveness of schools and programs. Other postsecondary institutions are in need of data about student preparedness for higher education and success in higher education. Missouri postsecondary institutions are willing to provide data back to high schools, but there is the need for concatenation of student records using the MOSIS Student ID in PK-12 and Social Security Number in higher education. Teacher preparation and certification programs need to follow their graduates into the PK-12 workplace to assess the effectiveness of their pre-service training. Overall, there is a need to design, implement, and fully use longitudinal data across PK-12 and higher education beyond DESE's current resources.

The Missouri Department of Economic Development is advancing the need for PK-12 linkages for analysis and tracking within their career programs. DED has tremendous capacity to analyze data and assist LEAs and DESE in evaluating programs if the longitudinal individual records are matchable beyond the high schools' data systems.

Control of access to the newly collected and aligned longitudinal records will be an important use and legal challenge for MOSIS. There is a need for a review and updating of all LEA,

DESE, and State policies related to the management of personally identifiable data. With the reissuance of FERPA guidelines, this updating is timely.

Figure 1 summarizes the limitations of DESE's current PK-12 systems and the gains anticipated from the work proposed in this application. Each is described in relationship to the "Statewide Longitudinal Data System Requirements" in the Request for Applications.

DESE has designed the MOSIS Longitudinal Data System to define, collect, store, and provide access to education data that support data-driven decision making from the classroom to the Legislature. This application will detail how that design is to be realized through the support of this grant combined with the on-going State funding. Significant work is required to convert fully from aggregate reporting to unit records. DESE faces tremendous challenges to re-engineer our internal processes. However, the major change and restructuring is in the schools and districts. They must not only change how data are submitted to DESE, but also how data are received from DESE and used for instructional management and administrative purposes.

There are important expected outcomes that cannot be achieved within the next five years without this grant. Continued State funding will allow us to eventually implement some of the improvements described. However, in the information technology arena, taking years to go from design to implementation is not an option. Too much changes too quickly to allow such a slow pace. Therefore, DESE will use the funds provided by this grant to both accelerate implementation and to provide functionality that otherwise State funds alone would be inadequate to deliver.

There are three foundational components of MOSIS for which this grant is needed.

1) To build a functional longitudinal data system to manage the individual unit records that have begun to be collected only at the end of the 2007-08 school year. DESE has many years of aggregate data, but the storage system for these does not provide either a data model or data store for longitudinal unit records.
2) To build the infrastructure for interoperability between DESE and individual districts and schools, postsecondary education, and workforce data. DESE has not been able to exchange unit-level data with these other entities; therefore, the infrastructure, the processes, and the policies all need to be recreated.
3) To rebuild DESE's successful EDFacts reporting system after the conversion from aggregate to unit record source data. New EDFacts data will then be available. Currently reported data come from different aggregate authoritative data sources. The new sources will require transformation from unit-level records to the EDFacts statistics.

DESE is missing major components that need to be created or re-engineered.

1) **A training and support system for teachers and other users.** The changes proposed and new requirements will increase our currently under-met need for training and support.

2) **A data repository to consolidate longitudinal data.** DESE's data repositories currently hold aggregate data. The operational data stores in use with the new individual unit records collected are not adequate as longitudinal data stores.
3) **A portal to manage collection, access, and reporting of data.** DESE's website is inadequate to manage the reporting functionality and collaborative processes required to leverage the benefits from the longitudinal data. The portal will integrate data collection, reporting, and collaboration among groups through a single sign-on user interface. A new analysis and reporting system will facilitate use by teachers and researchers.
4) **A set of standards for all agencies sharing data** supporting interoperability and alignment of individual identifiers (e.g., student, teacher, staff). Interoperability across these entities will be a challenge one that must be resolved in advance of the proliferation of data exchanges and uses from the new longitudinal data system.
5) **A teacher certification system** to keep pace with the increased demands for verification and reporting. The current teacher certification system must be modified to keep pace with the changes in MOSIS. The current system is inadequate to support the enhanced functionality required for longitudinal analyses and integration with individual student records.

Missouri knows the solution we need. We have used available State funds to design and implement this solution slowly on a voluntary basis over the last three years. During that time, DESE has engaged the services of ESP Solutions Group to facilitate our understanding of best practices across all SEAs and to create functional requirements for our individual student-level data collections. Together we have begun to establish metadata standards and business rules that ensure everyone shares the same understanding of the requirements and expectations of MOSIS. This work has formed the basis for our understanding of the needs for MOSIS and the components included in this grant application.

Until the spring of 2008, LEA participation in the redesigned MOSIS data collections was voluntary. This was necessary in our "Show Me State" to ensure support and buy-in. However, with the requirements of a longitudinal data system, LEA participation in MOSIS must now be mandatory. This changes our needs significantly. We can no longer allow LEAs to lag behind MOSIS implementation with the excuse that sufficient support is not available, or that they will not be getting the return benefits of timely and reliable data, analyses, and reports.

With progress come additional needs for changes. With an initial investment of $3 million over the past three years, we have made a measurable, successful start. We have begun to convert from aggregate records to unit records for students and teachers. However, this causes us to reconstruct our current processes for EDFacts, FERPA compliance, and sharing data with schools and districts. This grant will provide the resources over the next three years both to accelerate our progress and to ensure our success.

Figure 1: Current Limitations and Anticipated Gains

SLDS Requirements	Limitations of the Current System	Gains from the Proposed Work
Governance and Policy Requirements		
Need and Uses	DESE's legacy Core Data successfully counted and reported students and staff; however, the static tables generated from aggregate data do not yield the granularity required for queries and analyses regarding policy issues and school/classroom decision making. DESE can provide back to schools and districts little added value when the LEAs are the authoritative source for all aggregate statistics. DHE, DED, and UM are all ready, willing, and able to assist LEAs and DESE with research, evaluation, and analysis of student progress throughout P-20, but the linking of the records cannot be made with the current system. Where individual student records exist in DESE, the lack of SSN in MOSIS and the lack of the MOSIS ID in DHE, DED, and UM databases perpetuates the need for reasonableness matching.	Student learning will improve in Missouri schools as data for decision making become reality. MOSIS, with unit-level data, will support queries and research, will allow for regrouping of student data by current teachers, and grant access only to the detailed data for which a user has authority. This transition will provide timely and quality data to all stakeholders. Training and support will be provided to ensure user buy-in and success. Through the P-20 Council, the use of MOSIS ID in DESE and the SSN in other agency databases will be resolved.

SLDS Requirements	Limitations of the Current System	Gains from the Proposed Work
Governance	Core Data and the initial MOSIS functions were governed by internal DESE staff with guidance from the Core Data Users Group. When IT functions were moved to the State IT Department, an additional coordination burden was created. Bridging the gaps between DESE and districts, and between DESE and the State IT Department was left to the efforts of individuals within each group.	MOSIS will be governed by the P-20 Council, managed by DESE, and advised by the MOSIS Users Group. MOSIS will be based upon standards jointly adopted and followed by DESE and the State IT Department. Efficient sharing of data across compatible systems will be the outcome.
Institutional Support	The Core Data system developed within DESE to address the growing demands for data. There has been a $3 million investment of State funds for MOSIS over the past three years. Informal coordination among DESE, DHE, DED, and UM has occurred as it was possible. Institutional support was up to the individual State departments and LEAs.	The P-20 Council ensures the commitment of the commissioners of DESE (advised by LEAs), DHE, and DED, along with the oversight of the Governor's Office. UM will participate in the research aspects of this coordinated effort. The result will be an improved flow of information, with proper confidentiality protection, across these departments and levels of the education enterprise. The P-20 Council and the Governor's Office will support State funding for MOSIS activities.
Sustainability	DESE has always been committed fully to Core Data; however, the limited resources meant maintaining the system more than enhancing. With only the resources to encourage voluntary participation until the great majority of LEAs could cross the buy-in hurdle, DESE's progress was deliberate and subject to distraction.	MOSIS has a major commitment by DESE, with the support of the Legislature and the Governor's Office. DESE will reorganize its internal resources to support MOSIS and the new processes it brings. Training and support will be provided to ensure user success and continued buy-in.

SLDS Requirements	Limitations of the Current System	Gains from the Proposed Work
Technical Requirements		
Federal Reporting	DESE has been a top performer with EDFacts. Other Federal reporting was also complied with in an exemplary manner. However, the change from aggregate data to unit records requires a complete reworking of the EDFacts source data and processes.	MOSIS will provide unit records to a reconstructed process for producing EDFacts reports. Additional data will become available for EDFacts. The quality of the data will improve as more business rules are adopted and enforced. The MOSIS longitudinal data store will store and provide access to the data as the MOSIS system's functionality develops.
Privacy Protection and Data Accessibility	Core Data reports have been suppressing small cells for FERPA compliance. When MOSIS began to collect unit records, an ETL process was initiated to convert data into the same aggregate counts to preserve the use of the Core Data reports. With the conversion to user-defined reports, the process for ensuring confidentiality to individuals will become more complex.	MOSIS will move beyond the reproduction of legacy Core Data reports to a portal providing standard reports and query capability. All policies related to the access and management of data will be updated to address this new capacity and to reflect revised FERPA guidelines. Training and support will be provided to ensure user compliance.
Data Quality	There are inherent quality limitations with aggregate data. DESE has very little ability to verify the calculations and validity of reported aggregate statistics as long as they are reasonable.	As MOSIS develops, a full set of business rules for data quality will be developed and enforced. Data will be edited for compliance at the LEA level and certified before being submitted to DESE. As the capacity for analyses grow, the greater use of the data will identify other areas for improvement of the quality of the data. Training and support will be provided to ensure compliance by the data providers and proper use by users. One of the greatest advances in data quality will be the calculation of all official statistics by the same routines for all LEAs.

SLDS Requirements	Limitations of the Current System	Gains from the Proposed Work
Interoperability	Interoperability between DESE and LEAs is limited to viewing and downloading reports and data from our website. LEAs can upload data files or enter data into web forms; however, there is no seamless connection between LEA data repositories and DESE data repositories. All interoperability currently requires multiple processes in which data are extracted, reformatted, and sent from one computer to another.	With the adoption of universal metadata standards, the exchange of data across levels and agencies will be facilitated. MOSIS will explore interoperability standards such as SIF, but multiple alternative processes for the exchange of data will be needed for some time as the 537 LEAs adapt to the new standards and systems. The MOSIS longitudinal data store will provide a central repository and provide access to the data as the MOSIS system's functionality develops.
Enterprise-wide Architecture	DESE coordinates its data management activities with the State IT Department. There is such a legacy of different architectures within both DESE and IT, that the cost to replace them is beyond our means.	Although it is not currently possible to adopt and implement the same architecture across all areas of the State IT and DESE, MOSIS will continue to adopt standards and business rules that result in compatibility of these systems. Over time, each new component of MOSIS will comply with the Information Systems Architecture standards adopted. The MOSIS longitudinal data store will store and provide access to the data as the MOSIS system's functionality develops. There will not be a need for all systems to be identical as long as they are compatible within the Information Systems Architecture.

SECTION 2: Objectives for the Proposed System

DESE has analyzed the needs for the MOSIS Longitudinal Data System Grant and established a set of objectives that will not only guide the management of the project, but also provide the framework for evaluating the success of the implementation in relation to the benefits anticipated.

DESE is presenting proposed activities that are foundational and expansion. All are new systems or new processes and core to the achievement of the objectives established by the P-20 Council for this project.

MOSIS, as seen by the P-20 Council, has this vision for the use of our information.

> When students and the adults who support them reach a decision point, all the information they need to make the right choice will be at their fingertips. When education agencies and schools need to know how to accomplish this data-driven decision making, they will be supported by the MOSIS Longitudinal Data System to make it happen.
>
> All our information systems will be integrated to share data embracing open standards. Confidentiality, security, integrity, validity, quality, and timeliness will characterize this sharing process. Technology and the creative architecture that takes advantage of it will leverage open standards that allow a single "information network" to evolve. Submitting reports will be replaced by using reports. Assessment, accountability, and accounting will be unobtrusive processes performed by the information network using the transactional applications that make individuals productive.
>
> Educators will educate, not stop educating to collect, report, and analyze data. Students will learn, not stop learning to take assessments.

The overall goal for MOSIS is to improve the academic achievement of all Missouri students as evidenced by gains in statewide academic assessment performance, improvement of schools and districts in adequate yearly progress, an increase in the high school graduation rate, an improvement in the success of graduates in postsecondary education, and an improvement in the success of graduates in the workplace. The longitudinal data provided by MOSIS in future years will support the evaluation of this goal.

There are three foundational goals for the MOSIS Longitudinal Data System Grant.

1) MOSIS will be a functional longitudinal data system that will manage individual unit records for support of data-driven decision making by teachers, school staff, district staff, parents, students, and state-level officials.
2) MOSIS will build the infrastructure for interoperability between DESE and individual districts and schools, postsecondary education, and workforce data.
3) MOSIS will rebuild DESE's successful EDFacts reporting system after the conversion from aggregate to unit record source data. New EDFacts data will now be available. Currently reported data will now come from different authoritative data sources and require transformation from unit-level records to the required statistics.

Because MOSIS requires major components that need to be created or re-engineered, the deliverables of MOSIS have been defined as follows.

1) A training and support system for teachers and other users (Foundation)
2) A data repository to consolidate longitudinal data and conversion of all aggregate collections to unit records (Foundation)
3) A portal to manage collection, access, and reporting of data for use by teachers, districts, and State officials (Foundation)
   a) EDFacts reengineering to use unit records in MOSIS (Foundation)
   b) Research by UM to improve teacher preparation and professional development (Expansion)
   c) Interoperability across DESE, DHE, DED, and other State agencies (Expansion)
   d) Collaboration tools across all communities of interest for Missouri education (Expansion)
4) A standard for all agencies sharing data for interoperability including alignment of individual identifiers (e.g., student, teacher, staff) (Foundation)
   a) Information Systems Architecture development (Foundation)
   b) Policy (FERPA) alignment (Foundation)
   c) Metadata standards (Foundation)
5) A teacher certification system (Expansion)
   a) Response to increased demands for verification and reporting (Expansion)
   b) Reengineering to accommodate unit records in MOSIS (Foundation)

Each deliverable has been analyzed to determine the objectives by which MOSIS will determine success. These objectives are presented as the current set for MOSIS. These will be reviewed and updated by the P-20 council and other groups as MOSIS is developed. An annual review of these objectives is envisioned as a process to ensure that as the MOSIS project changes, the evaluation remains valid.

1) The training and support system for teachers and other users will be evaluated by these objectives.
   a) Every application, as appropriate, will have a training site with sample data prior to launch.
   b) Every application and process will have a users guide available electronically through the DESE website or portal.
   c) Each application will have contextual, online help.
   d) New users for each application will participate in initial training provided at a meeting site, over the web, or as a recorded program.
   e) Ongoing training will be available and provided as changes, enhancements, or new requirements arise.
   f) Users will be surveyed to determine how well the training is meeting their needs.
   g) The portal will provide the ability for user groups to communicate and to share ideas, concerns, and suggestions.
   h) DESE will provide level 1 email help and phone support as appropriate for each application.

i) DESE or the designated contractor will provide level 2 support as appropriate for each application.
j) The contractor or vendor for each application will provide level 3 support and maintenance as appropriate for each application

2) The data repository to consolidate data will be evaluated by these objectives.
   a) A functional requirements process and document will be created.
   b) A technical requirements document will be created.
   c) Procurement of the application will be completed.
   d) A user testing and acceptance plan will be adopted, implemented, and result in acceptance of the application.
   e) Each data repository will have an adopted data model consistent with the overall information systems architecture for MOSIS.
   f) Each data repository will be compliant with the standards established in the MOSIS information systems architecture.
   g) The longitudinal data repository will store data according to the adopted data model to accommodate a minimum of 20 years of data (not limited to a single instance of data per year) for all students, schools, and programs in Missouri.
   h) The longitudinal data repository will be accessible through automated processes by other systems as authorized.
   i) The reporting function of the portal will meet the needs of teachers, school staff, district staff, parents, students, and state officials.
3) The portal to manage collection, access, and reporting of data will be evaluated by these objectives.
   a) A functional requirements process and document will be created.
   b) A technical requirements document will be created.
   c) Procurement of the application will be completed.
   d) A user testing and acceptance plan will be adopted, implemented, and result in acceptance of the application.
   e) The portal will be integrated with the State IT security system.
   f) The portal will provide directory management services coordinated with the State IT security system to ensure that only authenticated users are provided access consistent with the authority granted them.
   g) State Report Manager will collect all required data as unit records as appropriate.
   h) State Report Manager will collect as much EDFacts data as appropriate.
   i) Users will be provided collaboration tools and resources to create communities of interest and to share resources throughout the State.
   j) The portal will provide individual user configuration for communications, links to other sites, and access to authorized applications within MOSIS.
   k) The portal will provide access to reports and data by teachers and other school staff to public information as well as confidential information for their own students.
   l) The portal will provide data in a confidential manner to UM for research.
   m) UM will deliver research-based insights into the success of teacher preparation programs and professional development training.
   n) UM will design standard reports and analyses that can be incorporated into the portal for wider use.

o) The portal will provide the collaboration tools for teachers, other educators, researchers, and all stakeholders to create communities of interest for sharing ideas and resources.
p) The portal will support the sharing of best practices, research, lessons plans, resources, and other valuable information for the improvement of instruction and the management of schools.

4) The standard for all agencies sharing data for interoperability including alignment of individual identifiers (e.g., student, teacher, staff) will be evaluated by these objectives.
   a) A single metadata dictionary will be maintained with the data elements, definitions, option sets, and business rules to be followed by all applications within MOSIS and users of MOSIS data.
   b) Policies will be reviewed and reflected in a comprehensive Data Access and Management Policy.
   c) Interoperability standards will be adopted and followed that allow all authorized systems to share data with automated processes with an approved periodicity.
5) The teacher certification system for verification and reporting will be evaluated by these objectives.
   a) A functional requirements process and document will be created.
   b) A technical requirements document will be created.
   c) Procurement of the application will be completed.
   d) A user testing and acceptance plan will be adopted, implemented, and result in acceptance of the application.
   e) Implementation will follow the project management process adopted by MOSIS.
   f) The final application will meet the functional and technical requirements.

DESE will conduct an annual evaluation of the status and progress of the MOSIS Longitudinal Data System Grant activities. This evaluation will be contracted to a qualified organization, and the findings reported directly to the P-20 Council.

The adopted project plan for MOSIS will be maintained to describe the daily, weekly, and monthly status for specific activities and deliverables. With this information, adjustments will be made as needed to the activities related to each objective. If appropriate, the objectives can be modified to reflect change orders or realities that arise during implementation.

SECTION 3: Project Design

The MOSIS Longitudinal Data System is described here in relation to the objectives detailed above. Currently, DESE is reengineering the data collection systems that have been collecting aggregate data to the collection of individual records. The operational systems are being designed in a coordinated way to be integrated into a new enterprise portal, and directory management and security system. They will share common functions, user security authorization and authentication routines for example, and a shared list of schools and districts. The main repository will be a new data warehouse with the longitudinal records matched across years, programs, and locations. In terms of data-driven decision making, the reporting functions will be the most significant new feature of MOSIS. Each component of MOSIS will conform to the requirements of the Information Systems Architecture. To ensure the anticipated benefits are

achieved, a strong training and support component will be implemented aligned with each of the new functionalities.

The attachments within Appendix A contain descriptions with key perspectives on several aspects of MOSIS and this grant application. Attachment 2 is a data flow picture of how DESE's information systems work in the present environment and how the proposed changes in MOSIS will create an interoperable environment more supportive of data usage at all levels of the education ecosystem in Missouri. Attachment 3 shows the governance structure provided by the P-20 Council, which will oversee the MOSIS data sharing and usage. Attachment 4 is a timeline showing the historical activity that has brought MOSIS to today's level of design and development. Attachment 5 contains a detailed timeline for the proposed LDS projects.

Description of MOSIS Longitudinal Data System Project Components by Objective

1) Training and Support System for Teachers and Other Users

Every component of MOSIS will be required to develop and implement these features for the support and training of users.

a) User documentation that follows the requirements documentation; available online; continually updated; reviewed and accepted by the Core Data User Group

b) Contextual help within each online application

c) Email and/or phone help desk for level 1 issues

d) Escalation of issues to level 2 within DESE

e) Escalation of issues to level 3 with contractor/vendor or State IT Department

f) Training plan for initial implementation, changes, and new personnel (efficient use of current regional and web-delivered training to be encouraged)

g) Evaluation of user needs and effectiveness of training and support

DESE will take advantage of the staff, facilities, resources, and expertise of three Regional Professional Development Centers in Missouri to create and deliver the user training and support foundation for MOSIS. The eligible centers will be asked to work with DESE to create the criteria and requirements for the training and support program. Then three successful bidders will be selected from among those that submit a plan for delivery.

To avoid splintering this crucial aspect of the project, one of the Regional Professional Development Centers will be designated as the lead and will be given additional resources to coordinate the efforts across all three.

DESE has used regional training, central meetings in Jefferson City, and Webinars very successfully in the launch and support of the MISIS ID and Precode projects. This methodology with alternative modes of delivery has allowed school and district staff to participate with success in training activities. A multifaceted approach for MOSIS training and support is also envisioned. With several components being developed or launched on the same timeframe,

school and district personnel, especially in the smaller districts, will be stretched to keep up and participate fully. The multiplicity of options will provide flexible participation while allowing DESE to require participation.

2) Data Repository for Longitudinal Records

DESE plans to build the MOSIS Longitudinal Data Store to support our analysis and *ad hoc* query needs. Data are selected for inclusion based on how well they can be analyzed or contribute to analysis. As such, DESE cannot merely buy a data warehouse. The data sources and particular topics of potential interest are unique to Missouri, and, therefore, the tables to be loaded are unique to our situation. A data warehouse vendor may have models that have been successful in the past, but the final designs will all be local. DESE will use the work of the Forum on Education Statistics and SIF to inform the content and design of the MOSIS data models (staging, operational, longitudinal, and reporting).

We propose to build the MOSIS Longitudinal Data Store as a series of data marts. As new marts are added, the dimensions in common will conform to the existing standards. This leverages our existing Core Data Reports, created in Business Objects, and allows us to continue using the historical reports and official statistics as we make the multi-year transition to a new reporting process or system. At this time, Business Objects is the likely platform for reporting because of our investment in it and its support by the State IT Department. DESE will follow best practices, identified by Ralph Kimball, for data warehouse development (Kimball, Ralph and Margy Ross; *The Data Warehouse Toolkit: The Complete Guide to Dimensional Data Modeling, Second Edition*, Wiley, 2002).

- **Select the process.** What is policy area or topic of interest under study?
- **Declare the grain**. What is the level of detail that will be available?
- **Choose the dimensions**. What are the ways the data can be aggregated or combined?
- **Identify the facts**. What are the measures of interest?

Contractors with expert knowledge of education and data warehouse development will work with DESE staff to initially identify the entities for the warehouse. The data mart development will begin with "student performance on the state assessment" and "student attendance and enrollment." The common dimensions of Student Demographics, Staff Demographics, School and District Characteristics, and Time will be detailed and loaded. Analysis cubes will be designed and constructed.

ED*Facts* reporting requirements will guide the identification of dimensions and aggregation categories.

A stakeholder group made up of both internal DESE and district staff will review the warehouse design, the loaded data, and the cubes for accuracy and validity. Any anomalies identified will be corrected in the design. Once the warehouse structure is accepted, processes will be designed and built for updating the warehouse (ETL) as new data are collected by DESE.

The grant will support the work of the contractors and pay the travel expenses of the stakeholder group. The salary and benefits for State staff will be covered as a State contribution to the project. Districts will cover the salary of their staff on the project.

After initial data marts with assessment and enrollment data are reviewed and accepted, work will commence on subsequent data marts, including but not limited to dropouts and graduates,

teacher qualifications, special education, English language learners (ELL), and discipline. The process for the development of these will follow from above. Dimensions will be conformed across the various data marts within the warehouse structure.

Two days of training for 25 DESE, DED, DHE, and UM employees on how to access and use the cubes and the Business Objects reporting tools.

Additionally, DESE will use the following standards and guidelines in the design of the MOSIS Longitudinal Data Store:

- NCES Handbooks Online, http://nces.ed.gov/programs/handbook/; and
- Financial Accounting for Local and State School Systems: 2003 Edition, http://nces.ed.gov/pubs2004/h2r2/;
- Schools Interoperability Framework (SIF) standards (http://www.sifinfo.org/tool_kit.asp);
- Recommendation 7 (Integrating Data Systems) of the U.S. Department of Education's National Educational Technology Plan (http://www.ed.gov/technology/plan);
- Data confidentiality guide of the National Forum on Education (Forum Guide to Protecting the Privacy of Student Information: State and Local Education Agencies (2004), http://nces.ed.gov/forum/pub_2004330.asp); and
- Technology security standards of the National Forum on Education (Weaving a Secure Web Around Education: A Guide to Technology Standards and Security (2003), http://nces.ed.gov/forum/pub_2003381.asp);

The data repository component implementation is expected to take two years after the completion of the review process for the database and business intelligence tool set and servers. The process will entail the following activities.

- Transition from aggregate records to unit records through State Report Manager collections.
- Build and populate longitudinal data store tables and build cubes.
- Review cube design and contents with DESE, DHE, DED, and UM staff and district advisory group adjust as needed.
- Train DESE analysts in the use of the longitudinal data store and cubes.
- Add additional data marts to the system using existing dimensions where they conform, making adjustments to common dimensions as needed.
- Continue iteration of new cubes and longitudinal data store tables designed and populated, review with advisors, adjust and train DESE, DHE, DED, and UM staff.

The MOSIS Longitudinal Data Store/Data Warehouse described above will be accessible to DESE employees. There will be managed direct access from outside DESE to comply with FERPA and formal interagency agreements under the direction of the P-20 Council.

3) Enterprise Portal

The MOSIS Portal is the overarching component that brings together all of the capabilities of the MOSIS LDS. The portal will provide Missouri with a cost-effective and efficient solution for delivering data and services to teachers, staff, students, and the community. The MOSIS Portal will also serve as the means of authenticating and validating users and maintaining information about functions and data that can be accessed into the various data collection components of MOSIS. DESE plans to leverage Microsoft's favorable SharePoint licensing structure. The MOSIS Portal is a customized implementation of SharePoint with a Directory Manager webpart designed to distribute the role of account and profile management to district administrators and individual users.

The Fusion Portal in Wyoming is the model from which the MOSIS Portal will be constructed. This will save us time and costs, delivering a functional portal to teachers and other educators as soon as possible.

Major benefits MOSIS will realize with the use of the MOSIS Portal:

- Instantly find and communicate with people and other organizations.
- Add real-time collaboration capabilities to core personal productivity programs.
- Collaborate across tools.
- Build community and department sites.
- Connect quickly and easily from remote locations.
- Receive higher availability of data and data recovery through Microsoft SQL Server integration.

The MOSIS Portal will provide access for collaboration with employees, partners, and other organizations while protecting sensitive enterprise information. This solution provides MOSIS with an ability to keep the information secure through a comprehensive set of tools to manage and control electronic content. This will help MOSIS streamline everyday business processes leading to improved productivity of staff.

The MOSIS Communications Center and Community Sites will allow users to build in workflow and notification services. The MOSIS Portal will be developed with a deep native integration with Microsoft Exchange Server. Hence, all the features of the Microsoft Exchange Outlook Web Access are proposed as native interfaces into the solution. The MOSIS Portal will also have native integration capabilities with the training and support tools for MOSIS (e.g., Microsoft Live Meeting, WebEx, Elluminate, and other interactive tools such as Real-Time Polls, Mood Indicator, Chat, Annotations, Whiteboard, Text Slide, and Web Slide) allowing users to draw, annotate, and type simultaneously to simulate the natural interactivity of an in-person meeting environment.

<u>Reporting/Analysis System</u>

There are many reporting and analysis systems that can connect to cubes and present those data in useful ways over the web. DESE uses Business Objects and currently plans to continue its use. With this decision, a procurement process is not needed merely required upgrades to user licenses. Reports can be developed around the policy questions identified in the data marts, and static or parameter-driven reports can be developed and deployed in the system.

The reporting system will be integrated into the MOSIS enterprise portal and directory. The directory will have the ability to delegate the management of user access rights to a security manager within each district. State representative groups will help in the identification of requirements and the decision process for any required procurement.

Constructed reports will be vetted with a group of district representatives and DESE program staff prior to deployment. Coordination within the P-20 Council will ensure the interoperability of not only data, but also reports.

In order for the Reporting and Analysis system to be successful, it must be broadly used. We have budgeted for each LEA to participate in two days of training on the system either in person or remotely through web-delivered processes. The training will include the definitions of the reported data, appropriate uses for the data, and how to correctly interpret the results.

The project activities include:

- Confirming the reporting and analysis tool set to use and procuring licenses
- Integrating the reporting set into the enterprise portal and directory; integrating user accounts
- Building reports based on the cubes being deployed in the longitudinal data system project
- Conducting regional training for school district staff in the use of the reporting system

Data Collection State Report Manager, the system that now collects individual student, teacher, and classroom data for MOSIS, has foundational content areas to convert from aggregate records. DESE will conduct metadata analyses to determine how the content to be collected should be organized into specific submission cycles. Our plan is to implement two additional submission cycles in year 1, and one additional submission cycle in each of the next two years to complete the data collections required for the MOSIS Longitudinal Data Repository and to satisfy EDFacts content requirements.

Research and Analysis Research and analysis using teacher and student data to determine the effectiveness of Missouri teachers will be a priority use of the longitudinal data with linkages across P-20. Initial teacher preparation and on-going professional development will be measured and analyzed. DHE will collaborate with UM to:

- Year 1: Link records of college graduates to K-12 teacher and classroom records in MOSIS. Analyze teacher preparation and K-12 courses taught, professional development and course assigned, and numbers of students served.
- Year 2: Analyze classroom gain score estimates for teachers in teacher preparation programs and professional development.
- Year 3: Calculate value-added estimates for teacher preparation programs and professional development activities.

Since the point of data mining is to look at data in new ways, having combined data from disparate systems, a crucial component is a complete metadata dictionary that describes exactly what data are collected, the time period covered, the population about which the data were collected, and any other information an analyst might need. Each data store will have a data

dictionary that specifies how all elements must conform. DESE has contracted with ESP Solutions Group to develop a metadata dictionary for each MOSIS State Report Manager submission cycle.

MOSIS Collaborative The ultimate benefit from longitudinal data is the improvement of academic success in Missouri's schools. This will occur through the use of MOSIS data for data-driven decision making. Individual educators can make a difference, but together in a collaborative environment, they can be a tremendous force. Beginning in year two, when data are available in the MOSIS Longitudinal Data Repository, the enterprise portal will be leveraged to begin connecting people of like jobs or like minds. The collaborative tools provided by the portal will be used to create the sharing of ideas, analyses, findings, resources, lesson plans, and any other valuable asset that the education community can provide.

This collaboration won't happen on its own. This grant will support not only the configuration necessary within the portal, but also the design of the features and functions basic to collaboration. Learning from other states and districts that have initiated similar efforts will require coordination and support. A two-way influence will be established between the communities of interest that are collaborating within the portal environment and the P-20 Council, which will be guiding the growing content and reporting capacity of MOSIS.

4) Standards for Interoperability

Information Systems Architecture DESE will complete a comprehensive review of all standards, policies, and procedures related to data management. This will create and maintain a MOSIS Information Systems Architecture following the best practices for agency organizational structure; metadata standards; project management; infrastructure; disaster prevention and recovery; portal services; data management and documentation; data stores; data-driven decision support; and user support.

Metadata Standards DESE will establish MOSIS data standards for all P-20 partners to use by documenting all data collections and repositories that relate to the MOSIS Longitudinal Data Store. This process will require the review and analysis of all current and planned data collection activities and the alignment of their data elements with the reporting requirements for EDFacts, State funding, program evaluation, grant compliance reporting, and other reporting requirements and needs. These metadata standards will ensure that the interoperability created through MOSIS results in the sharing of quality data that are interpreted accurately by the users.

MOSIS Student and Staff Identifier System

The MOSIS Student Identifier System will be used to create interoperability for exchanges of student and staff records across all the P-20 participants. This will require extensive reviews of laws, policies, and procedures to ensure proper use and protection of confidential data. The system will be extended to staff records; however, the use of SSN as the key field for staff and postsecondary students must be resolved. For FERPA protection, the fields needed to assign an ID will be limited to those commonly considered "directory information."

5) Teacher Certification System

DESE completed a comprehensive requirements study for the Missouri Educator Credentialing System. Twenty-two objectives were detailed and a cost estimate for development or procurement was created. This system will replace the current set of applications used by the

Educator Certification Section, including data from the Core Data System, Professional Development System, Substitute Certification System, and Professional Conduct System (fingerprint and revocation database). With the changes in MOSIS, the current set of applications will be outdated and will require alignment with the new metadata standards, State Report Manager collections, Longitudinal Data Repository, and Reporting System.

The Teacher Certification System is a top priority for DESE. So much depends upon recruiting, hiring, and retaining highly qualified staff including the reporting of those positions for the No Child Left Behind Act.

SECTION 4: Institutional Support

Institutional support can be bought with State funding. Institutional support can also be bought with confidence by the LEAs. Sustainable institutional support for MOSIS will come from the LEAs who have learned for themselves that the new processes MOSIS brings are better, and who will learn in the future that the new reporting MOSIS delivers supports their efforts to improve. MOSIS began with voluntary participation by LEAs. The Core Data User Group had recommended for years a transition to more automated, unit record State reports that would reduce the burden on LEAs by reducing the redundancy across collections. The implementation of our MOSIS ID and later the beginning of our State Report Manager data collections both began as voluntary efforts. The great benefit of this approach was that when these implementations were successful and had proven their value, the buy-in by LEAs was achieved. In the long-run, this will be the key to sustainability. DESE with MOSIS did not impose the culture change and the local investment until it was clear that LEAs would support and be able to participate in the new processes.

Now that MOSIS is beginning its first full school year of being mandated, the buy-in and ability of LEAs to participate is established. We are not seeking grant funding for a concept that may or may not work. We already have proven the concept. We are ready now for the funds to achieve the timely implementation of longitudinal analyses that will secure the next level of commitment by LEAs. That level is the reliance upon MOSIS because it provides them something they have never had before quality, individual records, matched across time and programs, accessible in a system that is usable and supported.

DESE is committed to the MOSIS Project as our long-term solution for information systems that support data-driven decision making. Regardless of the amount or duration of LDS grant dollars, DESE will build its State funding budgets for continuous maintenance and ongoing enhancements of MOSIS. Over the last three years, we have committed $3 million to MOSIS from State funds. With the new support of the P-20 Council, the outlook and political support for continued or increased funding for MOSIS is good.

Current DESE staff are already being transitioned from their legacy roles to new roles for MOSIS. This process will accelerate when the LDS grant is awarded. Missouri has a limit on FTEs in State departments. Adding State employees is difficult. However, contracting for those services is allowed within available budgets. This approach will allow DESE to continue staffing MOSIS as needed dependent upon the availability of the funding. Our long-term plan for MOSIS uses anticipated State funding for both FTEs and maintenance costs.

Facilities within DESE and the State IT Department are adequate for future MOSIS staff. Demands on space are limited by the requirement for additional staff to be contracted. Space for equipment and the infrastructure required to power and secure it are adequate within the State IT facilities. These facilities are already on a path for upgrade as all other systems continue to evolve.

Sustaining resources for MOSIS after the end of the LDS grant will be achieved based upon the need for MOSIS as established by its functionality and the growing dependence upon it. MOSIS is how DESE will do its business, so the need to maintain and continue it will be a core requirement of DESE.

We have a long way to go to approach our vision, but as a State, we have the commitment from the Legislature, Governor's Office, higher education, other State departments, and the Department of Elementary and Secondary Education to get there. Missouri's P-20 Council fully embraces their responsibility for sustainability of MOSIS. DESE represents the PK-12 perspective as gathered through the Core Data User Group and meetings with LEAs. The Governor's Office has a designated staff person to coordinate the P-20 Council. The Department of Higher Education (DHE) and the Department of Economic Development (DED) represent ongoing needs from their perspectives. The University of Missouri contributes a research view of the potential from longitudinal data. Together, we represent the ongoing needs from both a broad and an in-depth perspective for a longitudinal data system.

The P-20 Council will continue to ensure the commitment of the commissioners of DESE, DHE, and DED, along with the oversight of the Governor's Office. UM will participate in the research aspects of this coordinated effort. The result will be an improved flow of information, with proper confidentiality protection, across these departments and levels of the education enterprise. The P-20 Council and the Governor's Office will support State funding for MOSIS activities.

MOSIS has a major commitment by DESE, with the support of the Legislature and the Governor's Office. DESE will reorganize its internal resources to support MOSIS and the new processes it brings. Training and support will be provided to ensure user success and continued buy-in.

SECTION 5: Project Management Plan

The special blend of public policies, divergent stakeholder groups, multiple levels of control, and technical challenges makes the MOSIS project management special. DESE will follow a form of project management tailored to education agencies rather than that of traditional business-oriented project management.

Over the past three years, DESE has worked with ESP Solutions Group in the development and deployment of the State Report Manager data collection system. This successful process has demonstrated how DESE can, with limited resources, make major changes in how data are collected. Along the way, LEA participation has been voluntary, requiring even more care and shaping our set of empirical best practices for project management. DESE's processes are grounded in a wealth of resources from the National Center for Education Statistics (NCES),

other national standards groups, and publications from the National Forum on Education Statistics. DESE and ESP have used the standards and benchmarks from CMM (CMMI), the Project Management Institute (PMI), ISO9000, Six Sigma, and USED's best practices studies. ESP's "Management of an Education Information System" best practices framework was also utilized to formulate their Quality Project Management™ (QPM) methodology, which DESE will continue to follow for MOSIS. The details can be found in ESP's Optimal Reference Guide *Quality Project Management for Education Agencies* (see http://www.espsg.com/resources.php).

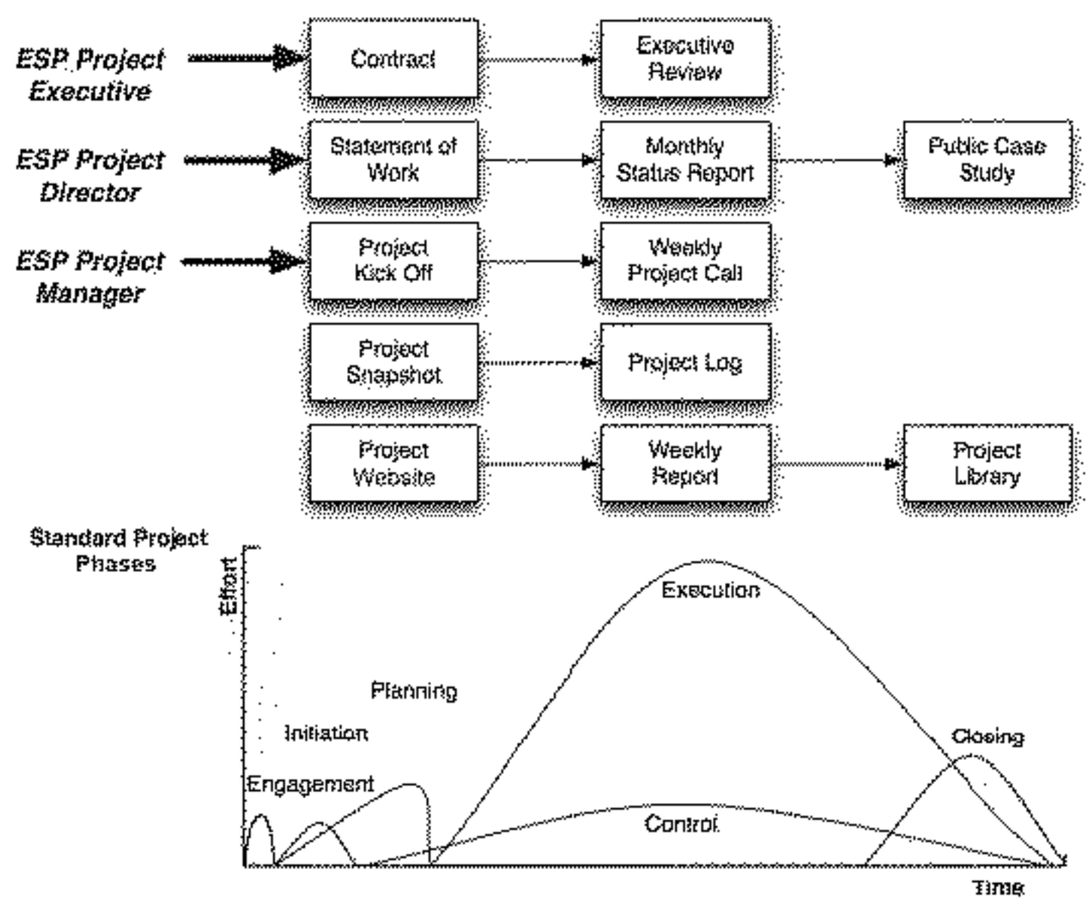
The QPM methodology ensures that the projects that DESE and ESP undertake are always managed for success within the precise context of schools, districts, and state-level constraints. QPM is a flexible, yet disciplined project management methodology tailored towards education agency information system implementations. It is not a rigid, non-specific, generalist project management methodology as is most commonly found in other technology integrator tool kits.

- DESE and QPM are solely focused on education data and technology.
- DESE and ESP use dynamic teaming to better plan and manage changing project landscapes and requirements. QPM moves resources in and out of a project with fluidity based on project needs and demands.
- ESP recognizes and applies what works specific to the different local and state education agencies across the U.S., their culture, histories, etc.
- ESP provides project support, not just technical support. ESP is a respected and trusted advisor to DESE when it comes to understanding and navigating national trends, emerging technology, and policy. DESE understands the unique political landscape both internal and external to education agencies. Therefore, QPM provides a full gamut of overall project support as opposed to the customary contractor technical support.
- To better understand and prepare for the unique demands of MOSIS, DESE has incorporated project management team involvement already in the proposal/project engagement process.

DESE/QPM Project Phases

The QPM methodology recognizes that a project moves through a series of phases.

Each phase starts with a set of expectations and ends with a set of deliverables that guides the next phase.



Traditionally the engagement phase ends with a signed contract. The initiation and planning phases begin with that contract and end with the statement of work and the complete project management plan.

In addition to a full Work Breakdown Structure (WBS) in Microsoft Project, the project management plan includes a requirements understanding document, communications plan, risk management plan, and the change management plan. A dynamic Statement of Work (SOW) documents the schedule and specific, agreed-upon deliverable expectations.

The execution phase uses the SOW and WBS to schedule resources for the agreed-upon tasks.

The control phase is managed through a series of weekly project status calls among the project management and key DESE project stakeholders. A monthly executive level provides regular updates and satisfaction checks. During each of these calls, the SOW and WBS are reviewed, status is validated against them, and the project management documents are then adjusted as needed.

Finally all completed deliverables are not considered final and approved by DESE until sign-off.

Additional DESE Project Management/Governance Processes

Project Governance The Missouri P-20 Council was created by the Legislature specifically to coordinate projects and activities such as this grant. Appendix A Attachment 3 shows the members of the P-20 Council and their relationship to each other. Although headed by the Governor's Office, the P-20 Council will be led by DESE for purposes of this grant. DESE will be the project manager as well.

Coordination and collaboration across the following groups has been found to be essential to our success.

- The leadership of the various divisions within DESE
- IT personnel at the state, regional, and local levels
- Administrative personnel at the state, regional, and local levels
- Classroom teachers
- The public (including parents and students)
- Governor's Office
- The Legislature
- Technology vendors
- Stakeholder advisory groups

DESE will continue to use the Core Data User Group to advise us on MOSIS. However, that group may recommend additional members or associated groups to ensure the broad and informed guidance required for MOSIS.

Project Risk Management - Because ESP's experience and focus is primarily based on education technology project management, they have experienced and thus understand the risks to large-scale education agency technology initiatives. Not only does DESE and ESP anticipate project risk, we understand how to mitigate risk. By utilizing risk management processes such as risk analysis matrices, we have successfully planned and implemented multiple projects together.

Issue Management DESE and ESP understand the common issues that can arise in an education agency environment and how to deal with them early. We methodically confront, track, and resolve all project issues via regular status meetings, documentation, and issue tracking software. For our data collection and reporting system implementations we utilize a web-based issue tracking tool.

Scope Control DESE will establish a firm project Statement of Work for each vendor, contractor, or activity for MOSIS so as to clearly define and meet the contracted project scope, expectations, and timeline. If any changes to project scope do occur, they will be managed with consistency, agreed upon by all involved parties, and have change orders processed and signed. This will ensure that the project is completed appropriately, on time, and within budget.

SECTION 6: Personnel and Resources

This project will succeed because of the commitment and expertise of the staff members who are assigned and the strengths of the partners in the project. The project team includes the core team responsible for DESE's enterprise data system improvement efforts, the leaders for both DESE and DHE applications in the State IT Department, the primary partners in DHE, DED, and UM, and the key experts provided by ESP Solutions Group.

MOSIS Project Director Leigh Ann Grant-Engle, Data Management Director, will be the co-project director. Leigh Ann will direct the technical aspects of the project including the integration of the systems into the enterprise data architecture. She will assure that all activities of this project integrate into agency-wide efforts and comply with State IT standards. She will be full time in this role because her current responsibilities are all part of the overall MOSIS Project. Two FTE technical associates will support these activities. Throughout the project offices within DESE, 12 FTEs work as data stewards in support of data quality. These will be coordinated to be aligned with the MOSIS Project activities.

MOSIS Project Director Tom Ogle, School Core Data Director, will be the co-project director. Tom will direct the school and district processes and standards for the project including the integration of the data into the enterprise data architecture. He will assure that all activities of this project coordinate with agency-wide data collection and use efforts and comply with State IT standards. He will be full time in this role because his current responsibilities are all part of the overall conversion of Core Data to the MOSIS Project. Three FTE associates will support these activities. Tom will ensure the full participation and support of the Core Data User Group in MOSIS.

Key Support Personnel Shelly Parey, Computer Information Technology Supervisor and these Computer Information Technologist Specialists Bruce Dent, Michelle Wagner, Micah Porter, Liza Merriman, John Harvey, and Jane Jordan support the DESE information technology operations and will provide essential insight and support to the MOSIS activities.

Project Manager Jason Young, Project Manager for State Report Manager and metadata standards, will be the on-site, full-time project manager responsible for day-to-day integration of data collections with data storage and use processes. Jason worked six years with DESE and the State IT Department before becoming ESP's on-site project manager for State Report Manager the last two years. He is uniquely qualified as the person who developed much of DESE's current ETL and reporting processes, and created DESE's current metadata dictionary, which will be used as the starting point for MOSIS data repositories and reporting. He will ensure successful integration of individual records into the EDFacts and new portal-centric reporting.

MOSIS Architect Steve King, will oversee the creation of the Information Systems Architecture and the adoption of metadata standards. Steve will be contracted for the number of hours required, estimated to be 20% in year 1. Alex Jackl, ESP's Chief Architect, will work with Steve to ensure comprehensive integration of all MOSIS components. Alex's time will be approximately 10%. These FTEs will be adequate for MOSIS because of the expertise already in-house in DESE and the existence of the State IT Department. Steve will ensure total compatibility between DESE and the State IT Department's requirements and processes.

Contracted Project Director Josh Goodman, PMP, will direct contracted services and ensure coordination with all internal DESE and State IT Processes. Josh has directed ESP's implementation of State Report Manager for three years in Missouri. In addition, he has directed successful statewide implementations of similar projects in other states. Josh will be contracted for 50% of his time. He will ensure that the project plan approved for this project is implemented successfully according to the project management methodology described.

State IT Department CIO Paul Wright is the CIO for both DESE and the Department of Higher Education. His time commitment is 100% to the success of all IT functions for both departments. Paul will ensure that the State IT standards are understood and followed to achieve complete interoperability across DESE, DHE, DED, and UM.

State IT Administration Steve White and Dianna James provide direct support to DESE and DHE for all IT functions. They are 100% in support of MOSIS and the other related activities for these departments.

Contracted Content Expertise Barbara Clements, Barbara Andrepont, and Glynn Ligon, all experienced in the design and implementation of statewide longitudinal information systems, will support MOSIS as needed. Together, their time will equal approximately 50%. This will be adequate in their supportive role as quality assurance and data usage consultants. Dr. Clements will provide expertise in policy matters related to data access and management (FERPA). Ms. Andrepont will provide expertise in data standards and interoperability. Dr. Ligon will provide expertise in best practices across the spectrum of issues related to longitudinal data systems. Their recent professional papers represent the expertise they bring to MOSIS. See http://www.espsg.com/resources.php.

Principal Researchers Michael Podgursky, Department of Economics, and Cory Koedel, Department of Economics, University of Missouri, Columbia, will provide the research experience and analysis expertise for studying the teacher preparation and professional development data to be available through MOSIS and the related databases. They will provide the expertise to analyze and interpret longitudinal data from MOSIS. They have conducted numerous studies to date using DESE data and will provide extensive and crucial design expertise for reporting from the new MOSIS longitudinal database. Together they will provide 25% time from their UM duties.

Analysis Manager Mary Bruton is the Workforce Analysis Manager at the Missouri Research and Information Center (MERIC), the research arm of the Missouri Department of Economic Development and Missouri's Labor Market Information office. She will provide guidance and expertise for the interoperability of data between MOSIS in DESE and DED's databases.

Research Associate Jeremy J. Kintzel, Department of Higher Education, Research Associate, will provide guidance and expertise for the interoperability of data between MOSIS in DESE and DHE's databases. Jeremy will manage the coordination of research activities by UM using longitudinal data from MOSIS.

Project Narrative

Other Narrative

Attachment 1:
Title: Pages: Uploaded File: **1236-3_5_6_Binder.pdf**

MOSIS Longitudinal Data System

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
1	1	MOSIS Longitudinal Data System	1025 days	Mon 12/29/08	Fri 11/30/12	
2	1.1	Project Initiation	50 days	Mon 12/29/08	Fri 3/6/09	
3	1.1.1	Notice of Award from ED	0 days	Mon 12/29/08	Mon 12/29/08	
4	1.1.2	SOW	14 days	Mon 2/2/09	Thu 2/19/09	
5	1.1.2.1	SOW created	3 days	Mon 2/2/09	Wed 2/4/09	3
6	1.1.2.2	SOW edited	3 days	Thu 2/5/09	Mon 2/9/09	5
7	1.1.2.3	SOW finalized	3 days	Tue 2/10/09	Thu 2/12/09	6
8	1.1.2.4	ED Review SOW	5 days	Fri 2/13/09	Thu 2/19/09	7
9	1.1.2.5	SOW accepted and vendor contract signed	0 wks	Thu 2/19/09	Thu 2/19/09	8
10	1.1.3	Kickoff	2 days	Fri 2/20/09	Mon 2/23/09	
11	1.1.3.1	Schedule Project Kickoff I	1 day	Fri 2/20/09	Fri 2/20/09	9
12	1.1.3.2	Set Agenda for Kickoff I	1 day	Mon 2/23/09	Mon 2/23/09	11,3,7
13	1.1.3.3	Review Initial Project Plan/WBS	2 days	Fri 2/20/09	Mon 2/23/09	9
14	1.1.3.4	Conduct Kickoff Meeting I	1 day	Mon 2/23/09	Mon 2/23/09	11,3,7
15	1.1.3.5	Final signoff and agreement on SOW	0 days	Mon 2/23/09	Mon 2/23/09	14
16	1.1.3.6	Launch project website	0 days	Mon 2/23/09	Mon 2/23/09	15
17	1.1.4	Initial Planning	9 days	Mon 2/23/09	Fri 3/6/09	
18	1.1.4.1	Identify Hardware, Software, Network, Security Experts	1 day	Tue 2/24/09	Tue 2/24/09	16
19	1.1.4.2	Assign and Communicate Roles	1 day	Tue 2/24/09	Tue 2/24/09	14
20	1.1.4.3	Distribute Team Member Contact Information	1 day	Tue 2/24/09	Tue 2/24/09	14
21	1.1.4.4	Identify Pilot District Candidates	5 days	Tue 2/24/09	Mon 3/2/09	14
22	1.1.4.5	Select Pilot Districts	0 days	Mon 3/2/09	Mon 3/2/09	21
23	1.1.4.6	Modify Project Plan Based upon Feedback	5 days	Mon 3/2/09	Fri 3/6/09	14SF+10 days
24	1.1.4.7	Software Licensing Agreements Signed	0 days	Mon 2/23/09	Mon 2/23/09	14
25						
26	1.2	Project Planning and Design	24 days	Tue 2/24/09	Fri 3/27/09	
27	1.2.1	Develop Final Project Management Plan/WBS	20 days	Tue 2/24/09	Mon 3/23/09	14
28	1.2.2	Prepare for Kickoff meeting II	3 days	Tue 3/24/09	Thu 3/26/09	27
29	1.2.3	Conduct Kickoff meeting II	1 day	Fri 3/27/09	Fri 3/27/09	27,28
30	1.2.4	Deliverable 1- Project Management Plan	0 days	Fri 3/27/09	Fri 3/27/09	29,23
31	1.2.5	Analysis and Design Review Process	24 days	Tue 2/24/09	Fri 3/27/09	
34						
35	1.3	Project Control	635 days	Mon 2/23/09	Fri 7/29/11	
36	1.3.1	Annual meeting in DC	522 days	Wed 7/29/09	Thu 7/28/11	
40	1.3.2	Monthly project calls with ED	566 days	Thu 4/30/09	Thu 6/30/11	

MOSIS Longitudinal Data System

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
92	1.3.3	Monthly project executive reviews	591 days	Wed 4/8/09	Wed 7/13/11	
121	1.3.4	Bi-monthly stakeholder updates	586 days	Thu 4/23/09	Thu 7/21/11	
153	1.3.5	Weekly internal status meetings	631 days	Mon 2/23/09	Mon 7/25/11	
281	1.3.6	Weekly project status reports	631 days	Fri 2/27/09	Fri 7/29/11	
409	1.3.7	Annual P-20 council review of MOSIS objectives	523 days	Thu 6/11/09	Mon 6/13/11	
413						
414	1.4	Project Execution	960 days	Mon 3/30/09	Fri 11/30/12	
415	1.4.1	MOSIS training and support system	730 days	Mon 3/30/09	Fri 1/13/12	
416	1.4.1.1	MOSIS training site design	30 days	Mon 3/30/09	Fri 5/8/09	32
417	1.4.1.2	MOSIS training site development	90 days	Mon 5/11/09	Fri 9/11/09	416
418	1.4.1.3	MOSIS training site users guide	45 days	Mon 5/25/09	Fri 7/24/09	416FS+10 days
419	1.4.1.4	MOSIS training site online help	45 days	Mon 8/10/09	Fri 10/9/09	418FS+10 days
420	1.4.1.5	MOSIS training site pilot	10 days	Mon 10/12/09	Fri 10/23/09	417,418,419
421	1.4.1.6	MOSIS training site user acceptance	0 days	Fri 10/23/09	Fri 10/23/09	420
422	1.4.1.7	MOSIS training site launch	0 days	Fri 10/23/09	Fri 10/23/09	421
423	1.4.1.8	MOSIS system trainings/User survey of system effectiveness	566 days	Wed 5/13/09	Wed 7/13/11	
438	1.4.1.9	MOSIS system support process developed	0 days	Fri 10/9/09	Fri 10/9/09	419
439	1.4.1.10	Level 1-3 system support process in place	580 days	Mon 10/26/09	Fri 1/13/12	422
440						
441	1.4.2	Longitudinal Data Store/Data Repository	960 days	Mon 3/30/09	Fri 11/30/12	
442	1.4.2.1	Functional requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
443	1.4.2.2	Technical requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
444	1.4.2.3	Identification of data base and business intelligence tool set	45 days	Mon 3/30/09	Fri 5/29/09	32
445	1.4.2.4	Procurement process of hardware and software	2 mons	Mon 6/1/09	Fri 7/24/09	444
446	1.4.2.5	Set up Hardware and Software	1 mon	Mon 7/27/09	Fri 8/21/09	445
447	1.4.2.6	Create user testing and acceptance plan	30 days	Mon 6/15/09	Fri 7/24/09	442,443FS+10
448	1.4.2.7	Data model development	30 days	Mon 6/15/09	Fri 7/24/09	442,443FS+10
449	1.4.2.8	Data model review	10 days	Mon 7/27/09	Fri 8/7/09	448
450	1.4.2.9	Data model acceptance	0 days	Fri 8/7/09	Fri 8/7/09	449
451	1.4.2.10	Data standards development	30 days	Mon 6/15/09	Fri 7/24/09	442,443FS+10
452	1.4.2.11	Data standards review	10 days	Mon 7/27/09	Fri 8/7/09	448
453	1.4.2.12	Data standards accepted	0 days	Fri 8/7/09	Fri 8/7/09	449
454	1.4.2.13	Data storage plan agreement based on data model	10 days	Mon 8/10/09	Fri 8/21/09	450
455	1.4.2.14	Authorized data system access plan	10 days	Mon 8/10/09	Fri 8/21/09	450
456	1.4.2.15	Reporting system needs assessment	10 days	Mon 8/10/09	Fri 8/21/09	450

MOSIS Longitudinal Data System

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
457	1.4.2.16	Longitudinal Data Repository development	865 days	Mon 8/10/09	Fri 11/30/12	
458	1.4.2.16.1	Facts and dimensions design, initial data population	120 days	Mon 8/10/09	Fri 1/22/10	
459	1.4.2.16.1.1	Student Demographics	10 days	Mon 8/10/09	Fri 8/21/09	453
460	1.4.2.16.1.2	Staff Demographics	10 days	Mon 8/24/09	Fri 9/4/09	459
461	1.4.2.16.1.3	Schools and Districts	10 days	Mon 9/7/09	Fri 9/18/09	460
462	1.4.2.16.1.4	State Assessments	10 days	Mon 9/21/09	Fri 10/2/09	461
463	1.4.2.16.1.5	Student Enrollment and Attendance	10 days	Mon 10/5/09	Fri 10/16/09	462
464	1.4.2.16.1.6	Staff Assignments	10 days	Mon 10/19/09	Fri 10/30/09	463
465	1.4.2.16.1.7	Special Education	10 days	Mon 11/2/09	Fri 11/13/09	464
466	1.4.2.16.1.8	Graduates and Dropouts	10 days	Mon 11/16/09	Fri 11/27/09	465
467	1.4.2.16.1.9	Teacher Certification	10 days	Mon 11/30/09	Fri 12/11/09	466
468	1.4.2.16.1.10	Student Courses	10 days	Mon 12/14/09	Fri 12/25/09	467
469	1.4.2.16.1.11	ELL	10 days	Mon 12/28/09	Fri 1/8/10	468
470	1.4.2.16.1.12	Discipline	10 days	Mon 1/11/10	Fri 1/22/10	469
471	1.4.2.16.2	Design ETL processes to update warehouse	120 days	Mon 8/10/09	Fri 1/22/10	
472	1.4.2.16.2.1	Student Demographics	10 days	Mon 8/10/09	Fri 8/21/09	453
473	1.4.2.16.2.2	Staff Demographics	10 days	Mon 8/24/09	Fri 9/4/09	472
474	1.4.2.16.2.3	Schools and Districts	10 days	Mon 9/7/09	Fri 9/18/09	473
475	1.4.2.16.2.4	State Assessments	10 days	Mon 9/21/09	Fri 10/2/09	474
476	1.4.2.16.2.5	Student Enrollment and Attendance	10 days	Mon 10/5/09	Fri 10/16/09	475
477	1.4.2.16.2.6	Staff Assignments	10 days	Mon 10/19/09	Fri 10/30/09	476
478	1.4.2.16.2.7	Special Education	10 days	Mon 11/2/09	Fri 11/13/09	477
479	1.4.2.16.2.8	Graduates and Dropouts	10 days	Mon 11/16/09	Fri 11/27/09	478
480	1.4.2.16.2.9	Teacher Certification	10 days	Mon 11/30/09	Fri 12/11/09	479
481	1.4.2.16.2.10	Student Courses	10 days	Mon 12/14/09	Fri 12/25/09	480
482	1.4.2.16.2.11	ELL	10 days	Mon 12/28/09	Fri 1/8/10	481
483	1.4.2.16.2.12	Discipline	10 days	Mon 1/11/10	Fri 1/22/10	482
484	1.4.2.16.3	Develop and build reporting cubes	80 days	Mon 8/10/09	Fri 11/27/09	
485	1.4.2.16.3.1	State Assessment	10 days	Mon 8/10/09	Fri 8/21/09	453
486	1.4.2.16.3.2	Student Enrollment and Attendance	10 days	Mon 8/24/09	Fri 9/4/09	485
487	1.4.2.16.3.3	Staff Assignments	10 days	Mon 9/7/09	Fri 9/18/09	486
488	1.4.2.16.3.4	Special Education	10 days	Mon 9/21/09	Fri 10/2/09	487
489	1.4.2.16.3.5	Graduates and Dropouts	10 days	Mon 10/5/09	Fri 10/16/09	488
490	1.4.2.16.3.6	Student Courses	10 days	Mon 10/19/09	Fri 10/30/09	489
491	1.4.2.16.3.7	ELL	10 days	Mon 11/2/09	Fri 11/13/09	490

MOSIS Longitudinal Data System

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
492	1.4.2.16.3.8	Discipline	10 days	Mon 11/16/09	Fri 11/27/09	491
493	1.4.2.16.4	MOSIS LDS user acceptance process-ongoing	170 days	Mon 8/24/09	Fri 4/16/10	456
494	1.4.2.16.5	Train state staff in use of reporting cubes-ongoing	80 days	Mon 8/24/09	Fri 12/11/09	456,485
495	1.4.2.16.6	Design Expansion of MOSIS Data Collection System	30 days	Mon 11/30/09	Fri 1/8/10	492
496	1.4.2.16.7	Implement Additional MOSIS SRM Data Collections	600 days	Mon 1/11/10	Fri 4/27/12	495
497	1.4.2.16.8	System Maintenance and Support	500 days	Mon 1/3/11	Fri 11/30/12	495
498						
499	1.4.3	Reporting and Analysis Portal	835 days	Mon 3/30/09	Fri 6/8/12	
500	1.4.3.1	Functional requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
501	1.4.3.2	Technical requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
502	1.4.3.3	Identification of toolset for ad-hoc, analysis, and security	45 days	Mon 3/30/09	Fri 5/29/09	32
503	1.4.3.4	Procurement of hardware and software	2 mons	Mon 6/1/09	Fri 7/24/09	502
504	1.4.3.5	Create portal user testing and acceptance plan	30 days	Mon 7/27/09	Fri 9/4/09	503
505	1.4.3.6	Install hardware and software	1 mon	Mon 9/7/09	Fri 10/2/09	504
506	1.4.3.7	Install and configure reporting and analysis tool	15 days	Mon 10/5/09	Fri 10/23/09	505
507	1.4.3.8	Integrate collaboration tools into portal	60 days	Mon 10/26/09	Fri 1/15/10	505,506
508	1.4.3.9	Integrate MOSIS application links to portal	60 days	Mon 1/18/10	Fri 4/9/10	507
509	1.4.3.10	Integrate portal with DESE IT security	15 days	Mon 4/12/10	Fri 4/30/10	508
510	1.4.3.11	Integrate security with portal directory system	15 days	Mon 5/3/10	Fri 5/21/10	509
511	1.4.3.12	Configure users and access rights	15 days	Mon 5/24/10	Fri 6/11/10	510
512	1.4.3.13	Integrate with longitudinal data store cubes	15 days	Mon 8/24/09	Fri 9/11/09	485
513	1.4.3.14	Build reports on the data warehouse cubes	60 days	Mon 8/24/09	Fri 11/13/09	485
514	1.4.3.15	Test Reports/QA	60 days	Mon 11/16/09	Fri 2/5/10	513
515	1.4.3.16	Create community sites	60 days	Mon 1/18/10	Fri 4/9/10	507
516	1.4.3.17	EDFacts Reporting Project	300 days	Mon 4/12/10	Fri 6/3/11	515
517	1.4.3.18	MOSIS reporting portal access user acceptance	0 days	Fri 4/9/10	Fri 4/9/10	515
518	1.4.3.19	Internal and district trainings	45 days	Mon 4/12/10	Fri 6/11/10	517
519	1.4.3.20	Rollout MOSIS reporting portal access to stakeholders	150 days	Mon 4/19/10	Fri 11/12/10	493,517
520	1.4.3.21	Commence UM research component	300 days	Mon 11/29/10	Fri 1/20/12	
521	1.4.3.21.1	UM report design and analysis	300 days	Mon 11/29/10	Fri 1/20/12	
522	1.4.3.21.1.1	Review of available data	45 days	Mon 11/29/10	Fri 1/28/11	519FS+10 days
523	1.4.3.21.1.2	Preliminary data analysis	30 days	Mon 1/31/11	Fri 3/11/11	522
524	1.4.3.21.1.3	UM recommendations for reporting	45 days	Mon 3/14/11	Fri 5/13/11	523
525	1.4.3.21.1.4	Incorporate UM reports into portal	180 days	Mon 5/16/11	Fri 1/20/12	524
526	1.4.3.22	Reporting portal maintenance and report enhancement	200 days	Mon 9/5/11	Fri 6/8/12	519

MOSIS Longitudinal Data System

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
527						
528	1.4.4	Develop MOSIS data sharing standards and interoperability processes	600 days	Mon 3/30/09	Fri 7/15/11	
529	1.4.4.1	Develop Information Systems Architecture	120 days	Mon 3/30/09	Fri 9/11/09	
530	1.4.4.2	Launch MOSIS metadata dictionary	600 days	Mon 3/30/09	Fri 7/15/11	
531	1.4.4.2.1	MOSIS metadata dictionary maintenance	600 days	Mon 3/30/09	Fri 7/15/11	30
532	1.4.4.3	Adopt MOSIS interoperability standards	0 days	Fri 5/29/09	Fri 5/29/09	443
533						
534	1.4.5	Teacher Certification System	435 days	Mon 10/4/10	Fri 6/1/12	
535	1.4.5.1	Functional requirements review and enhancement	45 days	Mon 10/4/10	Fri 12/3/10	
536	1.4.5.2	Technical requirements review and enhancement	45 days	Mon 10/4/10	Fri 12/3/10	
537	1.4.5.3	Procurement process	2 mons	Mon 12/6/10	Fri 1/28/11	535,536
538	1.4.5.4	Create user testing and acceptance plan	30 days	Mon 1/31/11	Fri 3/11/11	537
539	1.4.5.5	Teacher Certification System training	5 days	Mon 3/14/11	Fri 3/18/11	538
540	1.4.5.6	Teacher Certification System pilot	15 days	Mon 3/21/11	Fri 4/8/11	539
541	1.4.5.7	Teacher Certification System user acceptance	0 days	Fri 4/8/11	Fri 4/8/11	540
542	1.4.5.8	Teacher Certification System production	0 days	Fri 4/8/11	Fri 4/8/11	541
543	1.4.5.9	Teacher Certification System support and maintenance	300 days	Mon 4/11/11	Fri 6/1/12	542
544						
545	1.4.6	P-20 Collaboraitve	765 days	Mon 10/26/09	Fri 9/28/12	
546	1.4.6.1	Requirements Gathering	60 days	Mon 10/26/09	Fri 1/15/10	422
547	1.4.6.2	Design/Define Data Needs	100 days	Mon 1/18/10	Fri 6/4/10	546
548	1.4.6.3	System/Process Development	60 days	Mon 6/7/10	Fri 8/27/10	547
549	1.4.6.4	Create Documentation	60 days	Mon 8/30/10	Fri 11/19/10	548
550	1.4.6.5	Training	60 days	Mon 11/22/10	Fri 2/11/11	549
551	1.4.6.6	Integration of Reports into the Portal	150 days	Mon 2/14/11	Fri 9/9/11	550
552	1.4.6.7	Pilot Implementation	75 days	Mon 9/12/11	Fri 12/23/11	551
553	1.4.6.8	Production Implementation	100 days	Mon 12/26/11	Fri 5/11/12	552
554	1.4.6.9	Content Analysis/Reporting Collaboration Go Live	100 days	Mon 5/14/12	Fri 9/28/12	553
555						
556	1.5	Project Closing	18.33 days	Mon 6/11/12	Thu 7/5/12	
557	1.5.1	Project Review and Debrief	8.33 days	Mon 6/11/12	Thu 6/21/12	526
558	1.5.2	Closeout meeting	0 days	Thu 6/21/12	Thu 6/21/12	557
559	1.5.3	Deliverable - Final Report	10 days	Thu 6/21/12	Thu 7/5/12	558

Missouri P-20 Council

Always Learning • Always Prospering

Governor Matt Blunt

Missouri P-20 Council Members

Kent King
Commissioner,
Dept. of Elementary and Secondary Education

Robert Stein
Commissioner,
Dept. of Higher Education

Greg Steinhoff
Director,
Dept. of Economic Development

Kathy Swan
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September 22, 2008

Dr. Grover J. Whitehurst
Director of the Institute of Education Sciences
United States Department of Education
555 New Jersey Avenue, Northwest
Washington, D.C. 20208

Dear Dr. Grover J. Whitehurst:

We are pleased to support Missouri's Statewide Longitudinal Data System proposal.

The Missouri P-20 Council was created by statute in 2006, and includes the Commissioners of Education (P-12) and Higher Education, the Director of the Department of Economic Development, the President of the State Board of Education and the Chair of the Coordinating Board for Higher Education (CBHE). The mission of the Council is to develop a more coherent system of P-20 education where each level of education – preschool through graduate school – prepares students well for the next level and contributes to all students being college and career-ready.

All Council members are enthusiastically committed to P-20 longitudinal data and analysis and are working collaboratively to leverage linked data systems to strengthen decision-making in policy areas and major initiatives of common interest, including student preparation and persistence, college and career readiness, workforce participation, teacher education, and mathematics, engineering, technology, and science (METS) education and economic development. The investments included in this proposal have the potential to have a greater impact on our work, given the gaps we have identified in better supporting teacher effectiveness; creating a robust portal to manage the collection, access, and reporting of data; and creating interoperable standards for data sharing throughout the system.

The grant deliverables will move Missouri closer to a P-20 longitudinal data system that supports sound education policy and practice aimed at developing future Missourians who are well-prepared for college and careers in the New Economy. Again, we are pleased to lend our time, talent and resources in support of this proposal.

Sincerely,

D. Kent King | Robert Stein | Greg Steinhoff

Kathy Swan | Russell Thompson

MDHE
Missouri Department of Higher Education
Building Missouri's future...by degrees

Dr. Grover J. Whitehurst
Director of the Institute of Education Sciences
United States Department of Education
555 New Jersey Avenue, Northwest
Washington, D.C. 20208

Dear Dr. Whitehurst:

We are pleased to endorse the proposal being submitted by the Missouri Department of Elementary and Secondary Education (DESE), in cooperation with the state's P-20 Council, in support of the development of a comprehensive longitudinal student data system in the K-12 sector. As leaders of Missouri's educational organizations representing community colleges and public baccalaureate institutions, as well as the president of Missouri's statewide public technical college, we are united in our support for DESE's efforts to build a responsive data system which will strengthen decision-making for all with a stake in the continuous improvement of Missouri's educational system.

In addition, we are equally pleased that DESE is committed to ongoing collaboration with all interested stakeholders, throughout the development of this system, to ensure linkages are enabled with existing unit-record data systems in higher education and workforce development. The proposal also includes funds to support cooperative research and analysis involving DESE, the Department of Higher Education, the Department of Economic Development, and the University of Missouri – Columbia. Research leveraging data held by all partners, with appropriate governance and oversight, will advance the state's understanding of successful student preparation, college and career readiness, and workforce success.

We look forward to working with DESE, the P-20 Council, and other partners participating in this proposal to further the growth of data-driven decision-making in Missouri.

Thank you for your consideration,

Dr. Donald Claycomb
President
Linn State Technical College

Dr. James Kellerman
Executive Director
Missouri Community College Association

Dr. Brian Long
Executive Director
Council on Public Higher Education in Missouri

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Attachment 2: Data Flow within DESE

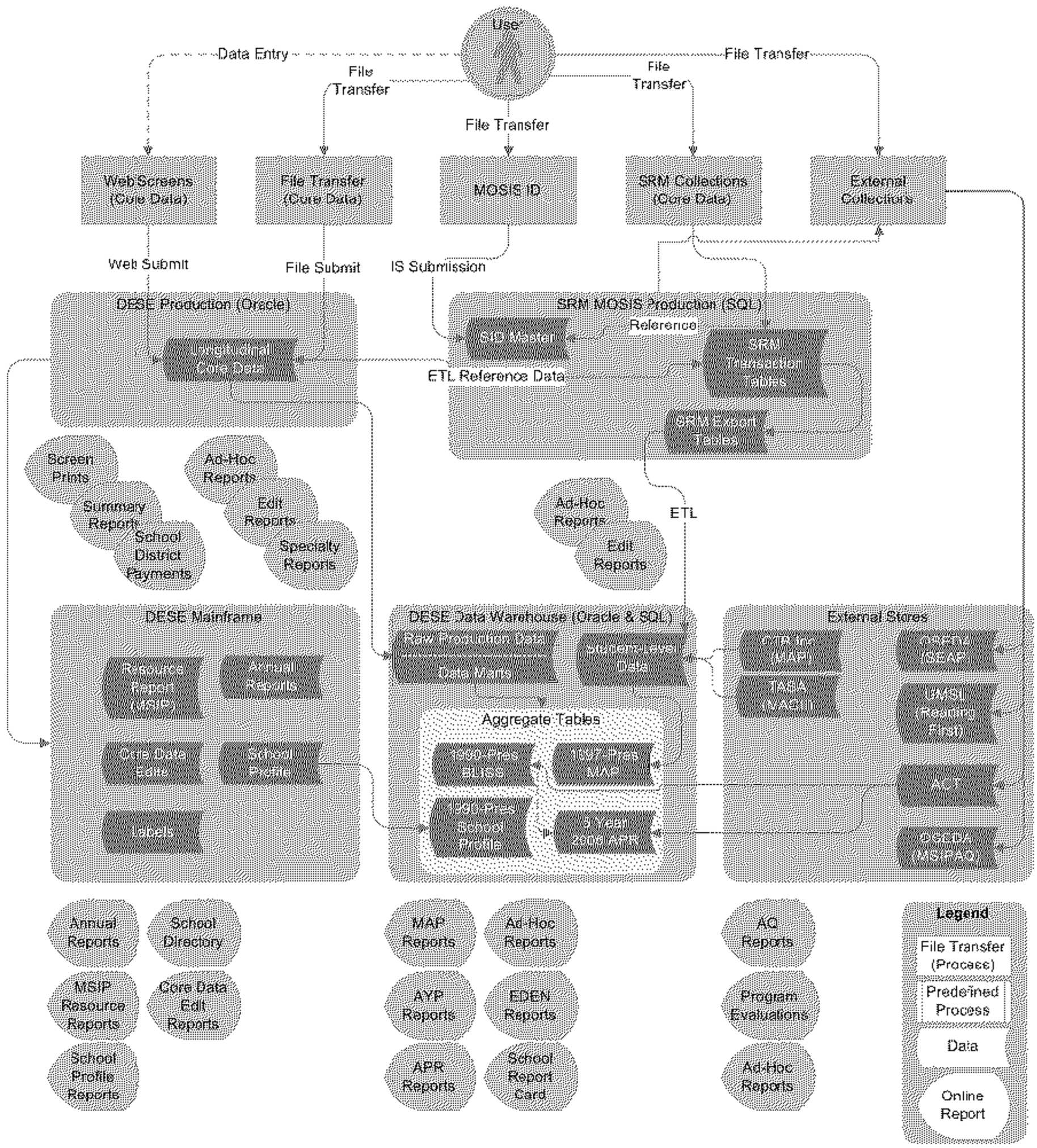
DESE has analyzed the internal data flow related to MOSIS in order to understand how the proposed changes will impact data access and interoperability. The top level data flow chart that follows summarizes that analysis.

The second data flow picture depicts how the entire MOSIS Longitudinal Data System will work together.

Proposed changes within the LDS grant application include:

1. Combine the contents of the DESE Mainframe, Data Warehouse, and External Sources into the MOSIS Longitudinal Data System Repository.
2. Convert the Web Screens (Core Data) to SRM Collections (Unit Records).
3. Consolidate the reporting using the MOSIS reporting function within the enterprise portal.
4. Reengineer the internal ETL processes to consolidate data into the MOSIS LDS Repository.
5. Transform all new unit records into the required statistics for EDFacts, school funding, and standard reporting.

Top Level Core Data Flow

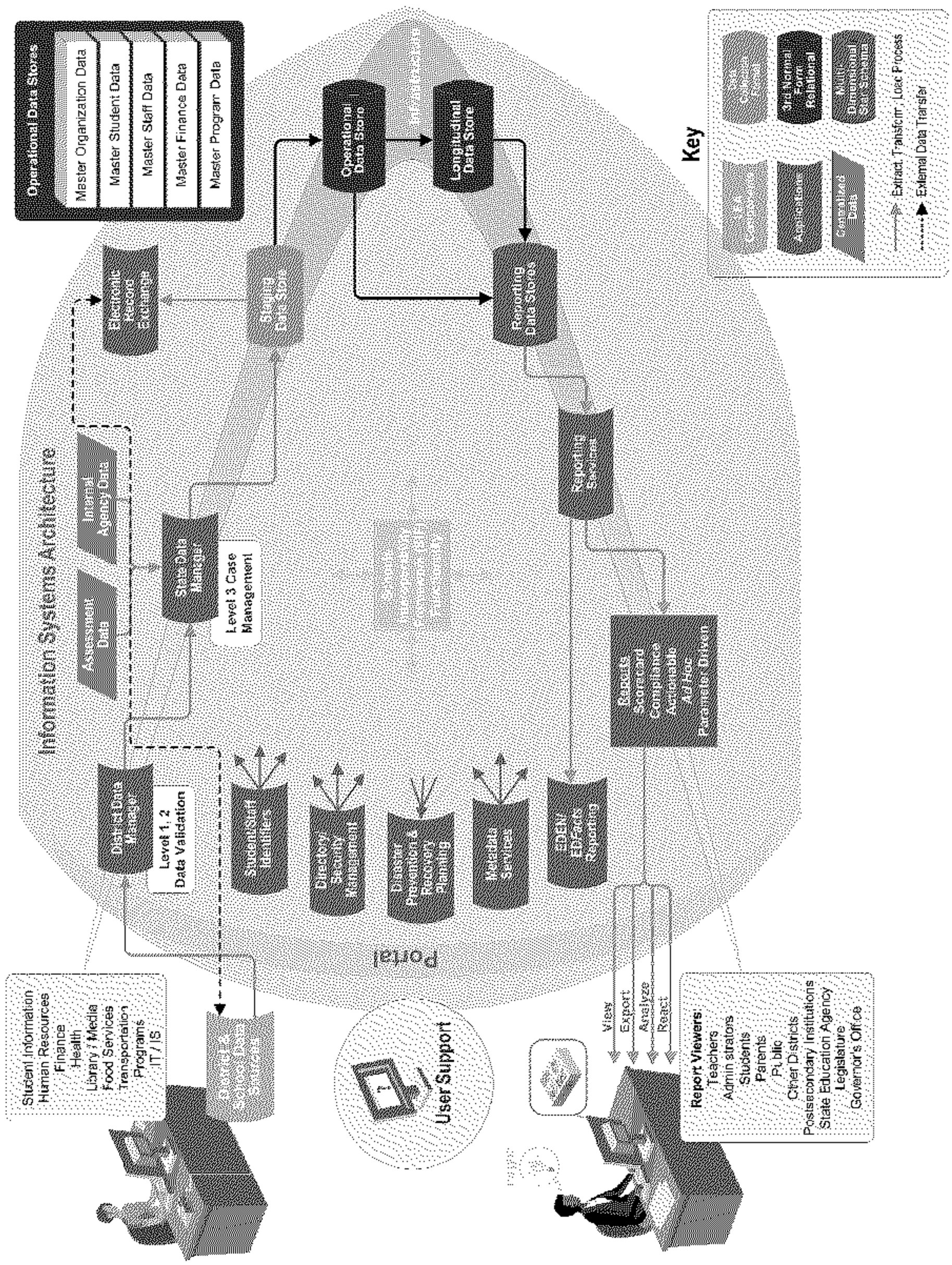


6.

Developed by ESP Solutions Group for the Missouri Department of Elementary and Secondary Education

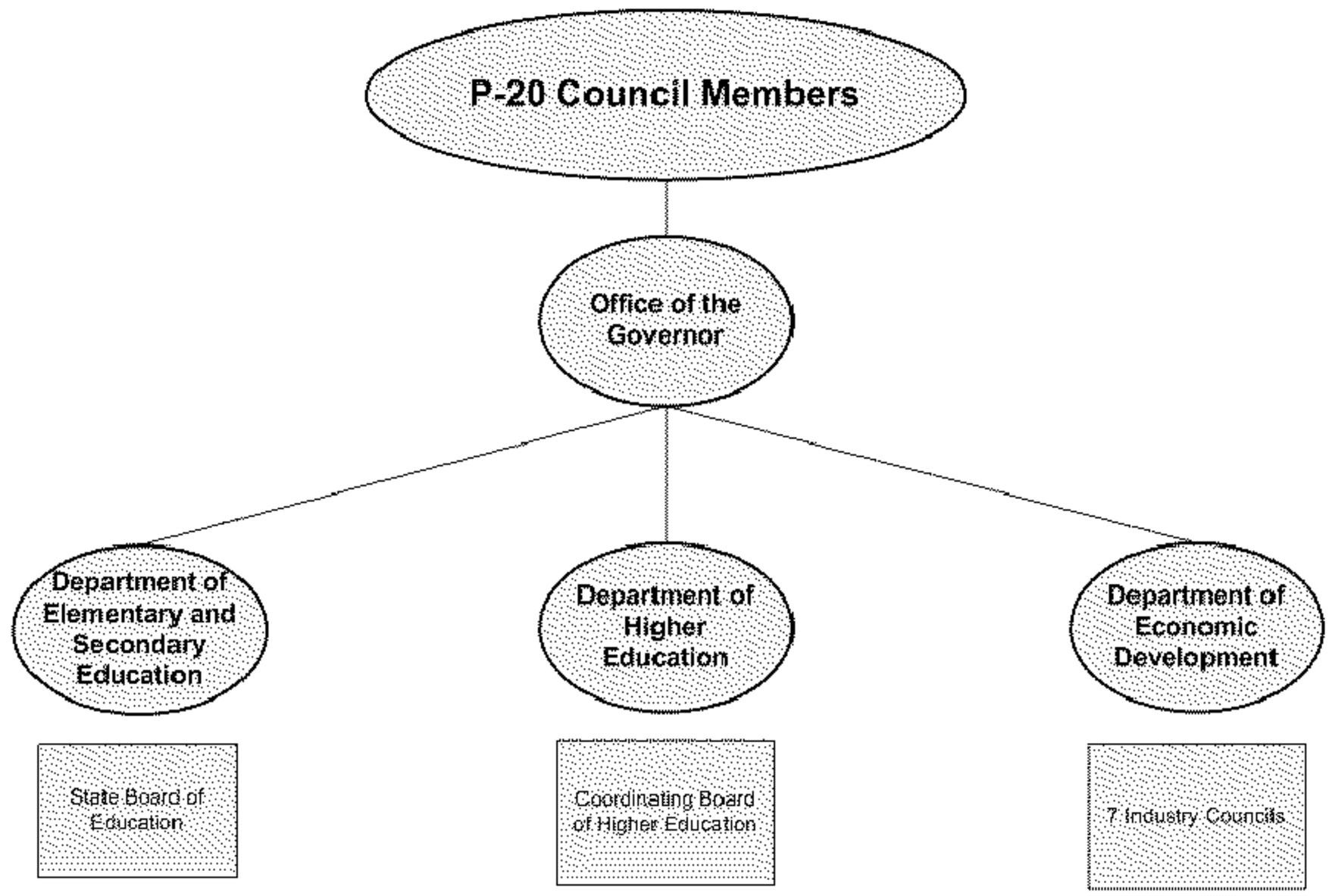
Attachment 2
Page 2 of 3

MOSIS Longitudinal Data System Components



Attachment 2
Page 3 of 3

Attachment 3: Governance Structure for the MOSIS Longitudinal Data System



P-20 Education Partners

Regional Professional Development Centers

Missouri Student Information System User's Group (Core Data Users Group)

University of Missouri Board of Curators

Coordinating Board for Early Childhood Education

Missouri Chamber of Commerce and Industry

Missouri METS Coalition

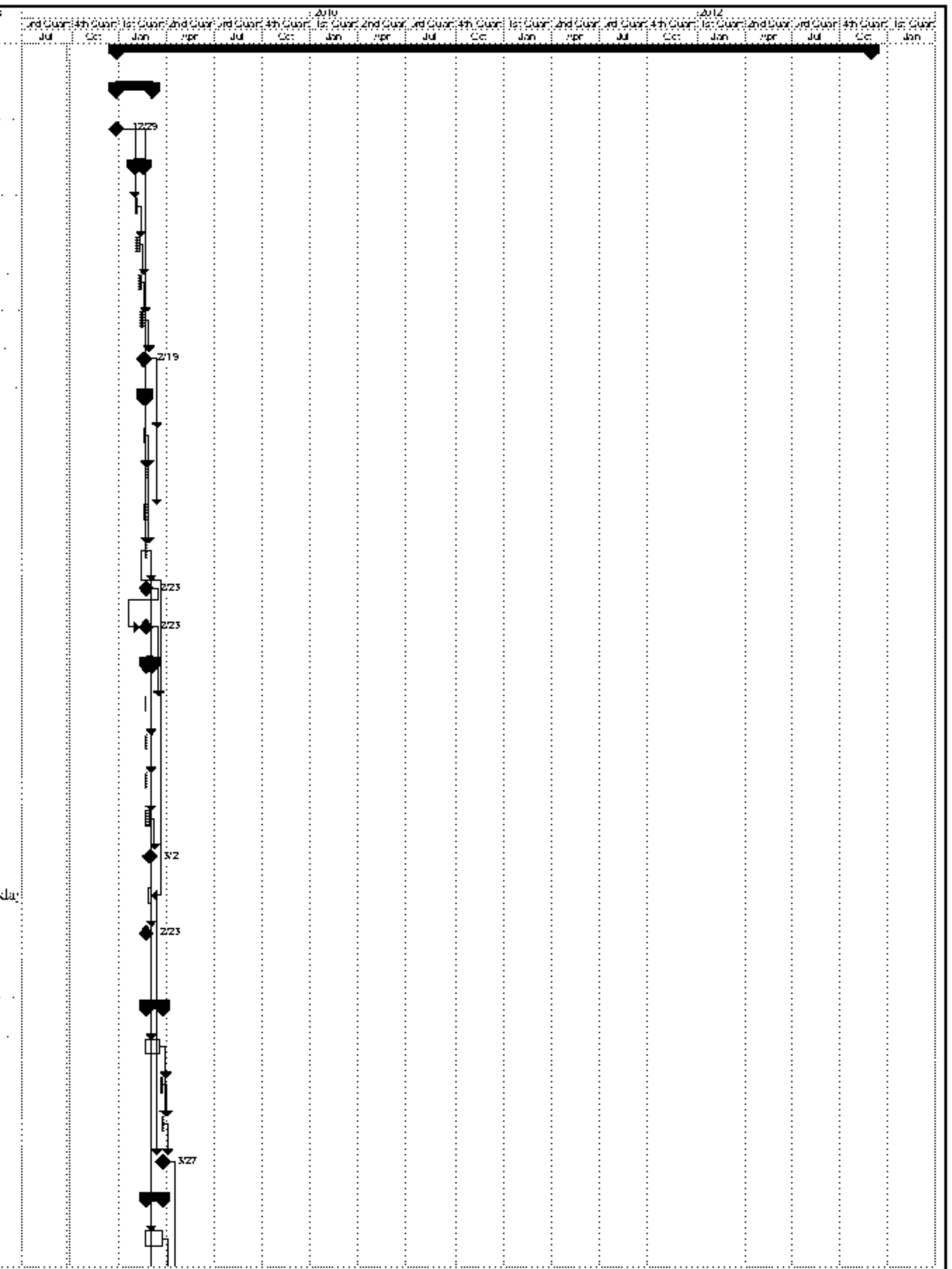
Attachment 4: MOSIS Historical and Future Timeline – 2005 – Present

The MOSIS Longitudinal Data System is Phase IV in the timeline DESE has been following for MOSIS development and implementation. The phases and dates below provide a high-level view of the work accomplished to date. Progress and timing have been limited by the available State funding (approximately $1 million annually since 2005).

	Deployment Period	Scope
MOSIS Phase I	2/05-9/05	1.1 Deployed MOSIS ID, assigned IDs to all students, and ensured that IDs have been incorporated into LEA student information systems.
MOSIS Phase II	8/05-9/06	2.1 Deployed SRM v1 to enable Pre-Code. 2.2 Operated MOSIS Pre-Code. 2.3 Deployed SRM v2 to enable Demographic Clean Up. 2.4 Operated MAP Demographic Clean Up 1.
MOSIS Phase III	9/06-Current	3.1 Enter DESE Data Inventory into DataSpecs™. This process includes the development of the Core Collection record-level file layout. 3.2 Onsite Project management, District Implementation, Training, and Support of MOSIS. 3.3 MAP Demographic Clean Up data collection. 3.4 Configure and deploy SRM v3 for MOSIS 3.5 Configure, implement, and roll-out MOSIS Phase III statewide to collect: a. Student Core Data (6 Submissions Aug, Oct., Dec., Feb., Apr., and June). b. Educator Core Data (1 Mandatory Submission - October). c. Teacher-Course-Student Relationship Data (3 Mandatory Submissions Aug., Oct., and June). d. Graduate Follow-Up Data (1 Mandatory Submission Feb.). e. Discipline Incident Data (1 Mandatory Submission - June). 3.6 ETL; Provision of aggregate data in their current form to existing DESE systems. 3.7 Historical Submission Module. 3.8 Implement statewide and cross trial business rules. 3.9 Launch 4 additional new MOSIS data collections (July 08- Jun 09) 3.10 Automate authoritative data allow for data to be changed in DESE systems and for the changes to be reflected in SRM business rule results. 3.11 Design and build the foundation for MOSIS Phase IV. a. Assist DESE in drafting IES LDS Application. b. Update DESE Data Access and Use Policy.

		c. Configure, implement, and roll-out MOSIS SRM operational data store. d. Identify the keys for a successful educational decision support system. e. Design Data Warehouse for record-level collection system while leveraging DESE's current system. f. Identify the requirements for integrating MOSIS Phase I student ID with MOSIS Phase III.
MOSIS Phase IV	Future	4.1 IES LDS grant project commences 4.2 Design and deploy a longitudinal data system/data warehouse for all certified data with integrated enterprise directory and D3M Portal and Directory. 4.3 Create a decision support reporting environment that advances DESE's vision. 4.4 Integrate MOSIS Phase I student ID with MOSIS Phase III. 4.5 Facilitate K-20 student record exchange.

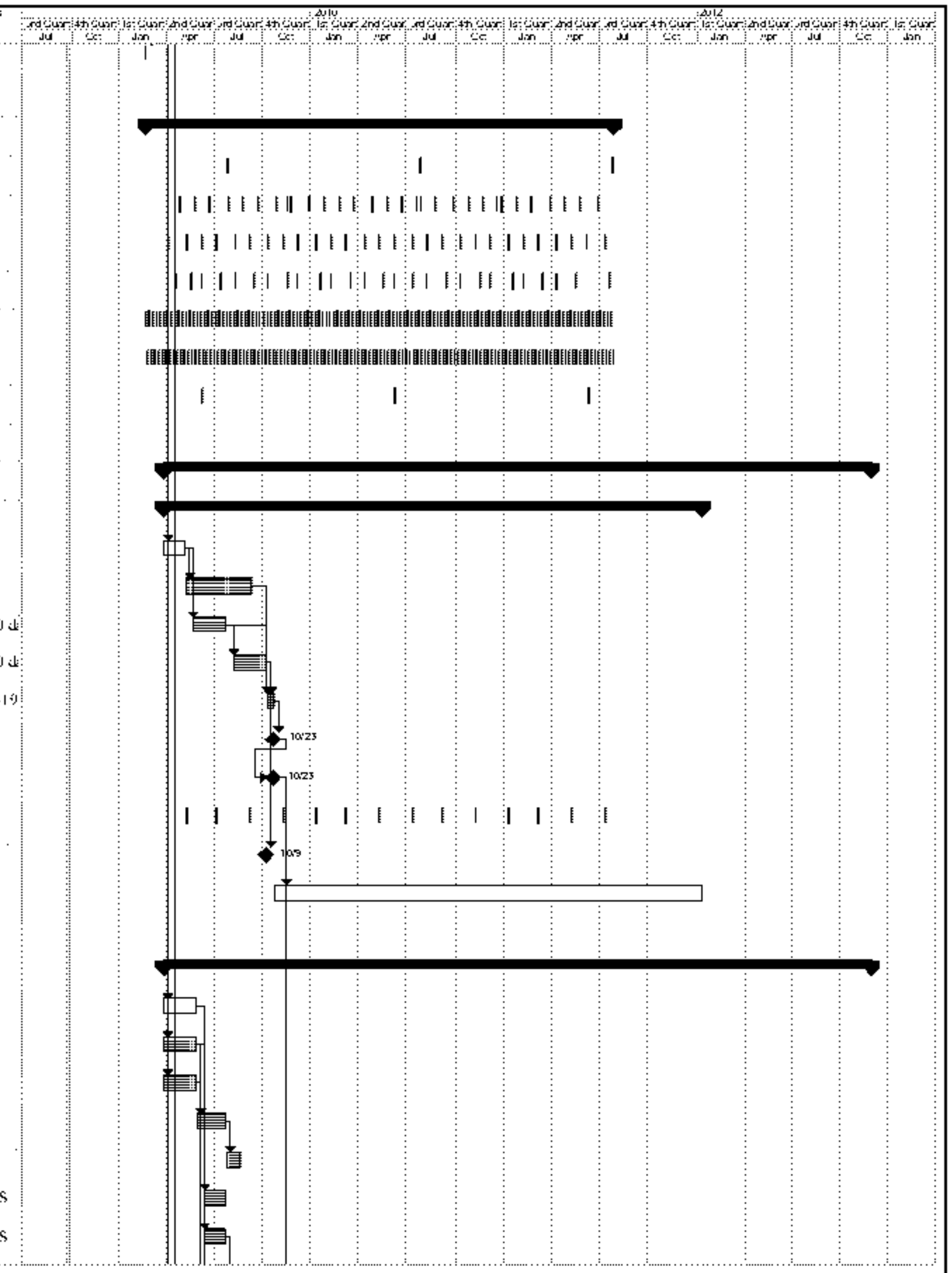
ID	WBS	Task Name	Duration	Start	Finish	Predecessors
1	1	MOSIS Longitudinal Data System	1025 days	Mon 12/29/08	Fri 11/30/12	
2	1.1	Project Initiation	50 days	Mon 12/29/08	Fri 3/6/09	
3	1.1.1	Notice of Award from LD	0 days	Mon 12/29/08	Mon 12/29/08	
4	1.1.2	SOW	14 days	Mon 2/2/09	Thu 2/19/09	
5	1.1.2.1	SOW created	3 days	Mon 2/2/09	Wed 2/4/09	3
6	1.1.2.2	SOW edited	3 days	Thu 2/5/09	Mon 2/9/09	5
7	1.1.2.3	SOW finalized	3 days	Tue 2/10/09	Thu 2/12/09	6
8	1.1.2.4	LD Review SOW	5 days	Fri 2/13/09	Thu 2/19/09	7
9	1.1.2.5	SOW accepted and vendor contract signed	0 wks	Thu 2/19/09	Thu 2/19/09	8
10	1.1.3	Kickoff	2 days	Fri 2/20/09	Mon 2/23/09	
11	1.1.3.1	Schedule Project Kickoff I	1 day	Fri 2/20/09	Fri 2/20/09	9
12	1.1.3.2	Set Agenda for Kickoff I	1 day	Mon 2/23/09	Mon 2/23/09	11.3.7
13	1.1.3.3	Review Initial Project Plan/WBS	2 days	Fri 2/20/09	Mon 2/23/09	9
14	1.1.3.4	Conduct Kickoff Meeting I	1 day	Mon 2/23/09	Mon 2/23/09	11.3.7
15	1.1.3.5	Final signoff and agreement on SOW	0 days	Mon 2/23/09	Mon 2/23/09	14
16	1.1.3.6	Launch project website	0 days	Mon 2/23/09	Mon 2/23/09	15
17	1.1.4	Initial Planning	9 days	Mon 2/23/09	Fri 3/6/09	
18	1.1.4.1	Identify Hardware, Software, Network, Security I.	1 day	Tue 2/24/09	Tue 2/24/09	16
19	1.1.4.2	Assign and Communicate Roles	1 day	Tue 2/24/09	Tue 2/24/09	14
20	1.1.4.3	Distribute Team Member Contact Information	1 day	Tue 2/24/09	Tue 2/24/09	14
21	1.1.4.4	Identify Pilot District Candidates	5 days	Tue 2/24/09	Mon 3/2/09	14
22	1.1.4.5	Select Pilot Districts	0 days	Mon 3/2/09	Mon 3/2/09	21
23	1.1.4.6	Modify Project Plan Based upon Feedback	5 days	Mon 3/2/09	Fri 3/6/09	14SF+10 day
24	1.1.4.7	Software Licensing Agreements Signed	0 days	Mon 2/23/09	Mon 2/23/09	14
25						
26	1.2	Project Planning and Design	24 days	Tue 2/24/09	Fri 3/27/09	
27	1.2.1	Develop Final Project Management Plan/WBS	20 days	Tue 2/24/09	Mon 3/23/09	14
28	1.2.2	Prepare for Kickoff meeting II	3 days	Tue 3/24/09	Thu 3/26/09	27
29	1.2.3	Conduct Kickoff meeting II	1 day	Fri 3/27/09	Fri 3/27/09	27,28
30	1.2.4	Deliverable 1- Project Management Plan	0 days	Fri 3/27/09	Fri 3/27/09	29,23
31	1.2.5	Analysis and Design Review Process	24 days	Tue 2/24/09	Fri 3/27/09	
32	1.2.5.1	Confirm and document draft architecture, requirem	24 days	Tue 2/24/09	Fri 3/27/09	14



Task | Progress | Summary | External Tasks | Split
Split | Milestone | Project Summary | External Milestone

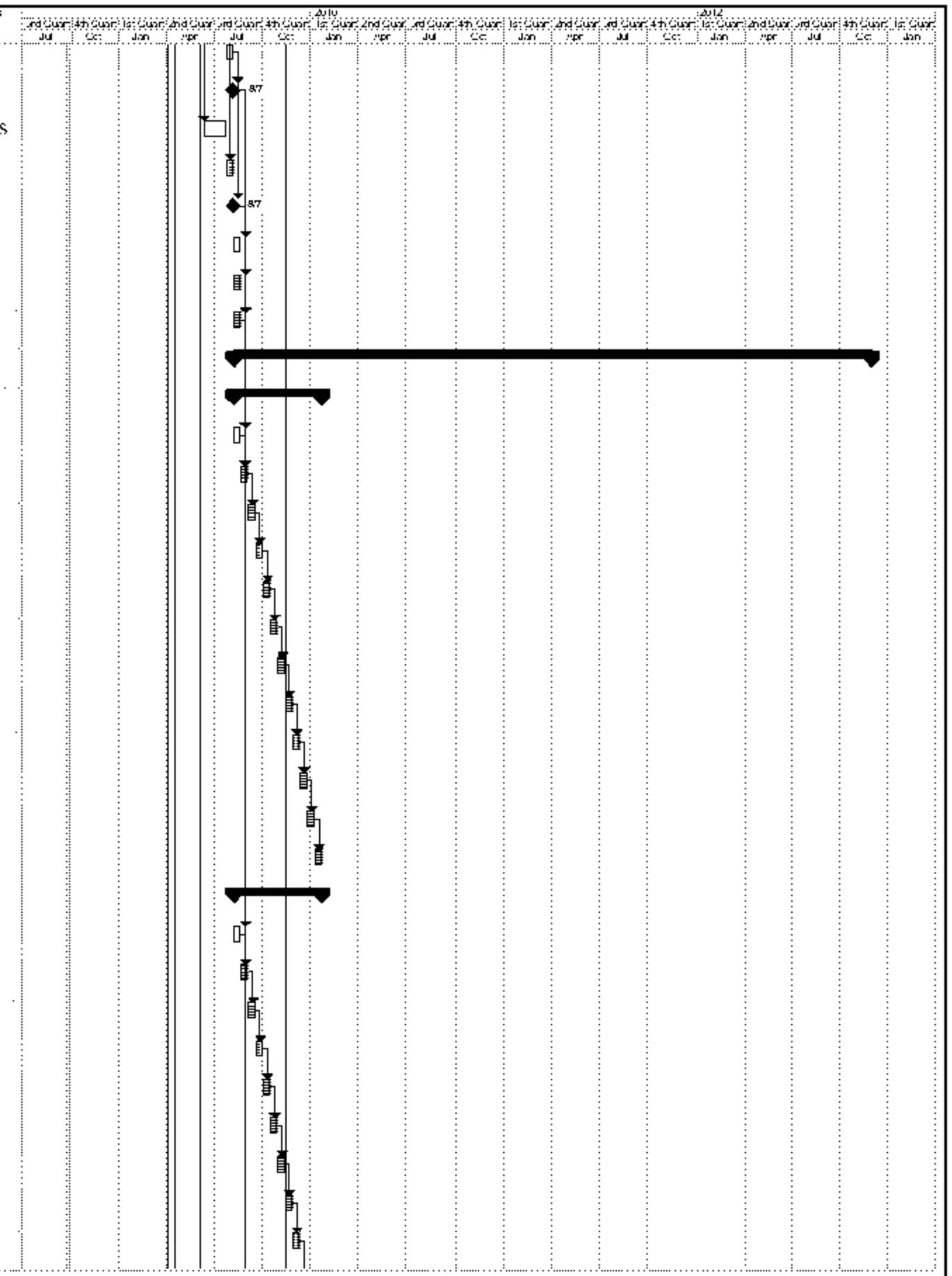
Project Management Timeline Detail

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
33	1.2.5.2	Review DLSL and WAN Environment	1 day	Tue 2/24/09	Tue 2/24/09	14
34						
35	1.3	Project Control	635 days	Mon 2/23/09	Fri 7/29/11	
36	1.3.1	Annual meeting in DC	522 days	Wed 7/29/09	Thu 7/28/11	
40	1.3.2	Monthly project calls with LD	566 days	Thu 4/30/09	Thu 6/30/11	
92	1.3.3	Monthly project executive reviews	591 days	Wed 4/8/09	Wed 7/13/11	
121	1.3.4	Bi-monthly stakeholder updates	586 days	Thu 4/23/09	Thu 7/21/11	
153	1.3.5	Weekly internal status meetings	631 days	Mon 2/23/09	Mon 7/25/11	
281	1.3.6	Weekly project status reports	631 days	Fri 2/27/09	Fri 7/29/11	
409	1.3.7	Annual P-20 council review of MOSIS objectives	523 days	Thu 6/11/09	Mon 6/13/11	
413						
414	1.4	Project Execution	960 days	Mon 3/30/09	Fri 11/30/12	
415	1.4.1	MOSIS training and support system	730 days	Mon 3/30/09	Fri 1/13/12	
416	1.4.1.1	MOSIS training site design	30 days	Mon 3/30/09	Fri 5/8/09	32
417	1.4.1.2	MOSIS training site development	90 days	Mon 5/11/09	Fri 9/11/09	416
418	1.4.1.3	MOSIS training site users guide	45 days	Mon 5/25/09	Fri 7/24/09	416FS+10 da
419	1.4.1.4	MOSIS training site online help	45 days	Mon 8/10/09	Fri 10/9/09	418FS+10 da
420	1.4.1.5	MOSIS training site pilot	10 days	Mon 10/12/09	Fri 10/23/09	417,418,419
421	1.4.1.6	MOSIS training site user acceptance	0 days	Fri 10/23/09	Fri 10/23/09	420
422	1.4.1.7	MOSIS training site launch	0 days	Fri 10/23/09	Fri 10/23/09	421
423	1.4.1.8	MOSIS system training&User survey of system eff	566 days	Wed 5/13/09	Wed 7/13/11	
430	1.4.1.9	MOSIS system support process developed	0 days	Fri 10/9/09	Fri 10/9/09	419
439	1.4.1.10	Level 1-3 system support process in place	580 days	Mon 10/26/09	Fri 1/13/12	422
440						
441	1.4.2	Longitudinal Data Store/Data Repository	960 days	Mon 3/30/09	Fri 11/30/12	
442	1.4.2.1	Functional requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
443	1.4.2.2	Technical requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
444	1.4.2.3	Identification of data base and business intelligene	45 days	Mon 3/30/09	Fri 5/29/09	32
445	1.4.2.4	Procurement process of hardware and software	2 mons	Mon 6/1/09	Fri 7/24/09	444
446	1.4.2.5	Set up Hardware and Software	1 mon	Mon 7/27/09	Fri 8/21/09	445
447	1.4.2.6	Create user testing and acceptance plan	30 days	Mon 6/15/09	Fri 7/24/09	442,443FS
448	1.4.2.7	Data model development	30 days	Mon 6/15/09	Fri 7/24/09	442,443FS



Task | Progress | Summary | External Tasks | Split
Split | Milestone | Project Summary | External Milestone

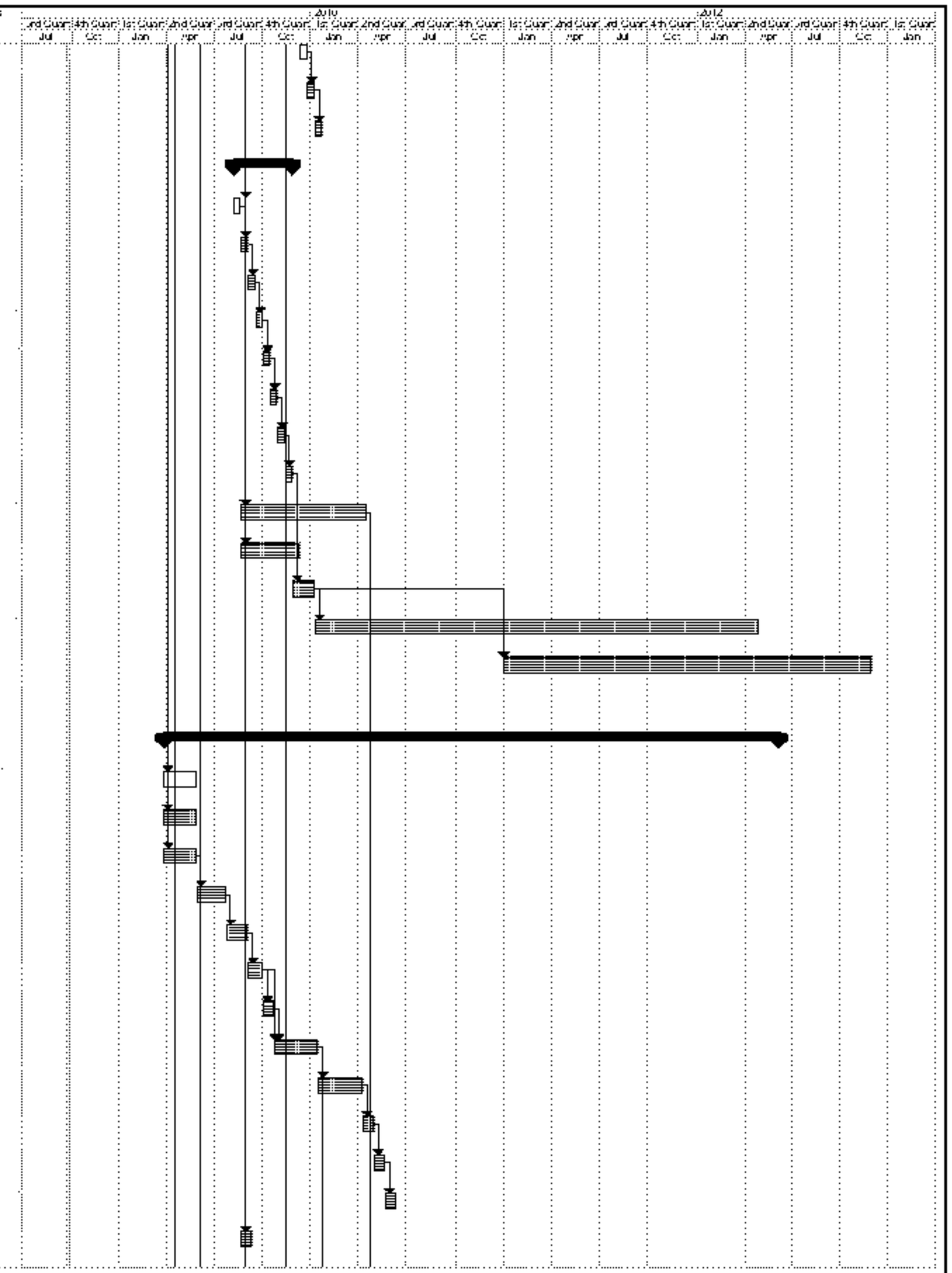
ID	WBS	Task Name	Duration	Start	Finish	Predecessors
449	1.4.2.8	Data model review	10 days	Mon 7/27/09	Fri 8/7/09	448
450	1.4.2.9	Data model acceptance	0 days	Fri 8/7/09	Fri 8/7/09	449
451	1.4.2.10	Data standards development	30 days	Mon 6/15/09	Fri 7/24/09	442,443FS
452	1.4.2.11	Data standards review	10 days	Mon 7/27/09	Fri 8/7/09	448
453	1.4.2.12	Data standards accepted	0 days	Fri 8/7/09	Fri 8/7/09	449
454	1.4.2.13	Data storage plan agreement based on data model	10 days	Mon 8/10/09	Fri 8/21/09	450
455	1.4.2.14	Authorized data system access plan	10 days	Mon 8/10/09	Fri 8/21/09	450
456	1.4.2.15	Reporting system needs assessment	10 days	Mon 8/10/09	Fri 8/21/09	450
457	1.4.2.16	Longitudinal Data Repository development	865 days	Mon 8/10/09	Fri 11/30/12	
458	1.4.2.16.1	Facts and dimensions design, initial data popul	120 days	Mon 8/10/09	Fri 1/22/10	
459	1.4.2.16.1.1	Student Demographics	10 days	Mon 8/10/09	Fri 8/21/09	453
460	1.4.2.16.1.2	Staff Demographics	10 days	Mon 8/24/09	Fri 9/4/09	459
461	1.4.2.16.1.3	Schools and Districts	10 days	Mon 9/7/09	Fri 9/18/09	460
462	1.4.2.16.1.4	State Assessments	10 days	Mon 9/21/09	Fri 10/2/09	461
463	1.4.2.16.1.5	Student Enrollment and Attendance	10 days	Mon 10/5/09	Fri 10/16/09	462
464	1.4.2.16.1.6	Staff Assignments	10 days	Mon 10/19/09	Fri 10/30/09	463
465	1.4.2.16.1.7	Special Education	10 days	Mon 11/2/09	Fri 11/13/09	464
466	1.4.2.16.1.8	Graduates and Dropouts	10 days	Mon 11/16/09	Fri 11/27/09	465
467	1.4.2.16.1.9	Teacher Certification	10 days	Mon 11/30/09	Fri 12/11/09	466
468	1.4.2.16.1.10	Student Courses	10 days	Mon 12/14/09	Fri 12/25/09	467
469	1.4.2.16.1.11	I.I.I.	10 days	Mon 12/28/09	Fri 1/8/10	468
470	1.4.2.16.1.12	Discipline	10 days	Mon 1/11/10	Fri 1/22/10	469
471	1.4.2.16.2	Design I.T.L processes to update warehouse	120 days	Mon 8/10/09	Fri 1/22/10	
472	1.4.2.16.2.1	Student Demographics	10 days	Mon 8/10/09	Fri 8/21/09	453
473	1.4.2.16.2.2	Staff Demographics	10 days	Mon 8/24/09	Fri 9/4/09	472
474	1.4.2.16.2.3	Schools and Districts	10 days	Mon 9/7/09	Fri 9/18/09	473
475	1.4.2.16.2.4	State Assessments	10 days	Mon 9/21/09	Fri 10/2/09	474
476	1.4.2.16.2.5	Student Enrollment and Attendance	10 days	Mon 10/5/09	Fri 10/16/09	475
477	1.4.2.16.2.6	Staff Assignments	10 days	Mon 10/19/09	Fri 10/30/09	476
478	1.4.2.16.2.7	Special Education	10 days	Mon 11/2/09	Fri 11/13/09	477
479	1.4.2.16.2.8	Graduates and Dropouts	10 days	Mon 11/16/09	Fri 11/27/09	478
480	1.4.2.16.2.9	Teacher Certification	10 days	Mon 11/30/09	Fri 12/11/09	479



Task | Progress | Summary | External Tasks | Split
Split | Milestone | Project Summary | External Milestone

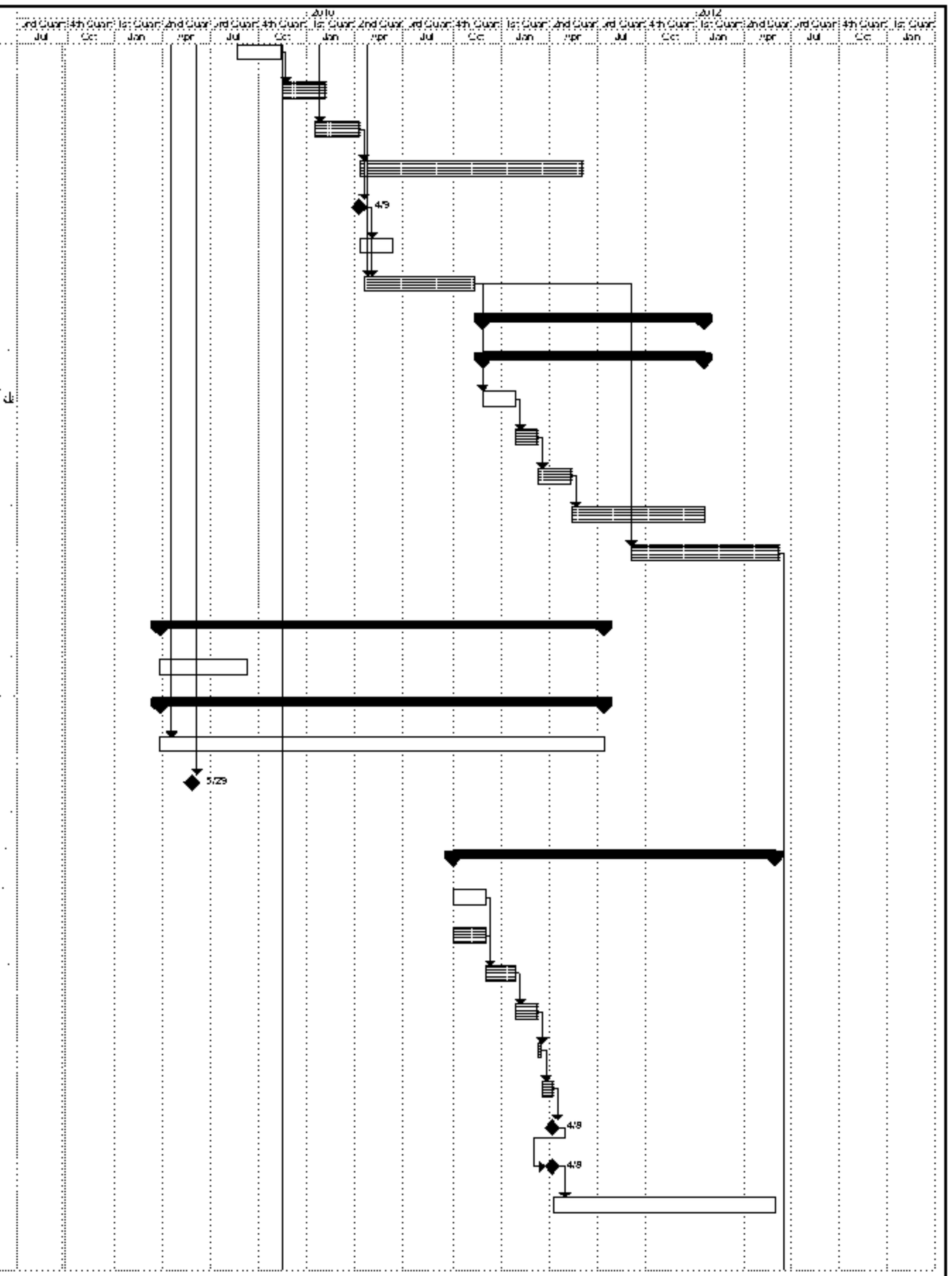
Project Management Timeline Detail

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
480	1.4.2.16.2.10	Student Courses	10 days	Mon 12/14/09	Fri 12/25/09	480
481	1.4.2.16.2.11	I.I.I.	10 days	Mon 12/28/09	Fri 1/8/10	481
482	1.4.2.16.2.12	Discipline	10 days	Mon 1/11/10	Fri 1/22/10	482
484	1.4.2.16.3	Develop and build reporting cubes	80 days	Mon 8/10/09	Fri 11/27/09	
485	1.4.2.16.3.1	State Assessment	10 days	Mon 8/10/09	Fri 8/21/09	453
486	1.4.2.16.3.2	Student Enrollment and Attendance	10 days	Mon 8/24/09	Fri 9/4/09	485
487	1.4.2.16.3.3	Staff Assignments	10 days	Mon 9/7/09	Fri 9/18/09	486
488	1.4.2.16.3.4	Special Education	10 days	Mon 9/21/09	Fri 10/2/09	487
489	1.4.2.16.3.5	Graduates and Dropouts	10 days	Mon 10/5/09	Fri 10/16/09	488
490	1.4.2.16.3.6	Student Courses	10 days	Mon 10/19/09	Fri 10/30/09	489
491	1.4.2.16.3.7	I.I.I.	10 days	Mon 11/2/09	Fri 11/13/09	490
492	1.4.2.16.3.8	Discipline	10 days	Mon 11/16/09	Fri 11/27/09	491
493	1.4.2.16.4	MOSIS LDS user acceptance process-ongoing	130 days	Mon 8/24/09	Fri 4/16/10	456
494	1.4.2.16.5	Train state staff in use of reporting cubes-ongo	80 days	Mon 8/24/09	Fri 12/11/09	456,485
495	1.4.2.16.6	Design Expansion of MOSIS Data Collection S	30 days	Mon 11/30/09	Fri 1/8/10	492
496	1.4.2.16.7	Implement Additional MOSIS SRM Data Colle	600 days	Mon 1/11/10	Fri 4/27/12	495
497	1.4.2.16.8	System Maintenance and Support	500 days	Mon 1/3/11	Fri 11/30/12	495
498						
499	1.4.3	Reporting and Analysis Portal	835 days	Mon 3/30/09	Fri 6/8/12	
500	1.4.3.1	Functional requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
501	1.4.3.2	Technical requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
502	1.4.3.3	Identification of tool set for ad-hoc, analysis, and s	45 days	Mon 3/30/09	Fri 5/29/09	32
503	1.4.3.4	Procurement of hardware and software	2 mons	Mon 6/1/09	Fri 7/24/09	502
504	1.4.3.5	Create portal user testing and acceptance plan	30 days	Mon 7/27/09	Fri 9/4/09	503
505	1.4.3.6	Install hardware and software	1 mon	Mon 9/7/09	Fri 10/2/09	504
506	1.4.3.7	Install and configure reporting and analysis tool	15 days	Mon 10/5/09	Fri 10/23/09	505
507	1.4.3.8	Integrate collaboration tools into portal	60 days	Mon 10/26/09	Fri 1/15/10	505,506
508	1.4.3.9	Integrate MOSIS application links to portal	60 days	Mon 1/18/10	Fri 4/9/10	507
509	1.4.3.10	Integrate portal with DLSL IT security	15 days	Mon 4/12/10	Fri 4/30/10	508
510	1.4.3.11	Integrate security with portal directory system	15 days	Mon 5/3/10	Fri 5/21/10	509
511	1.4.3.12	Configure users and access rights	15 days	Mon 5/24/10	Fri 6/11/10	510
512	1.4.3.13	Integrate with longitudinal data store cubes	15 days	Mon 8/24/09	Fri 9/11/09	485



Task | Progress | Summary | External Tasks | Split
Split | Milestone | Project Summary | External Milestone

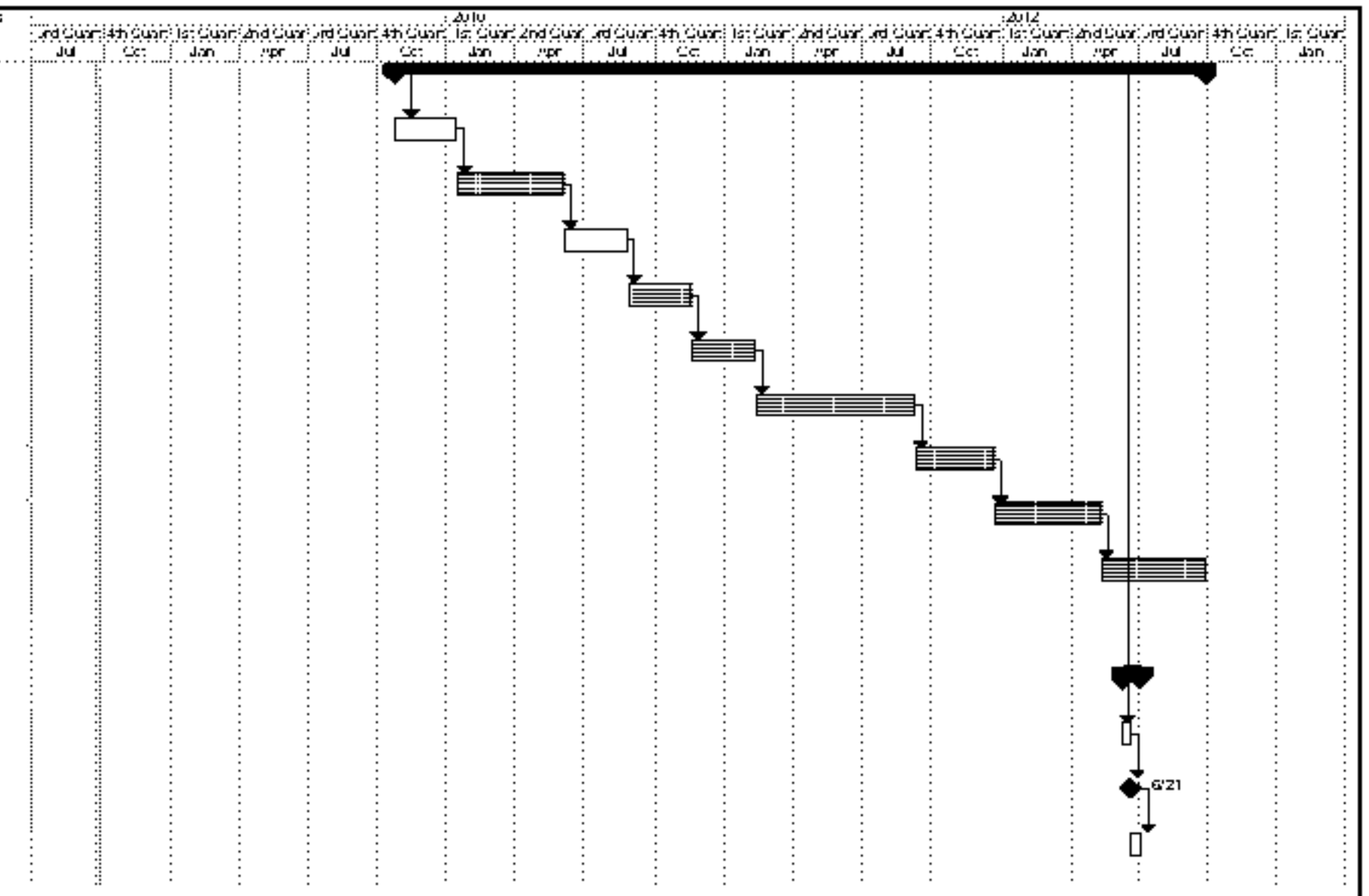
ID	WBS	Task Name	Duration	Start	Finish	Predecessors
313	1.4.3.14	Build reports on the data warehouse cubes	60 days	Mon 8/24/09	Fri 11/13/09	485
314	1.4.3.15	Test Reports/QA	60 days	Mon 11/16/09	Fri 2/5/10	513
315	1.4.3.16	Create community sites	60 days	Mon 1/18/10	Fri 4/9/10	507
316	1.4.3.17	LDFacts Reporting Project	300 days	Mon 4/12/10	Fri 6/3/11	515
317	1.4.3.18	MOSIS reporting portal access user acceptance	0 days	Fri 4/9/10	Fri 4/9/10	515
318	1.4.3.19	Internal and district trainings	45 days	Mon 4/12/10	Fri 6/11/10	517
319	1.4.3.20	Rollout MOSIS reporting portal access to stakeho	150 days	Mon 4/19/10	Fri 11/12/10	493,517
320	1.4.3.21	Commence UM research component	300 days	Mon 11/29/10	Fri 1/20/12	
321	1.4.3.21.1	UM report design and analysis	300 days	Mon 11/29/10	Fri 1/20/12	
322	1.4.3.21.1.1	Review of available data	45 days	Mon 11/29/10	Fri 1/28/11	519FS+10 d
323	1.4.3.21.1.2	Preliminary data analysis	30 days	Mon 1/31/11	Fri 3/11/11	522
324	1.4.3.21.1.3	UM recommendations for reporting	45 days	Mon 3/14/11	Fri 5/13/11	523
325	1.4.3.21.1.4	Incorporate UM reports into portal	180 days	Mon 5/16/11	Fri 1/20/12	524
326	1.4.3.22	Reporting portal maintenance and report enhancem	200 days	Mon 9/5/11	Fri 6/8/12	519
327						
328	1.4.4	Develop MOSIS data sharing standards and interopera	600 days	Mon 3/30/09	Fri 7/15/11	
329	1.4.4.1	Develop Information Systems Architecture	120 days	Mon 3/30/09	Fri 9/11/09	
330	1.4.4.2	Launch MOSIS metadata dictionary	600 days	Mon 3/30/09	Fri 7/15/11	
331	1.4.4.2.1	MOSIS metadata dictionary maintenance	600 days	Mon 3/30/09	Fri 7/15/11	30
332	1.4.4.3	Adopt MOSIS interoperability standards	0 days	Fri 5/29/09	Fri 5/29/09	443
333						
334	1.4.5	Teacher Certification System	435 days	Mon 10/4/10	Fri 6/1/12	
335	1.4.5.1	Functional requirements review and enhancement	45 days	Mon 10/4/10	Fri 12/3/10	
336	1.4.5.2	Technical requirements review and enhancement	45 days	Mon 10/4/10	Fri 12/3/10	
337	1.4.5.3	Procurement process	2 mons	Mon 12/6/10	Fri 1/28/11	335,336
338	1.4.5.4	Create user testing and acceptance plan	30 days	Mon 1/31/11	Fri 3/11/11	337
339	1.4.5.5	Teacher Certification System training	5 days	Mon 3/14/11	Fri 3/18/11	338
340	1.4.5.6	Teacher Certification System pilot	15 days	Mon 3/21/11	Fri 4/8/11	339
341	1.4.5.7	Teacher Certification System user acceptance	0 days	Fri 4/8/11	Fri 4/8/11	340
342	1.4.5.8	Teacher Certification System production	0 days	Fri 4/8/11	Fri 4/8/11	341
343	1.4.5.9	Teacher Certification System support and mainten	300 days	Mon 4/11/11	Fri 6/1/12	342
344						



Task | Progress | Summary | External Tasks | Split
Split | Milestone | Project Summary | External Milestone

Project Management Timeline Detail

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
345	1.4.6	P-20 Collaborative	765 days	Mon 10/26/09	Fri 9/28/12	
346	1.4.6.1	Requirements Gathering	60 days	Mon 10/26/09	Fri 1/15/10	422
347	1.4.6.2	Design/Define Data Needs	100 days	Mon 1/18/10	Fri 6/4/10	346
348	1.4.6.3	System/Process Development	60 days	Mon 6/7/10	Fri 8/27/10	347
349	1.4.6.4	Create Documentation	60 days	Mon 8/30/10	Fri 11/19/10	348
350	1.4.6.5	Training	60 days	Mon 11/22/10	Fri 2/11/11	349
351	1.4.6.6	Integration of Reports into the Portal	150 days	Mon 2/14/11	Fri 9/9/11	350
352	1.4.6.7	Pilot Implementation	75 days	Mon 9/12/11	Fri 12/23/11	351
353	1.4.6.8	Production Implementation	100 days	Mon 12/26/11	Fri 5/11/12	352
354	1.4.6.9	Content Analysis/Reporting Collaboration Go Live	100 days	Mon 5/14/12	Fri 9/28/12	353
355						
356	1.5	Project Closing	18.33 days	Mon 6/11/12	Thu 7/5/12	
357	1.5.1	Project Review and Debrief	8.33 days	Mon 6/11/12	Thu 6/21/12	326
358	1.5.2	Closeout meeting	0 days	Thu 6/21/12	Thu 6/21/12	357
359	1.5.3	Deliverable - Final Report	10 days	Thu 6/21/12	Thu 7/5/12	358



Task | Progress | Summary | External Tasks | Split
Split | Milestone | Project Summary | External Milestone

BARBARA H. ANDREPONT

PROFESSIONAL EXPERIENCE

ESP Solutions Group (Evaluation Software Publishing, Inc.)
Senior Data Management Architect (2004 – Present)
Serves as the subject matter expert on education data dictionaries, EDEN/ED*Facts* reporting to the U.S. Department of Education, SIFA and NCES data standards, and electronic student record exchange systems. Provides expert advice to states in the design and development of large-scale enterprise applications.

Recent Client Projects

- Project Director for Ohio Department of Education's SIF Gap Analysis project
- Project Director for New Hampshire Department of Education i4see Policy and Procedure Manual project
- Subject Matter Expert for Delaware Department of Education Data Inventory and Data Dictionary project

CCSSO Decision Support Architecture Consortium
Expert Consultant (2004)

Performance Based Data Management Initiative Expert Consultant (2003 – 2005)
Led and participated in site visits for the U.S. Department of Education project to inventory and analyze various states' data resources and capabilities to report education data. Provided technical support to states in initial year of PBDMI (ED*Facts*/EDEN) reporting.

Louisiana Department of Education
Consultant/Planning Analyst (2000 – 2003)
Assisted the Director of Planning, Analysis and Information Resources (PAIR) in information technology, policy, personnel and budget matters for unit and Department of Education. Assisted with strategies for aligning IT efforts with agency strategic plan. Represented unit in national education information technology efforts, including: CCSSO Education Information Advisory Committee (EIAC), and NCES Forum. Participated in EIAC Standing Committee to inform US Department of Education Chief Information Officer on education data standards initiatives and issues, and assist in resolutions.

Information Technology Director (1990 – 2000)
Directed agency operations for 3 units supporting Louisiana DOE. Managed network and data collections for 67 public school districts. Led technology planning efforts of State Department of Education. Implemented statewide education data collection systems which included individual student records, staff records and district financial data and provided auditable basis for state funding of $3.5 billion to school districts. Led transition of statewide K-12 Education telecommunications to Internet. Expanded agency computer and network access and technical support for staff.

Information Systems Assistant Director, Management Consultant Supervisor, Application Project Manager (1979 – 1990)

Application Programmer/Analyst – State Universities (1972 – 1979)

EDUCATION

M.B.A. – University of Southwestern Louisiana (1979)
Certification in Data Processing – Institute for Certification of Computer Professionals (1978)
B.A. in Computer Science – University of Southwestern Louisiana (1972)

SELECTED HONORS AND PROFESSIONAL APPOINTMENTS

- Schools Interoperability Framework Association (SIFA)
  - Technical Board (2004 – Present)

    - Student Record Exchange Task Force Lead (2004 – Present)
    - Board of Directors member (2004)
    - Customer Involvement Work Group Co-Lead (2000 – 2003)
- Louisiana Computer Using Educators (LACUE)
    - President and Board Member (2000 – 2003)
- Louisiana Education Technology Advisory Committee Chairperson
- Council of Information Services Directors (CISD)
    - VP and Chairperson of CISD Conference (1999)

BARBARA S. CLEMENTS, Ph.D.

PROFESSIONAL EXPERIENCE

ESP Solutions Group, Inc.
Vice President for Education Services (1997 – Present)
Responsibilities include project design and management, program evaluation, software conceptualization, thought leadership, and consulting on education information management systems and technology utilization. Extensive work completed with U.S. Department of Education and state education agencies on the collection of data for the Education Data Exchange Network (EDEN). Guidance provided to states on their policies and procedures for maintaining privacy and security of student records in conjunction with the Family Educational Rights and Privacy Act (FERPA).

Recent Client Projects

- Project Director, Maryland Data Dictionary Project
- Project Director, Benedictine School Data Management System Plan
- Project Director, Kansas Course Codes Project

National Transcript Center
Chief Standards Officer (2006 – Present)
Responsibilities include development and implementation of standards related to student academic records, including contents and format developed in coordination with national standards groups, and procedures for maintaining privacy and security of student records in conjunction with FERPA.

Council of Chief State School Officers (Washington, D. C.)
Acting Director, State Education Assessment Center (1995 – 1996)
Directed projects designed to improve the quality and availability of information on education. Responsibilities included coordinating Center activities and advising project directors; coordinating a task force of Council members; developing funding proposals; and handling inquiries about Center projects and activities.

Project Director, Data and Information System Projects (1987 – 1997)
Directed a series of federally funded projects to promote better collection and management of education information. Oversaw the development and activity within 4 major areas: 1) indicators to assess the quality and progress of the education system; 2) handbooks for the standardization of student and staff data; 3) guidelines on information management systems; 4) and guidelines on technology implementation. Responsibilities also included analysis of data collection systems, convening of task forces and working groups, and presentation and dissemination of information to the public. Served on or chaired many national task forces.

Texas Education Agency
Education Program Director (1984 – 1987)
Provided oversight and guidance on the development of assessments for initial and continuing teacher licensure. Directed development and research efforts related to the Texas Teacher Appraisal System. Responsibilities also included analyzing and interpreting data, monitoring funded research projects, and developing support materials.

The University of Texas at Austin
Research Associate, R&D Center for Teacher Education (1977 – 1984)
Provided direction on numerous classroom management research projects. Responsibilities included data interpretation, training and supervision of research personnel, and dissemination of findings, including the provision of workshops all across the US.

EDUCATION

Ph.D. in Educational Psychology – The University of Texas at Austin (1991)
M.A. in Foreign Language Education – The University of Texas at Austin (1977)

B.S.Ed. in Education – The University of Texas at Austin (1969)

PUBLICATIONS AND PAPERS

Extensive list of publications and presentations. Available upon request.

JAMES BRUCE DENT
Post Office Box 352
Jefferson City, Missouri 65102
Home Phone: 573-635-9830
Business Phone: 573-751-6950

CAREER OBJECTIVE

To obtain permanent employment in the Information Technology field in an organization that provides challenging opportunities in the areas of database administration and application development.

PROFESSIONAL PREPARATION

Graduate of Southwest Missouri State University May 1986
Earned a Bachelor of Science degree in Computer Information Systems

WORK EXPERIENCES

July 2005 Present
Missouri Office of Administration
Positions: Computer Information Technologist Specialist III

July 1986-July 2005
Missouri Department of Elementary and Secondary Education
Positions: Programmer I, Programmer/Analyst II, Programmer/Analyst III, Computer Information Technologist IV, Database Administrator, IT Manager

From 1986 to 1997, I developed batch applications using COBOL and Easytrieve and online applications using Cross System Product and command level CICS on an IBM VSE mainframe. In 1996, the department decided to move from a mainframe environment to a client server and web application environment. As we started progressing into the new environment during 1997, I was given the opportunity to move into the position of database administrator for our Oracle databases. In this position, I worked with the application development staff on designing and creating tables to support their applications. I was responsible for the administrative functions of the databases, including backups, restorations, installations and upgrades. I also wrote PL/SQL scripts to build reporting tables in the data warehouse environment. In the fall of 2000, I was promoted to IT Manager over the database and operations areas where I supervised the work of 5 employees. I also worked with vendors to keep maintenance and support contracts up to date and worked with technical support groups to troubleshoot and resolve software issues that occurred. With the statewide Information Technology consolidation, the Missouri Department Of Elementary and Secondary Education's Information Technology group was moved under the Office of Administration and I was reclassified as Computer Information Technologist Specialist where my primary duties are database administration (Oracle and MS SQL Server) and data warehouse design and development using Oracle PL/SQL and MS SQL Server Transact-SQL.

JOSHUA H. GOODMAN, PMP

PROFESSIONAL EXPERIENCE

ESP Solutions Group, Inc.
***Senior Project Manager* (2004 – Present)**
Extensive experience managing client projects, related workflow, and deliverables. Responsibilities include requirements gathering, business process, invoicing, and budget documentation, scheduling data system implementations and training, maintaining successful client relationships, the coordination of project tasks, managing communication with subcontractors, and updates to ESP project website content.

Recent Client Projects

- Project Director, Missouri Department of Elementary and Secondary Education's Longitudinal Data System
- Project Manager, Wyoming Department of Education's WISE Student Information System
- Project Manager, Wyoming Department of Education's statewide Schools Interoperability Framework (SIF) implementation
- Project Manager, Wyoming Department of Education's Fusion education portal project
- Project Manager, Alaska Department of Education and Early Development's Unity education portal project

Electronic Data Systems (EDS) Contract
***Business / Insurance Analyst* (2003 – 2004)**
Key information project management role supporting the EDS Project Life Cycle Process by developing, implementing, and monitoring two high-profile government projects. Analyzed financial data to detect irregularities and presented findings and recommendations to both state agencies and EDS senior management. Other areas of responsibility included analyzing operational systems, defining business rules, and creating program policy documentation, which included written updates to the Texas Medicaid Provider Procedures Manual.

Office of the Governor, Criminal Justice Division
***Program Administrator / Consultant* (2002 – 2003)**
Developed and implemented controls for grant program management. Successfully directed a statewide team of program monitors responsible for the evaluation of 1,300 grant programs and review of $150,000,000 in state and federal funding. The outcome of the project resulted in process automation and the development of productive working relationships with grant programs, various levels of management, and government officials.

G&S Typesetters and Book Production Services
***Production Coordinator / Account and Project Manager* (2000 – 2002)**
Coordinated the planning and production of professional trade and academic textbooks for Prentice Hall-PTR, Wadsworth, Addison-Wesley, Jossey-Bass, and McGraw-Hill/Mayfield. Other responsibilities included coordination of scheduling, editorial and proofreading functions, processing art, pre-press, and archiving operations, and managing client-partner relationships.

First American Flood Data Services, Inc.
***Project Manager/Technical Writer* (1995 – 2000)**
Executed special projects for the Vice President of Operations and Research; including production-related database development and maintenance, the writing and editing of training and procedure manuals, documentation of database hit-rates, and implementation of operational programs; resulting in an increase in program quality and productivity.

EDUCATION

P.M.P. – Project Management Institute (2005)
M.A. – The University of Texas at Austin (1998)
B.A. – The University of Michigan at Ann Arbor (1993)

SELECTED HONORS AND PROFESSIONAL APPOINTMENTS

Austin Community Relations Council, Board Member (2003 – 2005)
Young Austin Leadership Alliance, Board Member (2002 – 2004)

Leigh Ann Grant-Engle

3323 CR 338
New Bloomfield, MO 65063
573-310-4097 cell
573-522-8310 work

CURRENT RESPONSIBILITIES:

Implemented the Missouri Student Information System (MOSIS) as the project manager; which has been a three phase project Phase I the implementation of a statewide ID system, Phase II linking the state ID to the state assessment data, and Phase III capturing the agencies core educational data at a student level.

Served as the Department of Elementary and Secondary Education (DESE) data representative for the states P-20 council, which recently secured a national grant to evaluate student success after leaving high school.

Worked with various researchers to determine effectiveness of the correlation between assessment and classroom application.

Manage the on-line Crystal Reports which provides assessment and data results to administrators and teachers. As well as the organization of the Building Level Indicator Support System (BLISS), which includes several hundred educational indicators that can be queried via the agencies web site.

Help to manage, plan and implement data systems that support the Missouri Assessment Program (MAP), and the Missouri School Improvement Program (MSIP), the Missouri Virtual School Program (MOVIP) and various other state and federal systems.

As DESE's Data Manager assisted various state and federal program staff in their program evaluations, as well as the nine Regional Professional Development Centers and various school programs.

Supervise and conduct collection, analysis, reporting and dissemination of data regarding Missouri public schools. This includes providing guidance to Department staff regarding appropriate data collection and reporting activities, developing procedures, queries and scripts to verify data accuracy and interpret trends.

Presented various educational statistics to Missouri public schools and their school boards, Missouri State Board of Education, Missouri Legislators, and National Center for Educational Statistics.

Serve as a member of a two-person team assigned to evaluate, establish and communicate the Department's Information Technology priorities. This includes initiating and facilitating discussions to determine the data collection and technology needs of individual sections and communicating those needs to the Information Technology group.

Communicate with and inform state policy makers, local school administrators, classroom teachers, parents, and the general public about the testing program, accreditation program, and various other state and federal programs.

Develop and conduct workshops, in-service programs, and other professional development activities that support the statewide assessment program and school improvement/accreditation initiatives.

Serve as liaison with testing contractors and Information Technology staff regarding project programming needs, timely and accurate reporting, and other data related issues.

SUMMARY OF ADDITIONAL QUALIFICATIONS:

Approve all requests for data to be used in research projects. This includes reviewing of proposals and securing and providing data at the necessary unit of analysis for the research.

Active member of the Education Information Management Advisory Committee (EIMAC); sponsored by the Council of Chief State School Officers; which provides guidance to the US Department of Education in terms of data collections and reporting.

Administered the statewide alternate assessment for students with severe cognitive disabilities. Responsibilities included training teachers on developing a portfolio assessment, providing technical assistance on implementation of the portfolio, and facilitating the scoring of the portfolios.

As Research Associate for the Office of Social and Economic Data Analysis (OSEDA) analyzed educational data to help Missouri school districts with school improvement initiatives.

WORK EXPERIENCE

Department of Elementary and Secondary Education	**January 1999 - Present**
Positions:	
Data Manager Deputy Commissioner Division	August 2000 Present
Assistant Director, Missouri Assessment Program Division of School Improvement	January 1999 -- August 2000
Research Associate Office of Social and Economic Data Analysis	September 1993 December 1998

EDUCATION

University of Missouri, Columbia, Missouri

Bachelor of Science, Education, 1991
Masters of Sociology, 1994

Recent Presentations:

"Show Me the Data: Growing Quality Data in Missouri" NCES Summer Forum
And Data Conference 2007 Washington DC, July 2007

"Zero to 950,000 in 9 Months" NCES Summer Forum
And Data Conference 2006 Washington DC, July 2006

"Successful Implementation from Kick-
Off to Sign-Off" 19th Annual MIS Conference Orlando, FL February 2006

John Harvey

742 Jay-Or Drive
Jefferson City, Missouri 65109
(573) 659-4427
jharvey1963@juno.com

Highlights of Qualifications:

Over twenty years of professional experience including seven years in Information Technology.

Proven experience in problem-solving with a mind for analytical thinking.

Excellent technical writing and documentation skills.

Strong and effective communication skills with co-workers and with customers.

Highly motivated to see that work is performed to complete satisfaction of the customer.

Education:

Columbia College, Columbia, Missouri
Bachelor of Science in Computer Science, May 2002

William Jewell College, Liberty, Missouri
Bachelor of Arts in Physics, May 1987

Inducted to Sigma Pi Sigma National Physics Honor Society, February 1987

Professional Experience:

Computer Information Technologist II Missouri Office of Administration, Elementary and Secondary Education Support
April 2001 to Present

- Over four years of experience working as a team member in the Visual Studio.NET environment writing web-based applications in Visual Basic.NET.
- As part of the School Funding Formula development team, I was involved with the successful analysis, design, and development of the web-based application to fund Missouri schools.
- Enhance and maintain the web-based Annual Secretary of the Board Report which is used by all 524 school districts within the State of Missouri for reporting their financial data to the department.
- Serve on the Web Application Development Standards committee to review existing standards and recommend new standards that ensure consistent coding practices among the developers in the department.

Quality Control Dana Corporation
May 1988 April 2001

- Maintained comprehensive gauge calibration program in compliance with QS-9000 standards.
- Performed metrological studies for purposes of statistical analysis and supplier performance.
- Designed both variable and hard gauging for laboratory and production applications using computer-aided design software.
- Met on-site with customer engineering staff to address, troubleshoot and resolve quality issues.

ALEXANDER M. JACKL

PROFESSIONAL EXPERIENCE

ESP Solutions Group, Inc.
Chief Information Officer/Chief Architect (2005 – Present)
Executive responsible for strategy, marketing, sales, budgeting, personnel, program management and tactical implementation. Responsible for managing large-scale education technology projects from design to full implementation. Coordinates all entities involved in enterprise architecture planning. Provides analysis to state and local education agencies regarding the design, architecture, development, implementation and roll-out of K-12 data enterprise systems.

Recent Client Projects

- Project Director/Chief Architect, Connecticut Department of Education's SLDS Project
- Project Director/Chief Architect, Wyoming Department of Education's WISE Project
- USED Federal Data Model Prototype Project

Council of Chief State School Officers (CCSSO) Decision Support Architecture Consortium (DSAC)
Executive Partner (2004 – Present)
Analyzing technical needs and providing solutions to over 26 states through the CCSSO. Providing state and local education agencies with technical gap analysis, system architecture design, and project planning. Researching and documenting best practices of enterprise systems such as unique ID, student record-level collections, enterprise directories, data warehouses, security frameworks, portals, and vertical SIF implementations.

United States Open e-Learning Consortium
Chief Technologist (2001 – 2005)
Worked with 18 states to develop consensus on K-12 educational needs at the school, district, regional, state, and federal level. Directed efforts to build co-development agreements between major specification bodies in the K-12 space; IMS Global, SIF, ADL, OKI, and GEM. Guided the adoption of the IMS QTI ASI model in the SIF specification body.

IMS Global Learning Consortium, Inc.
Specification Development Manager/Technical Advisory Board Editor (2003 – 2004)
Managed development teams to design, establish, document, and publish specifications. Wrote narrative specifications for the IMS development teams, as well as designed and drove new context documentation for the specification. Worked with other specification and standard bodies (SIF, IEEE, ISO, etc.) on co-development.

Safety Net Solutions, Inc.
Vice President of e-Learning (2002 – 2003)
Vice President of Operations (2001 – 2002)

Massachusetts Department of Education
Director of Information Systems (1999 – 2001)
Responsible for long-term strategic planning, budgeting, and forecasting for the department. Oversaw the completion of numerous large-scale information management system projects. Evaluated vendor contracts and responsible for contract completion. Represented the department in negotiations with the Federal Government and with other states.

EDUCATION

Graduate Work in Programming – MIT (1990 – 1994)
B.A. in Print/Broadcast Journalism – University of Rhode Island (1987)

SELECTED HONORS AND PROFESSIONAL APPOINTMENTS

- Schools Interoperability Framework Association (SIFA) Technical Board Member (2002 – Present)
  - Instructional Services Task Force Lead (Present)
  - Data Model Task Force Co-Lead (2007 – Present)
- Co-Chairperson, (SIFA) Technical Board (2006 – Present)
- Choice Solutions, Inc.: Education Strategy Advisory Board (Present)

Diana G James

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Vienna MO 65582
(573) 291-8478
jamesy_1000@hotmail.com

PROFESSIONAL EXPERIENCE

Manager **2001 - Present**
Department of Elementary & Secondary Education - Jefferson City, MO

Oversee the Applications Development and Database section for the agency which consists of 19. Provide assistance and support for the agency in the area of technology which consists of web based applications for the collection of data from and dissemination of funding to 523 public school districts and 16 Charter Schools in the state of Missouri. Act in both Program and Project Manager roles.

- Program Management of the Applications Development and Support as well as the Database Administration teams.
- Project Management of small, medium, and large projects.
- Consult with and advise various levels of DESE staff concerning authomation possibilities for the Department.
- Act as Deputy for the IT Director.
- Serve on Statewide committees dealing primarily with Applications and Database.
- Member of Prime Vendor contract committee that is responsible for renegotiating the prime vendor contract for the State.
- Participated, as manager, in the evaluation and purchase of hardware, database and software components for the agency.
- Developed standards committee for the creation of design and development standards to be utilized in the software development area.
-

Computer Technology Consultant **1997-2000**
Rose International - Jefferson City, MO

Worked as a sub-contractor for the State of Missouri, through Anderson Consulting, on a Y2K project. Performed developer and team lead roles. Managed 6 staff as team lead.

Quality Assurance Analyst/Project Manager **1988 - 1997**
Edward Jones St Louis, MO

Part of a Quality Assurance team ensuring compliance with standards and verification that the system developed met the stated requirements.

QualityAssurance Analyst **1985 - 1988**
Office of Administration, State of Missouri Jefferson City, MO

Performed quality assurance testing and developed test scripts.

TECHNICAL SUMMARY

Operating Systems:	Windows 3.1x through Windows XP, MS DOS, VM/ESA, MVS
Hardware:	IBM PC, IBM 327x series
Software/Other:	Microsoft Access, HTML, MS .NET Framework (VB .NET) Cobol, JCL, IDMS, DB2, Oracle, MVS/TSO, MS Office Suite, MS Project Enterprise, MS Visio, COOL:Gen, ClearAccess

EDUCATION/CERTIFICATIONS

Project Management Certification State of Missouri, 2003
Bachelor of Journalism, University of Missouri-Columbia, December 1980
Additional studies in Computer Science at University of Missouri, Rolla; Lincoln University, Jefferson City, Missouri

PROFESSIONAL ORGANIZATIONS

Project Management Institute **2002 - Present**

ADDITIONAL ACTIVITIES

Mentoring Committee **2002**
State of Missouri

Member of a team developing a mentoring program for future IT Directors for the State. Developed criteria for both mentors and mentees with which to do matching and developed feedback forms for the CIO or his designee to review.

Risk Management Committee **2002**
State of Missouri

Member of a team working on a subsection of the Missouri Best Practices for Project Management, dealing with Risk Management. The team created forms, descriptions, and guidelines to be used in the Risk Management controls of Project Management. The committee followed the recommendations of Project Management Institute.

Application Development Methodology Committee **2007 - Present**
State of Missouri

Serving as a member of the Application Development Methodology Committee. The purpose of this committee is to develop a common and consistent methodology of standards and guidelines to be used in the process of Software Development. In addition, templates will be provided.

Architecture Review Committee – Applications Domain **Present**

Serving as a member of the Applications Domain sub-committee of the overall Statewide Architecture Review Committee. The goal of the overall committee is to enhance coordination, simplify integration, build a consistent infrastructure and generally allow greater efficiencies in the development of technology solutions. The purpose of this committee is to establish standards and guidelines for software tools as well as assessing proposed software tools to ensure they comply.

JANE JORDAN

COMPUTER INFORMATION TECHNOLOGY SPECIALISTS II

SUMMARY OF QUALIFICATIONS

- Team building, leadership, and conflict resolution and management skills used to establish and maintain effective working relationship with program groups to determine data needs based on state and federal requirements
- Technical expertise in analysis, design and creation of Oracle database systems and tables, optimize loading data in Oracle tables from mainframe sql tables, VSAM files and tape storage using Oracle sqlldr utility
- Ability to review and analyze processes and calculations in current programs, documentation and reports on multiple platforms to determine adhoc reporting needs
- Unique analytical problem-solving ability used to provide consultative guidance in sql queries to other application developers

EDUCATION

Bachelor of Science University of Missouri, Columbia Missouri, December 1974

Information Technology Equipment and Software operated

- Windows XP , Microsoft Office Outlook, Word, Access and Excel
- TCP/IP Implementation
- TOAD by Quest Software
- Clear Access Manager and Clear Access
- ETL and Copy Manager
- AIX Operating System on RS6000 using VI editor and kornshell
- Oracle database using SQL, SQLPlus, PL/SQL and Enterprice Manager
- Easyflow software for flow chart documentation
- Mainframe DOS/VSE operating system using JCL, COBOL, CSP, Easytrieve on VSAM files, sql tables and tape data storage
- EDEN Education Data Exchange Network Submission system
- Instruction in Microsoft SQL server, Microsoft Project Management, CoolGen, Visual Basic and Crystal Reports

ACHIEVEMENTS

- Work with program areas to analyze information about education programs at state, district and school level and transfer data used to evaluate effectiveness and efficiency of federal education programs to U.S. Department of Education using EDEN (Education Data Exchange Network) online internet tool. Resulting dataset populates annual CSPR federal reporting.
- Create a school improvement system measuring Adequate Yearly Progress (AYP) to comply with No Child Left Behind Act (NCLB) requirement that all schools, districts and states show that students are making adequate yearly progress in communication arts and mathematics
- Reporting system created to measure performance standards including thirteen measures of student performance in five areas of academic achievement, reading achievement, ACT achievement, career preparation and education persistence.

EMPLOYMENT HISTORY Department of Elementary Education State of Missouri

- Computer Information Technology Specialists II 2005 to present
- Comupter Information Technology Specialist I 1998-2005
- Computer Information Specialist III (title change) 1997-1998
- Programmer Analyst II 1992-1997
- Programmer 1991-1992
- Programmer Trainee 1988-1991

STEVEN KING

PROFESSIONAL EXPERIENCE

ESP Solutions Group, Inc.
Vice President (2005 – Present)
Responsibilities include project design and direction, data system architecture planning, data analysis, and strategy for local, state, and federal education agencies. Leadership and architectural direction for data warehouse and data inventory efforts. Acts as Project Director for ESP client engagements.

Recent Client Projects

- Project Director, Alaska Dept of Education and Early Development, Education Information Reporting Portal Project
- Project Director, North Carolina Dept of Public Instruction, EDEN/ EDFacts Reporting Project
- Project Director, Maine Dept of Education, Data Inventory Project Phase I
- Information systems architect, Missouri Dept of Elementary and Secondary Education, MOSIS project
- Consultant, US Department of Education, EDEN/EDFacts Support

Wyoming Department of Education
Director, Data Management Unit (2003 – 2005)
Managed department data collection, reporting and management activities aimed at maximizing the utility of agency information for decision making while minimizing the burden placed on schools and districts. Responsibilities included coordinating staff activities and priorities, policy development and recommendation, collaboration with schools and district on collection design and schedule, liaison to federal program offices and organizations. Also responsible for overseeing the internal technology plan and network infrastructure for the WDE.

Information Resources Manager (1989 – 2003)
Coordinated WDE data collection and reporting activities. Responsibilities included collection form design and automation; liaison work with schools, districts, and federal program offices; training of WDE and school district staff on data collection, collection design, and data driven decision making. Designed and built the Department's Oracle data system and warehouse. Designed and constructed the Department's first website.

Education Technology Consultant (1985 – 1989)
Consulted with Wyoming schools and districts on how to use technology in classrooms for instruction. Responsibilities included conducting workshops and trainings; curriculum design and review; and coordinating with state professional organizations. During this time, implemented and installed the first network for the WDE and the first e-mail system in state government.

Whisman School District (Mountain View, CA)
Computer Resource Teacher (1981 – 1982)
Taught computer science and computer literacy to middle school students. Trained district teachers in the use of computers in their classrooms and subject areas.

James Logan High School (Union City, CA)
Mathematics and Computer Science Teacher (1978 – 1981)

TECHNOLOGY PROFICIENCY

Database Management Systems: MS SQL Server; Analysis Services, Oracle, MS Access, Visual FoxPro
eXtensible Markup Language: XML schema development, XML style sheets and transformations (XSLT)
Web development: HTML CSS

Programming Languages: PL/SQL, Java, C, C++, Pascal, Logo, Visual Basic, SVG, SQL

EDUCATION

Teaching Credential in Mathematics, Life Science – San Jose State University (1978)
B.A. in Mathematics – University of California, San Diego (1977)

PROFESSIONAL ORGANIZATIONS

- Schools Interoperability Framework Association (SIFA)
  - Board of Directors (2005 – Present)
  - SIFA Treasurer (2008)
- Education Information Management Advisory Consortium (formerly EIAC)
  - EIAC Chair (1999 – 2000), EIAC Vice Chair (1998 – 1999)
  - General Statistics Permanent Standing Task Force
    - Chair (2004 – 2005)
    - Vice Chair (2002-2004)
  - General Statistics Sub-committee
    - Chair (1997– 1998)
    - Vice Chair (1996-1997)
- National Forum on Education Statistics
  - Forum Vice Chair (1994)
  - Technology, Dissemination, and Communication Committee
    - Chair (1993 – 1994)
    - Vice Chair (1992-1993)
  - Education Indicators Task Force Chair (2002-2005)
  - Security Guide Task Force Chair (1996-1998)

Jeremy J. Kintzel
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Professional Experience

research associate, Missouri Dept. of Higher Education (Jefferson City, MO) Aug. 2006 present

- administered collection of student unit-record enrollment, term registration, and completions data from 33 public campuses (220,000 students in fall 2006 enrollment dataset)
- conducted auditing and analysis of student-level data using SAS (intermediate proficiency) in a UNIX environment
- served as Missouri coordinator of the National Center for Education Statistics Integrated Postsecondary Education Data System (IPEDS)
- represented the Department on research, data, and policy issues at regional and national conferences and workshops
- provided ad-hoc analysis and formal written reporting on data and research issues to the Missouri General Assembly, Office of the Governor, the Coordinating Board for Higher Education, the State Auditor, national education organizations, and other stakeholders
- provided research support and consultation on data issues associated with statewide strategic planning
- compiled and coordinated publication of the *Statistical Summary of Missouri Higher Education*
- co-authored an extensive grant-funded report on financial aid distribution at selected public four-year institutions
- edited revision of formal documentation governing collection of student-level enrollment and completions data collected from public postsecondary institutions
- managed collection and analysis of aggregate surveys from postsecondary institutions on student demographics, transfer, financial aid distribution, career / technical education, and other areas of ongoing policy focus
- negotiated and managed memorandum of understanding with the University of Missouri Columbia Department of Economics which provides additional data management and research support

program specialist, Missouri Dept. of Higher Education (Jefferson City, MO) Sept. 2005 Aug. 2006

- participated in state-level policy development and/or Department initiatives focusing on mathematics, engineering, technology, and science (METS), early childhood education and health, developmental education, transfer / articulation, assessment and accountability, P-20 coordination, dual / advanced credit, program inventory management, and teacher education
- served as primary or supporting Department liaison to statewide and regional organizations, including ACT, the MOREnet Council, the Missouri Developmental Education Consortium, Missouri Assessment Consortium, and other state agencies
- co-drafted revised Recommended High School Core Curriculum, adopted by the CBHE in June, 2006

adjunct instructor (English composition and literature), Kansas City Kansas Community College Aug. 2000 Dec. 2005

teacher (language arts), Morgan County R-II High School (Versailles, MO) Aug. 2003 May 2005

adjunct instructor (English composition), Penn Valley Community College (Kansas City, MO) Aug. 2000 July 2003

teacher (language arts), Hayden High School (Topeka, KS) Aug. 1998 May 2000

special needs vocational coach, DeSoto High School (DeSoto, KS) Sept. 1997 May 1998

contract instructional designer, Pryor Resources (Shawnee, KS), Helzberg Diamond Shops (Kansas City, MO) Aug. 1996 Sept. 1997

instructor / graduate teaching assistant, Kansas State University (Manhattan, KS) Aug. 1994 May 1996

Education

Master of Information Systems Management (data administration and management), Keller Graduate School of Management /DeVry University June 2008

Certificate (education), Ottawa University (Ottawa, KS) May 1998

Master of Arts, (English), Kansas State University (Manhattan, KS) May 1996

Bachelor of Arts, (English), Pittsburg State University (Pittsburg, KS) May 1994

References Available Upon Request

GLYNN D. LIGON, Ph.D.

PROFESSIONAL EXPERIENCE

ESP Solutions Group, Inc.
President and Chief Executive Officer (1993 – Present)
Founded leading K-12 education data services firm. Responsible for overall strategic direction and operational performance of the firm. Client-facing responsibilities include the development and management of strategic information services and technology projects, evaluation of the effectiveness of programs, and design and development of large-scale software applications. Clients include the U.S. Department of Education and dozens of state education agencies.

Austin Independent School District
Executive Director, Dept. of Management Information (1985 – 1993)
Responsible for managing the activities of the department. Served on the Superintendent's Cabinet. Provided coordination and efficiency among the District's offices, collecting, analyzing, and reporting information. Directed the activities within six major areas: 1) research, evaluation and student testing; 2) student records, eligibility, transfers, and District elections; 3) systems and applications computer programming; 4) computer operations and production; 5) telecommunications for voice, data, and video transmissions; 6) and planning and projections for student enrollment and facility use.

Director, Office of Research and Evaluation (1983 – 1985)
Responsible for providing AISD with information for the improvement of instructional programs. Supervised federally and locally funded project evaluations. Prepared, administered, and reviewed various budgets under which the office is funded. Recruited, screened, and hired competent personnel. Supervised all research activities conducted in the District by external agencies. Acted as a general consultant to the AISD staff in all phases of evaluation. Served as official liaison between the public, the media and the District.

Senior Evaluator (1972 – 1983), Austin I.S.D. and Edgewood I.S.D.
Systemwide Testing, Compensatory Education, Title VII Bilingual Program, ESEA Title VII Bilingual Project, ESEA Title I Program

Edgewood I.S.D. and Mission I.S.D. (Texas)
Teacher (1969 – 1972)

EDUCATION
Ph.D. in Educational Psychology – The University of Texas at Austin (1980)
M.A. in Psychology and Education – Texas A & M University (1971)
B.A. in Psychology – Baylor University (1969)

PUBLICATIONS AND PAPERS
Extensive list of evaluation papers and other publications. Available upon request.

SELECTED HONORS AND PROFESSIONAL APPOINTMENTS
American Educational Research Association: Vice President (1991-1993)
Southwest Educational Research Association: President (1990-1991)
United States Department of Education: Evaluation Review Panel (1992-2000)
National Education Goals Panel: Data Definition Task Force (1993-1995)

PROFESSIONAL ORGANIZATIONS

- American Educational Research Association
  - Division H, Public School Evaluation, Program Chair (1987)
  - Division H, Pre Post Press Editor (1988 – 1990)
  - Vice President (1991 – 1993)
- Southwest Educational Research Association
  - Secretary (1987 – 1989)
  - President Elect; Program Chair (1989 – 1990)
  - President (1990 – 1991)
- Directors of Research and Evaluation of Large City Schools
  - Chair (1989)
- Texas Joint Urban Evaluation Council
  - Chair (1987 – 1989)
  - Chair (1991 – 1993)
- National Association of Test Directors
  - Board Member (1989 – 1993)

PROFESSIONAL APPOINTMENTS

- Commissioner's Advisory Committee for Research & Evaluation (Texas Education Agency), Chair (1988 – 1990)
- Council of Chief State School Officers Steering Committee, National Assessment Planning Project (1988 – 1989)
- Steering Committee for the Community Needs Assessment for Travis County, City of Austin, and the United Way; Chair of the Technical Advisory Committee (1988)
- Annual Texas Testing Conference, Planning Committee (1986 – 1988); Steering Committee (1988 – 1993)
- Information Systems Advisory Committee, Texas Education Agency (1988 – 1990)
- Science Academy of Austin Advisory Board (1988 – 1993)
- National Center for Education Statistics Interstate Student Records Transfer Task Force (1989 – 1993)
- Research and Development Center Committee on Collaboration, University of Texas (1989)
- Cooperative Education Data Collection and Reporting Standards Task Force (1990)
- Evaluation Review Panel, United States Department of Education (1992 – Present)
- National Education Goals Panel, Data Definition Task Force (1993 – 1995)
- Campus Leadership Team, Anderson High School (1994 – 1996)

Liza Merriman
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liza_rd6@hotmail.com

SUMMARY OF QUALIFICATIONS

Solutions-focused, team oriented .NET developer capable of leading projects from concept to completion. Over six years experience with strong analytical skills combined with object oriented programming techniques. Enjoys all aspects of the project including meeting with customers, analysis, documentation, development, troubleshooting, testing and implementation. Strives to meet deadlines and learn innovative technology in order to increase reliability and improve productivity.

TECHNICAL PROFICIENCIES

- Languages: VB.NET, Visual Basic, COOL:Gen, HTML, SQL, JavaScript, VBScript, ASP, XML
- Tools: Visual Studio .NET 2003 and 2005, MKS, Crystal Reports, Crystal Enterprise, COOL:Gen, Microsoft Office Project, Microsoft Suite (Word, Excel, PowerPoint, Access, Outlook, FrontPage), Adobe PDF, TOAD, Advanced Query Tool, FTP, Telnet, SnagIt, AJAX, Team Foundation Server(TFS), Oracle, SQL Server, ANTS Profiler

PROFESSIONAL EXPERIENCE

Missouri Office of Administration –Information Technology Services Division
Department of Elementary and Secondary Education Support
Computer Information Technologist, 2002 – present

- Promoted to a Computer Information Technologist II in June 2005 and a Computer Information Technologist III in March 2008.
- Technical Lead of ITSD - DESE Applications Development Division
- Responsible for mentoring new employees as well as researching and documenting new technologies and methodologies.
- Perform analysis and document requirement specifications for upcoming VB.NET web applications, data processes, and Crystal Reports.
- Designed, developed and currently maintains many VB.NET web applications ranging from internal maintenance screens and systems to high volume data collection web applications.
- Designed, developed and currently maintains several Crystal Reports, including the statewide Educator Inappropriate Certification Report.
- Developed the front end of the department's newest data access functionality. All new VB.NET applications use this Microsoft.NET web service to process transactions, select, update, delete, and insert records to our database tables.
- Lead developer in fulfilling the department's goal in regards to using new advanced technology by creating a Microsoft.NET web service in conjunction with a COOL:Gen client which resulted in programming the first VB.NET payment.
- Known within the department by coworkers as a knowledgeable resource regarding VB.NET, MKS, and Crystal Reports.
- Primary contact for the DESE Payment Management System. This includes the web application and the payment calculations.
- Troubleshoot and diagnose many application errors in the development, test, and production environments.
- Volunteered to assist developers in other Missouri state departments regarding .NET and Crystal Reports.
- Provide training courses onsite to other developers in the group who are interested in learning new functionality.
- Participate in code walkthroughs and customer and developer specification walkthroughs to ensure that the applications, reports and data processes are designed and developed per ITSD-DESE standards.
- Provide application training and customer service to DESE clients.

- Assisted in interviewing processes for vacant Computer Information Technologist positions.
- Produce spreadsheets for customers by writing complex SQL queries. These spreadsheets contain data that cannot be accessed through any of the developed web applications or reports.
- Received several ACTS cards which are recognition rewards offered by the State of Missouri Office of Administration.
- Lead developer in the implementation of the department's first VB.NET 2005 web application which utilized the 2.0 frameworks new features such as master pages, tree views and AJAX.

PROFESSIONAL AFFILIATIONS

- ITSD-DESE Application Development Standards Committee
- ITSD-DESE Application Design Standards Committee
- ITSD-DESE Report Standards Committee

EDUCATION AND TRAINING

- A.S Web Development and Computer Programming, State Fair Community College – Jefferson City, MO
- COOL:Gen Development Environment training, Computer Associates – Plano, TX
- Crystal Reports 9 Development and Design (Onsite) - Jefferson City, MO
- Introduction to XML, MOTEC – Jefferson City, MO

References: Available upon request
Code and Specification samples: Available upon request

Dr. Tom Ogle: Project Co-Director
Department of Elementary and Secondary Education
Jefferson City, MO

Qualifications:

Project Management Skills: Managed projects at section, business unit and agency levels with members from multiple organizations, information technology units and varied functional areas. Worked with team members to develop and implement innovative solutions and to identify and resolve problems.

Data Analysis Skills: Provided assistance daily to various members of the Missouri education community in locating and explaining summary education statistics and in performing ad hoc queries of longitudinal aggregate data in our data repository at state, district, school, teacher and class levels.

Data Collection Experience: Managed agency's primary data collection system for past 17 years and served as agency designated reviewer for all data collection form changes and new data collection form development.

Professional Experience:

Director of School Core Data Section, 1995 to Present
Department of Elementary and Secondary Education
Directed combined sections responsible for aggregate data collections used for state accountability system and entitlement payments as well as production of state agency summary reports. Managed transition from PC diskette collection system to Web based system including oversight of the development of web pages for use by both school district and state agency staff. Also provided oversight for development of process for transfer of data to legacy mainframe computer system and to data repository for ad hoc reporting. Since 1995 served as team leader for the agency-wide Core Data Team comprised of data stewards from various business units responsible for maintenance and enhancement of primary data collection systems within our agency.

Director of Classification Data, 1988 to 1995
Department of Elementary and Secondary Education
Directed section responsible for aggregate data collections used for state accountability system. Managed transition from paper collection system to PC diskette collection system including oversight of the development of microcomputer program modules for use by school district staff and process for diskette data file upload to state mainframe computer. Provided technical support for school district staff.

Microcomputer Consultant, 1985 to 1988
Department of Elementary and Secondary Education
Provided consultation to staff in over 500 Missouri public school districts related to implementation of microcomputer technology for instruction. Reviewed and negotiated microcomputer equipment grant applications from school districts.

Co-Founder, 1980 to 1985
Century Next Computers
Started and directed operations of two retail microcomputer stores. Developed and implemented business plan including direct management of one location and associated outside sales staff.

High School Teacher, 1976 to 1983
Boone County R-VI School District
Taught Vocational Agriculture students and served as building and program administrator.

Other Experience:

Chair of the Metadata Task Force National Forum on Education Statistics 2008

Chair of the Decision Support Literacy Task Force of the National Forum on Education Statistics, 2004 to 2005.

Member of General Statistics Permanent Standing Task Force of the Council of Chief State School Officers, an advisory group related to EDEN, sponsored by USDOE, 2001 to present.

Chair of the Technology in Schools Task Force of the National Forum on Education Statistics, 1998 to 2002.

Chair of the Education Information Advisory Committee of the Council of Chief State School Officers, 1998 to 1999.

Chair of the Technology, Dissemination and Communication Committee of the National Forum on Education Statistics, 1997 to 1998.

Education:

Ph.D., University of Missouri-Columbia, 1987

M.Ag.Stu., University of Queensland-Brisbane, 1976

M.Ed., University of Missouri-Columbia, 1974

B.S., University of Missouri-Columbia, 1973

Publications:

U.S. Department of Education, National Center for Education Statistics. *Technology in Schools: Suggestions, Tools, and Guidelines For Assessing Technology in Elementary and Secondary Education,* NCES 2003-313, prepared by Tom Ogle (chair), Morgan Branch, Bethann Canada, Oren Christmas, John Clement, Judith Fillion, Ed Goddard, N. Blair Loudat, Tom Purwin, Andy Rogers, Carl Schmitt, and Mike Vinson of the Technology in Schools Task Force, National Forum on Education Statistics. Washington DC: 2002

Recent Presentations:

"Metadata System Guidance for State and Local Education Agencies" NCES Summer Forum And Data Conference 2008 Washington DC, July 2008

"Show Me the Data: Growing Quality Data in Missouri" NCES Summer Forum And Data Conference 2007 Washington DC, July 2007

"Metadata System Guidance for State and Local Education Agencies" NCES Summer Forum And Data Conference 2007 Washington DC, July 2007

"Best Practices: Submitting Data to EDEN" NCES Summer Forum And Data Conference 2006 Washington DC, July 2006

"Successful Implementation from Kick-Off to Sign-Off" 19th Annual MIS Conference Orlando, FL February 2006

"EDEN as Viewed from the State Perspective," 18th Annual MIS Conference, New Orleans, Louisiana, February 24, 2005.

"Improving the Quality of District-Level Education Data: Technical Strategies and Policy Considerations," 18th Annual MIS Conference, New Orleans, Louisiana, February 24, 2005.

"Highly Qualified Teacher Identification," 18th Annual MIS Conference, New Orleans, Louisiana, February 24, 2005.

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SHELLY A. PAREY

OBJECTIVE

To further my knowledge in the Information Technology field and to be a benefit to the company that I work for. I would like the opportunity to utilize my skills as a project manager and to continue learning.

EMPLOYMENT

October 2000-Present State of Missouri (OA Information Tech. Services Division) Jefferson City, Missouri

Current Position: Computer Information Technology Supervisor

- State Certified Project Manager; one of three project managers in the applications development group that supports the Department of Elementary and Secondary Education (DESE).
- Assigns tasks to the project team members, develops and maintains project plans, creates all project management related documents per the State Project Management standards, and ensures that all DESE standards are being followed.
- Assists manager in evaluation of project team members.
- Supervisor for a team of 6 developers, coordinating vacation times, assignments, and reviews.
- Management of the IT priority system; which includes enhancements, production issues, and new projects for multiple systems at DESE.
- Member of the Development and Design Standards team.
- Develops and maintains Advantage:Gen, VB.NET, and Crystal applications.
- Develops header graphics and layouts for system web pages as needed.
- Provides customer support and assistance.

1995-2000 Speedline Electrovert Camdenton, Missouri

Final Position: Purchasing Agent

- Responsible for the forecasting, purchasing, and inventory control for a variety of electrical and mechanical parts.
- Worked with engineers and suppliers in product development for better quality and cost control.
- Participated in the implementation of a new software system.
- Established departmental problem-resolution procedures.

EDUCATION/CERTIFICATION

1996-2000 Columbia College Lake Ozark, Missouri

- Bachelor of Science, Computer Information Systems (2000)
- Associate in Arts (1998)

1993-1995 Missouri State University Springfield, Missouri

2004-2007 IT Advisory Board Jefferson City, Missouri

- Project Management certification for the State of Missouri

SKILLS

- Microsoft Project 2007
- Microsoft Project Server 2007
- Advantage:Gen 6.0
- VB.NET
- Visual C++
- HTML
- ASP
- JavaScript
- Crystal Reports
- Toad (Oracle query and maintenance)
- AQT (SQL Server query and maintenance)
- Microsoft Office
- Adobe Photoshop 7.0
- Adobe Imageready 7.0
- Microsoft Image Composer

Michael John Podgursky

Telephone numbers

Office:(573) 882-4574
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E-Mail: PodgurskyM@Missouri.Edu

Academic Background

Degrees: Ph.D., University of Wisconsin-Madison, 1980
M.A., University of Wisconsin-Madison, 1976
B.A., Cum Laude, University of Missouri-Columbia, 1974

Professional Associations

American Economic Association
American Education Finance Association
Society of Labor Economists

Employment

Professor of Economics University of Missouri Columbia Fall, 1995 - present
Scholar-in-residence. Ewing Marion Kauffman Foundation. Kansas City. Fall, 2005 Fall, 2006
Middlebush Professor of Economics, Fall, 2002 Fall, 2005
Economics Department Chair, University of Missouri - Columbia, Summer 1995 Fall, 2005
Professor of Economics, Department of Economics, University of Massachusetts at Amherst, Fall, 1993 -Summer, 1995
Associate Professor of Economics, University of Massachusetts at Amherst, Fall, 1987 - Summer, 1993
Assistant Professor of Economics, University of Massachusetts at Amherst, Fall, 1980 - Summer, 1987.
Associate Director, Massachusetts Institute for Social and Economic Research, University of Massachusetts at Amherst, Summer 1992 - 1995.
Visiting Assistant Professor of Economics, Notre Dame University, Spring, 1986.
Cooperating Faculty, Labor Relations and Research Center University of Massachusetts, 1980 to 1995.
Lecturer, Department of Economics, Notre Dame University, 1979-80

Selected Publications

Books:

Dale Ballou and Michael Podgursky. Teacher Pay and Teacher Quality. Kalamazoo, MI: W.E. Upjohn Institute, 1997.

Articles and Published Reports:

M. Podgursky. 2006. Is It Time To Rethink Teacher Pensions in Maryland? Baltimore, MD: Abell Foundation and Maryland Public Policy Institute. http://www.abell.org/publications/detail.asp?ID=123

M. Podgursky and R. Tongrut. "(Mis)-Measuring the Relative Pay of Teachers." Education Finance and Policy. Vol. 1 No. 4 (Fall 2006), pp. 425-440.

M. Podgursky and M. Springer. "K-12 Public School Finance in Missouri: An Overview." Regional Economic Development. Federal Reserve Bank of St. Louis. Volume 2 No. 1 (2006), pp. 31-50.

M. Podgursky. "Is There a 'Qualified Teacher' Shortage?" Education Next. Vol. 6 No. 2 (Spring, 2006), pp. 27-32.

M. Podgursky. "Teacher Licensing in U.S. Public Schools: The Case for Simplicity and Flexibility." Peabody Journal of Education. Vol. 80 No. 3 (2005), pp. 15-43.

M. Podgursky, R. Monroe, D. Watson. "Teacher Pay, Mobility, and Academic Quality." Economics of Education Review. Vol. 23 (2004). Pp. 507-518.

M. Podgursky. "Fringe Benefits: AFT and NEA Teacher Salary Surveys." Education Next Vol. 3 No. 3 (Summer 2003), pp. 71-78.

M. Podgursky, M. Ehlert, R. Monroe, D.Watson, J. Wittstruck. "Student Loan Defaults and Enrollment Persistence."
Journal of Student Financial Aid. Vol. 32. No. 3, 2002, pp. 27-42.

D. Ballou and M. Podgursky. "Seniority, Wages and Turnover Among Public School Teachers." Journal of Human Resources. Vol. 37. No. 4 (Fall 2002), pp. 892-912.

M. Podgursky. "Statistical Analyses of Economics NRC Scores." in Evaluating Research Productivity University of Kansas. Merrill Advanced Studies Center Report No. 105. June 2001. pp. 47-50.

D. Ballou and M. Podgursky. "Defining Merit: How Should We Pay Teachers?" Education Next Vol. 1 No. 1
(Spring 2001), pp. 16-25. http://www.educationnext.net/2001sp/16ballou.html

D. Ballou and M. Podgursky. "Reforming Teacher Preparation and Licensing: What Does the Evidence Show?" Teachers College Record Vol. 101, No. 1 (Winter 2000), pp. 5-26.

D. Ballou and M. Podgursky. "Teacher Recruitment and Retention in Public and Private Schools." Journal of Policy Analysis and Management, Vol. 17, No. 3, June 1998, pp. 393-417.

D. Ballou and M. Podgursky. "Some Unanswered Questions Concerning National Board Certification" Education Week
June 11 1998.

D. Ballou and M. Podgursky. "Rural Schools," Rural Development Perspectives. Vol. 10, No. 3, (June 1995), pp. 6-16.

D. Ballou and M. Podgursky. "What Makes a Good Principal? How Teachers Assess the Performance of Principals." Economics of Education Review, Vol. 14, No. 3, (1995) pp. 243-252.

D. Ballou and M. Podgursky. "Recruiting Smarter Teachers." Journal of Human Resources, Vol. 30, No. 2 (Spring 1995), pp. 326-338.

D. Ballou and M. Podgursky. "Teacher Quality in Public and Private Schools," Proceedings of the Social Statistics Section, American Statistical Association Annual Meetings, 1994.

Contributions to Edited Volumes:

M. Podgursky. "Teams versus Bureaucracies: Personnel Policy, Wage-Setting, and Teacher Quality in Traditional Public, Charter, and Private Schools." in Mark Berends (ed.) Charter Schools: Their Growth and Outcomes. Mahwah, NJ: Lawrence Erlbaum Associates, Inc. 2007 forthcoming.

M. Podgursky. "Is Teacher Pay 'Adequate?'" in Paul Peterson and Martin West (eds) School Money Trials. Brookings Institution Press, 2007 forthcoming.

M. Podgursky. "Improving Academic Performance in U.S. Public Schools: Why Teacher Licensing is (Almost) Irrelevant" in Fredrick Hess, Andrew Rotherham, and Kate Walsh (eds.) Teacher Training and Quality: New Directions in Policy. Cambridge, MA: Harvard Educational Press, 2004, pp. 255-278.

M. Podgursky. "Regulation Versus Markets: The Case for Greater Flexibility in the Market for Public School Teachers." in Margaret Chang and Herbert Walberg (eds) Tomorrow's Teachers Richmond CA: McCutchan. 2002. pp. 117-148.

Referee/ Reviewer: American Economic Review, Review of Economics and Statistics, Journal of Human Resources, Industrial and Labor Relations Review, Industrial Relations, Growth and Change, Applied Economics, Cambridge Journal of Economics, Small Business Economics, Contemporary Policy Issues, Eastern Economic Journal, Education Matters, Teachers College Record, Educational Researcher, Economics of Education Review, Journal of Policy Analysis and Management, Education Evaluation and Policy Analysis

National Science Foundation, Smith-Richardson Foundation, Fordham Foundation

Other Professional Service

National Research Council, Panel on Teacher Preparation. 2005-present.
Editorial Board, Education Finance and Policy, 2004-present
Board of Directors, Missouri Show Me Institute. 2005-present
Advisory Board,. National Center for Teacher Quality. Washington, D.C. 2003-present.
Advisory Board. American Board for Certification of Teachers Excellence, Washington, D.C. 2001- present
Technical Board of Advisors, Department of Education Reform, University of Arkansas, 2005-present
NCES School Finance Technical Review Panel, 2004-present
IES expert review panel, 2004.
ERIC Advisory Board, 2004-present
Member, Cleveland Conference, 2005-present

Recent Funded Research

National Center for Education Statistics. Research Potential of State Administrative Data on Teacher Pay and Benefits. (2006).

Co-Investigator, National Center for Performance Incentives, Vanderbilt University, (IES research center, 2006-2011).
($550,000)

Co-Investigator, Center for Analysis of Longitudinal Data in Education Research (CALDER), Urban Institute (IES research center, 2007-2009.

Ewing Marion Kauffman Foundation. "The Market for Math and Science Teachers in the K.C. Metro Area." ($60,000).

Missouri Department of Higher Education/ Lumina Foundation. Affordability, Access and Performance of Missouri Public Higher Education Institutions. 2000-2004 ($490,000)

Smith Richardson Foundation. Personnel Policy in Traditional Public, Private, and Charter Schools 2001- ($63,000)

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Eldon, MO. 65026

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Micah Porter

Experience

2000–Present State of Missouri – OA-ITSD Jefferson City, MO

Computer Information Technologist

- Develop and Maintain Department Web & GUI Applications
- Responsible for critical state applications such as:
  - Educator Certification System
  - School Funding Formula
- System Analysis and Design
- Mentor to New Developers

2000–2000 State of Missouri - DESE Jefferson City, MO

Software Developer – Internship

- Development and Maintenance of Department Applications
- Application Security Administration
- Project Specification Development

1997–2000 Columbia College - Lake Campus Columbia, MO

Computer Lab Technician / Assistant

- Assisted Students With Computer Related Assignments
- Managed Campus LAN
- Responsible for 26 Computer Systems

Education

2002–2004 William Woods University Fulton, MO

- **Masters in Business Administration**

1996–2001 Columbia College Columbia, MO

- **B.S., Computer Information Systems**
- Minors in Both Management and History.
- Graduated with Honors.

Teaching

2002– Present State Fair Community College Sedalia, MO

- **Teach online courses in "Intro to CIS", "XML", and "Java"**

Technology

Microsoft operating system; MS Office Suite, MS Visual Basic .NET, HTML, ASP, XML, Java, and Cool:Gen.

References

Available Upon Request

MICHELLE LYNN WAGNER
23663 Highway 87
Jamestown, MO 65046
(573) 230-4375

OBJECTIVE

Seeking a position where I can fully utilize my varied background, skills, and education.

EDUCATION

May 2004 Lincoln University, Jefferson City, MO 65101
Bachelor of Science Degree with a major in Computer Information Systems

GPA 3.814 Magna Cum Laude

Courses: Data Files and Databases, System Development and Methodology, Perl, Ruby, Visual Basic, Beginning and Intermediate COBOL, Computer Graphics, Internet Programming HTML and Java, Networking, Microsoft Office.

WORK HISTORY

9/04 to Present **Office of Administration**
Information Technology Services Division – DESE
Computer Information Technologist I

Create and maintain Oracle PL/SQL and SQL Server T-SQL scripts. Convert existing Oracle PL/SQL scripts to SQL Server T-SQL. Set up data transformation packages in SQL Server to ftp data to the mainframe and run T-SQL scripts. Set up jobs using SQL Server Enterprise Manager to run T-SQL scripts. Analyze, modify, test, implement code and verify data accuracy. Create and modify tables. Make data corrections and move code, data and tables from one environment to another. Load data using Oracle SQLLOADER utility. Implement applications on AIX. Install and test new software such as Advanced Query Tool and iWay DataMigrator.

- Visual Basic .NET training through MOTEC
- SQL Server training through MOTEC
- Crystal Reports XI through MOTEC

12/00 to 9/04

Department of Economic Development
Management Information Systems
Clerk IV

Routinely worked with Microsoft Access, Word, Excel and Outlook, generated queries and reports from Microsoft Access and Excel, processed and tracked hardware and software maintenance renewals, maintained software licensing information, data entry, prepared purchase requisitions, assisted staff with miscellaneous IT projects.

- Perl training through MOTEC

4/97 to 12/00

Department of Economic Development
Neighborhood Assistance Program
Clerk Typist II

Created and maintained Microsoft Access databases, routinely worked with Microsoft Outlook, Word, Excel and Access, assisted with the creation and maintenance of the NAP website, assisted with the development of the NAP FAS database, generated queries and reports from Microsoft Access databases, data entry, training in Microsoft Office, training in customer service, assisted with the preparation and development of contracts, directed incoming telephone calls, assisted the general public, created and maintained files, arranged travel and accommodations, prepared purchase supply requisitions, processed expense accounts, sorted and distributed mail, prepared internal and inter-departmental documents.

10/95 to 4/97

Department of Economic Development
Community and Economic Development
Receptionist (Clerk Typist II)

Directed incoming telephone calls, assisted the general public, logged State cars in and out, filed car packets and mileage forms, sorted and distributed mail, prepared purchase and supply requisitions, maintained supply inventory.

12/93 to 6/95

Missouri Senate
Senator John D. Schneider
Secretary

Receptionist, worked with the Senate Calendar, scheduled group tours for schools and other organizations, typed correspondence to constituents

and other agencies, received incoming telephone calls, created filing system, maintained all files, worked with Community Service Directory for the Senator's district, handled all incoming and outgoing mail, transcribed letters, data entry, received and sent faxes, ran errands within the Senate and House, communicated with various State and Federal agencies and out-of-state departments, and implemented ideas for the workflow.

RELATED SKILLS

- Dependable, enthusiastic and quick to learn.
- Independent works with minimal supervision and contributes to a team.
- Ability to communicate and maintain effective working relationships with others.
- Effectively handles multiple tasks.

Paul Gerard Wright

3608 West Hilltop Drive Columbia, MO 65203

PROFESSIONAL EXPERIENCE

Chief Information Officer **2001-Present**
Interim Chief Information Officer **2000-2001**
Department of Elementary & Secondary Education - Jefferson City, MO
Oversee Information Technology section for the agency which consists of 40 employees and an annual budget of $3 million. Provide direction for the agency in the area of technology which consists of web based applications for the collection of data from and dissemination of funding to 524 public school districts in the state of Missouri. The Information Technology section consists of networking, database administration, and software development groups.
Primary duties include:

- Implementing Missouri Project Management Best Practices in the Department.
- Continuing to develop Project Management databases to be used as part of the Best Practices implementation.
- Developing and implementing disaster recovery procedures for the Department.
- Re-vamping the Information Technology (IT) section and creating a functional organization chart of the new organiztion.
- Working with business divisions to institute a Project Management Office and distributed software development as part of the IT restructuring.
- Establishing IT Liaison positions within the divisions. These Liaisons will be a main link between the divisions and the IT section.
- Providing Liaison training.
- Establishing a communications plan between IT and various areas and levels of the Department.
- Participating in the Information Technology Advisory Board (ITAB) meetings, which consists of the IT Directors from each State agency. Also, participating in various ITAB sub-committees, such as IT Consulting Review Committee, Performance Measures Committee, and Total Cost of Ownership/Return on Investment (TCO/ROI) Committee.

Manager - Information Technology **1996-2001**
Department of Elementary & Secondary Education - Jefferson City, MO
As project manager for Information Systems Information Strategy Plan (ISP), researched toolsets for integration into the Department's new client/server environment, recruit college full-time and interns, work with agencies for contract personnel, responsible for new development activities. Provide supervisory activity (performance management, training, etc.) for internal staff (manage 7 staff) and manage all development contract staff (15 from three contract agencies).

- Interim-CIO from September 2000 to present.
- Managed a team and participated in the development of an Information Strategy Plan (ISP) for the agency.
- Participated, as manager, in the evaluation and purchase of hardware, database and software components for the agency's transition from mainframe to client/server. This included Computer Assisted Software Engineering (CASE) toolset and hardware operating environment (NT and AIX).
- Developed standards committee for the creation of over 40 standards to be utilized in the software development area.
- Developing a web-based transactional application in order to better understand and manage the development tools installed.
- Teamed with the Assistant CIO to develop a brochure for use in college campus recruiting and job fairs.
- Designed and developed a database to track campus recruiting candidates via laptop. This data is then transferred to a web server for viewing by all State agencies.
- Designed and developed databases for tracking user work requests, change control management and a knowledge database for technical problem/resolution. This is part of an overall Project Management system that I am developing for the Department.

- o Member of Prime Vendor contract committee that is responsible for renegotiating the prime vendor contract for the State.

Analyst **1996-1996**
University Extension-OSEDA - Columbia, MO
Provided Visual Basic and Access development and support to the Missouri Department of Elementary & Secondary Education.

Computer Technology Consultant **1993-1996**
Columbia, Missouri
Consult in areas such as, interactive multimedia authoring, CBT development, HTML, long-term technology planning for businesses, and training; software design and development in Visual Basic; design and installation of BBS and Internet servers.

Supervising Systems Analyst **1988-1993**
Chevron Petroleum Technology Company - San Ramon, California
Responsible for providing work direction to a team of 9 Programmers and Systems Analysts in support of Chevron exploration and production departments for overseas operations. Perform work reviews, administer salary, develop budget (of $1million yearly) and strengthen client relations.

- o Strengthened client relationship through periodic 'face-to-face' meetings to discuss current projects' status and other general concerns.
- o Designed and co-developed an on-line order entry system used by Computer Operations at 3 company sites.
- o Designed a manpower billing reporting system utilizing MVS/SAS and REXX for the San Ramon site. System was used by client organization as well as internally.

Supervising Systems Analyst **1984-1988**
Chevron Information Technology Company - San Ramon, California
Responsible for providing work direction to a team of 8 Programmers and Systems Analysts in support of Chevron Chemical Company operations. Tasks included performance review, salary administration, budgeting, and client liaison.

- o Developed and implemented methods for 24 hour support of all Chevron Chemical systems, including on-line and batch IMS, Nomad and RAMIS.
- o Formulated standards and wrote programmers guide that itemizes these standards, including programming style, documentation and many other support functions.

Data Communications Analyst **1983-1984**
Chevron Information Technology Company - San Francisco, California
Participated in a 1 year rotational assignment program learning aspects of general data communications. Assignment was made available to only 7 employees.

- o As a project analyst, installed and re-configured remote controllers at 3 Chevron sites during a restructuring of the Chevron telecommunications network. Worked alone and on a tight deadline installing at Midwest sites.
- o As a network analyst, designed new telecommunications hubs for the Chevron network in Atlanta, Richmond and San Francisco. A multi-million dollar project tying all sites in the East to the San Francisco-based mainframe.

Programmer/Analyst **1979-Current**
Chevron Information Technology Company - San Francisco, California
Developed procedures in support of Chevron Chemical's multi-million dollar order entry system, which consisted of on-line and batch IMS, Nomad, RAMIS and MARK IV applications.

- o As project lead, designed and installed an on-line perpetual inventory system, for all Chevron Chemical warehouses, using IMS and PL/1.

Professional Recruiter **1982-Current**
Chevron Corporation
State of Missouri - Jefferson City, MO
As team lead, made all preparations for recruiting activities at 5 universities for the recruitment of computer science, MIS and EE graduates. Conducted on-campus interviews at these schools. Recruited technical professionals via job fairs. Contacted, interviewed and recommended technical contractors.

- o Recommended and administered scholarship and departmental cash gift budgets for 5 major universities.
- o Evaluated criteria and recommended schools for recruiting activities.
- o Chevron Recruiting Team Leader for 4 campuses (University of Missouri-Columbia, University of California-Santa Barbara, California State University-Chico). Duties included making all arrangements for interviewing, arranging for participation in career fairs, making recruiting team assignments, travel arrangements and remaining in contact throughout the year with campus contacts.
- o State of Missouri recruiter at the University of Missouri-Columbia, Central Missouri State University, State Fair Community College, Columbia College, and Westminster College. Duties included making all arrangements for interviewing, arranging for participation in career fairs, making recruiting team assignments, travel arrangements and remaining in contact throughout the year with campus contacts.

TECHNICAL SUMMARY

Operating Systems:	Windows 3.1x through Windows XP, MS DOS, VM/XA, VM/ESA, MVS, Macintosh, DEC UNIX (ULTRIX), IBM AIX
Hardware:	IBM PC, Macintosh, IBM 327x series SNA terminals, DEC 5000/200
Software/Other:	Microsoft Access, Visual Basic 6.0, HTML, MS .NET Framework (VB .NET) Nomad2, SAS, MARK IV, FORTRAN, PL/1, JCL, IMS, MVS/TSO, MS Office Suite, MS Project, MS Visio, Qbasic, COOL:Gen, Clearaccess, FoxPro
Project Management:	Yankovich & Yourdon - SDM/70; Project Management seminar conducted by MTW Consulting 1997; Project Assessment Quotation session held by the State of Missouri's Office of Administration; Business Scorecard Development workshop conducted by the Missouri Excellence organization.

EDUCATION/CERTIFICATIONS/AWARDS

IT Director of the Year State of Missouri, June 2008
Partnership Appreciation Award (Support of the Cisco Academy Program) - 2008
Project Management Certification State of Missouri, March 2001
Master of Science, Management of Information Systems, ISIM University, January 2001
Bachelor of Arts, Computer Science, University of Missouri-Columbia, December 1978

PROFESSIONAL ORGANIZATIONS

Project Management Institute **2002 - Present**

ADDITIONAL ACTIVITIES

IT Recruiting Committee **2006 - Present**
State of Missouri

Central Missouri State University (CMSU) – School of Business **2005**
Warrensburg, MO

Information Technology Advisory Board (ITAB) **2005 - Present**
State of Missouri

Project Management Standing Committee (PMSC) **2003 - Present**
State of Missouri

Missouri Value Assessment Program Committee (MOVAP) **2003 - Present**
State of Missouri

Performance Management Committee **2003 - Present**
State of Missouri

Missouri Technical Training & Education Center (MOTEC) **2002 - 2004**
Jefferson City, MO

Regional Technical Education Council (RTEC) - Jefferson City **2002 - Present**
Jefferson City, MO

University of Missouri – College of Business, Marketing Advisory Board **2001 - Present**
Columbia, MO

State Fair Community College (SFCC) **2000 - Present**
Sedalia, MO

Central Missouri State University (CMSU) – School of Business **1998 - Present**
Warrensburg, MO

Business Information Technology (BIT) Career Institute **1998 - Present**
Central Missouri State University - Warrensburg, MO

Jefferson City Information Technology Coalition (JCITC) **1997-Present**
Jefferson City, MO

JASON YOUNG

PROFESSIONAL EXPERIENCE

ESP Solutions Group
2006 – Present *Project Manager*
Experience managing client projects, related workflow, and deliverables. Responsibilities include project requirements gathering, project documentation, project scheduling for data system implementations, maintaining client relationships, coordination of project tasks, adherence to schedules, managing communication with subcontractors, and updating ESP's project website and content. Other relevant duties include oversight of Microsoft data loading and transformation technologies and educational data systems analysis.

Recent Client Projects

- Project Manager for Missouri Department of Elementary and Secondary Education's Longitudinal Data Collection System
- Project Manager for Missouri Department of Elementary and Secondary Education's State Identification System

State of Missouri
1999 – 2006 *Information Technology Specialist*
Team lead responsible for maintenance of the Missouri Department of Elementary and Secondary Education Information Technology infrastructure. Work experience included expertise in Microsoft Server technology, Cisco network systems, Microsoft .Net application programming, and Microsoft Database technologies.

Specific duties and technologies:

- Design and support of Microsoft Active Directory system.
- Design and support of Microsoft Exchange Server system.
- Administration of Cisco router, switch, content switch, intrusion prevention, and firewall.
- Design and support of state-wide area network connecting state operated schools.
- Design and support of Business Objects Enterprise Server providing web and desktop reporting.
- Design and support of public and secured .Net based web applications.
- Design and support of Microsoft SQL Server databases.

TECHNICAL PROFICIENCY

Database Environments: Microsoft SQL Server, Microsoft SQL Server Integrated Services Cisco network systems, Microsoft .Net Framework

Programming Languages: Visual Basic .Net, SQL

EDUCATION

1999 B.S. – Columbia College of Missouri

Budget Narrative

Budget Narrative

Attachment 1:
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Missouri Longitudinal Data System Grant Application: Budget Narrative

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This document explains and details the calculations that went into the construction of the project budget. There is a section for each line of the budget; Personnel, Fringe, Travel, etc. The budget narrative also justifies the distinction of the funding requests across the various sub-projects in the proposal that add up to the total amount requested. The sub-project values were totaled in each category to get the final project totals.

PR/Award # R372A090054

e1

Personnel

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – State**	$127,490	The Missouri Department of Elementary and Secondary Education is committed to the successful implementation of a LDS to improve educational outcomes. As a sign of this commitment, DESE will contribute in-kind funding for 2.0 FTE for each year of this project. Additional staff throughout the organization have been and will continue to support the MOSIS efforts 2 MOSIS FTE technical associates, 12 FTE data stewards focusing on program area specific data and integration, 3 FTE Core Data technical support, 1 FTE Computer Information Technology Supervisor, 6 FTE Computer Information Technology Specialists.
	Year 2 – State	$127,490	" "
	Year 3 – State	$127,490	" "

Fringe

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – State**	$79,209	On behalf of its employees, the Missouri Department of Elementary and Secondary Education contributes a total of 20.71 percent for retirement, social security, workers compensation, and unemployment insurance. These expenses will provided as an in-kind contribution from DESE.
	Year 2 – State	$79,209	" "
	Year 3 – State	$79,209	" "

Travel

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**	$7,450	DESE staff and P-20 Council members will select two participants to attend the two day meeting in DC.
	Year 2 – Grant	$17,500	DESE staff and P-20 Council members will select two participants to

Project	Funding Source	Amount	Justification
			attend the two day meeting in DC. UM and the P-20 collaborative will select participants to present and attend conferences related directly to the MOSIS Longitudinal Data System research activities.
	Year 3 – Grant	$17,568	DESE staff and P-20 Council members will select two participants to attend the two day meeting in DC. UM and the P-20 collaborative will select participants to present and attend conferences related directly to the MOSIS Longitudinal Data System research activities.

Equipment

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**	$150,000	The State IT Department will work with vendors providing software applications for MOSIS to determine the exact hardware and operation systems software required. Procurement will be through standard State IT processes. The estimate used here is based upon current hardware configurations within IT, discussions with potential vendors, and discussions with other SEAs implementing similar solutions. MOSIS anticipates procuring communications, staging, operational, longitudinal database, and reporting servers as needed whenever current servers already supporting DESE operations are not adequate.
	Year 2 – Grant	$25,000	The State IT Department will contract for standard maintenance and support for the equipment and software purchased for MOSIS.
	Year 3 – Grant	$25,000	The State IT Department will contract for standard maintenance and support for the equipment and software purchased for MOSIS.
	Year 1 – State	$494,500	DESE is poised to capitalize on the opportunities presented by this grant application as evidenced by the state-of-the-art facilities and equipment currently in place. The secured data center is climate controlled and maintains UPS power protection plus a fire suppression system ($10,000). A combined security system, Application Guardian System (database side) and Active Directory, provide a secure environment to house the confidential data ($2,500). The database system operates on a combination of Oracle 8 running on IBM RISC processors and

Project	Funding Source	Amount	Justification
			Microsoft SQL Server running on clustered IBM servers running Windows Server and cluster services ($100,000). The student identification system (MOSIS) is comprised of a dual process IBM server running JBoss as an application server and a separate dual processor IBM server database server running Microsoft SQL server ($60,000). The database system is further enhanced by a Business Objects/Crystal Enterprise XI cluster running on four IBM servers with dual processors (3.2GHz) for reporting ($300,000). Finally, Microsoft's IIS 6 running on a dual processor IBM server provides a stable and secure web environment ($2,000). The test environment is also used for training on OLAP and knowledge discovery ($20,000). DESE will continue to provide the aforementioned equipment, security systems, and housing at an estimated cost of $494,500.

Supplies

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – State**	None	
	Year 2 – State	None	
	Year 3 – State	None	

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e4

Contractual

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$4,092,080	Total requested for Contractual Services in Year 1.
			MOSIS Training and Support System - $475,000 is being requested for this component in year one for contracted services and is broken out as follows:
		$5,000	Requirements Gathering: DESE, the Core Data User Group, the Regional Professional Development Centers (RPDC), contractors, and the other members of the P-20 Council will develop, review, and approve the MOSIS Training and Support System Plan Requirements. Contracted services will be used to procure professional assistance to support the development of this plan. (40 hours x $125/hour)
		$10,000	System Design: DESE, the Core Data User Group, the Regional Professional Development Centers, contractors, and the other members of the P-20 Council will develop, review, and approve the MOSIS Training and Support System design plan. Contracted services will be used to procure professional assistance to support the development of this plan. (80 hours x $125/hour)
		$145,000	System Development: The Regional Professional Development Centers already have training facilities and processes along with relationships with the LEAs and schools. Each RPDC will prepare and submit to DESE a training plan and proposal in response to a request prepared by DESE. These funds will support the development of the training materials and programming. (8 training components x 18,125)

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$50,000	Users Guide and Technical Documentation: DESE will contract for the writing of the MOSIS Users Guide and Technical Documentation. This document will contain high-level descriptions of all components of MOSIS, and will reference the detailed documentation provided for each component by the contractors.
		$240,000	System Training: DESE will contract with three Regional Professional Development Centers to schedule and deliver training on each component of MOSIS as it is rolled out to users. Cost calculations are based upon 3 training centers, each serving approximately 175 districts, and delivering 40 hours of training for each of 8 components of MOSIS. (40 hours X 8 training components = 320 Hours X 3 Centers = 960 Hours @ $250 = $240,000).
		$12,500	Pilot Implementation and Support: Contract services will be used to support the pilot rollout of the MOSIS Training and Support System. (100 hours x $125/hour)
		$12,500	Production Implementation and Support: Contract services will support the production rollout of the MOSIS Training and Support System. (100 hours x $125/hour)
			Longitudinal Data Repository - $1,380,500 is being requested for this component in year one for contracted services and is broken out as follows:

PR/Award # R372A090054 e5

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$50,000	Requirements Gathering: DESE, the Core Data User Group, contractors, and the other members of the P-20 Council will develop, review, and approve the MOSIS Longitudinal Data Repository requirements. Contracted services will be used to procure professional assistance to support the development of these requirements. (400 hours x $125/hour)
		$75,000	System Design: DESE, the Core Data User Group, contractors, and the other members of the P-20 Council will develop, review, and approve the MOSIS Longitudinal Data Repository system design. Contracted services will be used to procure professional assistance to support the development of this design. (600 hours x $125/hour)
		$650,000	MOSIS Longitudinal Data Repository System Development: DESE will procure the development and integration services or purchase as required.
		$155,000	Design Longitudinal Data Repository Update/ETL Processes: DESE will procure the design and development of the Longitudinal Data Repository update/ETL process.
		$37,500	Technical Documentation: DESE will contract for the writing of the MOSIS Longitudinal Data Repository Technical Documentation.
		$50,000	Longitudinal Data Repository System Training: The contractor will be required to provide system training and knowledge transfer for DESE and State IT staff.
		$63,000	Pilot Implementation: The contractor will be required to successfully pilot the Longitudinal Data Repository with internal DESE and State IT systems, State Report Manager data from pilot LEAs, and the portal.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$75,000	Production Implementation: After a successful pilot, a phased production implementation will begin.
		$25,000	Design the Expansion of MOSIS: This phase is related to the expansion of the MOSIS Data Collection System. In order to implement additional data collections in MOSIS it is required to go through a phase where the collection, data elements, and business rules are defined.
		$200,000	Implement Additional MOSIS State Report Manager (SRM) Data Collections: Two of the new SRM collections (submission cycles) will be implemented to convert legacy aggregate data to unit records. 4 new collections @ $50,000 per collection.
			Reporting and Analysis Portal - $715,500 is being requested for this component in year one for contracted services and is broken out as follows:
		$37,500	Requirements Gathering: The reporting requirements are a crucial component of the overall MOSIS system. Therefore, the portal must have comprehensive requirements. Knowledge exchange with the DESE will be essential. Carefully crafted requirements are a priority. DESE, the Core Data User Group, contractors, and the other members of the P-20 Council will develop, review, and approve the MOSIS reporting requirements. Contracted services will be used to procure the professional assistance to support the development of these requirements.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$62,500	System Design: DESE, the Core Data User Group, contractors, and the other members of the P-20 Council will develop, review, and approve the MOSIS Reporting and Analysis Portal system and report design. Contracted services will be used to procure professional assistance to support the development of this design.
		$175,000	System Development: DESE will procure the development or purchase of the portal and associated reporting tools, and/or integrate with the existing Business Objects tool.
		$37,500	Technical and User Documentation: The contractor will produce both technical and user documentation and integrate it with the training plans of each Regional Professional Development Centers.
		$50,000	System Training: Training for internal DESE and State IT staff to ensure complete knowledge transfer of the reporting and analysis portal. Special emphasis will be placed on training for report design and creation.
		$75,000	Portal Integration at DESE: DESE and State IT will work with the contractor to integrate the portal and reporting services with the data warehouse and other applications. Contractor will be responsible for ensuring the integration is complete and seamless.
		$75,000	Portal Security Integration: This essential step in the process allocates proper role assignment, authentication, and access to the secure data contained within the data reporting and analysis portal.
		$25,000	Pilot Implementation: The contractor will be required to successfully pilot the portal and reporting services with internal DESE and State IT systems and State Report Manager.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$100,000	Develop Reporting Cubes: The reporting cubes will reflect the questions and reporting requirements basic to the success of MOSIS. The contractor will deliver a specified number of cubes as defined in the requirement documents.
		$78,000	EDFacts Reporting: DESE must recreate its EDFacts reporting process to accommodate the new authoritative data sources in unit record format rather than in aggregate statistics. Additional data will also be available for EDFacts inclusion. A contractor will be engaged to work with DESE to facilitate this transition and to create an ongoing EDFacts reporting process.
			Data Sharing Standards and Interoperability - $50,000 is being requested for this component in year one for contracted services and is broken out as follows:
		$35,000	ISA: The Information Systems Architecture will engage the P-20 Council members, LEAs, and State IT in a comprehensive review and documentation of policies and standards for all systems including MOSIS. A contractor will be engaged with expertise in the contents and process for developing this architecture.
		$15,000	Data Dictionary/Metadata Review and Documentation: DESE will work with their contractor to document the data elements, definitions, and option sets for all MOSIS-related collections, repositories, and reports.
		$100,000	**DESE FTEs:** Two full-time contract staff to support the overall project, with focus on providing help and assistance to school and district users of MOSIS. Legislative limitations on State FTEs require that these be contractors.

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$300,000	**Project Management, Oversight, and Control:** DESE will procure onsite and external project management, oversight, and control to manage the MOSIS Longitudinal Data System Project, and to track, document, and resolve project issues and risk. Costs are based upon current expenditures within DESE for similar work associated with the MOSIS ID implementation and the early stages of the State Report Manager data collections. (1 Project Manager, .5 Project Director, .33 Systems Architects, .5 Content Experts) These experts are listed in the staffing section of the narrative. Hourly rates are blended and discounted based upon current contract levels.
			University of Missouri Research/Development and Analysis of Teacher Quality This activity is part of the enterprise portal and reporting objective of MOSIS. These efforts will research and design analysis and reporting processes for MOSIS users specifically focused on teacher preparation and professional development. $158,580 is being requested for this component in year one for contracted services and is broken out as follows:
		$31,680	Primary Researcher I Summer Hours: During the summer, the primary researcher will devote a full month to the analyses and report design. $198/hour x 160 hours.
		$28,512	Primary Researcher I School Year Hours: During the school year, the primary researcher will use a release class period to conduct the analyses and report design. $198/hour x 144 hours.
		$19,520	Primary Researcher II Summer Hours: During the summer, the primary researcher will devote a full month to the analyses and report design. $122/hour x 160 hours.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$17,568	Primary Researcher II School Year Hours: During the school year, the primary researcher will use a release class period to conduct the analyses and report design. $122/hour x 144 hours.
		$18,300	Researcher School Year Hours: During the school year, the researcher will use a release class period to conduct the analyses and report design. $122/hour x 150 hours.
		$34,000	Graduate Research Assistant: During the school year and the summer, the graduate researcher will assist in the analyses and report design. $20/hour x 1,700 hours.
		$9,000	Graduate Student Support (Tuition/Insurance): The graduate student compensation will also include support for tuition and insurance costs.
			Teacher Certification System- $800,000 is being requested for this component in year one for contracted services and is broken out as follows:
		$50,000	Requirements Gathering: DESE and the Educator Certification Office will work with a contractor to ensure that all requirements are documented.
		$75,000	System Design: DESE and the Educator Certification Office will work with a contractor to ensure that all requirements are incorporated into the system design.
		$675,000	System Development: DESE will develop, contract for the development, or purchase the required system. The cost has been estimated from presentations by potential vendors, and through discussions with other states with comparable systems.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
			Design and Implement P-20 Collaborative - $112,500 is being requested for this component in year one for contracted services and is broken out as follows:
		$50,000	Requirements Gathering: The members of the P-20 Council will work together and with a contractor to detail the requirements for comprehensive collaboration and effective leveraging of the MOSIS data and reporting tools.
		$62,500	Design: The members of the P-20 Council will work together and with a contractor to design the features and functions of the P-20 Collaborative.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 2 – Grant**		
		$2,241,332	Total requested for Contractual Services in Year 2.
			MOSIS Training and Support System - $112,500 is being requested for this component in year two for contracted services and is broken out as follows:
		$12,500	Users Guide and Technical Documentation: DESE will contract for the updating of the MOSIS Users Guide and Technical Documentation. This document will contain high-level descriptions of all components of MOSIS, and will reference the detailed documentation provided for each component by the contractors. Year two will focus on document clean up and enhancement.
		$50,000	System Training: Year two will focus on continued development, enhancement, and delivery of MOSIS trainings.
		$50,000	System Maintenance and Support: Year two will provide ongoing support and maintenance for the MOSIS Training System as implemented in the Regional Professional Development Centers.
			Longitudinal Data Repository - $350,000 is being requested for this component in year two for contracted services and is broken out as follows
		$50,000	MOSIS Longitudinal Data Repository System Development: Year two will focus on continued development, enhancement, and delivery of the MOSIS Longitudinal Data Repository.

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 2 – Grant**		
		$50,000	Design Longitudinal Data Repository Update/ETL Processes: Year two will focus on continued development of the Longitudinal Data Repository update/ETL process to encompass additional data sources and content.
		$50,000	Longitudinal Data Repository System Training: The contractor will be required to provide continued system training and knowledge transfer for DESE and State IT staff. This amount allows the contractor to perform key functions while internal staff observe and/or participate as a knowledge transfer activity.
		$100,000	LDS Maintenance and Support: The contractor will be required to provide support and maintenance for the LDS system. This amount is based upon review of the level of effort and costs in other SEAs with both in-production systems and those in a planning stage.
		$50,000	Additional MOSIS SRM Data Collection: Data elements required for EDFacts or other reporting but not in a current collection, or an additional submission cycle for a collection will be configured and implemented.
		$50,000	Support and Maintenance: The MOSIS SRM Data Collection submissions that have been configured and implemented through this grant will be supported and maintained by the contractor.
			Reporting and Analysis Portal - $420,000 is being requested for this component in year two for contracted services and is broken out as follows:

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 2 – Grant**		
		$50,000	System Training: Ongoing training for internal DESE, and State IT staff to ensure complete knowledge transfer of the reporting and analysis portal. Special emphasis will be placed on expert training for report design and creation.
		$50,000	Production Implementation: The contractor will be required to successfully complete a phased rollout of the next tranche of functions of the portal and reporting system and services to districts, DESE, and State IT staff.
		$75,000	Support and Maintenance: The contractor will be required to provide support and maintenance for the reporting and analysis portal system.
		$75,000	Testing and QA of Reporting Portal System: The contractor will be required to successfully demonstrate system accuracy via testing of the reporting and analysis portal system.
		$75,000	Integrate Reports into Portal: The contractor will be required to integrate specified and approved reports into the reporting and analysis portal system by creation of the interoperability among the Longitudinal Data Repository and other authoritative data sources throughout DESE or other official partner repositories.
		$75,000	Roll Out Reports to Users: The contractor will be required to roll out reports in the production environment to districts, DESE, and State IT staff.

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 2 – Grant**		
		$20,000	EDFacts Reporting: DESE must keep its EDFacts reporting process up-to-date to accommodate the new authoritative data sources in unit record format rather than in aggregate statistics and to respond to annual changes in the EDFacts specifications. Additional data will also become available for EDFacts inclusion. A contractor will be engaged to work with DESE to facilitate the ongoing EDFacts reporting process.
			Data Sharing Standards and Interoperability - $30,000 is being requested for this component in year two for contracted services and is broken out as follows:
		$15,000	Information Systems Architecture: The Information Systems Architecture will continue to engage the P-20 Council members, LEAs, and State IT in a comprehensive review and documentation of policies and standards for all systems including MOSIS. A contractor will be engaged with expertise in the contents and process for developing and enhancing this architecture.
		$15,000	Data Dictionary/Metadata Review and Documentation: DESE will continue to work with their contractor to document the data elements, definitions, and option sets for all MOSIS-related collections, repositories, and reports.
		$110,000	**DESE FTEs:** Two full-time contract staff will support the overall project internal to DESE. Legislative limitations on State FTEs require that these be contractors. A COLA adjustment has been added.
		$330,000	**Project Management, Oversight, and Control:** Continued onsite and external project management, oversight, and control to manage the MOSIS Longitudinal Data project, and to track, document, and resolve project issues and risk will be provided by a contractor. Costs are based upon current expenditures within DESE for similar work associated

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 2 – Grant**		
			with the MOSIS ID implementation and the early stages of the State Report Manager data collections. A COLA adjustment is included.
			University of Missouri Research/Development and Analysis of Teacher Quality - $165,082 is being requested for this component in year two for contracted services and is broken out as follows:
		$32,960	Primary Researcher I Summer Hours: During the summer, the primary researcher will devote a full month to the analyses and report design. $206/hour x 160 hours. A COLA adjustment has been added.
		$29,664	Primary Researcher I School Year Hours: During the school year, the primary researcher will use a release class period to conduct the analyses and report design. $206/hour x 144 hours. A COLA adjustment has been added.
		$20,320	Primary Researcher II Summer Hours: During the summer, the primary researcher will devote a full month to the analyses and report design. $127/hour x 160 hours. A COLA adjustment has been added.
		$18,288	Primary Researcher II School Year Hours: During the school year, the primary researcher will use a release class period to conduct the analyses and report design. $127/hour x 144 hours.
		$19,050	Researcher School Year Hours: During the school year, the researcher will use a release class period to conduct the analyses and report design. $127/hour x 150 hours. A COLA adjustment has been added.
		$35,700	Graduate Research Assistant: During the school year and the summer, the graduate researcher will assist in the analyses and report design. $21/hour x 1,700 hours. A COLA adjustment has been added.

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 2 – Grant**		
		$9,100	Graduate Student Support (Tuition/Insurance): The graduate student compensation will also include support for tuition and insurance costs. A COLA adjustment has been added.
			Teacher Certification System - $422,500 is being requested for this component in year two for contracted services and is broken out as follows:
		$50,000	System Integration at DESE: DESE and State IT will work with a contractor to ensure integration and interoperability of the teacher certification system with all other components of MOSIS.
		$50,000	Users Guide and Technical Documentation: DESE will contract for the writing and publication of the users guide and technical documentation for the teacher certification system.
		$50,000	Training: Teacher certification system training for knowledge transfer to DESE and State IT staff.
		$100,000	Pilot Rollout and Support: Before full project implementation, a pilot will be conducted to ensure the system works as designed and performs acceptably. This pilot will be more extensive than most to ensure the complex relationships among the data sources and reports are meeting the requirements.
		$75,000	Production Rollout and Support: Using a phased approach, DESE and the Certification Office will roll out the system in production mode with the support of the contractor and the State IT Department.
		$97,500	Maintenance and Support: Annual maintenance and support of the teacher certification system will be contracted.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 2 – Grant**		
			Design and Implement P-20 Collaborative - $301,250 is being requested for this component in year two for contracted services and is broken out as follows:
		$100,000	Design: The members of the P-20 Council will work together and with a contractor to design the features and functions of the P-20 Collaborative. Contracted services will be used to procure professional assistance to support the development of the design plan.
		$157,500	System Development: The P-20 Council will manage the development or contracting for the development of the collaborative activities based upon MOSIS data.
		$31,250	Documentation: A significant component of this phase is the development of user documentation. This documentation will be created in partnership with the P-20 Council appropriately be presented through the portal for use.
		$12,500	Training: A training plan will be developed for all the user groups and communities of interest that will be enhanced over time as the collaborative features of the portal are rolled out and usage increases.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 3 – Grant**		
		$1,825,834	Total requested for Contractual Services in Year 3.
			MOSIS Training and Support System - $112,500 is being requested for this component in year three for contracted services and is broken out as follows:
		$12,500	Users Guide and Technical Documentation: DESE will contract for the writing of updates to the MOSIS Users Guide and Technical Documentation. This document will contain high-level descriptions of all components of MOSIS, and will reference the detailed documentation provided for each component by the contractors. Year three of this phase will focus on document clean up and enhancement.
		$50,000	System Training: Year three of this phase will focus on continued development, enhancement, and delivery of MOSIS trainings.
		$50,000	System Maintenance and Support: Year three will provide ongoing support and maintenance for the MOSIS Training System.
			Longitudinal Data Repository - $250,000 is being requested for this component in year three for contracted services and is broken out as follows:
		$50,000	Longitudinal Data Repository System Training: The contractor will be required to provide continued system training and knowledge transfer for DESE and State IT staff. At the end of this year, DESE and State IT staff must be fully independent in their knowledge and support of the functionality of the system.
		$100,000	LDS Maintenance and Support: The contractor will be required to provide support and maintenance for the LDS system.

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 3 – Grant**		
		$50,000	Additional MOSIS SRM Data Collection: Data elements required for EDFacts or other reporting but not in a current collection, or an additional submission cycle for a collection will be configured and implemented.
		$50,000	Support and Maintenance: The MOSIS SRM Data Collection submissions that have been configured and implemented through this grant will be supported and maintained by the contractor.
			Reporting and Analysis Portal - $220,000 is being requested for this component in year three for contracted services and is broken out as follows:
		$50,000	System Training: Ongoing training for internal DESE and State IT staff to ensure complete knowledge transfer of the reporting and analysis portal. Special emphasis will be placed on expert training for report design and creation.
		$75,000	Support and Maintenance: The contractor will be required to provide support and maintenance for the reporting and analysis portal system.
		$25,000	Testing and QA of Reporting Portal System: The contractor will be required to successfully demonstrate system accuracy via testing of the reporting and analysis portal system.
		$25,000	Integrate Reports into Portal: The contractor will be required to integrate approved reports into the reporting and analysis portal system.
		$25,000	Roll Out Reports to Users: The contractor will be required to roll out reports to districts, DESE, and State IT staff.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 3 – Grant**		
		$20,000	EDFacts Reporting: DESE must continue to update its EDFacts reporting process to accommodate the new authoritative data sources in unit record format rather than in aggregate statistics. Additional data will also be available for EDFacts inclusion. Annual changes to EDFacts requirements must be met. A contractor will be engaged to work with DESE to implement the ongoing EDFacts reporting process.
			Data Sharing Standards and Interoperability - $30,000 is being requested for this component in year three for contracted services and is broken out as follows:
		$15,000	Information Systems Architecture: The Information Systems Architecture will continue to engage the P-20 Council members, LEAs, and State IT in a comprehensive review and documentation of policies and standards for all systems including MOSIS. A contractor will be engaged with expertise in the contents and process for developing and enhancing this architecture.
		$15,000	Data Dictionary/Metadata Review and Documentation: DESE will continue to work with their contractor to document the data elements, definitions, and option sets for all MOSIS-related collections, repositories, and reports.
		$125,000	**DESE FTEs:** Two full-time contract staff to support the overall project, with focus on providing help and assistance to school and district users of MOSIS. Legislative limitations on State FTEs require that these be contractors. A COLA adjustment has been added.

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 3 – Grant**		
		$363,000	**Project Management, Oversight, and Control:** Continued onsite project management, oversight, and control to manage the MOSIS Longitudinal Data project, and to track, document, and resolve project issues and risk.
			University of Missouri Research/Development and Analysis of Teacher Quality - $171,584 is being requested for this component in year three for contracted services and is broken out as follows:
		$34,240	Primary Researcher I Summer Hours: During the summer, the primary researcher will devote a full month to the analyses and report design. $214/hour x 160 hours.
		$30,816	Primary Researcher I School Year Hours: During the school year, the primary researcher will use a release class period to conduct the analyses and report design. $214/hour x 144 hours.
		$21,120	Primary Researcher II Summer Hours: During the summer, the primary researcher will devote a full month to the analyses and report design. $132/hour x 160 hours.
		$19,008	Primary Researcher II School Year Hours: During the school year, the primary researcher will use a release class period to conduct the analyses and report design. $132/hour x 144 hours.
		$19,800	Researcher School Year Hours: During the school year, the researcher will use a release class period to conduct the analyses and report design. $132/hour x 150 hours.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 3 – Grant**		
		$37,400	Graduate Research Assistant: During the school year and the summer, the graduate researcher will assist in the analyses and report design. $22/hour x 1,700 hours.
		$9,200	Graduate Student Support (Tuition/Insurance): The graduate student compensation will also include support for tuition and insurance costs.
			Teacher Certification System - $272,500 is being requested for this component in year three for contracted services and is broken out as follows:
		$50,000	Training: Teacher certification system training for knowledge transfer to DESE and State IT staff.
		$50,000	Pilot Rollout and Support: Before full project implementation, a pilot will be conducted to ensure the system works as designed and performs acceptably.
		$75,000	Production and Support: Using a phased approach, DESE and the Certification Office will roll out the system in production mode with the support of the contractor and the State IT Department.
		$97,500	Maintenance and Support: Annual maintenance and support of the teacher certification system will be contracted.
			Design and Implement P-20 Collaborative This activity is part of the enterprise portal and reporting objective of MOSIS. The best process for achieving data quality and usage is to support collaborative relationships based upon the data. $281,250 is being requested for this component in year three for contracted services and is broken out as follows:

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 3 – Grant**		
		$31,250	Documentation: A significant component of this phase is the development of user documentation. This documentation will be created in partnership with the P-20 Council appropriately be presented through the portal for use.
		$50,000	Training: A training program will be provided for all the user groups and communities of interest that will be enhanced over time as the collaborative features of the portal are rolled out and usage increases.
		$50,000	Integration into Portal: The integration of the collaborative tools and users into the portal will be contracted.
		$50,000	Pilot Implementation: Before full project implementation, a pilot will be conducted to ensure the system works as designed and performs acceptably. A pilot also creates both the foundation and the interest for full participation.
		$50,000	Production Implementation: Using a phased approach, DESE and the P-20 Collaborative will roll out the system in production mode with the support of the contractor and the State IT Department. Based upon the results of the pilot and the guidance of user groups, full implementation will be launched.
		$50,000	Content Analysis/Reporting Collaboration: As usage in the system builds and collaboration expands, the contents and reporting will be enhanced.

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – State**	$129,822	DESE has collaborated with several nationally known vendors to incorporate shelf products into the tools used to help collect, manage and distribute data. DESE has paid maintenance on these systems for the past 3 years and has allocated dollars for 3 additional years of maintenance.
	Year 2 – State	$135,664	“ ”
	Year 3 – State	$141,769	“ ”

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Construction

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System		None	

Other

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System		None	

Indirect Costs

Project	Funding Source		Amount	Justification
MOSIS Longitudinal Data System	Year 1	Grant	$282,867.57	6.9% approved indirect cost rate
	Year 2	Grant	$155,859.40	"
	Year 3	Grant	$127,194.73	"

Training Stipends

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System		None	

Budget Summary Page 1

MOSIS SLDS Budget Summary	Y1	Y2	Y3
MOSIS Training and Support System			
Requirements Gathering	$5,000		
System Design	$10,000		
System Development	$145,000		
Users Guide and Technical Documentation	$50,000	$12,500	$12,500
System Training	$240,000	$50,000	$50,000
Pilot Implementation and Support	$12,500		
Production Implementation and Support	$12,500		
System Maintenance and Support		$50,000	$50,000
Longitudinal Data Repository			
Requirements Gathering	$50,000		
System Design	$75,000		
MOSIS Longitudinal Data Repository System Development	$650,000	$50,000	
Design Longitudinal Data Repository Update/ETL Processes	$155,000	$50,000	
Technical Documentation	$37,500		
System Training	$50,000	$50,000	$50,000
Pilot Implementation	$63,000		
Production Implementation	$75,000		
LDS Maintenance and Support		$100,000	$100,000
Design Expansion of MOSIS	$25,000		
Implement Additional MOSIS SRM Data Collections	$200,000	$50,000	$50,000
Support and Maintenance of MOSIS Expansion		$50,000	$50,000
Reporting and Analysis Portal			
Requirements Gathering	$37,500		
System/Report Design	$62,500		
System Development	$175,000		
Technical and User Documentation	$37,500		
System Training	$50,000	$50,000	$50,000
Portal Integration at DESE	$75,000		
Portal Security Integration	$75,000		
Pilot Implementation	$25,000		
Production Implementation		$50,000	
Support and Maintenance		$75,000	$75,000
Develop Reporting Cubes	$100,000		
Testing and QA		$75,000	$25,000
Integrate Reports into Portal		$75,000	$25,000
Rollout Reports to Users		$75,000	$25,000
EDFacts Reporting	$78,000	$20,000	$20,000
Data Sharing Standards and Interoperability			
ISA Policy	$35,000	$15,000	$15,000
Data Dictionary/Metadata Review and Documentation	$15,000	$15,000	$15,000
HW/SW Licenses	$150,000	$25,000	$25,000
DESE FTE (2 Contract Staff)	$100,000	$110,000	$125,000
Project Management, Oversight, and Control	$300,000	$330,000	$363,000
Travel	$6,000	$6,000	$6,000
Page 1 Subtotals	$3,177,000	$1,383,500	$1,131,500
	Page 1 Total		$5,692,000

Budget Summary Page 2

MOSIS SLDS Budget Summary			
	Y1	Y2	Y3
UM Research / Development and Analysis of Teacher Quality			
Primary Researcher I Summer Hours	$31,680	$32,960	$34,240
Primary Researcher I School Year Hours	$28,512	$29,664	$30,816
Primary Researcher II Summer Hours	$19,520	$20,320	$21,120
Primary Researcher II School Year Hours	$17,568	$18,288	$19,008
Researcher School Year Hours	$18,300	$19,050	$19,800
Graduate Research Assistant	$34,000	$35,700	$37,400
Graduate Student Support (Tuition/Insurance)	$9,000	$9,100	$9,200
Travel/Conferences	$1,450	$1,500	$1,568
Teacher Certification System			
Requirements Gathering	$50,000		
System Design	$75,000		
System Development	$675,000		
System Integration at DESE		$50,000	
Users Guide and Technical Documentation		$50,000	
Training		$50,000	$50,000
Pilot Rollout and Support		$100,000	$50,000
Production Rollout and Support		$75,000	$75,000
Maintenance and Support		$97,500	$97,500
Design and Implement P-20 Collaborative			
Requirements Gathering	$50,000		
Design	$62,500	$100,000	
System Development		$157,500	
Travel/Conferences		$10,000	$10,000
Documentation		$31,250	$31,250
Training		$12,500	$50,000
Integration into Portal			$50,000
Pilot Implementation			$50,000
Production Implementation			$50,000
Content Analysis/Reporting Collaboration			$50,000
Indirect Costs	$282,868	$155,859	$127,195
Page 2 Subtotals	$1,355,398	$1,056,191	$864,097
	Page 2 Total		$3,275,686
	Grand Total		$8,967,686

U.S. Department of Education

Washington, D.C. 20202-5335

APPLICATION FOR GRANTS UNDER THE

STATEWIDE LONGITUDINAL DATA SYSTEMS
CFDA # 84.372A
PR/Award # R372A090054
Grants.gov Tracking#: GRANT10076359

OMB No. 1890-0004, Expiration Date:
Closing Date: SEP 25, 2008

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This application was generated using the PDF functionality. The PDF functionality automatically numbers the pages in this application. Some pages/sections of this application may contain 2 sets of page numbers, one set created by the applicant and the other set created by e-Application's PDF functionality. Page numbers created by the e-Application PDF functionality will be preceded by the letter e (for example, e1, e2, e3, etc.).

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OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify)

* 3. Date Received: 09/25/2008

4. Applicant Identifier:

5a. Federal Entity Identifier:

* 5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: State of Missouri Department of Elem. and Sec. Education

* b. Employer/Taxpayer Identification Number (EIN/TIN): 44-6000987

* c. Organizational DUNS: 093746923

d. Address:

* Street1: 205 Jefferson Street
Street2:
* City: Jefferson City
County:
* State: MO: Missouri
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 65102

e. Organizational Unit:

Department Name: MO Department of Elem & Sec Ed

Division Name: Deputy Commissioner

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:
* First Name: Leigh
Middle Name: Ann
* Last Name: Grant-Engle
Suffix:

Title: Data Manager

Organizational Affiliation:

* Telephone Number: 573 522-8310
Fax Number: 573 526-6898

* Email: leighann.grantengle@dese.mo.gov

Close Form | Previous | Next | Print Page | About

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

9. Type of Applicant 1: Select Applicant Type:

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

U.S. Department of Education

11. Catalog of Federal Domestic Assistance Number:

84.372

CFDA Title:

Statewide Data Systems

*** 12. Funding Opportunity Number:**

ED-GRANTS-062608-001

* Title:

Statewide Longitudinal Data Systems Grant Program CFDA 84.372

13. Competition Identification Number:

84-372A2009-1

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

*** 15. Descriptive Title of Applicant's Project:**

MOSIS Longitudinal Data System

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Close Form | Previous | Next | Print Page | About

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

16. Congressional Districts Of:

* a. Applicant: MO-All
* b. Program/Project: MO-All

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 03/02/2009
* b. End Date: 03/01/2012

18. Estimated Funding ($):

* a. Federal	8,967,685.00
* b. Applicant	0.00
* c. State	1,363,434.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	10,331,119.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .

☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)**

☐ Yes ☒ No Explanation

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix:
* First Name: Leigh
Middle Name: Ann
* Last Name: Crante-Engle
Suffix:

* Title: Data Manager

* Telephone Number: 573 522-8310
Fax Number:

* Email: leighann.grantengle@dese.mo.gov

* Signature of Authorized Representative: Leigh Grant
* Date Signed: 09/25/2008

Authorized for Local Reproduction

Standard Form 424 (Revised 10/2005)
Prescribed by OMB Circular A-102

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

*** Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.

U.S. DEPARTMENT OF EDUCATION

BUDGET INFORMATION

NON-CONSTRUCTION PROGRAMS

OMB Control Number: 1890-0004

Expiration Date: 06/30/2005

Name of Institution/Organization:
State of Missouri Department of ...

Applicants requesting funding for only one year should complete the column under "Project Year 1." Applicants requesting funding for multi-year grants should complete all applicable columns. Please read all instructions before completing form.

SECTION A - BUDGET SUMMARY

U.S. DEPARTMENT OF EDUCATION FUNDS

Budget Categories	Project Year 1(a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
2. Fringe Benefits	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
3. Travel	$ 7,450	$ 17,500	$ 17,568	$ 0	$ 0	$ 42,518
4. Equipment	$ 150,000	$ 25,000	$ 25,000	$ 0	$ 0	$ 200,000
5. Supplies	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
6. Contractual	$ 4,092,080	$ 2,241,332	$ 1,825,834	$ 0	$ 0	$ 8,159,246
7. Construction	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
8. Other	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
9. Total Direct Costs (lines 1-8)	$ 4,249,530	$ 2,283,832	$ 1,868,402	$ 0	$ 0	$ 8,401,764
10. Indirect Costs*	$ 282,867	$ 155,859	$ 127,194	$ 0	$ 0	$ 565,921
11. Training Stipends	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
12. Total Costs (lines 9-11)	$ 4,532,397	$ 2,439,691	$ 1,995,596	$ 0	$ 0	$ 8,967,685

***Indirect Cost Information** ***(To Be Completed by Your Business Office)*:**

If you are requesting reimbursement for indirect costs on line 10, please answer the following questions:

(1) Do you have an Indirect Cost Rate Agreement approved by the Federal government? [X] Yes [ ] No
(2) If yes, please provide the following information:
Period Covered by the Indirect Cost Rate Agreement: From: 7/1/2008 To: 6/30/2009 (mm/dd/yyyy)
Approving Federal agency: [X] ED [ ] Other (please specify): _____
(3) For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:
[X] Is included in your approved Indirect Cost Rate Agreement? or, [ ] Complies with 34 CFR 76.564(c)(2)?

ED Form No. 524

U.S. DEPARTMENT OF EDUCATION

BUDGET INFORMATION

NON-CONSTRUCTION PROGRAMS

OMB Control Number: 1890-0004

Expiration Date: 06/30/2005

Name of Institution/Organization:
State of Missouri Department of ...

Applicants requesting funding for only one year should complete the column under "Project Year 1." Applicants requesting funding for multi-year grants should complete all applicable columns. Please read all instructions before completing form.

SECTION B - BUDGET SUMMARY

NON-FEDERAL FUNDS

Budget Categories	Project Year 1(a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel	$ 127,490	$ 127,490	$ 127,490	$ 0	$ 0	$ 382,470
2. Fringe Benefits	$ 26,403	$ 26,403	$ 26,403	$ 0	$ 0	$ 79,209
3. Travel	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
4. Equipment	$ 494,500	$ 0	$ 0	$ 0	$ 0	$ 494,500
5. Supplies	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
6. Contractual	$ 129,822	$ 135,664	$ 141,769	$ 0	$ 0	$ 407,255
7. Construction	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
8. Other	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
9. Total Direct Costs (lines 1-8)	$ 778,215	$ 289,557	$ 295,662	$ 0	$ 0	$ 1,363,434
10. Indirect Costs	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
11. Training Stipends	$ 0	$ 0	$ 0	$ 0	$ 0	$ 0
12. Total Costs (lines 9-11)	$ 778,215	$ 289,557	$ 295,662	$ 0	$ 0	$ 1,363,434

OMB Approval No.: 4040-0007
Expiration Date: 04/30/2008

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.

2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.

3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.

4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.

5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).

6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C.§§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee- 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.

8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.

10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is $10,000 or more.

11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).

12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.

13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).

14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.

15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.

16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.

17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."

18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

* SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	* TITLE
Leigh Grant	Data Manager
* APPLICANT ORGANIZATION	* DATE SUBMITTED
State of Missouri Department of Elem. and Sec. Education	09/25/2008

Standard Form 424B (Rev. 7-97) Back

CERTIFICATION REGARDING LOBBYING

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, ''Disclosure of Lobbying Activities,'' in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,00 0 and not more than $100,000 for each such failure.

Statement for Loan Guarantees and Loan Insurance

The undersigned states, to the best of his or her knowledge and belief, that:

If any funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this commitment providing for the United States to insure or guarantee a loan, the undersigned shall complete and submit Standard Form-LLL, ''Disclosure of Lobbying Activities,'' in accordance with its instructions. Submission of this statement is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required statement shall be subjec t to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

* APPLICANT'S ORGANIZATION

State of Missouri Department of Elem. and Sec. Education

* PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE

Prefix: | * First Name: Leigh | Middle Name: Ann

* Last Name: Grante-Engle | Suffix:

* Title: Data Manager

* SIGNATURE: Leigh Grant | * DATE: 09/25/2008

Close Form

SUPPLEMENTAL INFORMATION
REQUIRED FOR
DEPARTMENT OF EDUCATION GRANTS

1. Project Director:

Prefix:	* First Name:	Middle Name:	* Last Name:	Suffix:
	Leigh	Ann	Grant-Engle	

Address:

* Street1: 205 Jefferson St.
Street2:
* City: Jefferson City
County:
* State: MO: Missouri
* Zip Code: 65102
* Country: USA: UNITED STATES

* Phone Number (give area code): 573 522-8310
Fax Number (give area code):

Email Address: leighann.grantengle@dese.mo.gov

2. Applicant Experience:

Novice Applicant ☐ Yes ☐ No ☒ Not applicable to this program

3. Human Subjects Research

Are any research activities involving human subjects planned at any time during the proposed project Period?

☐ Yes ☒ No

Are ALL the research activities proposed designated to be exempt from the regulations?

☐ Yes Provide Exemption(s) #:

☐ No Provide Assurance #, if available:

Please attach an explanation Narrative:

Add Attachment | Delete Attachment | View Attachment

Project Narrative

Abstract Narrative

Attachment 1:
Title: Pages: Uploaded File: **1234-1_Abstract.pdf**

ABSTRACT
Title of the Project: MOSIS Longitudinal Data System

The Missouri Department of Elementary and Secondary Education (DESE) seeks $8,967,685 funding for foundation and expansion components for its MOSIS system. MOSIS will define, collect, store, and provide access to education data that support data-driven decision making from the classroom to the Legislature. Significant work is required to convert fully from our aggregate reporting to the required unit records.

DESE will use the funds to build a functional longitudinal data system; to build the infrastructure for interoperability between DESE and individual districts and schools, postsecondary education, and workforce data; and to rebuild the EDFacts reporting system after the conversion from aggregate to unit record source data.

Major deliverables include: 1) a training and support system for teachers and other users; 2) a data repository to consolidate longitudinal data; 3) portal to manage collection, access, and reporting of data; 4) a set of standards for all agencies sharing data through interoperability including alignment of individual identifiers (e.g., student, teacher, staff), and; and 5) a teacher certification system to keep pace with the increased demands for verification and reporting.

This project will be governed by the P-20 Council and managed by DESE. The Council which, was created in statute in 2006, has dedicated staff and active participation from the Commissioners of Education (P-12) and Higher Education, the Director of the Department of Economic Development, as well as the chairs of the two education governing boards. The collaborative work toward P-20 longitudinal data and analysis began in earnest in 2006 when Governor Blunt convened a task force consisting of representatives from DESE, DHE, DED, and the University of Missouri (UM) to make recommendations for coordinating data throughout the education continuum. This important work in has continued to-date and has resulted in significant commitments of time, talent and resources. This interagency support helps ensure sustainability while creating a true P-20 perspective. The focus of the grant activities is on the K-12 longitudinal data foundation needed to support the eventual P-20 solution.

Missouri knows the solution. State funds have been used to implement it slowly on a voluntary basis. With an initial investment of $3 million over the past three years, we have made a significant start. We have begun to convert from aggregate records to unit records for students and teachers. However, this conversion causes us to reconstruct our current processes for EDFacts, FERPA compliance, and sharing data with schools and districts. This grant will provide the resources over the next three years both to accelerate our progress and to ensure our success. DESE has pre-arranged for procurements and has planned a timely start and implementation. Project objectives have been tied to benchmarks so our annual evaluation of the project can determine our success. The broad-based support for this project, from schools, the Legislature, Governor's Office, UM, and multiple state-level departments gives us confidence that we are targeting the right objectives and deliverables.

Project Narrative

Project Narrative

Attachment 1:
Title: Pages: Uploaded File: **1237-2_ProjectNarrative.pdf**

MOSIS Longitudinal Data System
Submitted by the Missouri Department of Elementary and Secondary Education
Application for Statewide Longitudinal Data Systems Grant CFDA #: 84.372A

Introduction

The State of Missouri educates 900,000 students. Our diverse students, 42% low income, attend over 500 districts. In each of the past three years, the State has managed to invest only $1 per student to improve data for supporting classroom instruction, school improvement, and longitudinal analyses. Missouri ranks among the very lowest states in the capacity of our data systems to meet the needs of students, teachers, and decision makers. However, we are poised to improve. We have invested our resources well. Our schools have voluntarily converted to new processes. We know what needs to be done. Missouri is committed to producing maximum benefit from a longitudinal data systems grant.

SECTION 1: Need for the Project

The State of Missouri considers its education data to be sufficient for funding our schools and satisfying the basic requirements for Federal reporting. In fact, Missouri has been recognized for having an exemplary Core Data System for collecting basic aggregate data; however, aggregate data collections are no longer adequate to meet the greatly expanded State and Federal mandates for data. Our vision for education data includes supporting schools and districts with added value from longitudinally matched individual records for students and teachers. We have a long way to go to reach this vision, but as a State, we have the commitment from the Legislature, Governor's Office, higher education, other state departments, and the Department of Elementary and Secondary Education (DESE) to get there.

This needs assessment has been focused with the direction of Missouri's P-20 Council. DESE represents the PK-12 perspective as gathered through the Core Data User Group and meetings with LEAs. The Governor's Office has a designated staff person to coordinate the P-20 Council. The Department of Higher Education (DHE) and the Department of Economic Development (DED) vetted the needs from their perspectives. The University of Missouri contributed a research view of the needs for longitudinal data. As shown by the letters of support in Attachment 1; together, we have identified the needs from both a broad and an in-depth perspective for a longitudinal data system.

With limited State resources, we have made early progress to initiate the conversion from aggregate statistics to unit-level records. However, our progress has been deliberate but not expedient. For example, we have spent $3 million in State funds over three years to implement a student identifier system and to begin the conversion from aggregate data collections to individual records. We are seeking Federal assistance to complete the building of the foundation of a modern interoperable, longitudinal data system that will support data-driven decision making for our schools and districts.

The Data Quality Campaign (DQC) rated Missouri's 2007-08 data system as having only 4 of 10 essential elements.

Missouri will not be able to report NGA graduation rates until 2011. DQC said "No" to all six of its questions about whether Missouri had addressed key issues using student-level P-12 longitudinal data. The new ratings to be released momentarily by the DQC will show improvement because we have begun to build individual student data collections for implementation in the 2008-09 school year. However, we have not built the longitudinal data stores nor the access systems that will allow us to conduct those longitudinal analyses and to begin to benefit from these data. Our improved rating will be from taking initial steps, not having completed the foundation for the full system.

The improvement of student learning in PK-12, the improvement of the graduation rate, and the extension of that success throughout higher education and into the workplace are the goals of the Missouri Student Information System (MOSIS). Missouri needs MOSIS to be fully implemented and functional in order to receive maximum use from the data in which the schools and districts invest so much effort. As a by-product, Missouri's reporting of official data to the public and EDFacts will improve.

From the perspective of the LEAs, especially the classroom teacher, MOSIS is an improvement over the aggregate Core Data collections and the web reports generated from those data. However, the timeliness, added value from longitudinal analysis of individual records, and *ad hoc* queries envisioned in a longitudinal data system are crucial needs for instructional planning and improvement. A missing foundational component of MOSIS is the ability to allow teachers to regroup student-level data by the students who are in their classes each day. Last year's groupings of students are not useful to teachers, counselors, and other school staff when current-year activities are being planned and conducted. The proposed portal and associated reporting services are significant needs. Along with the expansion of data use, the need for training and support of teachers, school staff, and district personnel is evident.

From the perspective of the University of Missouri (UM), the lack of longitudinally linked student and staff records has limited research into best practices and evaluation of the effectiveness of schools and programs. Other postsecondary institutions are in need of data about student preparedness for higher education and success in higher education. Missouri postsecondary institutions are willing to provide data back to high schools, but there is the need for concatenation of student records using the MOSIS Student ID in PK-12 and Social Security Number in higher education. Teacher preparation and certification programs need to follow their graduates into the PK-12 workplace to assess the effectiveness of their pre-service training. Overall, there is a need to design, implement, and fully use longitudinal data across PK-12 and higher education beyond DESE's current resources.

The Missouri Department of Economic Development is advancing the need for PK-12 linkages for analysis and tracking within their career programs. DED has tremendous capacity to analyze data and assist LEAs and DESE in evaluating programs if the longitudinal individual records are matchable beyond the high schools' data systems.

Control of access to the newly collected and aligned longitudinal records will be an important use and legal challenge for MOSIS. There is a need for a review and updating of all LEA,

DESE, and State policies related to the management of personally identifiable data. With the reissuance of FERPA guidelines, this updating is timely.

Figure 1 summarizes the limitations of DESE's current PK-12 systems and the gains anticipated from the work proposed in this application. Each is described in relationship to the "Statewide Longitudinal Data System Requirements" in the Request for Applications.

DESE has designed the MOSIS Longitudinal Data System to define, collect, store, and provide access to education data that support data-driven decision making from the classroom to the Legislature. This application will detail how that design is to be realized through the support of this grant combined with the on-going State funding. Significant work is required to convert fully from aggregate reporting to unit records. DESE faces tremendous challenges to re-engineer our internal processes. However, the major change and restructuring is in the schools and districts. They must not only change how data are submitted to DESE, but also how data are received from DESE and used for instructional management and administrative purposes.

There are important expected outcomes that cannot be achieved within the next five years without this grant. Continued State funding will allow us to eventually implement some of the improvements described. However, in the information technology arena, taking years to go from design to implementation is not an option. Too much changes too quickly to allow such a slow pace. Therefore, DESE will use the funds provided by this grant to both accelerate implementation and to provide functionality that otherwise State funds alone would be inadequate to deliver.

There are three foundational components of MOSIS for which this grant is needed.

1) To build a functional longitudinal data system to manage the individual unit records that have begun to be collected only at the end of the 2007-08 school year. DESE has many years of aggregate data, but the storage system for these does not provide either a data model or data store for longitudinal unit records.
2) To build the infrastructure for interoperability between DESE and individual districts and schools, postsecondary education, and workforce data. DESE has not been able to exchange unit-level data with these other entities; therefore, the infrastructure, the processes, and the policies all need to be recreated.
3) To rebuild DESE's successful EDFacts reporting system after the conversion from aggregate to unit record source data. New EDFacts data will then be available. Currently reported data come from different aggregate authoritative data sources. The new sources will require transformation from unit-level records to the EDFacts statistics.

DESE is missing major components that need to be created or re-engineered.

1) **A training and support system for teachers and other users.** The changes proposed and new requirements will increase our currently under-met need for training and support.

2) **A data repository to consolidate longitudinal data.** DESE's data repositories currently hold aggregate data. The operational data stores in use with the new individual unit records collected are not adequate as longitudinal data stores.
3) **A portal to manage collection, access, and reporting of data.** DESE's website is inadequate to manage the reporting functionality and collaborative processes required to leverage the benefits from the longitudinal data. The portal will integrate data collection, reporting, and collaboration among groups through a single sign-on user interface. A new analysis and reporting system will facilitate use by teachers and researchers.
4) **A set of standards for all agencies sharing data** supporting interoperability and alignment of individual identifiers (e.g., student, teacher, staff). Interoperability across these entities will be a challenge one that must be resolved in advance of the proliferation of data exchanges and uses from the new longitudinal data system.
5) **A teacher certification system** to keep pace with the increased demands for verification and reporting. The current teacher certification system must be modified to keep pace with the changes in MOSIS. The current system is inadequate to support the enhanced functionality required for longitudinal analyses and integration with individual student records.

Missouri knows the solution we need. We have used available State funds to design and implement this solution slowly on a voluntary basis over the last three years. During that time, DESE has engaged the services of ESP Solutions Group to facilitate our understanding of best practices across all SEAs and to create functional requirements for our individual student-level data collections. Together we have begun to establish metadata standards and business rules that ensure everyone shares the same understanding of the requirements and expectations of MOSIS. This work has formed the basis for our understanding of the needs for MOSIS and the components included in this grant application.

Until the spring of 2008, LEA participation in the redesigned MOSIS data collections was voluntary. This was necessary in our "Show Me State" to ensure support and buy-in. However, with the requirements of a longitudinal data system, LEA participation in MOSIS must now be mandatory. This changes our needs significantly. We can no longer allow LEAs to lag behind MOSIS implementation with the excuse that sufficient support is not available, or that they will not be getting the return benefits of timely and reliable data, analyses, and reports.

With progress come additional needs for changes. With an initial investment of $3 million over the past three years, we have made a measurable, successful start. We have begun to convert from aggregate records to unit records for students and teachers. However, this causes us to reconstruct our current processes for EDFacts, FERPA compliance, and sharing data with schools and districts. This grant will provide the resources over the next three years both to accelerate our progress and to ensure our success.

Figure 1: Current Limitations and Anticipated Gains

SLDS Requirements	Limitations of the Current System	Gains from the Proposed Work
Governance and Policy Requirements		
Need and Uses	DESE's legacy Core Data successfully counted and reported students and staff; however, the static tables generated from aggregate data do not yield the granularity required for queries and analyses regarding policy issues and school/classroom decision making. DESE can provide back to schools and districts little added value when the LEAs are the authoritative source for all aggregate statistics. DHE, DED, and UM are all ready, willing, and able to assist LEAs and DESE with research, evaluation, and analysis of student progress throughout P-20, but the linking of the records cannot be made with the current system. Where individual student records exist in DESE, the lack of SSN in MOSIS and the lack of the MOSIS ID in DHE, DED, and UM databases perpetuates the need for reasonableness matching.	Student learning will improve in Missouri schools as data for decision making become reality. MOSIS, with unit-level data, will support queries and research, will allow for regrouping of student data by current teachers, and grant access only to the detailed data for which a user has authority. This transition will provide timely and quality data to all stakeholders. Training and support will be provided to ensure user buy-in and success. Through the P-20 Council, the use of MOSIS ID in DESE and the SSN in other agency databases will be resolved.

SLDS Requirements	Limitations of the Current System	Gains from the Proposed Work
Governance	Core Data and the initial MOSIS functions were governed by internal DESE staff with guidance from the Core Data Users Group. When IT functions were moved to the State IT Department, an additional coordination burden was created. Bridging the gaps between DESE and districts, and between DESE and the State IT Department was left to the efforts of individuals within each group.	MOSIS will be governed by the P-20 Council, managed by DESE, and advised by the MOSIS Users Group. MOSIS will be based upon standards jointly adopted and followed by DESE and the State IT Department. Efficient sharing of data across compatible systems will be the outcome.
Institutional Support	The Core Data system developed within DESE to address the growing demands for data. There has been a $3 million investment of State funds for MOSIS over the past three years. Informal coordination among DESE, DHE, DED, and UM has occurred as it was possible. Institutional support was up to the individual State departments and LEAs.	The P-20 Council ensures the commitment of the commissioners of DESE (advised by LEAs), DHE, and DED, along with the oversight of the Governor's Office. UM will participate in the research aspects of this coordinated effort. The result will be an improved flow of information, with proper confidentiality protection, across these departments and levels of the education enterprise. The P-20 Council and the Governor's Office will support State funding for MOSIS activities.
Sustainability	DESE has always been committed fully to Core Data; however, the limited resources meant maintaining the system more than enhancing. With only the resources to encourage voluntary participation until the great majority of LEAs could cross the buy-in hurdle, DESE's progress was deliberate and subject to distraction.	MOSIS has a major commitment by DESE, with the support of the Legislature and the Governor's Office. DESE will reorganize its internal resources to support MOSIS and the new processes it brings. Training and support will be provided to ensure user success and continued buy-in.

SLDS Requirements	Limitations of the Current System	Gains from the Proposed Work
Technical Requirements		
Federal Reporting	DESE has been a top performer with EDFacts. Other Federal reporting was also complied with in an exemplary manner. However, the change from aggregate data to unit records requires a complete reworking of the EDFacts source data and processes.	MOSIS will provide unit records to a reconstructed process for producing EDFacts reports. Additional data will become available for EDFacts. The quality of the data will improve as more business rules are adopted and enforced. The MOSIS longitudinal data store will store and provide access to the data as the MOSIS system's functionality develops.
Privacy Protection and Data Accessibility	Core Data reports have been suppressing small cells for FERPA compliance. When MOSIS began to collect unit records, an ETL process was initiated to convert data into the same aggregate counts to preserve the use of the Core Data reports. With the conversion to user-defined reports, the process for ensuring confidentiality to individuals will become more complex.	MOSIS will move beyond the reproduction of legacy Core Data reports to a portal providing standard reports and query capability. All policies related to the access and management of data will be updated to address this new capacity and to reflect revised FERPA guidelines. Training and support will be provided to ensure user compliance.
Data Quality	There are inherent quality limitations with aggregate data. DESE has very little ability to verify the calculations and validity of reported aggregate statistics as long as they are reasonable.	As MOSIS develops, a full set of business rules for data quality will be developed and enforced. Data will be edited for compliance at the LEA level and certified before being submitted to DESE. As the capacity for analyses grow, the greater use of the data will identify other areas for improvement of the quality of the data. Training and support will be provided to ensure compliance by the data providers and proper use by users. One of the greatest advances in data quality will be the calculation of all official statistics by the same routines for all LEAs.

SLDS Requirements	Limitations of the Current System	Gains from the Proposed Work
Interoperability	Interoperability between DESE and LEAs is limited to viewing and downloading reports and data from our website. LEAs can upload data files or enter data into web forms; however, there is no seamless connection between LEA data repositories and DESE data repositories. All interoperability currently requires multiple processes in which data are extracted, reformatted, and sent from one computer to another.	With the adoption of universal metadata standards, the exchange of data across levels and agencies will be facilitated. MOSIS will explore interoperability standards such as SIF, but multiple alternative processes for the exchange of data will be needed for some time as the 537 LEAs adapt to the new standards and systems. The MOSIS longitudinal data store will provide a central repository and provide access to the data as the MOSIS system's functionality develops.
Enterprise-wide Architecture	DESE coordinates its data management activities with the State IT Department. There is such a legacy of different architectures within both DESE and IT, that the cost to replace them is beyond our means.	Although it is not currently possible to adopt and implement the same architecture across all areas of the State IT and DESE, MOSIS will continue to adopt standards and business rules that result in compatibility of these systems. Over time, each new component of MOSIS will comply with the Information Systems Architecture standards adopted. The MOSIS longitudinal data store will store and provide access to the data as the MOSIS system's functionality develops. There will not be a need for all systems to be identical as long as they are compatible within the Information Systems Architecture.

SECTION 2: Objectives for the Proposed System

DESE has analyzed the needs for the MOSIS Longitudinal Data System Grant and established a set of objectives that will not only guide the management of the project, but also provide the framework for evaluating the success of the implementation in relation to the benefits anticipated.

DESE is presenting proposed activities that are foundational and expansion. All are new systems or new processes and core to the achievement of the objectives established by the P-20 Council for this project.

MOSIS, as seen by the P-20 Council, has this vision for the use of our information.

> When students and the adults who support them reach a decision point, all the information they need to make the right choice will be at their fingertips. When education agencies and schools need to know how to accomplish this data-driven decision making, they will be supported by the MOSIS Longitudinal Data System to make it happen.
>
> All our information systems will be integrated to share data embracing open standards. Confidentiality, security, integrity, validity, quality, and timeliness will characterize this sharing process. Technology and the creative architecture that takes advantage of it will leverage open standards that allow a single "information network" to evolve. Submitting reports will be replaced by using reports. Assessment, accountability, and accounting will be unobtrusive processes performed by the information network using the transactional applications that make individuals productive.
>
> Educators will educate, not stop educating to collect, report, and analyze data. Students will learn, not stop learning to take assessments.

The overall goal for MOSIS is to improve the academic achievement of all Missouri students as evidenced by gains in statewide academic assessment performance, improvement of schools and districts in adequate yearly progress, an increase in the high school graduation rate, an improvement in the success of graduates in postsecondary education, and an improvement in the success of graduates in the workplace. The longitudinal data provided by MOSIS in future years will support the evaluation of this goal.

There are three foundational goals for the MOSIS Longitudinal Data System Grant.

1) MOSIS will be a functional longitudinal data system that will manage individual unit records for support of data-driven decision making by teachers, school staff, district staff, parents, students, and state-level officials.
2) MOSIS will build the infrastructure for interoperability between DESE and individual districts and schools, postsecondary education, and workforce data.
3) MOSIS will rebuild DESE's successful EDFacts reporting system after the conversion from aggregate to unit record source data. New EDFacts data will now be available. Currently reported data will now come from different authoritative data sources and require transformation from unit-level records to the required statistics.

Because MOSIS requires major components that need to be created or re-engineered, the deliverables of MOSIS have been defined as follows.

1) A training and support system for teachers and other users (Foundation)
2) A data repository to consolidate longitudinal data and conversion of all aggregate collections to unit records (Foundation)
3) A portal to manage collection, access, and reporting of data for use by teachers, districts, and State officials (Foundation)
   a) EDFacts reengineering to use unit records in MOSIS (Foundation)
   b) Research by UM to improve teacher preparation and professional development (Expansion)
   c) Interoperability across DESE, DHE, DED, and other State agencies (Expansion)
   d) Collaboration tools across all communities of interest for Missouri education (Expansion)
4) A standard for all agencies sharing data for interoperability including alignment of individual identifiers (e.g., student, teacher, staff) (Foundation)
   a) Information Systems Architecture development (Foundation)
   b) Policy (FERPA) alignment (Foundation)
   c) Metadata standards (Foundation)
5) A teacher certification system (Expansion)
   a) Response to increased demands for verification and reporting (Expansion)
   b) Reengineering to accommodate unit records in MOSIS (Foundation)

Each deliverable has been analyzed to determine the objectives by which MOSIS will determine success. These objectives are presented as the current set for MOSIS. These will be reviewed and updated by the P-20 council and other groups as MOSIS is developed. An annual review of these objectives is envisioned as a process to ensure that as the MOSIS project changes, the evaluation remains valid.

1) The training and support system for teachers and other users will be evaluated by these objectives.
   a) Every application, as appropriate, will have a training site with sample data prior to launch.
   b) Every application and process will have a users guide available electronically through the DESE website or portal.
   c) Each application will have contextual, online help.
   d) New users for each application will participate in initial training provided at a meeting site, over the web, or as a recorded program.
   e) Ongoing training will be available and provided as changes, enhancements, or new requirements arise.
   f) Users will be surveyed to determine how well the training is meeting their needs.
   g) The portal will provide the ability for user groups to communicate and to share ideas, concerns, and suggestions.
   h) DESE will provide level 1 email help and phone support as appropriate for each application.

i) DESE or the designated contractor will provide level 2 support as appropriate for each application.
j) The contractor or vendor for each application will provide level 3 support and maintenance as appropriate for each application

2) The data repository to consolidate data will be evaluated by these objectives.
   a) A functional requirements process and document will be created.
   b) A technical requirements document will be created.
   c) Procurement of the application will be completed.
   d) A user testing and acceptance plan will be adopted, implemented, and result in acceptance of the application.
   e) Each data repository will have an adopted data model consistent with the overall information systems architecture for MOSIS.
   f) Each data repository will be compliant with the standards established in the MOSIS information systems architecture.
   g) The longitudinal data repository will store data according to the adopted data model to accommodate a minimum of 20 years of data (not limited to a single instance of data per year) for all students, schools, and programs in Missouri.
   h) The longitudinal data repository will be accessible through automated processes by other systems as authorized.
   i) The reporting function of the portal will meet the needs of teachers, school staff, district staff, parents, students, and state officials.
3) The portal to manage collection, access, and reporting of data will be evaluated by these objectives.
   a) A functional requirements process and document will be created.
   b) A technical requirements document will be created.
   c) Procurement of the application will be completed.
   d) A user testing and acceptance plan will be adopted, implemented, and result in acceptance of the application.
   e) The portal will be integrated with the State IT security system.
   f) The portal will provide directory management services coordinated with the State IT security system to ensure that only authenticated users are provided access consistent with the authority granted them.
   g) State Report Manager will collect all required data as unit records as appropriate.
   h) State Report Manager will collect as much EDFacts data as appropriate.
   i) Users will be provided collaboration tools and resources to create communities of interest and to share resources throughout the State.
   j) The portal will provide individual user configuration for communications, links to other sites, and access to authorized applications within MOSIS.
   k) The portal will provide access to reports and data by teachers and other school staff to public information as well as confidential information for their own students.
   l) The portal will provide data in a confidential manner to UM for research.
   m) UM will deliver research-based insights into the success of teacher preparation programs and professional development training.
   n) UM will design standard reports and analyses that can be incorporated into the portal for wider use.

o) The portal will provide the collaboration tools for teachers, other educators, researchers, and all stakeholders to create communities of interest for sharing ideas and resources.
p) The portal will support the sharing of best practices, research, lessons plans, resources, and other valuable information for the improvement of instruction and the management of schools.

4) The standard for all agencies sharing data for interoperability including alignment of individual identifiers (e.g., student, teacher, staff) will be evaluated by these objectives.
   a) A single metadata dictionary will be maintained with the data elements, definitions, option sets, and business rules to be followed by all applications within MOSIS and users of MOSIS data.
   b) Policies will be reviewed and reflected in a comprehensive Data Access and Management Policy.
   c) Interoperability standards will be adopted and followed that allow all authorized systems to share data with automated processes with an approved periodicity.
5) The teacher certification system for verification and reporting will be evaluated by these objectives.
   a) A functional requirements process and document will be created.
   b) A technical requirements document will be created.
   c) Procurement of the application will be completed.
   d) A user testing and acceptance plan will be adopted, implemented, and result in acceptance of the application.
   e) Implementation will follow the project management process adopted by MOSIS.
   f) The final application will meet the functional and technical requirements.

DESE will conduct an annual evaluation of the status and progress of the MOSIS Longitudinal Data System Grant activities. This evaluation will be contracted to a qualified organization, and the findings reported directly to the P-20 Council.

The adopted project plan for MOSIS will be maintained to describe the daily, weekly, and monthly status for specific activities and deliverables. With this information, adjustments will be made as needed to the activities related to each objective. If appropriate, the objectives can be modified to reflect change orders or realities that arise during implementation.

SECTION 3: Project Design

The MOSIS Longitudinal Data System is described here in relation to the objectives detailed above. Currently, DESE is reengineering the data collection systems that have been collecting aggregate data to the collection of individual records. The operational systems are being designed in a coordinated way to be integrated into a new enterprise portal, and directory management and security system. They will share common functions, user security authorization and authentication routines for example, and a shared list of schools and districts. The main repository will be a new data warehouse with the longitudinal records matched across years, programs, and locations. In terms of data-driven decision making, the reporting functions will be the most significant new feature of MOSIS. Each component of MOSIS will conform to the requirements of the Information Systems Architecture. To ensure the anticipated benefits are

achieved, a strong training and support component will be implemented aligned with each of the new functionalities.

The attachments within Appendix A contain descriptions with key perspectives on several aspects of MOSIS and this grant application. Attachment 2 is a data flow picture of how DESE's information systems work in the present environment and how the proposed changes in MOSIS will create an interoperable environment more supportive of data usage at all levels of the education ecosystem in Missouri. Attachment 3 shows the governance structure provided by the P-20 Council, which will oversee the MOSIS data sharing and usage. Attachment 4 is a timeline showing the historical activity that has brought MOSIS to today's level of design and development. Attachment 5 contains a detailed timeline for the proposed LDS projects.

Description of MOSIS Longitudinal Data System Project Components by Objective

1) Training and Support System for Teachers and Other Users

Every component of MOSIS will be required to develop and implement these features for the support and training of users.

a) User documentation that follows the requirements documentation; available online; continually updated; reviewed and accepted by the Core Data User Group

b) Contextual help within each online application

c) Email and/or phone help desk for level 1 issues

d) Escalation of issues to level 2 within DESE

e) Escalation of issues to level 3 with contractor/vendor or State IT Department

f) Training plan for initial implementation, changes, and new personnel (efficient use of current regional and web-delivered training to be encouraged)

g) Evaluation of user needs and effectiveness of training and support

DESE will take advantage of the staff, facilities, resources, and expertise of three Regional Professional Development Centers in Missouri to create and deliver the user training and support foundation for MOSIS. The eligible centers will be asked to work with DESE to create the criteria and requirements for the training and support program. Then three successful bidders will be selected from among those that submit a plan for delivery.

To avoid splintering this crucial aspect of the project, one of the Regional Professional Development Centers will be designated as the lead and will be given additional resources to coordinate the efforts across all three.

DESE has used regional training, central meetings in Jefferson City, and Webinars very successfully in the launch and support of the MISIS ID and Precode projects. This methodology with alternative modes of delivery has allowed school and district staff to participate with success in training activities. A multifaceted approach for MOSIS training and support is also envisioned. With several components being developed or launched on the same timeframe,

school and district personnel, especially in the smaller districts, will be stretched to keep up and participate fully. The multiplicity of options will provide flexible participation while allowing DESE to require participation.

2) Data Repository for Longitudinal Records

DESE plans to build the MOSIS Longitudinal Data Store to support our analysis and *ad hoc* query needs. Data are selected for inclusion based on how well they can be analyzed or contribute to analysis. As such, DESE cannot merely buy a data warehouse. The data sources and particular topics of potential interest are unique to Missouri, and, therefore, the tables to be loaded are unique to our situation. A data warehouse vendor may have models that have been successful in the past, but the final designs will all be local. DESE will use the work of the Forum on Education Statistics and SIF to inform the content and design of the MOSIS data models (staging, operational, longitudinal, and reporting).

We propose to build the MOSIS Longitudinal Data Store as a series of data marts. As new marts are added, the dimensions in common will conform to the existing standards. This leverages our existing Core Data Reports, created in Business Objects, and allows us to continue using the historical reports and official statistics as we make the multi-year transition to a new reporting process or system. At this time, Business Objects is the likely platform for reporting because of our investment in it and its support by the State IT Department. DESE will follow best practices, identified by Ralph Kimball, for data warehouse development (Kimball, Ralph and Margy Ross; *The Data Warehouse Toolkit: The Complete Guide to Dimensional Data Modeling, Second Edition*, Wiley, 2002).

- **Select the process.** What is policy area or topic of interest under study?
- **Declare the grain**. What is the level of detail that will be available?
- **Choose the dimensions**. What are the ways the data can be aggregated or combined?
- **Identify the facts**. What are the measures of interest?

Contractors with expert knowledge of education and data warehouse development will work with DESE staff to initially identify the entities for the warehouse. The data mart development will begin with "student performance on the state assessment" and "student attendance and enrollment." The common dimensions of Student Demographics, Staff Demographics, School and District Characteristics, and Time will be detailed and loaded. Analysis cubes will be designed and constructed.

ED*Facts* reporting requirements will guide the identification of dimensions and aggregation categories.

A stakeholder group made up of both internal DESE and district staff will review the warehouse design, the loaded data, and the cubes for accuracy and validity. Any anomalies identified will be corrected in the design. Once the warehouse structure is accepted, processes will be designed and built for updating the warehouse (ETL) as new data are collected by DESE.

The grant will support the work of the contractors and pay the travel expenses of the stakeholder group. The salary and benefits for State staff will be covered as a State contribution to the project. Districts will cover the salary of their staff on the project.

After initial data marts with assessment and enrollment data are reviewed and accepted, work will commence on subsequent data marts, including but not limited to dropouts and graduates,

teacher qualifications, special education, English language learners (ELL), and discipline. The process for the development of these will follow from above. Dimensions will be conformed across the various data marts within the warehouse structure.

Two days of training for 25 DESE, DED, DHE, and UM employees on how to access and use the cubes and the Business Objects reporting tools.

Additionally, DESE will use the following standards and guidelines in the design of the MOSIS Longitudinal Data Store:

- NCES Handbooks Online, http://nces.ed.gov/programs/handbook/; and
- Financial Accounting for Local and State School Systems: 2003 Edition, http://nces.ed.gov/pubs2004/h2r2/;
- Schools Interoperability Framework (SIF) standards (http://www.sifinfo.org/tool_kit.asp);
- Recommendation 7 (Integrating Data Systems) of the U.S. Department of Education's National Educational Technology Plan (http://www.ed.gov/technology/plan);
- Data confidentiality guide of the National Forum on Education (Forum Guide to Protecting the Privacy of Student Information: State and Local Education Agencies (2004), http://nces.ed.gov/forum/pub_2004330.asp); and
- Technology security standards of the National Forum on Education (Weaving a Secure Web Around Education: A Guide to Technology Standards and Security (2003), http://nces.ed.gov/forum/pub_2003381.asp);

The data repository component implementation is expected to take two years after the completion of the review process for the database and business intelligence tool set and servers. The process will entail the following activities.

- Transition from aggregate records to unit records through State Report Manager collections.
- Build and populate longitudinal data store tables and build cubes.
- Review cube design and contents with DESE, DHE, DED, and UM staff and district advisory group adjust as needed.
- Train DESE analysts in the use of the longitudinal data store and cubes.
- Add additional data marts to the system using existing dimensions where they conform, making adjustments to common dimensions as needed.
- Continue iteration of new cubes and longitudinal data store tables designed and populated, review with advisors, adjust and train DESE, DHE, DED, and UM staff.

The MOSIS Longitudinal Data Store/Data Warehouse described above will be accessible to DESE employees. There will be managed direct access from outside DESE to comply with FERPA and formal interagency agreements under the direction of the P-20 Council.

3) Enterprise Portal

The MOSIS Portal is the overarching component that brings together all of the capabilities of the MOSIS LDS. The portal will provide Missouri with a cost-effective and efficient solution for delivering data and services to teachers, staff, students, and the community. The MOSIS Portal will also serve as the means of authenticating and validating users and maintaining information about functions and data that can be accessed into the various data collection components of MOSIS. DESE plans to leverage Microsoft's favorable SharePoint licensing structure. The MOSIS Portal is a customized implementation of SharePoint with a Directory Manager webpart designed to distribute the role of account and profile management to district administrators and individual users.

The Fusion Portal in Wyoming is the model from which the MOSIS Portal will be constructed. This will save us time and costs, delivering a functional portal to teachers and other educators as soon as possible.

Major benefits MOSIS will realize with the use of the MOSIS Portal:

- Instantly find and communicate with people and other organizations.
- Add real-time collaboration capabilities to core personal productivity programs.
- Collaborate across tools.
- Build community and department sites.
- Connect quickly and easily from remote locations.
- Receive higher availability of data and data recovery through Microsoft SQL Server integration.

The MOSIS Portal will provide access for collaboration with employees, partners, and other organizations while protecting sensitive enterprise information. This solution provides MOSIS with an ability to keep the information secure through a comprehensive set of tools to manage and control electronic content. This will help MOSIS streamline everyday business processes leading to improved productivity of staff.

The MOSIS Communications Center and Community Sites will allow users to build in workflow and notification services. The MOSIS Portal will be developed with a deep native integration with Microsoft Exchange Server. Hence, all the features of the Microsoft Exchange Outlook Web Access are proposed as native interfaces into the solution. The MOSIS Portal will also have native integration capabilities with the training and support tools for MOSIS (e.g., Microsoft Live Meeting, WebEx, Elluminate, and other interactive tools such as Real-Time Polls, Mood Indicator, Chat, Annotations, Whiteboard, Text Slide, and Web Slide) allowing users to draw, annotate, and type simultaneously to simulate the natural interactivity of an in-person meeting environment.

<u>Reporting/Analysis System</u>

There are many reporting and analysis systems that can connect to cubes and present those data in useful ways over the web. DESE uses Business Objects and currently plans to continue its use. With this decision, a procurement process is not needed merely required upgrades to user licenses. Reports can be developed around the policy questions identified in the data marts, and static or parameter-driven reports can be developed and deployed in the system.

The reporting system will be integrated into the MOSIS enterprise portal and directory. The directory will have the ability to delegate the management of user access rights to a security manager within each district. State representative groups will help in the identification of requirements and the decision process for any required procurement.

Constructed reports will be vetted with a group of district representatives and DESE program staff prior to deployment. Coordination within the P-20 Council will ensure the interoperability of not only data, but also reports.

In order for the Reporting and Analysis system to be successful, it must be broadly used. We have budgeted for each LEA to participate in two days of training on the system either in person or remotely through web-delivered processes. The training will include the definitions of the reported data, appropriate uses for the data, and how to correctly interpret the results.

The project activities include:

- Confirming the reporting and analysis tool set to use and procuring licenses
- Integrating the reporting set into the enterprise portal and directory; integrating user accounts
- Building reports based on the cubes being deployed in the longitudinal data system project
- Conducting regional training for school district staff in the use of the reporting system

Data Collection State Report Manager, the system that now collects individual student, teacher, and classroom data for MOSIS, has foundational content areas to convert from aggregate records. DESE will conduct metadata analyses to determine how the content to be collected should be organized into specific submission cycles. Our plan is to implement two additional submission cycles in year 1, and one additional submission cycle in each of the next two years to complete the data collections required for the MOSIS Longitudinal Data Repository and to satisfy EDFacts content requirements.

Research and Analysis Research and analysis using teacher and student data to determine the effectiveness of Missouri teachers will be a priority use of the longitudinal data with linkages across P-20. Initial teacher preparation and on-going professional development will be measured and analyzed. DHE will collaborate with UM to:

- Year 1: Link records of college graduates to K-12 teacher and classroom records in MOSIS. Analyze teacher preparation and K-12 courses taught, professional development and course assigned, and numbers of students served.
- Year 2: Analyze classroom gain score estimates for teachers in teacher preparation programs and professional development.
- Year 3: Calculate value-added estimates for teacher preparation programs and professional development activities.

Since the point of data mining is to look at data in new ways, having combined data from disparate systems, a crucial component is a complete metadata dictionary that describes exactly what data are collected, the time period covered, the population about which the data were collected, and any other information an analyst might need. Each data store will have a data

dictionary that specifies how all elements must conform. DESE has contracted with ESP Solutions Group to develop a metadata dictionary for each MOSIS State Report Manager submission cycle.

MOSIS Collaborative The ultimate benefit from longitudinal data is the improvement of academic success in Missouri's schools. This will occur through the use of MOSIS data for data-driven decision making. Individual educators can make a difference, but together in a collaborative environment, they can be a tremendous force. Beginning in year two, when data are available in the MOSIS Longitudinal Data Repository, the enterprise portal will be leveraged to begin connecting people of like jobs or like minds. The collaborative tools provided by the portal will be used to create the sharing of ideas, analyses, findings, resources, lesson plans, and any other valuable asset that the education community can provide.

This collaboration won't happen on its own. This grant will support not only the configuration necessary within the portal, but also the design of the features and functions basic to collaboration. Learning from other states and districts that have initiated similar efforts will require coordination and support. A two-way influence will be established between the communities of interest that are collaborating within the portal environment and the P-20 Council, which will be guiding the growing content and reporting capacity of MOSIS.

4) Standards for Interoperability

Information Systems Architecture DESE will complete a comprehensive review of all standards, policies, and procedures related to data management. This will create and maintain a MOSIS Information Systems Architecture following the best practices for agency organizational structure; metadata standards; project management; infrastructure; disaster prevention and recovery; portal services; data management and documentation; data stores; data-driven decision support; and user support.

Metadata Standards DESE will establish MOSIS data standards for all P-20 partners to use by documenting all data collections and repositories that relate to the MOSIS Longitudinal Data Store. This process will require the review and analysis of all current and planned data collection activities and the alignment of their data elements with the reporting requirements for EDFacts, State funding, program evaluation, grant compliance reporting, and other reporting requirements and needs. These metadata standards will ensure that the interoperability created through MOSIS results in the sharing of quality data that are interpreted accurately by the users.

MOSIS Student and Staff Identifier System

The MOSIS Student Identifier System will be used to create interoperability for exchanges of student and staff records across all the P-20 participants. This will require extensive reviews of laws, policies, and procedures to ensure proper use and protection of confidential data. The system will be extended to staff records; however, the use of SSN as the key field for staff and postsecondary students must be resolved. For FERPA protection, the fields needed to assign an ID will be limited to those commonly considered "directory information."

5) Teacher Certification System

DESE completed a comprehensive requirements study for the Missouri Educator Credentialing System. Twenty-two objectives were detailed and a cost estimate for development or procurement was created. This system will replace the current set of applications used by the

Educator Certification Section, including data from the Core Data System, Professional Development System, Substitute Certification System, and Professional Conduct System (fingerprint and revocation database). With the changes in MOSIS, the current set of applications will be outdated and will require alignment with the new metadata standards, State Report Manager collections, Longitudinal Data Repository, and Reporting System.

The Teacher Certification System is a top priority for DESE. So much depends upon recruiting, hiring, and retaining highly qualified staff including the reporting of those positions for the No Child Left Behind Act.

SECTION 4: Institutional Support

Institutional support can be bought with State funding. Institutional support can also be bought with confidence by the LEAs. Sustainable institutional support for MOSIS will come from the LEAs who have learned for themselves that the new processes MOSIS brings are better, and who will learn in the future that the new reporting MOSIS delivers supports their efforts to improve. MOSIS began with voluntary participation by LEAs. The Core Data User Group had recommended for years a transition to more automated, unit record State reports that would reduce the burden on LEAs by reducing the redundancy across collections. The implementation of our MOSIS ID and later the beginning of our State Report Manager data collections both began as voluntary efforts. The great benefit of this approach was that when these implementations were successful and had proven their value, the buy-in by LEAs was achieved. In the long-run, this will be the key to sustainability. DESE with MOSIS did not impose the culture change and the local investment until it was clear that LEAs would support and be able to participate in the new processes.

Now that MOSIS is beginning its first full school year of being mandated, the buy-in and ability of LEAs to participate is established. We are not seeking grant funding for a concept that may or may not work. We already have proven the concept. We are ready now for the funds to achieve the timely implementation of longitudinal analyses that will secure the next level of commitment by LEAs. That level is the reliance upon MOSIS because it provides them something they have never had before quality, individual records, matched across time and programs, accessible in a system that is usable and supported.

DESE is committed to the MOSIS Project as our long-term solution for information systems that support data-driven decision making. Regardless of the amount or duration of LDS grant dollars, DESE will build its State funding budgets for continuous maintenance and ongoing enhancements of MOSIS. Over the last three years, we have committed $3 million to MOSIS from State funds. With the new support of the P-20 Council, the outlook and political support for continued or increased funding for MOSIS is good.

Current DESE staff are already being transitioned from their legacy roles to new roles for MOSIS. This process will accelerate when the LDS grant is awarded. Missouri has a limit on FTEs in State departments. Adding State employees is difficult. However, contracting for those services is allowed within available budgets. This approach will allow DESE to continue staffing MOSIS as needed dependent upon the availability of the funding. Our long-term plan for MOSIS uses anticipated State funding for both FTEs and maintenance costs.

Facilities within DESE and the State IT Department are adequate for future MOSIS staff. Demands on space are limited by the requirement for additional staff to be contracted. Space for equipment and the infrastructure required to power and secure it are adequate within the State IT facilities. These facilities are already on a path for upgrade as all other systems continue to evolve.

Sustaining resources for MOSIS after the end of the LDS grant will be achieved based upon the need for MOSIS as established by its functionality and the growing dependence upon it. MOSIS is how DESE will do its business, so the need to maintain and continue it will be a core requirement of DESE.

We have a long way to go to approach our vision, but as a State, we have the commitment from the Legislature, Governor's Office, higher education, other State departments, and the Department of Elementary and Secondary Education to get there. Missouri's P-20 Council fully embraces their responsibility for sustainability of MOSIS. DESE represents the PK-12 perspective as gathered through the Core Data User Group and meetings with LEAs. The Governor's Office has a designated staff person to coordinate the P-20 Council. The Department of Higher Education (DHE) and the Department of Economic Development (DED) represent ongoing needs from their perspectives. The University of Missouri contributes a research view of the potential from longitudinal data. Together, we represent the ongoing needs from both a broad and an in-depth perspective for a longitudinal data system.

The P-20 Council will continue to ensure the commitment of the commissioners of DESE, DHE, and DED, along with the oversight of the Governor's Office. UM will participate in the research aspects of this coordinated effort. The result will be an improved flow of information, with proper confidentiality protection, across these departments and levels of the education enterprise. The P-20 Council and the Governor's Office will support State funding for MOSIS activities.

MOSIS has a major commitment by DESE, with the support of the Legislature and the Governor's Office. DESE will reorganize its internal resources to support MOSIS and the new processes it brings. Training and support will be provided to ensure user success and continued buy-in.

SECTION 5: Project Management Plan

The special blend of public policies, divergent stakeholder groups, multiple levels of control, and technical challenges makes the MOSIS project management special. DESE will follow a form of project management tailored to education agencies rather than that of traditional business-oriented project management.

Over the past three years, DESE has worked with ESP Solutions Group in the development and deployment of the State Report Manager data collection system. This successful process has demonstrated how DESE can, with limited resources, make major changes in how data are collected. Along the way, LEA participation has been voluntary, requiring even more care and shaping our set of empirical best practices for project management. DESE's processes are grounded in a wealth of resources from the National Center for Education Statistics (NCES),

other national standards groups, and publications from the National Forum on Education Statistics. DESE and ESP have used the standards and benchmarks from CMM (CMMI), the Project Management Institute (PMI), ISO9000, Six Sigma, and USED's best practices studies. ESP's "Management of an Education Information System" best practices framework was also utilized to formulate their Quality Project Management™ (QPM) methodology, which DESE will continue to follow for MOSIS. The details can be found in ESP's Optimal Reference Guide *Quality Project Management for Education Agencies* (see http://www.espsg.com/resources.php).

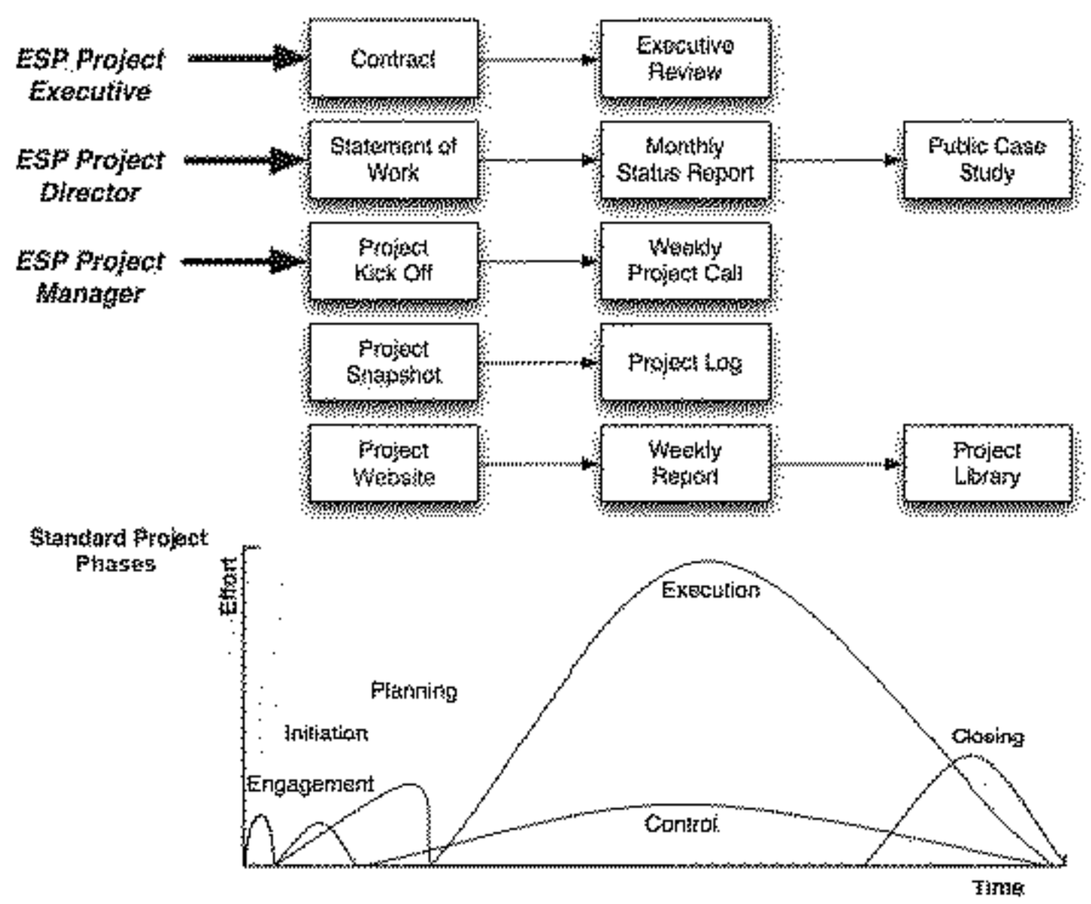
The QPM methodology ensures that the projects that DESE and ESP undertake are always managed for success within the precise context of schools, districts, and state-level constraints. QPM is a flexible, yet disciplined project management methodology tailored towards education agency information system implementations. It is not a rigid, non-specific, generalist project management methodology as is most commonly found in other technology integrator tool kits.

- DESE and QPM are solely focused on education data and technology.
- DESE and ESP use dynamic teaming to better plan and manage changing project landscapes and requirements. QPM moves resources in and out of a project with fluidity based on project needs and demands.
- ESP recognizes and applies what works specific to the different local and state education agencies across the U.S., their culture, histories, etc.
- ESP provides project support, not just technical support. ESP is a respected and trusted advisor to DESE when it comes to understanding and navigating national trends, emerging technology, and policy. DESE understands the unique political landscape both internal and external to education agencies. Therefore, QPM provides a full gamut of overall project support as opposed to the customary contractor technical support.
- To better understand and prepare for the unique demands of MOSIS, DESE has incorporated project management team involvement already in the proposal/project engagement process.

DESE/QPM Project Phases

The QPM methodology recognizes that a project moves through a series of phases.

Each phase starts with a set of expectations and ends with a set of deliverables that guides the next phase.



Traditionally the engagement phase ends with a signed contract. The initiation and planning phases begin with that contract and end with the statement of work and the complete project management plan.

In addition to a full Work Breakdown Structure (WBS) in Microsoft Project, the project management plan includes a requirements understanding document, communications plan, risk management plan, and the change management plan. A dynamic Statement of Work (SOW) documents the schedule and specific, agreed-upon deliverable expectations.

The execution phase uses the SOW and WBS to schedule resources for the agreed-upon tasks.

The control phase is managed through a series of weekly project status calls among the project management and key DESE project stakeholders. A monthly executive level provides regular updates and satisfaction checks. During each of these calls, the SOW and WBS are reviewed, status is validated against them, and the project management documents are then adjusted as needed.

Finally all completed deliverables are not considered final and approved by DESE until sign-off.

Additional DESE Project Management/Governance Processes

Project Governance The Missouri P-20 Council was created by the Legislature specifically to coordinate projects and activities such as this grant. Appendix A Attachment 3 shows the members of the P-20 Council and their relationship to each other. Although headed by the Governor's Office, the P-20 Council will be led by DESE for purposes of this grant. DESE will be the project manager as well.

Coordination and collaboration across the following groups has been found to be essential to our success.

- The leadership of the various divisions within DESE
- IT personnel at the state, regional, and local levels
- Administrative personnel at the state, regional, and local levels
- Classroom teachers
- The public (including parents and students)
- Governor's Office
- The Legislature
- Technology vendors
- Stakeholder advisory groups

DESE will continue to use the Core Data User Group to advise us on MOSIS. However, that group may recommend additional members or associated groups to ensure the broad and informed guidance required for MOSIS.

Project Risk Management - Because ESP's experience and focus is primarily based on education technology project management, they have experienced and thus understand the risks to large-scale education agency technology initiatives. Not only does DESE and ESP anticipate project risk, we understand how to mitigate risk. By utilizing risk management processes such as risk analysis matrices, we have successfully planned and implemented multiple projects together.

Issue Management DESE and ESP understand the common issues that can arise in an education agency environment and how to deal with them early. We methodically confront, track, and resolve all project issues via regular status meetings, documentation, and issue tracking software. For our data collection and reporting system implementations we utilize a web-based issue tracking tool.

Scope Control DESE will establish a firm project Statement of Work for each vendor, contractor, or activity for MOSIS so as to clearly define and meet the contracted project scope, expectations, and timeline. If any changes to project scope do occur, they will be managed with consistency, agreed upon by all involved parties, and have change orders processed and signed. This will ensure that the project is completed appropriately, on time, and within budget.

SECTION 6: Personnel and Resources

This project will succeed because of the commitment and expertise of the staff members who are assigned and the strengths of the partners in the project. The project team includes the core team responsible for DESE's enterprise data system improvement efforts, the leaders for both DESE and DHE applications in the State IT Department, the primary partners in DHE, DED, and UM, and the key experts provided by ESP Solutions Group.

MOSIS Project Director Leigh Ann Grant-Engle, Data Management Director, will be the co-project director. Leigh Ann will direct the technical aspects of the project including the integration of the systems into the enterprise data architecture. She will assure that all activities of this project integrate into agency-wide efforts and comply with State IT standards. She will be full time in this role because her current responsibilities are all part of the overall MOSIS Project. Two FTE technical associates will support these activities. Throughout the project offices within DESE, 12 FTEs work as data stewards in support of data quality. These will be coordinated to be aligned with the MOSIS Project activities.

MOSIS Project Director Tom Ogle, School Core Data Director, will be the co-project director. Tom will direct the school and district processes and standards for the project including the integration of the data into the enterprise data architecture. He will assure that all activities of this project coordinate with agency-wide data collection and use efforts and comply with State IT standards. He will be full time in this role because his current responsibilities are all part of the overall conversion of Core Data to the MOSIS Project. Three FTE associates will support these activities. Tom will ensure the full participation and support of the Core Data User Group in MOSIS.

Key Support Personnel Shelly Parey, Computer Information Technology Supervisor and these Computer Information Technologist Specialists Bruce Dent, Michelle Wagner, Micah Porter, Liza Merriman, John Harvey, and Jane Jordan support the DESE information technology operations and will provide essential insight and support to the MOSIS activities.

Project Manager Jason Young, Project Manager for State Report Manager and metadata standards, will be the on-site, full-time project manager responsible for day-to-day integration of data collections with data storage and use processes. Jason worked six years with DESE and the State IT Department before becoming ESP's on-site project manager for State Report Manager the last two years. He is uniquely qualified as the person who developed much of DESE's current ETL and reporting processes, and created DESE's current metadata dictionary, which will be used as the starting point for MOSIS data repositories and reporting. He will ensure successful integration of individual records into the EDFacts and new portal-centric reporting.

MOSIS Architect Steve King, will oversee the creation of the Information Systems Architecture and the adoption of metadata standards. Steve will be contracted for the number of hours required, estimated to be 20% in year 1. Alex Jackl, ESP's Chief Architect, will work with Steve to ensure comprehensive integration of all MOSIS components. Alex's time will be approximately 10%. These FTEs will be adequate for MOSIS because of the expertise already in-house in DESE and the existence of the State IT Department. Steve will ensure total compatibility between DESE and the State IT Department's requirements and processes.

Contracted Project Director Josh Goodman, PMP, will direct contracted services and ensure coordination with all internal DESE and State IT Processes. Josh has directed ESP's implementation of State Report Manager for three years in Missouri. In addition, he has directed successful statewide implementations of similar projects in other states. Josh will be contracted for 50% of his time. He will ensure that the project plan approved for this project is implemented successfully according to the project management methodology described.

State IT Department CIO Paul Wright is the CIO for both DESE and the Department of Higher Education. His time commitment is 100% to the success of all IT functions for both departments. Paul will ensure that the State IT standards are understood and followed to achieve complete interoperability across DESE, DHE, DED, and UM.

State IT Administration Steve White and Dianna James provide direct support to DESE and DHE for all IT functions. They are 100% in support of MOSIS and the other related activities for these departments.

Contracted Content Expertise Barbara Clements, Barbara Andrepont, and Glynn Ligon, all experienced in the design and implementation of statewide longitudinal information systems, will support MOSIS as needed. Together, their time will equal approximately 50%. This will be adequate in their supportive role as quality assurance and data usage consultants. Dr. Clements will provide expertise in policy matters related to data access and management (FERPA). Ms. Andrepont will provide expertise in data standards and interoperability. Dr. Ligon will provide expertise in best practices across the spectrum of issues related to longitudinal data systems. Their recent professional papers represent the expertise they bring to MOSIS. See http://www.espsg.com/resources.php.

Principal Researchers Michael Podgursky, Department of Economics, and Cory Koedel, Department of Economics, University of Missouri, Columbia, will provide the research experience and analysis expertise for studying the teacher preparation and professional development data to be available through MOSIS and the related databases. They will provide the expertise to analyze and interpret longitudinal data from MOSIS. They have conducted numerous studies to date using DESE data and will provide extensive and crucial design expertise for reporting from the new MOSIS longitudinal database. Together they will provide 25% time from their UM duties.

Analysis Manager Mary Bruton is the Workforce Analysis Manager at the Missouri Research and Information Center (MERIC), the research arm of the Missouri Department of Economic Development and Missouri's Labor Market Information office. She will provide guidance and expertise for the interoperability of data between MOSIS in DESE and DED's databases.

Research Associate Jeremy J. Kintzel, Department of Higher Education, Research Associate, will provide guidance and expertise for the interoperability of data between MOSIS in DESE and DHE's databases. Jeremy will manage the coordination of research activities by UM using longitudinal data from MOSIS.

Project Narrative

Other Narrative

Attachment 1:
Title: Pages: Uploaded File: **1236-3_5_6_Binder.pdf**

MOSIS Longitudinal Data System

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
1	1	MOSIS Longitudinal Data System	1025 days	Mon 12/29/08	Fri 11/30/12	
2	1.1	Project Initiation	50 days	Mon 12/29/08	Fri 3/6/09	
3	1.1.1	Notice of Award from ED	0 days	Mon 12/29/08	Mon 12/29/08	
4	1.1.2	SOW	14 days	Mon 2/2/09	Thu 2/19/09	
5	1.1.2.1	SOW created	3 days	Mon 2/2/09	Wed 2/4/09	3
6	1.1.2.2	SOW edited	3 days	Thu 2/5/09	Mon 2/9/09	5
7	1.1.2.3	SOW finalized	3 days	Tue 2/10/09	Thu 2/12/09	6
8	1.1.2.4	ED Review SOW	5 days	Fri 2/13/09	Thu 2/19/09	7
9	1.1.2.5	SOW accepted and vendor contract signed	0 wks	Thu 2/19/09	Thu 2/19/09	8
10	1.1.3	Kickoff	2 days	Fri 2/20/09	Mon 2/23/09	
11	1.1.3.1	Schedule Project Kickoff I	1 day	Fri 2/20/09	Fri 2/20/09	9
12	1.1.3.2	Set Agenda for Kickoff I	1 day	Mon 2/23/09	Mon 2/23/09	11,3,7
13	1.1.3.3	Review Initial Project Plan/WBS	2 days	Fri 2/20/09	Mon 2/23/09	9
14	1.1.3.4	Conduct Kickoff Meeting I	1 day	Mon 2/23/09	Mon 2/23/09	11,3,7
15	1.1.3.5	Final signoff and agreement on SOW	0 days	Mon 2/23/09	Mon 2/23/09	14
16	1.1.3.6	Launch project website	0 days	Mon 2/23/09	Mon 2/23/09	15
17	1.1.4	Initial Planning	9 days	Mon 2/23/09	Fri 3/6/09	
18	1.1.4.1	Identify Hardware, Software, Network, Security Experts	1 day	Tue 2/24/09	Tue 2/24/09	16
19	1.1.4.2	Assign and Communicate Roles	1 day	Tue 2/24/09	Tue 2/24/09	14
20	1.1.4.3	Distribute Team Member Contact Information	1 day	Tue 2/24/09	Tue 2/24/09	14
21	1.1.4.4	Identify Pilot District Candidates	5 days	Tue 2/24/09	Mon 3/2/09	14
22	1.1.4.5	Select Pilot Districts	0 days	Mon 3/2/09	Mon 3/2/09	21
23	1.1.4.6	Modify Project Plan Based upon Feedback	5 days	Mon 3/2/09	Fri 3/6/09	14SF+10 days
24	1.1.4.7	Software Licensing Agreements Signed	0 days	Mon 2/23/09	Mon 2/23/09	14
25						
26	1.2	Project Planning and Design	24 days	Tue 2/24/09	Fri 3/27/09	
27	1.2.1	Develop Final Project Management Plan/WBS	20 days	Tue 2/24/09	Mon 3/23/09	14
28	1.2.2	Prepare for Kickoff meeting II	3 days	Tue 3/24/09	Thu 3/26/09	27
29	1.2.3	Conduct Kickoff meeting II	1 day	Fri 3/27/09	Fri 3/27/09	27,28
30	1.2.4	Deliverable 1- Project Management Plan	0 days	Fri 3/27/09	Fri 3/27/09	29,23
31	1.2.5	Analysis and Design Review Process	24 days	Tue 2/24/09	Fri 3/27/09	
34						
35	1.3	Project Control	635 days	Mon 2/23/09	Fri 7/29/11	
36	1.3.1	Annual meeting in DC	522 days	Wed 7/29/09	Thu 7/28/11	
40	1.3.2	Monthly project calls with ED	566 days	Thu 4/30/09	Thu 6/30/11	

MOSIS Longitudinal Data System

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
92	1.3.3	Monthly project executive reviews	591 days	Wed 4/8/09	Wed 7/13/11	
121	1.3.4	Bi-monthly stakeholder updates	586 days	Thu 4/23/09	Thu 7/21/11	
153	1.3.5	Weekly internal status meetings	631 days	Mon 2/23/09	Mon 7/25/11	
281	1.3.6	Weekly project status reports	631 days	Fri 2/27/09	Fri 7/29/11	
409	1.3.7	Annual P-20 council review of MOSIS objectives	523 days	Thu 6/11/09	Mon 6/13/11	
413						
414	1.4	Project Execution	960 days	Mon 3/30/09	Fri 11/30/12	
415	1.4.1	MOSIS training and support system	730 days	Mon 3/30/09	Fri 1/13/12	
416	1.4.1.1	MOSIS training site design	30 days	Mon 3/30/09	Fri 5/8/09	32
417	1.4.1.2	MOSIS training site development	90 days	Mon 5/11/09	Fri 9/11/09	416
418	1.4.1.3	MOSIS training site users guide	45 days	Mon 5/25/09	Fri 7/24/09	416FS+10 days
419	1.4.1.4	MOSIS training site online help	45 days	Mon 8/10/09	Fri 10/9/09	418FS+10 days
420	1.4.1.5	MOSIS training site pilot	10 days	Mon 10/12/09	Fri 10/23/09	417,418,419
421	1.4.1.6	MOSIS training site user acceptance	0 days	Fri 10/23/09	Fri 10/23/09	420
422	1.4.1.7	MOSIS training site launch	0 days	Fri 10/23/09	Fri 10/23/09	421
423	1.4.1.8	MOSIS system trainings/User survey of system effectiveness	566 days	Wed 5/13/09	Wed 7/13/11	
438	1.4.1.9	MOSIS system support process developed	0 days	Fri 10/9/09	Fri 10/9/09	419
439	1.4.1.10	Level 1-3 system support process in place	580 days	Mon 10/26/09	Fri 1/13/12	422
440						
441	1.4.2	Longitudinal Data Store/Data Repository	960 days	Mon 3/30/09	Fri 11/30/12	
442	1.4.2.1	Functional requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
443	1.4.2.2	Technical requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
444	1.4.2.3	Identification of data base and business intelligence tool set	45 days	Mon 3/30/09	Fri 5/29/09	32
445	1.4.2.4	Procurement process of hardware and software	2 mons	Mon 6/1/09	Fri 7/24/09	444
446	1.4.2.5	Set up Hardware and Software	1 mon	Mon 7/27/09	Fri 8/21/09	445
447	1.4.2.6	Create user testing and acceptance plan	30 days	Mon 6/15/09	Fri 7/24/09	442,443FS+10
448	1.4.2.7	Data model development	30 days	Mon 6/15/09	Fri 7/24/09	442,443FS+10
449	1.4.2.8	Data model review	10 days	Mon 7/27/09	Fri 8/7/09	448
450	1.4.2.9	Data model acceptance	0 days	Fri 8/7/09	Fri 8/7/09	449
451	1.4.2.10	Data standards development	30 days	Mon 6/15/09	Fri 7/24/09	442,443FS+10
452	1.4.2.11	Data standards review	10 days	Mon 7/27/09	Fri 8/7/09	448
453	1.4.2.12	Data standards accepted	0 days	Fri 8/7/09	Fri 8/7/09	449
454	1.4.2.13	Data storage plan agreement based on data model	10 days	Mon 8/10/09	Fri 8/21/09	450
455	1.4.2.14	Authorized data system access plan	10 days	Mon 8/10/09	Fri 8/21/09	450
456	1.4.2.15	Reporting system needs assessment	10 days	Mon 8/10/09	Fri 8/21/09	450

MOSIS Longitudinal Data System

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
457	1.4.2.16	Longitudinal Data Repository development	865 days	Mon 8/10/09	Fri 11/30/12	
458	1.4.2.16.1	Facts and dimensions design, initial data population	120 days	Mon 8/10/09	Fri 1/22/10	
459	1.4.2.16.1.1	Student Demographics	10 days	Mon 8/10/09	Fri 8/21/09	453
460	1.4.2.16.1.2	Staff Demographics	10 days	Mon 8/24/09	Fri 9/4/09	459
461	1.4.2.16.1.3	Schools and Districts	10 days	Mon 9/7/09	Fri 9/18/09	460
462	1.4.2.16.1.4	State Assessments	10 days	Mon 9/21/09	Fri 10/2/09	461
463	1.4.2.16.1.5	Student Enrollment and Attendance	10 days	Mon 10/5/09	Fri 10/16/09	462
464	1.4.2.16.1.6	Staff Assignments	10 days	Mon 10/19/09	Fri 10/30/09	463
465	1.4.2.16.1.7	Special Education	10 days	Mon 11/2/09	Fri 11/13/09	464
466	1.4.2.16.1.8	Graduates and Dropouts	10 days	Mon 11/16/09	Fri 11/27/09	465
467	1.4.2.16.1.9	Teacher Certification	10 days	Mon 11/30/09	Fri 12/11/09	466
468	1.4.2.16.1.10	Student Courses	10 days	Mon 12/14/09	Fri 12/25/09	467
469	1.4.2.16.1.11	ELL	10 days	Mon 12/28/09	Fri 1/8/10	468
470	1.4.2.16.1.12	Discipline	10 days	Mon 1/11/10	Fri 1/22/10	469
471	1.4.2.16.2	Design ETL processes to update warehouse	120 days	Mon 8/10/09	Fri 1/22/10	
472	1.4.2.16.2.1	Student Demographics	10 days	Mon 8/10/09	Fri 8/21/09	453
473	1.4.2.16.2.2	Staff Demographics	10 days	Mon 8/24/09	Fri 9/4/09	472
474	1.4.2.16.2.3	Schools and Districts	10 days	Mon 9/7/09	Fri 9/18/09	473
475	1.4.2.16.2.4	State Assessments	10 days	Mon 9/21/09	Fri 10/2/09	474
476	1.4.2.16.2.5	Student Enrollment and Attendance	10 days	Mon 10/5/09	Fri 10/16/09	475
477	1.4.2.16.2.6	Staff Assignments	10 days	Mon 10/19/09	Fri 10/30/09	476
478	1.4.2.16.2.7	Special Education	10 days	Mon 11/2/09	Fri 11/13/09	477
479	1.4.2.16.2.8	Graduates and Dropouts	10 days	Mon 11/16/09	Fri 11/27/09	478
480	1.4.2.16.2.9	Teacher Certification	10 days	Mon 11/30/09	Fri 12/11/09	479
481	1.4.2.16.2.10	Student Courses	10 days	Mon 12/14/09	Fri 12/25/09	480
482	1.4.2.16.2.11	ELL	10 days	Mon 12/28/09	Fri 1/8/10	481
483	1.4.2.16.2.12	Discipline	10 days	Mon 1/11/10	Fri 1/22/10	482
484	1.4.2.16.3	Develop and build reporting cubes	80 days	Mon 8/10/09	Fri 11/27/09	
485	1.4.2.16.3.1	State Assessment	10 days	Mon 8/10/09	Fri 8/21/09	453
486	1.4.2.16.3.2	Student Enrollment and Attendance	10 days	Mon 8/24/09	Fri 9/4/09	485
487	1.4.2.16.3.3	Staff Assignments	10 days	Mon 9/7/09	Fri 9/18/09	486
488	1.4.2.16.3.4	Special Education	10 days	Mon 9/21/09	Fri 10/2/09	487
489	1.4.2.16.3.5	Graduates and Dropouts	10 days	Mon 10/5/09	Fri 10/16/09	488
490	1.4.2.16.3.6	Student Courses	10 days	Mon 10/19/09	Fri 10/30/09	489
491	1.4.2.16.3.7	ELL	10 days	Mon 11/2/09	Fri 11/13/09	490

MOSIS Longitudinal Data System

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
492	1.4.2.16.3.8	Discipline	10 days	Mon 11/16/09	Fri 11/27/09	491
493	1.4.2.16.4	MOSIS LDS user acceptance process-ongoing	170 days	Mon 8/24/09	Fri 4/16/10	456
494	1.4.2.16.5	Train state staff in use of reporting cubes-ongoing	80 days	Mon 8/24/09	Fri 12/11/09	456,485
495	1.4.2.16.6	Design Expansion of MOSIS Data Collection System	30 days	Mon 11/30/09	Fri 1/8/10	492
496	1.4.2.16.7	Implement Additional MOSIS SRM Data Collections	600 days	Mon 1/11/10	Fri 4/27/12	495
497	1.4.2.16.8	System Maintenance and Support	500 days	Mon 1/3/11	Fri 11/30/12	495
498						
499	1.4.3	Reporting and Analysis Portal	835 days	Mon 3/30/09	Fri 6/8/12	
500	1.4.3.1	Functional requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
501	1.4.3.2	Technical requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
502	1.4.3.3	Identification of toolset for ad-hoc, analysis, and security	45 days	Mon 3/30/09	Fri 5/29/09	32
503	1.4.3.4	Procurement of hardware and software	2 mons	Mon 6/1/09	Fri 7/24/09	502
504	1.4.3.5	Create portal user testing and acceptance plan	30 days	Mon 7/27/09	Fri 9/4/09	503
505	1.4.3.6	Install hardware and software	1 mon	Mon 9/7/09	Fri 10/2/09	504
506	1.4.3.7	Install and configure reporting and analysis tool	15 days	Mon 10/5/09	Fri 10/23/09	505
507	1.4.3.8	Integrate collaboration tools into portal	60 days	Mon 10/26/09	Fri 1/15/10	505,506
508	1.4.3.9	Integrate MOSIS application links to portal	60 days	Mon 1/18/10	Fri 4/9/10	507
509	1.4.3.10	Integrate portal with DESE IT security	15 days	Mon 4/12/10	Fri 4/30/10	508
510	1.4.3.11	Integrate security with portal directory system	15 days	Mon 5/3/10	Fri 5/21/10	509
511	1.4.3.12	Configure users and access rights	15 days	Mon 5/24/10	Fri 6/11/10	510
512	1.4.3.13	Integrate with longitudinal data store cubes	15 days	Mon 8/24/09	Fri 9/11/09	485
513	1.4.3.14	Build reports on the data warehouse cubes	60 days	Mon 8/24/09	Fri 11/13/09	485
514	1.4.3.15	Test Reports/QA	60 days	Mon 11/16/09	Fri 2/5/10	513
515	1.4.3.16	Create community sites	60 days	Mon 1/18/10	Fri 4/9/10	507
516	1.4.3.17	EDFacts Reporting Project	300 days	Mon 4/12/10	Fri 6/3/11	515
517	1.4.3.18	MOSIS reporting portal access user acceptance	0 days	Fri 4/9/10	Fri 4/9/10	515
518	1.4.3.19	Internal and district trainings	45 days	Mon 4/12/10	Fri 6/11/10	517
519	1.4.3.20	Rollout MOSIS reporting portal access to stakeholders	150 days	Mon 4/19/10	Fri 11/12/10	493,517
520	1.4.3.21	Commence UM research component	300 days	Mon 11/29/10	Fri 1/20/12	
521	1.4.3.21.1	UM report design and analysis	300 days	Mon 11/29/10	Fri 1/20/12	
522	1.4.3.21.1.1	Review of available data	45 days	Mon 11/29/10	Fri 1/28/11	519FS+10 days
523	1.4.3.21.1.2	Preliminary data analysis	30 days	Mon 1/31/11	Fri 3/11/11	522
524	1.4.3.21.1.3	UM recommendations for reporting	45 days	Mon 3/14/11	Fri 5/13/11	523
525	1.4.3.21.1.4	Incorporate UM reports into portal	180 days	Mon 5/16/11	Fri 1/20/12	524
526	1.4.3.22	Reporting portal maintenance and report enhancement	200 days	Mon 9/5/11	Fri 6/8/12	519

MOSIS Longitudinal Data System

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
527						
528	1.4.4	Develop MOSIS data sharing standards and interoperability processes	600 days	Mon 3/30/09	Fri 7/15/11	
529	1.4.4.1	Develop Information Systems Architecture	120 days	Mon 3/30/09	Fri 9/11/09	
530	1.4.4.2	Launch MOSIS metadata dictionary	600 days	Mon 3/30/09	Fri 7/15/11	
531	1.4.4.2.1	MOSIS metadata dictionary maintenance	600 days	Mon 3/30/09	Fri 7/15/11	30
532	1.4.4.3	Adopt MOSIS interoperability standards	0 days	Fri 5/29/09	Fri 5/29/09	443
533						
534	1.4.5	Teacher Certification System	435 days	Mon 10/4/10	Fri 6/1/12	
535	1.4.5.1	Functional requirements review and enhancement	45 days	Mon 10/4/10	Fri 12/3/10	
536	1.4.5.2	Technical requirements review and enhancement	45 days	Mon 10/4/10	Fri 12/3/10	
537	1.4.5.3	Procurement process	2 mons	Mon 12/6/10	Fri 1/28/11	535,536
538	1.4.5.4	Create user testing and acceptance plan	30 days	Mon 1/31/11	Fri 3/11/11	537
539	1.4.5.5	Teacher Certification System training	5 days	Mon 3/14/11	Fri 3/18/11	538
540	1.4.5.6	Teacher Certification System pilot	15 days	Mon 3/21/11	Fri 4/8/11	539
541	1.4.5.7	Teacher Certification System user acceptance	0 days	Fri 4/8/11	Fri 4/8/11	540
542	1.4.5.8	Teacher Certification System production	0 days	Fri 4/8/11	Fri 4/8/11	541
543	1.4.5.9	Teacher Certification System support and maintenance	300 days	Mon 4/11/11	Fri 6/1/12	542
544						
545	1.4.6	P-20 Collaboraitve	765 days	Mon 10/26/09	Fri 9/28/12	
546	1.4.6.1	Requirements Gathering	60 days	Mon 10/26/09	Fri 1/15/10	422
547	1.4.6.2	Design/Define Data Needs	100 days	Mon 1/18/10	Fri 6/4/10	546
548	1.4.6.3	System/Process Development	60 days	Mon 6/7/10	Fri 8/27/10	547
549	1.4.6.4	Create Documentation	60 days	Mon 8/30/10	Fri 11/19/10	548
550	1.4.6.5	Training	60 days	Mon 11/22/10	Fri 2/11/11	549
551	1.4.6.6	Integration of Reports into the Portal	150 days	Mon 2/14/11	Fri 9/9/11	550
552	1.4.6.7	Pilot Implementation	75 days	Mon 9/12/11	Fri 12/23/11	551
553	1.4.6.8	Production Implementation	100 days	Mon 12/26/11	Fri 5/11/12	552
554	1.4.6.9	Content Analysis/Reporting Collaboration Go Live	100 days	Mon 5/14/12	Fri 9/28/12	553
555						
556	1.5	Project Closing	18.33 days	Mon 6/11/12	Thu 7/5/12	
557	1.5.1	Project Review and Debrief	8.33 days	Mon 6/11/12	Thu 6/21/12	526
558	1.5.2	Closeout meeting	0 days	Thu 6/21/12	Thu 6/21/12	557
559	1.5.3	Deliverable - Final Report	10 days	Thu 6/21/12	Thu 7/5/12	558

Missouri P-20 Council

Always Learning • Always Prospering

Governor Matt Blunt

Missouri P-20 Council Members

Kent King
Commissioner,
Dept. of Elementary and Secondary Education

Robert Stein
Commissioner,
Dept. of Higher Education

Greg Steinhoff
Director,
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September 22, 2008

Dr. Grover J. Whitehurst
Director of the Institute of Education Sciences
United States Department of Education
555 New Jersey Avenue, Northwest
Washington, D.C. 20208

Dear Dr. Grover J. Whitehurst:

We are pleased to support Missouri's Statewide Longitudinal Data System proposal.

The Missouri P-20 Council was created by statute in 2006, and includes the Commissioners of Education (P-12) and Higher Education, the Director of the Department of Economic Development, the President of the State Board of Education and the Chair of the Coordinating Board for Higher Education (CBHE). The mission of the Council is to develop a more coherent system of P-20 education where each level of education – preschool through graduate school – prepares students well for the next level and contributes to all students being college and career-ready.

All Council members are enthusiastically committed to P-20 longitudinal data and analysis and are working collaboratively to leverage linked data systems to strengthen decision-making in policy areas and major initiatives of common interest, including student preparation and persistence, college and career readiness, workforce participation, teacher education, and mathematics, engineering, technology, and science (METS) education and economic development. The investments included in this proposal have the potential to have a greater impact on our work, given the gaps we have identified in better supporting teacher effectiveness; creating a robust portal to manage the collection, access, and reporting of data; and creating interoperable standards for data sharing throughout the system.

The grant deliverables will move Missouri closer to a P-20 longitudinal data system that supports sound education policy and practice aimed at developing future Missourians who are well-prepared for college and careers in the New Economy. Again, we are pleased to lend our time, talent and resources in support of this proposal.

Sincerely,

D. Kent King | Robert Stein | Greg Steinhoff

Kathy Swan | Russell Thompson

MDHE
Missouri Department of Higher Education
Building Missouri's future...by degrees

Dr. Grover J. Whitehurst
Director of the Institute of Education Sciences
United States Department of Education
555 New Jersey Avenue, Northwest
Washington, D.C. 20208

Dear Dr. Whitehurst:

We are pleased to endorse the proposal being submitted by the Missouri Department of Elementary and Secondary Education (DESE), in cooperation with the state's P-20 Council, in support of the development of a comprehensive longitudinal student data system in the K-12 sector. As leaders of Missouri's educational organizations representing community colleges and public baccalaureate institutions, as well as the president of Missouri's statewide public technical college, we are united in our support for DESE's efforts to build a responsive data system which will strengthen decision-making for all with a stake in the continuous improvement of Missouri's educational system.

In addition, we are equally pleased that DESE is committed to ongoing collaboration with all interested stakeholders, throughout the development of this system, to ensure linkages are enabled with existing unit-record data systems in higher education and workforce development. The proposal also includes funds to support cooperative research and analysis involving DESE, the Department of Higher Education, the Department of Economic Development, and the University of Missouri – Columbia. Research leveraging data held by all partners, with appropriate governance and oversight, will advance the state's understanding of successful student preparation, college and career readiness, and workforce success.

We look forward to working with DESE, the P-20 Council, and other partners participating in this proposal to further the growth of data-driven decision-making in Missouri.

Thank you for your consideration,

Dr. Donald Claycomb
President
Linn State Technical College

Dr. James Kellerman
Executive Director
Missouri Community College Association

Dr. Brian Long
Executive Director
Council on Public Higher Education in Missouri

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Attachment 2: Data Flow within DESE

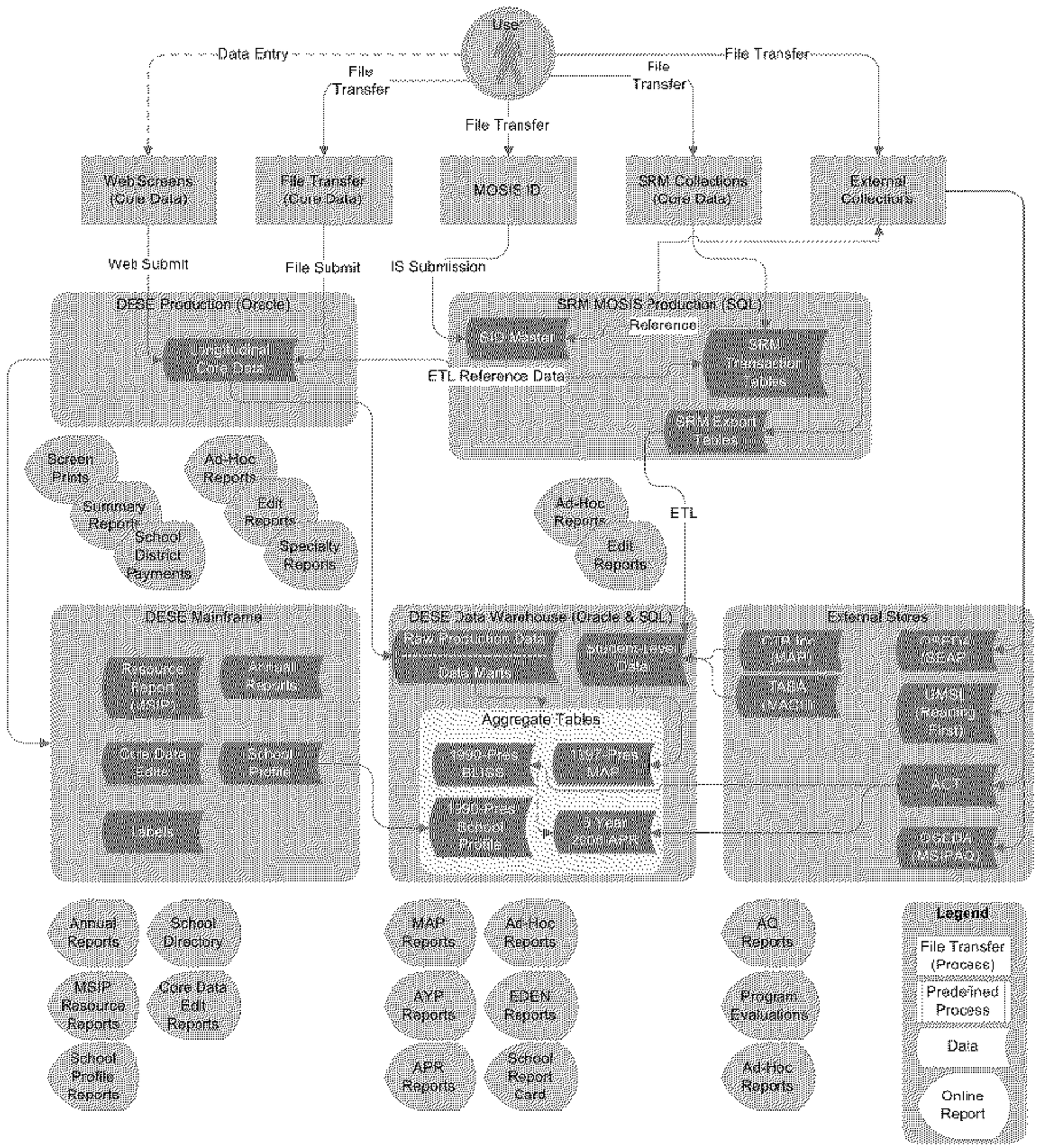
DESE has analyzed the internal data flow related to MOSIS in order to understand how the proposed changes will impact data access and interoperability. The top level data flow chart that follows summarizes that analysis.

The second data flow picture depicts how the entire MOSIS Longitudinal Data System will work together.

Proposed changes within the LDS grant application include:

1. Combine the contents of the DESE Mainframe, Data Warehouse, and External Sources into the MOSIS Longitudinal Data System Repository.
2. Convert the Web Screens (Core Data) to SRM Collections (Unit Records).
3. Consolidate the reporting using the MOSIS reporting function within the enterprise portal.
4. Reengineer the internal ETL processes to consolidate data into the MOSIS LDS Repository.
5. Transform all new unit records into the required statistics for EDFacts, school funding, and standard reporting.

Top Level Core Data Flow

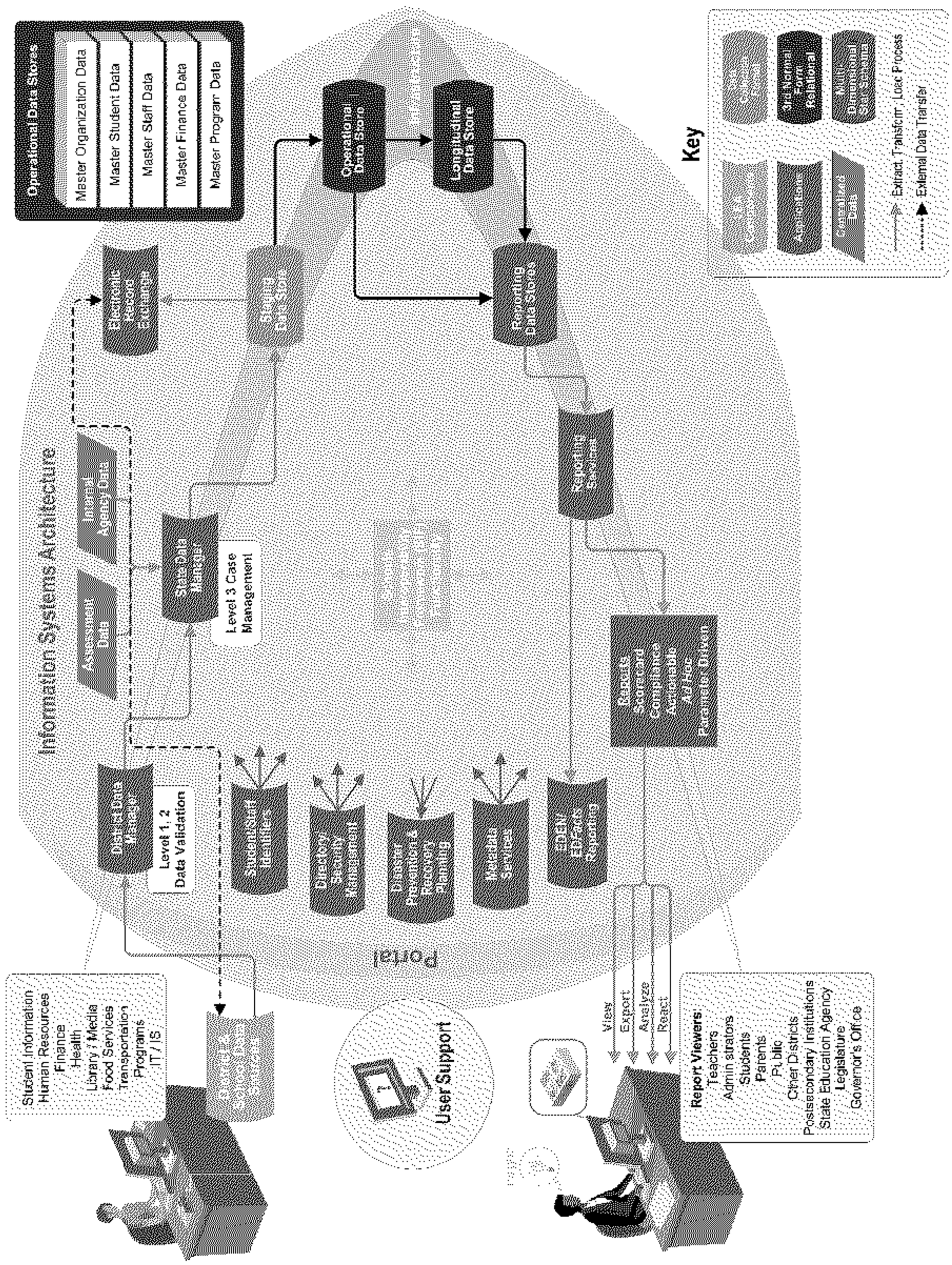


6.

Developed by ESP Solutions Group for the Missouri Department of Elementary and Secondary Education

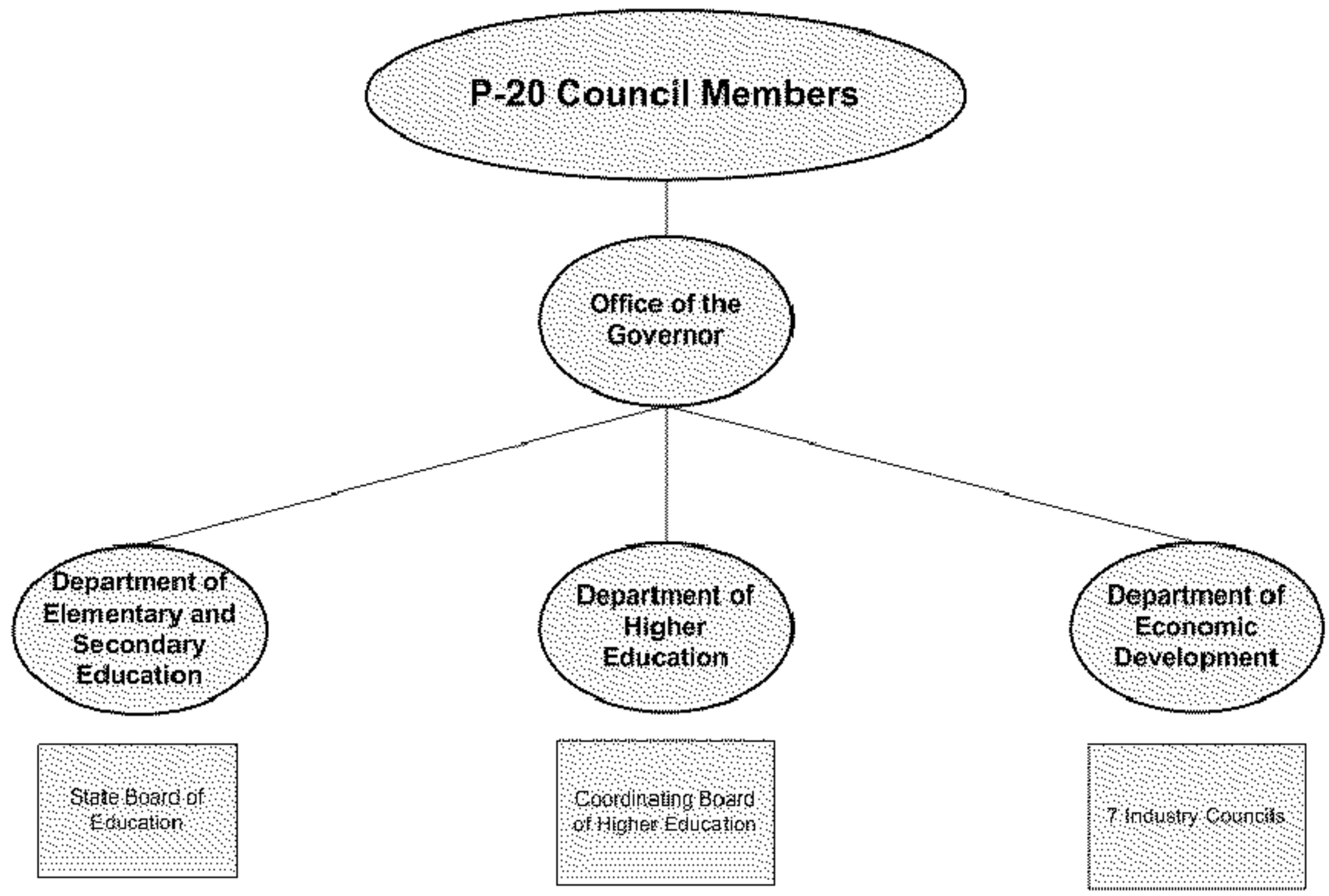
Attachment 2
Page 2 of 3

MOSIS Longitudinal Data System Components



Attachment 2
Page 3 of 3

Attachment 3: Governance Structure for the MOSIS Longitudinal Data System



P-20 Education Partners

Regional Professional Development Centers

Missouri Student Information System User's Group (Core Data Users Group)

University of Missouri Board of Curators

Coordinating Board for Early Childhood Education

Missouri Chamber of Commerce and Industry

Missouri METS Coalition

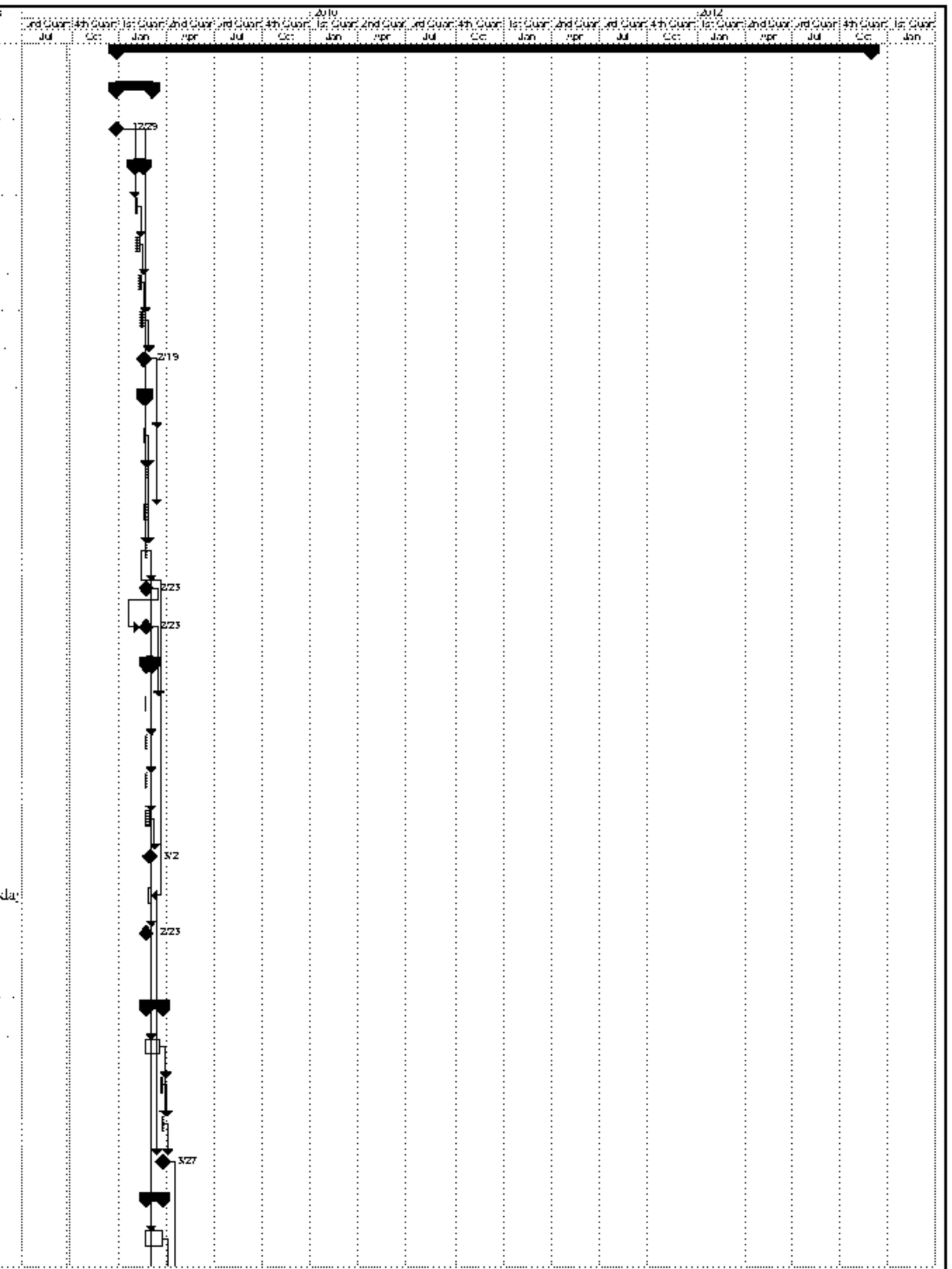
Attachment 4: MOSIS Historical and Future Timeline – 2005 – Present

The MOSIS Longitudinal Data System is Phase IV in the timeline DESE has been following for MOSIS development and implementation. The phases and dates below provide a high-level view of the work accomplished to date. Progress and timing have been limited by the available State funding (approximately $1 million annually since 2005).

	Deployment Period	Scope
MOSIS Phase I	2/05-9/05	1.1 Deployed MOSIS ID, assigned IDs to all students, and ensured that IDs have been incorporated into LEA student information systems.
MOSIS Phase II	8/05-9/06	2.1 Deployed SRM v1 to enable Pre-Code. 2.2 Operated MOSIS Pre-Code. 2.3 Deployed SRM v2 to enable Demographic Clean Up. 2.4 Operated MAP Demographic Clean Up 1.
MOSIS Phase III	9/06-Current	3.1 Enter DESE Data Inventory into DataSpecs™. This process includes the development of the Core Collection record-level file layout. 3.2 Onsite Project management, District Implementation, Training, and Support of MOSIS. 3.3 MAP Demographic Clean Up data collection. 3.4 Configure and deploy SRM v3 for MOSIS 3.5 Configure, implement, and roll-out MOSIS Phase III statewide to collect: a. Student Core Data (6 Submissions Aug, Oct., Dec., Feb., Apr., and June). b. Educator Core Data (1 Mandatory Submission - October). c. Teacher-Course-Student Relationship Data (3 Mandatory Submissions Aug., Oct., and June). d. Graduate Follow-Up Data (1 Mandatory Submission Feb.). e. Discipline Incident Data (1 Mandatory Submission - June). 3.6 ETL; Provision of aggregate data in their current form to existing DESE systems. 3.7 Historical Submission Module. 3.8 Implement statewide and cross trial business rules. 3.9 Launch 4 additional new MOSIS data collections (July 08- Jun 09) 3.10 Automate authoritative data allow for data to be changed in DESE systems and for the changes to be reflected in SRM business rule results. 3.11 Design and build the foundation for MOSIS Phase IV. a. Assist DESE in drafting IES LDS Application. b. Update DESE Data Access and Use Policy.

		c. Configure, implement, and roll-out MOSIS SRM operational data store. d. Identify the keys for a successful educational decision support system. e. Design Data Warehouse for record-level collection system while leveraging DESE's current system. f. Identify the requirements for integrating MOSIS Phase I student ID with MOSIS Phase III.
MOSIS Phase IV	Future	4.1 IES LDS grant project commences 4.2 Design and deploy a longitudinal data system/data warehouse for all certified data with integrated enterprise directory and D3M Portal and Directory. 4.3 Create a decision support reporting environment that advances DESE's vision. 4.4 Integrate MOSIS Phase I student ID with MOSIS Phase III. 4.5 Facilitate K-20 student record exchange.

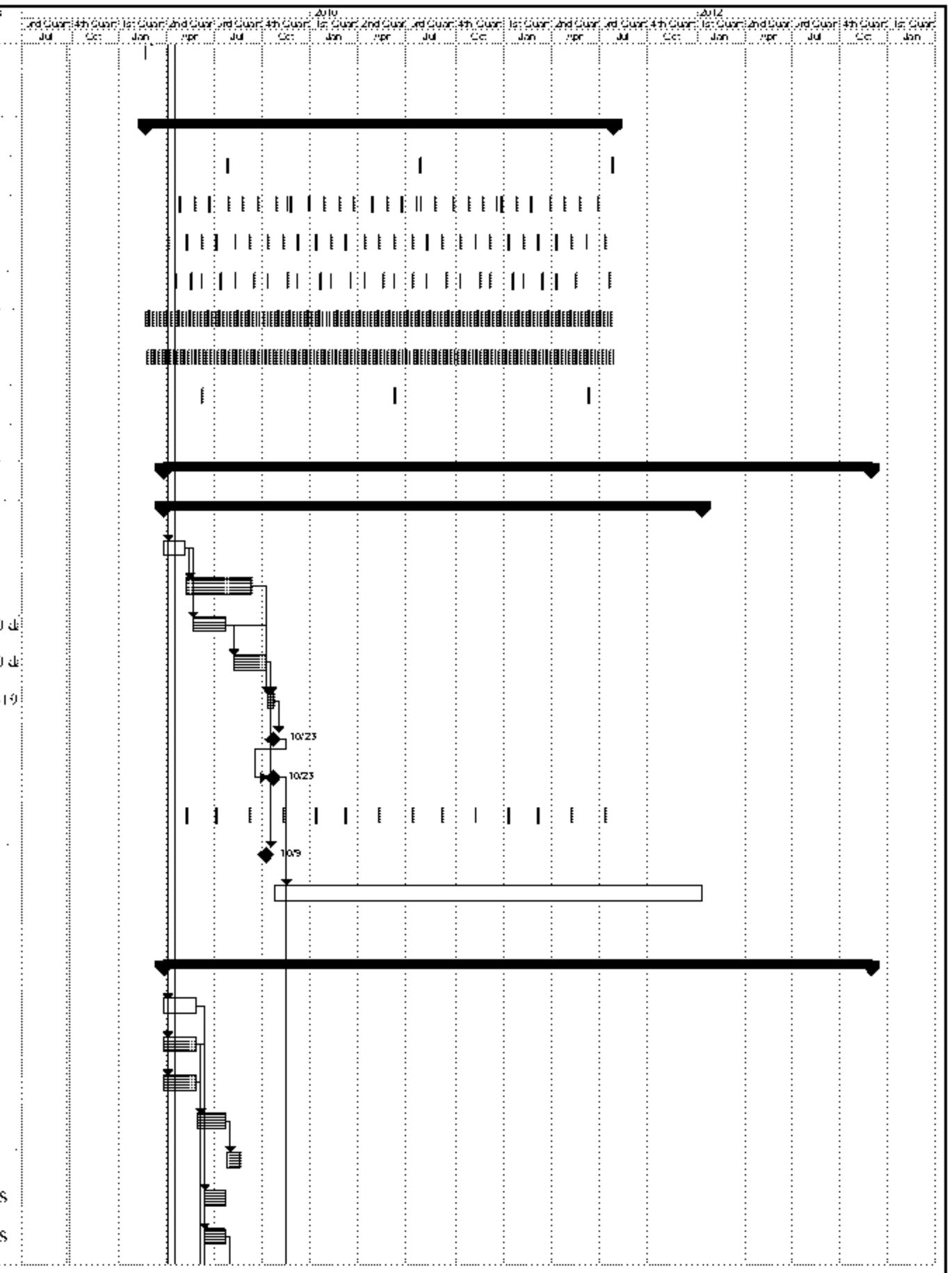
ID	WBS	Task Name	Duration	Start	Finish	Predecessors
1	1	MOSIS Longitudinal Data System	1025 days	Mon 12/29/08	Fri 11/30/12	
2	1.1	Project Initiation	50 days	Mon 12/29/08	Fri 3/6/09	
3	1.1.1	Notice of Award from LD	0 days	Mon 12/29/08	Mon 12/29/08	
4	1.1.2	SOW	14 days	Mon 2/2/09	Thu 2/19/09	
5	1.1.2.1	SOW created	3 days	Mon 2/2/09	Wed 2/4/09	3
6	1.1.2.2	SOW edited	3 days	Thu 2/5/09	Mon 2/9/09	5
7	1.1.2.3	SOW finalized	3 days	Tue 2/10/09	Thu 2/12/09	6
8	1.1.2.4	LD Review SOW	5 days	Fri 2/13/09	Thu 2/19/09	7
9	1.1.2.5	SOW accepted and vendor contract signed	0 wks	Thu 2/19/09	Thu 2/19/09	8
10	1.1.3	Kickoff	2 days	Fri 2/20/09	Mon 2/23/09	
11	1.1.3.1	Schedule Project Kickoff I	1 day	Fri 2/20/09	Fri 2/20/09	9
12	1.1.3.2	Set Agenda for Kickoff I	1 day	Mon 2/23/09	Mon 2/23/09	11.3.7
13	1.1.3.3	Review Initial Project Plan/WBS	2 days	Fri 2/20/09	Mon 2/23/09	9
14	1.1.3.4	Conduct Kickoff Meeting I	1 day	Mon 2/23/09	Mon 2/23/09	11.3.7
15	1.1.3.5	Final signoff and agreement on SOW	0 days	Mon 2/23/09	Mon 2/23/09	14
16	1.1.3.6	Launch project website	0 days	Mon 2/23/09	Mon 2/23/09	15
17	1.1.4	Initial Planning	9 days	Mon 2/23/09	Fri 3/6/09	
18	1.1.4.1	Identify Hardware, Software, Network, Security I.	1 day	Tue 2/24/09	Tue 2/24/09	16
19	1.1.4.2	Assign and Communicate Roles	1 day	Tue 2/24/09	Tue 2/24/09	14
20	1.1.4.3	Distribute Team Member Contact Information	1 day	Tue 2/24/09	Tue 2/24/09	14
21	1.1.4.4	Identify Pilot District Candidates	5 days	Tue 2/24/09	Mon 3/2/09	14
22	1.1.4.5	Select Pilot Districts	0 days	Mon 3/2/09	Mon 3/2/09	21
23	1.1.4.6	Modify Project Plan Based upon Feedback	5 days	Mon 3/2/09	Fri 3/6/09	14SF+10 day
24	1.1.4.7	Software Licensing Agreements Signed	0 days	Mon 2/23/09	Mon 2/23/09	14
25						
26	1.2	Project Planning and Design	24 days	Tue 2/24/09	Fri 3/27/09	
27	1.2.1	Develop Final Project Management Plan/WBS	20 days	Tue 2/24/09	Mon 3/23/09	14
28	1.2.2	Prepare for Kickoff meeting II	3 days	Tue 3/24/09	Thu 3/26/09	27
29	1.2.3	Conduct Kickoff meeting II	1 day	Fri 3/27/09	Fri 3/27/09	27,28
30	1.2.4	Deliverable 1- Project Management Plan	0 days	Fri 3/27/09	Fri 3/27/09	29,23
31	1.2.5	Analysis and Design Review Process	24 days	Tue 2/24/09	Fri 3/27/09	
32	1.2.5.1	Confirm and document draft architecture, requirem	24 days	Tue 2/24/09	Fri 3/27/09	14



Task | Progress | Summary | External Tasks | Split
Split | Milestone | Project Summary | External Milestone

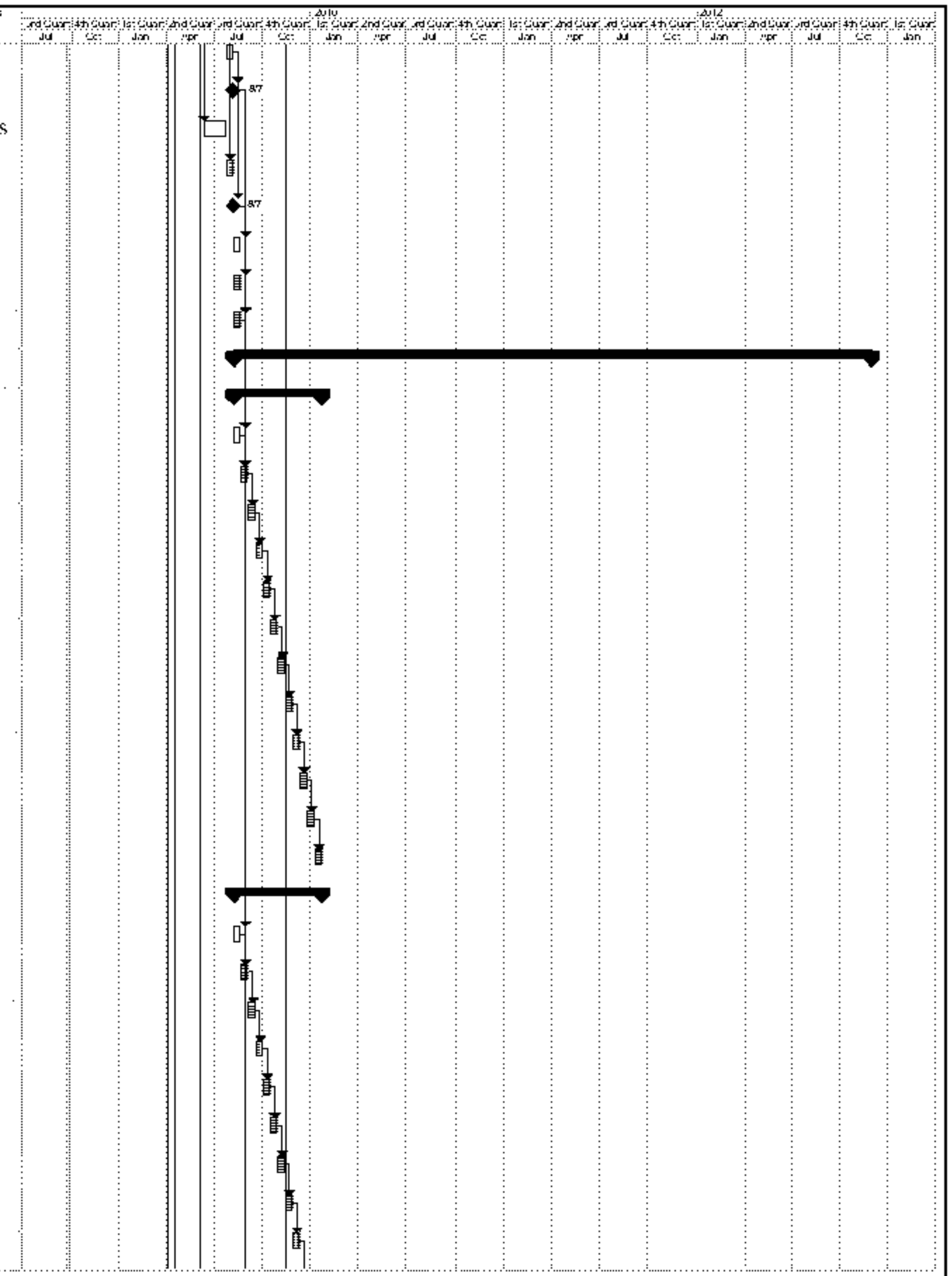
Project Management Timeline Detail

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
33	1.2.5.2	Review DLSL and WAN Environment	1 day	Tue 2/24/09	Tue 2/24/09	14
34						
35	1.3	Project Control	635 days	Mon 2/23/09	Fri 7/29/11	
36	1.3.1	Annual meeting in DC	522 days	Wed 7/29/09	Thu 7/28/11	
40	1.3.2	Monthly project calls with LD	566 days	Thu 4/30/09	Thu 6/30/11	
92	1.3.3	Monthly project executive reviews	591 days	Wed 4/8/09	Wed 7/13/11	
121	1.3.4	Bi-monthly stakeholder updates	586 days	Thu 4/23/09	Thu 7/21/11	
153	1.3.5	Weekly internal status meetings	631 days	Mon 2/23/09	Mon 7/25/11	
281	1.3.6	Weekly project status reports	631 days	Fri 2/27/09	Fri 7/29/11	
409	1.3.7	Annual P-20 council review of MOSIS objectives	523 days	Thu 6/11/09	Mon 6/13/11	
413						
414	1.4	Project Execution	960 days	Mon 3/30/09	Fri 11/30/12	
415	1.4.1	MOSIS training and support system	730 days	Mon 3/30/09	Fri 1/13/12	
416	1.4.1.1	MOSIS training site design	30 days	Mon 3/30/09	Fri 5/8/09	32
417	1.4.1.2	MOSIS training site development	90 days	Mon 5/11/09	Fri 9/11/09	416
418	1.4.1.3	MOSIS training site users guide	45 days	Mon 5/25/09	Fri 7/24/09	416FS+10 da
419	1.4.1.4	MOSIS training site online help	45 days	Mon 8/10/09	Fri 10/9/09	418FS+10 da
420	1.4.1.5	MOSIS training site pilot	10 days	Mon 10/12/09	Fri 10/23/09	417,418,419
421	1.4.1.6	MOSIS training site user acceptance	0 days	Fri 10/23/09	Fri 10/23/09	420
422	1.4.1.7	MOSIS training site launch	0 days	Fri 10/23/09	Fri 10/23/09	421
423	1.4.1.8	MOSIS system training&User survey of system eff	566 days	Wed 5/13/09	Wed 7/13/11	
430	1.4.1.9	MOSIS system support process developed	0 days	Fri 10/9/09	Fri 10/9/09	419
439	1.4.1.10	Level 1-3 system support process in place	580 days	Mon 10/26/09	Fri 1/13/12	422
440						
441	1.4.2	Longitudinal Data Store/Data Repository	960 days	Mon 3/30/09	Fri 11/30/12	
442	1.4.2.1	Functional requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
443	1.4.2.2	Technical requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
444	1.4.2.3	Identification of data base and business intelligene	45 days	Mon 3/30/09	Fri 5/29/09	32
445	1.4.2.4	Procurement process of hardware and software	2 mons	Mon 6/1/09	Fri 7/24/09	444
446	1.4.2.5	Set up Hardware and Software	1 mon	Mon 7/27/09	Fri 8/21/09	445
447	1.4.2.6	Create user testing and acceptance plan	30 days	Mon 6/15/09	Fri 7/24/09	442,443FS
448	1.4.2.7	Data model development	30 days	Mon 6/15/09	Fri 7/24/09	442,443FS



Task | Progress | Summary | External Tasks | Split
Split | Milestone | Project Summary | External Milestone

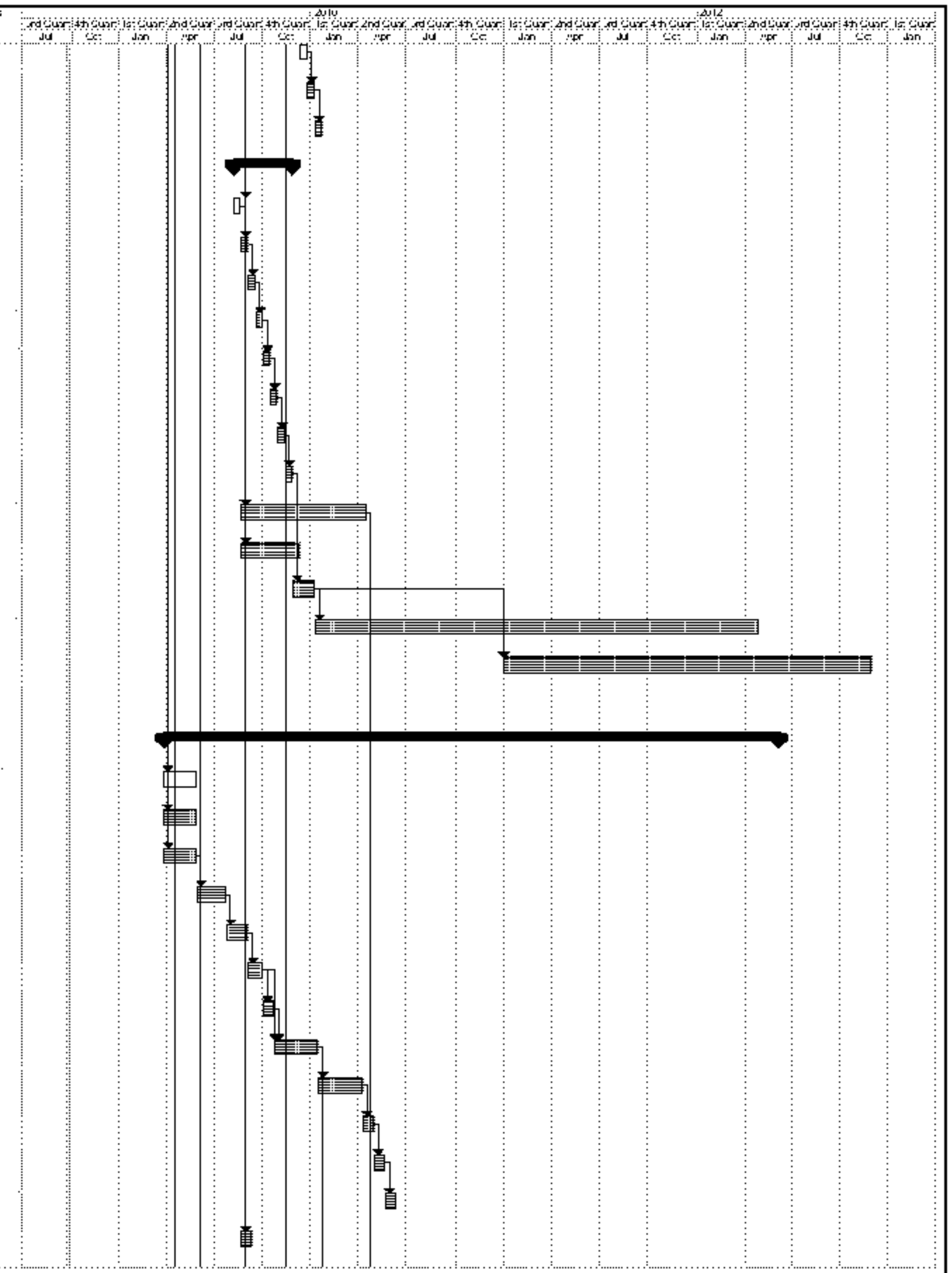
ID	WBS	Task Name	Duration	Start	Finish	Predecessors
449	1.4.2.8	Data model review	10 days	Mon 7/27/09	Fri 8/7/09	448
450	1.4.2.9	Data model acceptance	0 days	Fri 8/7/09	Fri 8/7/09	449
451	1.4.2.10	Data standards development	30 days	Mon 6/15/09	Fri 7/24/09	442,443FS
452	1.4.2.11	Data standards review	10 days	Mon 7/27/09	Fri 8/7/09	448
453	1.4.2.12	Data standards accepted	0 days	Fri 8/7/09	Fri 8/7/09	449
454	1.4.2.13	Data storage plan agreement based on data model	10 days	Mon 8/10/09	Fri 8/21/09	450
455	1.4.2.14	Authorized data system access plan	10 days	Mon 8/10/09	Fri 8/21/09	450
456	1.4.2.15	Reporting system needs assessment	10 days	Mon 8/10/09	Fri 8/21/09	450
457	1.4.2.16	Longitudinal Data Repository development	865 days	Mon 8/10/09	Fri 11/30/12	
458	1.4.2.16.1	Facts and dimensions design, initial data popul	120 days	Mon 8/10/09	Fri 1/22/10	
459	1.4.2.16.1.1	Student Demographics	10 days	Mon 8/10/09	Fri 8/21/09	453
460	1.4.2.16.1.2	Staff Demographics	10 days	Mon 8/24/09	Fri 9/4/09	459
461	1.4.2.16.1.3	Schools and Districts	10 days	Mon 9/7/09	Fri 9/18/09	460
462	1.4.2.16.1.4	State Assessments	10 days	Mon 9/21/09	Fri 10/2/09	461
463	1.4.2.16.1.5	Student Enrollment and Attendance	10 days	Mon 10/5/09	Fri 10/16/09	462
464	1.4.2.16.1.6	Staff Assignments	10 days	Mon 10/19/09	Fri 10/30/09	463
465	1.4.2.16.1.7	Special Education	10 days	Mon 11/2/09	Fri 11/13/09	464
466	1.4.2.16.1.8	Graduates and Dropouts	10 days	Mon 11/16/09	Fri 11/27/09	465
467	1.4.2.16.1.9	Teacher Certification	10 days	Mon 11/30/09	Fri 12/11/09	466
468	1.4.2.16.1.10	Student Courses	10 days	Mon 12/14/09	Fri 12/25/09	467
469	1.4.2.16.1.11	I.I.I.	10 days	Mon 12/28/09	Fri 1/8/10	468
470	1.4.2.16.1.12	Discipline	10 days	Mon 1/11/10	Fri 1/22/10	469
471	1.4.2.16.2	Design I.T.L processes to update warehouse	120 days	Mon 8/10/09	Fri 1/22/10	
472	1.4.2.16.2.1	Student Demographics	10 days	Mon 8/10/09	Fri 8/21/09	453
473	1.4.2.16.2.2	Staff Demographics	10 days	Mon 8/24/09	Fri 9/4/09	472
474	1.4.2.16.2.3	Schools and Districts	10 days	Mon 9/7/09	Fri 9/18/09	473
475	1.4.2.16.2.4	State Assessments	10 days	Mon 9/21/09	Fri 10/2/09	474
476	1.4.2.16.2.5	Student Enrollment and Attendance	10 days	Mon 10/5/09	Fri 10/16/09	475
477	1.4.2.16.2.6	Staff Assignments	10 days	Mon 10/19/09	Fri 10/30/09	476
478	1.4.2.16.2.7	Special Education	10 days	Mon 11/2/09	Fri 11/13/09	477
479	1.4.2.16.2.8	Graduates and Dropouts	10 days	Mon 11/16/09	Fri 11/27/09	478
480	1.4.2.16.2.9	Teacher Certification	10 days	Mon 11/30/09	Fri 12/11/09	479



Task | Progress | Summary | External Tasks | Split
Split | Milestone | Project Summary | External Milestone

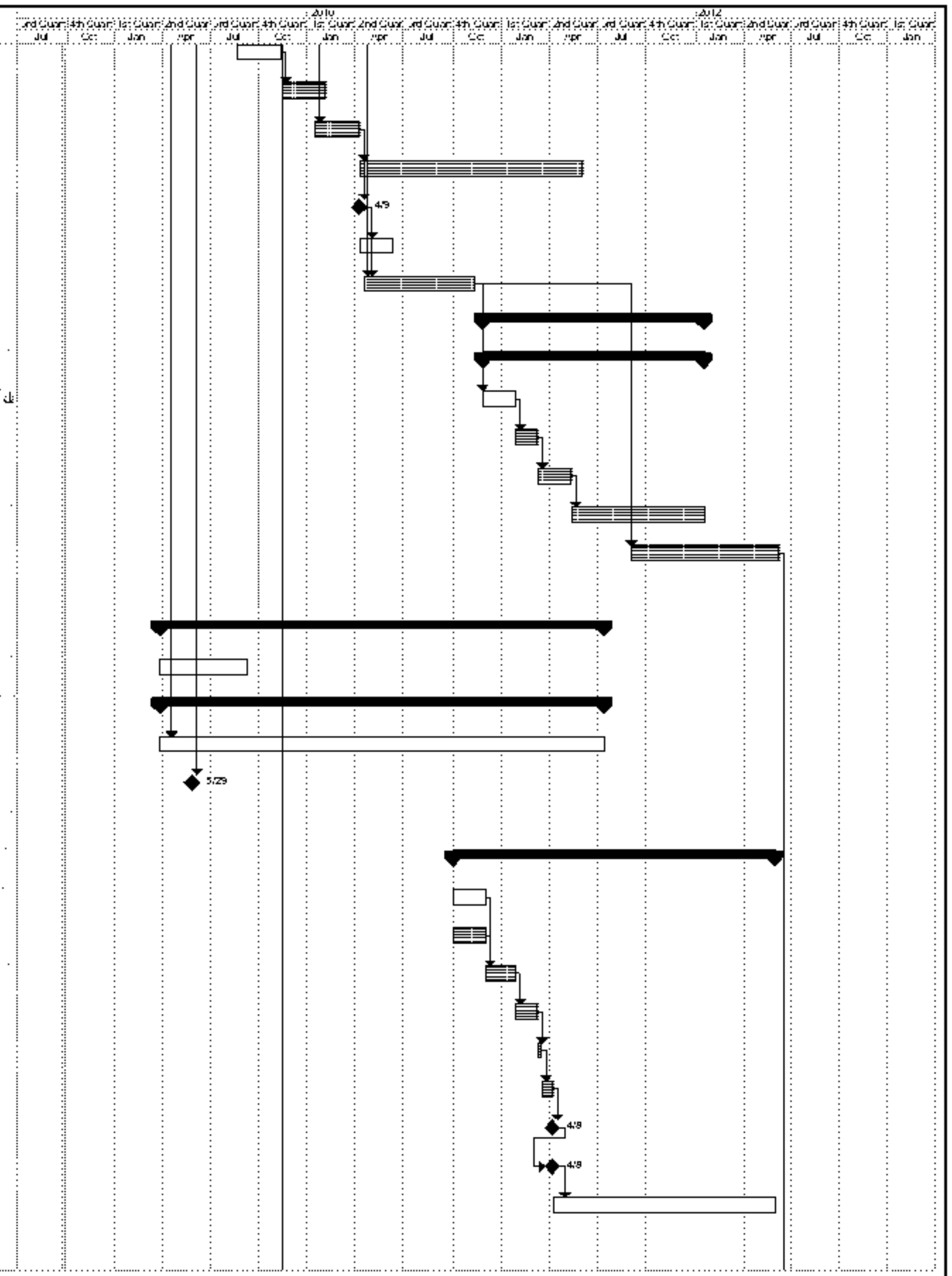
Project Management Timeline Detail

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
480	1.4.2.16.2.10	Student Courses	10 days	Mon 12/14/09	Fri 12/25/09	480
481	1.4.2.16.2.11	I.I.I.	10 days	Mon 12/28/09	Fri 1/8/10	481
482	1.4.2.16.2.12	Discipline	10 days	Mon 1/11/10	Fri 1/22/10	482
484	1.4.2.16.3	Develop and build reporting cubes	80 days	Mon 8/10/09	Fri 11/27/09	
485	1.4.2.16.3.1	State Assessment	10 days	Mon 8/10/09	Fri 8/21/09	453
486	1.4.2.16.3.2	Student Enrollment and Attendance	10 days	Mon 8/24/09	Fri 9/4/09	485
487	1.4.2.16.3.3	Staff Assignments	10 days	Mon 9/7/09	Fri 9/18/09	486
488	1.4.2.16.3.4	Special Education	10 days	Mon 9/21/09	Fri 10/2/09	487
489	1.4.2.16.3.5	Graduates and Dropouts	10 days	Mon 10/5/09	Fri 10/16/09	488
490	1.4.2.16.3.6	Student Courses	10 days	Mon 10/19/09	Fri 10/30/09	489
491	1.4.2.16.3.7	I.I.I.	10 days	Mon 11/2/09	Fri 11/13/09	490
492	1.4.2.16.3.8	Discipline	10 days	Mon 11/16/09	Fri 11/27/09	491
493	1.4.2.16.4	MOSIS LDS user acceptance process-ongoing	130 days	Mon 8/24/09	Fri 4/16/10	456
494	1.4.2.16.5	Train state staff in use of reporting cubes-ongo	80 days	Mon 8/24/09	Fri 12/11/09	456,485
495	1.4.2.16.6	Design Expansion of MOSIS Data Collection S	30 days	Mon 11/30/09	Fri 1/8/10	492
496	1.4.2.16.7	Implement Additional MOSIS SRM Data Colle	600 days	Mon 1/11/10	Fri 4/27/12	495
497	1.4.2.16.8	System Maintenance and Support	500 days	Mon 1/3/11	Fri 11/30/12	495
498						
499	1.4.3	Reporting and Analysis Portal	835 days	Mon 3/30/09	Fri 6/8/12	
500	1.4.3.1	Functional requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
501	1.4.3.2	Technical requirements review and enhancement	45 days	Mon 3/30/09	Fri 5/29/09	32
502	1.4.3.3	Identification of tool set for ad-hoc, analysis, and s	45 days	Mon 3/30/09	Fri 5/29/09	32
503	1.4.3.4	Procurement of hardware and software	2 mons	Mon 6/1/09	Fri 7/24/09	502
504	1.4.3.5	Create portal user testing and acceptance plan	30 days	Mon 7/27/09	Fri 9/4/09	503
505	1.4.3.6	Install hardware and software	1 mon	Mon 9/7/09	Fri 10/2/09	504
506	1.4.3.7	Install and configure reporting and analysis tool	15 days	Mon 10/5/09	Fri 10/23/09	505
507	1.4.3.8	Integrate collaboration tools into portal	60 days	Mon 10/26/09	Fri 1/15/10	505,506
508	1.4.3.9	Integrate MOSIS application links to portal	60 days	Mon 1/18/10	Fri 4/9/10	507
509	1.4.3.10	Integrate portal with DLSL IT security	15 days	Mon 4/12/10	Fri 4/30/10	508
510	1.4.3.11	Integrate security with portal directory system	15 days	Mon 5/3/10	Fri 5/21/10	509
511	1.4.3.12	Configure users and access rights	15 days	Mon 5/24/10	Fri 6/11/10	510
512	1.4.3.13	Integrate with longitudinal data store cubes	15 days	Mon 8/24/09	Fri 9/11/09	485



Task | Progress | Summary | External Tasks | Split
Split | Milestone | Project Summary | External Milestone

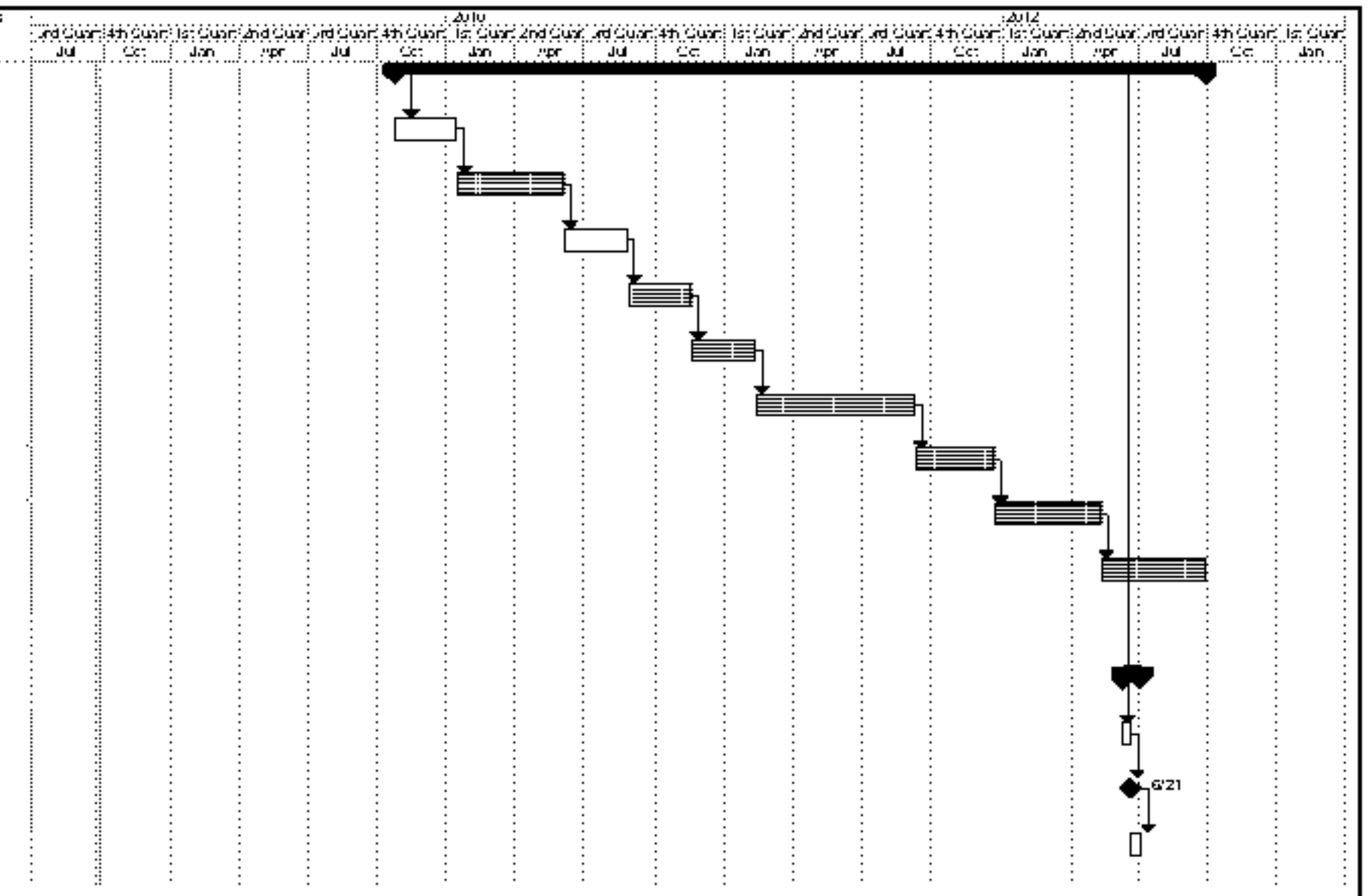
ID	WBS	Task Name	Duration	Start	Finish	Predecessors
313	1.4.3.14	Build reports on the data warehouse cubes	60 days	Mon 8/24/09	Fri 11/13/09	485
314	1.4.3.15	Test Reports/QA	60 days	Mon 11/16/09	Fri 2/5/10	513
315	1.4.3.16	Create community sites	60 days	Mon 1/18/10	Fri 4/9/10	507
316	1.4.3.17	LDFacts Reporting Project	300 days	Mon 4/12/10	Fri 6/3/11	515
317	1.4.3.18	MOSIS reporting portal access user acceptance	0 days	Fri 4/9/10	Fri 4/9/10	515
318	1.4.3.19	Internal and district trainings	45 days	Mon 4/12/10	Fri 6/11/10	517
319	1.4.3.20	Rollout MOSIS reporting portal access to stakeho	150 days	Mon 4/19/10	Fri 11/12/10	493,517
320	1.4.3.21	Commence UM research component	300 days	Mon 11/29/10	Fri 1/20/12	
321	1.4.3.21.1	UM report design and analysis	300 days	Mon 11/29/10	Fri 1/20/12	
322	1.4.3.21.1.1	Review of available data	45 days	Mon 11/29/10	Fri 1/28/11	519FS+10 d
323	1.4.3.21.1.2	Preliminary data analysis	30 days	Mon 1/31/11	Fri 3/11/11	522
324	1.4.3.21.1.3	UM recommendations for reporting	45 days	Mon 3/14/11	Fri 5/13/11	523
325	1.4.3.21.1.4	Incorporate UM reports into portal	180 days	Mon 5/16/11	Fri 1/20/12	524
326	1.4.3.22	Reporting portal maintenance and report enhancem	200 days	Mon 9/5/11	Fri 6/8/12	519
327						
328	1.4.4	Develop MOSIS data sharing standards and interopera	600 days	Mon 3/30/09	Fri 7/15/11	
329	1.4.4.1	Develop Information Systems Architecture	120 days	Mon 3/30/09	Fri 9/11/09	
330	1.4.4.2	Launch MOSIS metadata dictionary	600 days	Mon 3/30/09	Fri 7/15/11	
331	1.4.4.2.1	MOSIS metadata dictionary maintenance	600 days	Mon 3/30/09	Fri 7/15/11	30
332	1.4.4.3	Adopt MOSIS interoperability standards	0 days	Fri 5/29/09	Fri 5/29/09	443
333						
334	1.4.5	Teacher Certification System	435 days	Mon 10/4/10	Fri 6/1/12	
335	1.4.5.1	Functional requirements review and enhancement	45 days	Mon 10/4/10	Fri 12/3/10	
336	1.4.5.2	Technical requirements review and enhancement	45 days	Mon 10/4/10	Fri 12/3/10	
337	1.4.5.3	Procurement process	2 mons	Mon 12/6/10	Fri 1/28/11	335,336
338	1.4.5.4	Create user testing and acceptance plan	30 days	Mon 1/31/11	Fri 3/11/11	337
339	1.4.5.5	Teacher Certification System training	5 days	Mon 3/14/11	Fri 3/18/11	338
340	1.4.5.6	Teacher Certification System pilot	15 days	Mon 3/21/11	Fri 4/8/11	339
341	1.4.5.7	Teacher Certification System user acceptance	0 days	Fri 4/8/11	Fri 4/8/11	340
342	1.4.5.8	Teacher Certification System production	0 days	Fri 4/8/11	Fri 4/8/11	341
343	1.4.5.9	Teacher Certification System support and mainten	300 days	Mon 4/11/11	Fri 6/1/12	342
344						



Task | Progress | Summary | External Tasks | Split
Split | Milestone | Project Summary | External Milestone

Project Management Timeline Detail

ID	WBS	Task Name	Duration	Start	Finish	Predecessors
345	1.4.6	P-20 Collaborative	765 days	Mon 10/26/09	Fri 9/28/12	
346	1.4.6.1	Requirements Gathering	60 days	Mon 10/26/09	Fri 1/15/10	422
347	1.4.6.2	Design/Define Data Needs	100 days	Mon 1/18/10	Fri 6/4/10	346
348	1.4.6.3	System/Process Development	60 days	Mon 6/7/10	Fri 8/27/10	347
349	1.4.6.4	Create Documentation	60 days	Mon 8/30/10	Fri 11/19/10	348
350	1.4.6.5	Training	60 days	Mon 11/22/10	Fri 2/11/11	349
351	1.4.6.6	Integration of Reports into the Portal	150 days	Mon 2/14/11	Fri 9/9/11	350
352	1.4.6.7	Pilot Implementation	75 days	Mon 9/12/11	Fri 12/23/11	351
353	1.4.6.8	Production Implementation	100 days	Mon 12/26/11	Fri 5/11/12	352
354	1.4.6.9	Content Analysis/Reporting Collaboration Go Live	100 days	Mon 5/14/12	Fri 9/28/12	353
355						
356	1.5	Project Closing	18.33 days	Mon 6/11/12	Thu 7/5/12	
357	1.5.1	Project Review and Debrief	8.33 days	Mon 6/11/12	Thu 6/21/12	326
358	1.5.2	Closeout meeting	0 days	Thu 6/21/12	Thu 6/21/12	357
359	1.5.3	Deliverable - Final Report	10 days	Thu 6/21/12	Thu 7/5/12	358



Task | Progress | Summary | External Tasks | Split
Split | Milestone | Project Summary | External Milestone

BARBARA H. ANDREPONT

PROFESSIONAL EXPERIENCE

ESP Solutions Group (Evaluation Software Publishing, Inc.)
Senior Data Management Architect (2004 – Present)
Serves as the subject matter expert on education data dictionaries, EDEN/ED*Facts* reporting to the U.S. Department of Education, SIFA and NCES data standards, and electronic student record exchange systems. Provides expert advice to states in the design and development of large-scale enterprise applications.

Recent Client Projects

- Project Director for Ohio Department of Education's SIF Gap Analysis project
- Project Director for New Hampshire Department of Education i4see Policy and Procedure Manual project
- Subject Matter Expert for Delaware Department of Education Data Inventory and Data Dictionary project

CCSSO Decision Support Architecture Consortium
Expert Consultant (2004)

Performance Based Data Management Initiative Expert Consultant (2003 – 2005)
Led and participated in site visits for the U.S. Department of Education project to inventory and analyze various states' data resources and capabilities to report education data. Provided technical support to states in initial year of PBDMI (ED*Facts*/EDEN) reporting.

Louisiana Department of Education
Consultant/Planning Analyst (2000 – 2003)
Assisted the Director of Planning, Analysis and Information Resources (PAIR) in information technology, policy, personnel and budget matters for unit and Department of Education. Assisted with strategies for aligning IT efforts with agency strategic plan. Represented unit in national education information technology efforts, including: CCSSO Education Information Advisory Committee (EIAC), and NCES Forum. Participated in EIAC Standing Committee to inform US Department of Education Chief Information Officer on education data standards initiatives and issues, and assist in resolutions.

Information Technology Director (1990 – 2000)
Directed agency operations for 3 units supporting Louisiana DOE. Managed network and data collections for 67 public school districts. Led technology planning efforts of State Department of Education. Implemented statewide education data collection systems which included individual student records, staff records and district financial data and provided auditable basis for state funding of $3.5 billion to school districts. Led transition of statewide K-12 Education telecommunications to Internet. Expanded agency computer and network access and technical support for staff.

Information Systems Assistant Director, Management Consultant Supervisor, Application Project Manager (1979 – 1990)

Application Programmer/Analyst – State Universities (1972 – 1979)

EDUCATION

M.B.A. – University of Southwestern Louisiana (1979)
Certification in Data Processing – Institute for Certification of Computer Professionals (1978)
B.A. in Computer Science – University of Southwestern Louisiana (1972)

SELECTED HONORS AND PROFESSIONAL APPOINTMENTS

- Schools Interoperability Framework Association (SIFA)
  - Technical Board (2004 – Present)

    - Student Record Exchange Task Force Lead (2004 – Present)
    - Board of Directors member (2004)
    - Customer Involvement Work Group Co-Lead (2000 – 2003)
- Louisiana Computer Using Educators (LACUE)
    - President and Board Member (2000 – 2003)
- Louisiana Education Technology Advisory Committee Chairperson
- Council of Information Services Directors (CISD)
    - VP and Chairperson of CISD Conference (1999)

BARBARA S. CLEMENTS, Ph.D.

PROFESSIONAL EXPERIENCE

ESP Solutions Group, Inc.
Vice President for Education Services (1997 – Present)
Responsibilities include project design and management, program evaluation, software conceptualization, thought leadership, and consulting on education information management systems and technology utilization. Extensive work completed with U.S. Department of Education and state education agencies on the collection of data for the Education Data Exchange Network (EDEN). Guidance provided to states on their policies and procedures for maintaining privacy and security of student records in conjunction with the Family Educational Rights and Privacy Act (FERPA).

Recent Client Projects

- Project Director, Maryland Data Dictionary Project
- Project Director, Benedictine School Data Management System Plan
- Project Director, Kansas Course Codes Project

National Transcript Center
Chief Standards Officer (2006 – Present)
Responsibilities include development and implementation of standards related to student academic records, including contents and format developed in coordination with national standards groups, and procedures for maintaining privacy and security of student records in conjunction with FERPA.

Council of Chief State School Officers (Washington, D. C.)
Acting Director, State Education Assessment Center (1995 – 1996)
Directed projects designed to improve the quality and availability of information on education. Responsibilities included coordinating Center activities and advising project directors; coordinating a task force of Council members; developing funding proposals; and handling inquiries about Center projects and activities.

Project Director, Data and Information System Projects (1987 – 1997)
Directed a series of federally funded projects to promote better collection and management of education information. Oversaw the development and activity within 4 major areas: 1) indicators to assess the quality and progress of the education system; 2) handbooks for the standardization of student and staff data; 3) guidelines on information management systems; 4) and guidelines on technology implementation. Responsibilities also included analysis of data collection systems, convening of task forces and working groups, and presentation and dissemination of information to the public. Served on or chaired many national task forces.

Texas Education Agency
Education Program Director (1984 – 1987)
Provided oversight and guidance on the development of assessments for initial and continuing teacher licensure. Directed development and research efforts related to the Texas Teacher Appraisal System. Responsibilities also included analyzing and interpreting data, monitoring funded research projects, and developing support materials.

The University of Texas at Austin
Research Associate, R&D Center for Teacher Education (1977 – 1984)
Provided direction on numerous classroom management research projects. Responsibilities included data interpretation, training and supervision of research personnel, and dissemination of findings, including the provision of workshops all across the US.

EDUCATION

Ph.D. in Educational Psychology – The University of Texas at Austin (1991)
M.A. in Foreign Language Education – The University of Texas at Austin (1977)

B.S.Ed. in Education – The University of Texas at Austin (1969)

PUBLICATIONS AND PAPERS

Extensive list of publications and presentations. Available upon request.

JAMES BRUCE DENT
Post Office Box 352
Jefferson City, Missouri 65102
(b)(6)
Business Phone: 573-751-6950

CAREER OBJECTIVE

To obtain permanent employment in the Information Technology field in an organization that provides challenging opportunities in the areas of database administration and application development.

PROFESSIONAL PREPARATION

Graduate of Southwest Missouri State University May 1986
Earned a Bachelor of Science degree in Computer Information Systems

WORK EXPERIENCES

July 2005 Present
Missouri Office of Administration
Positions: Computer Information Technologist Specialist III

July 1986-July 2005
Missouri Department of Elementary and Secondary Education
Positions: Programmer I, Programmer/Analyst II, Programmer/Analyst III, Computer Information Technologist IV, Database Administrator, IT Manager

From 1986 to 1997, I developed batch applications using COBOL and Easytrieve and online applications using Cross System Product and command level CICS on an IBM VSE mainframe. In 1996, the department decided to move from a mainframe environment to a client server and web application environment. As we started progressing into the new environment during 1997, I was given the opportunity to move into the position of database administrator for our Oracle databases. In this position, I worked with the application development staff on designing and creating tables to support their applications. I was responsible for the administrative functions of the databases, including backups, restorations, installations and upgrades. I also wrote PL/SQL scripts to build reporting tables in the data warehouse environment. In the fall of 2000, I was promoted to IT Manager over the database and operations areas where I supervised the work of 5 employees. I also worked with vendors to keep maintenance and support contracts up to date and worked with technical support groups to troubleshoot and resolve software issues that occurred. With the statewide Information Technology consolidation, the Missouri Department Of Elementary and Secondary Education's Information Technology group was moved under the Office of Administration and I was reclassified as Computer Information Technologist Specialist where my primary duties are database administration (Oracle and MS SQL Server) and data warehouse design and development using Oracle PL/SQL and MS SQL Server Transact-SQL.

JOSHUA H. GOODMAN, PMP

PROFESSIONAL EXPERIENCE

ESP Solutions Group, Inc.
***Senior Project Manager* (2004 – Present)**
Extensive experience managing client projects, related workflow, and deliverables. Responsibilities include requirements gathering, business process, invoicing, and budget documentation, scheduling data system implementations and training, maintaining successful client relationships, the coordination of project tasks, managing communication with subcontractors, and updates to ESP project website content.

Recent Client Projects

- Project Director, Missouri Department of Elementary and Secondary Education's Longitudinal Data System
- Project Manager, Wyoming Department of Education's WISE Student Information System
- Project Manager, Wyoming Department of Education's statewide Schools Interoperability Framework (SIF) implementation
- Project Manager, Wyoming Department of Education's Fusion education portal project
- Project Manager, Alaska Department of Education and Early Development's Unity education portal project

Electronic Data Systems (EDS) Contract
***Business / Insurance Analyst* (2003 – 2004)**
Key information project management role supporting the EDS Project Life Cycle Process by developing, implementing, and monitoring two high-profile government projects. Analyzed financial data to detect irregularities and presented findings and recommendations to both state agencies and EDS senior management. Other areas of responsibility included analyzing operational systems, defining business rules, and creating program policy documentation, which included written updates to the Texas Medicaid Provider Procedures Manual.

Office of the Governor, Criminal Justice Division
***Program Administrator / Consultant* (2002 – 2003)**
Developed and implemented controls for grant program management. Successfully directed a statewide team of program monitors responsible for the evaluation of 1,300 grant programs and review of $150,000,000 in state and federal funding. The outcome of the project resulted in process automation and the development of productive working relationships with grant programs, various levels of management, and government officials.

G&S Typesetters and Book Production Services
***Production Coordinator / Account and Project Manager* (2000 – 2002)**
Coordinated the planning and production of professional trade and academic textbooks for Prentice Hall-PTR, Wadsworth, Addison-Wesley, Jossey-Bass, and McGraw-Hill/Mayfield. Other responsibilities included coordination of scheduling, editorial and proofreading functions, processing art, pre-press, and archiving operations, and managing client-partner relationships.

First American Flood Data Services, Inc.
***Project Manager/Technical Writer* (1995 – 2000)**
Executed special projects for the Vice President of Operations and Research; including production-related database development and maintenance, the writing and editing of training and procedure manuals, documentation of database hit-rates, and implementation of operational programs; resulting in an increase in program quality and productivity.

EDUCATION

P.M.P. – Project Management Institute (2005)
M.A. – The University of Texas at Austin (1998)
B.A. – The University of Michigan at Ann Arbor (1993)

SELECTED HONORS AND PROFESSIONAL APPOINTMENTS

Austin Community Relations Council, Board Member (2003 – 2005)
Young Austin Leadership Alliance, Board Member (2002 – 2004)

Leigh Ann Grant-Engle

(b)(6)

573-522-8310 work

CURRENT RESPONSIBILITIES:

Implemented the Missouri Student Information System (MOSIS) as the project manager; which has been a three phase project Phase I the implementation of a statewide ID system, Phase II linking the state ID to the state assessment data, and Phase III capturing the agencies core educational data at a student level.

Served as the Department of Elementary and Secondary Education (DESE) data representative for the states P-20 council, which recently secured a national grant to evaluate student success after leaving high school.

Worked with various researchers to determine effectiveness of the correlation between assessment and classroom application.

Manage the on-line Crystal Reports which provides assessment and data results to administrators and teachers. As well as the organization of the Building Level Indicator Support System (BLISS), which includes several hundred educational indicators that can be queried via the agencies web site.

Help to manage, plan and implement data systems that support the Missouri Assessment Program (MAP), and the Missouri School Improvement Program (MSIP), the Missouri Virtual School Program (MOVIP) and various other state and federal systems.

As DESE's Data Manager assisted various state and federal program staff in their program evaluations, as well as the nine Regional Professional Development Centers and various school programs.

Supervise and conduct collection, analysis, reporting and dissemination of data regarding Missouri public schools. This includes providing guidance to Department staff regarding appropriate data collection and reporting activities, developing procedures, queries and scripts to verify data accuracy and interpret trends.

Presented various educational statistics to Missouri public schools and their school boards, Missouri State Board of Education, Missouri Legislators, and National Center for Educational Statistics.

Serve as a member of a two-person team assigned to evaluate, establish and communicate the Department's Information Technology priorities. This includes initiating and facilitating discussions to determine the data collection and technology needs of individual sections and communicating those needs to the Information Technology group.

Communicate with and inform state policy makers, local school administrators, classroom teachers, parents, and the general public about the testing program, accreditation program, and various other state and federal programs.

Develop and conduct workshops, in-service programs, and other professional development activities that support the statewide assessment program and school improvement/accreditation initiatives.

Serve as liaison with testing contractors and Information Technology staff regarding project programming needs, timely and accurate reporting, and other data related issues.

SUMMARY OF ADDITIONAL QUALIFICATIONS:

Approve all requests for data to be used in research projects. This includes reviewing of proposals and securing and providing data at the necessary unit of analysis for the research.

Active member of the Education Information Management Advisory Committee (EIMAC); sponsored by the Council of Chief State School Officers; which provides guidance to the US Department of Education in terms of data collections and reporting.

Administered the statewide alternate assessment for students with severe cognitive disabilities. Responsibilities included training teachers on developing a portfolio assessment, providing technical assistance on implementation of the portfolio, and facilitating the scoring of the portfolios.

As Research Associate for the Office of Social and Economic Data Analysis (OSEDA) analyzed educational data to help Missouri school districts with school improvement initiatives.

WORK EXPERIENCE

Department of Elementary and Secondary Education	**January 1999 - Present**
Positions:	
Data Manager Deputy Commissioner Division	August 2000 Present
Assistant Director, Missouri Assessment Program Division of School Improvement	January 1999 -- August 2000
Research Associate Office of Social and Economic Data Analysis	September 1993 December 1998

EDUCATION

University of Missouri, Columbia, Missouri

Bachelor of Science, Education, 1991
Masters of Sociology, 1994

Recent Presentations:

"Show Me the Data: Growing Quality Data in Missouri" NCES Summer Forum
And Data Conference 2007 Washington DC, July 2007

"Zero to 950,000 in 9 Months" NCES Summer Forum
And Data Conference 2006 Washington DC, July 2006

"Successful Implementation from Kick-
Off to Sign-Off" 19th Annual MIS Conference Orlando, FL February 2006

John Harvey

(b)(6)

Highlights of Qualifications:

Over twenty years of professional experience including seven years in Information Technology.

Proven experience in problem-solving with a mind for analytical thinking.

Excellent technical writing and documentation skills.

Strong and effective communication skills with co-workers and with customers.

Highly motivated to see that work is performed to complete satisfaction of the customer.

Education:

Columbia College, Columbia, Missouri
Bachelor of Science in Computer Science, May 2002

William Jewell College, Liberty, Missouri
Bachelor of Arts in Physics, May 1987

Inducted to Sigma Pi Sigma National Physics Honor Society, February 1987

Professional Experience:

Computer Information Technologist II Missouri Office of Administration, Elementary and Secondary Education Support
April 2001 to Present

- Over four years of experience working as a team member in the Visual Studio.NET environment writing web-based applications in Visual Basic.NET.
- As part of the School Funding Formula development team, I was involved with the successful analysis, design, and development of the web-based application to fund Missouri schools.
- Enhance and maintain the web-based Annual Secretary of the Board Report which is used by all 524 school districts within the State of Missouri for reporting their financial data to the department.
- Serve on the Web Application Development Standards committee to review existing standards and recommend new standards that ensure consistent coding practices among the developers in the department.

Quality Control Dana Corporation
May 1988 April 2001

- Maintained comprehensive gauge calibration program in compliance with QS-9000 standards.
- Performed metrological studies for purposes of statistical analysis and supplier performance.
- Designed both variable and hard gauging for laboratory and production applications using computer-aided design software.
- Met on-site with customer engineering staff to address, troubleshoot and resolve quality issues.

ALEXANDER M. JACKL

PROFESSIONAL EXPERIENCE

ESP Solutions Group, Inc.
Chief Information Officer/Chief Architect (2005 – Present)
Executive responsible for strategy, marketing, sales, budgeting, personnel, program management and tactical implementation. Responsible for managing large-scale education technology projects from design to full implementation. Coordinates all entities involved in enterprise architecture planning. Provides analysis to state and local education agencies regarding the design, architecture, development, implementation and roll-out of K-12 data enterprise systems.

Recent Client Projects

- Project Director/Chief Architect, Connecticut Department of Education's SLDS Project
- Project Director/Chief Architect, Wyoming Department of Education's WISE Project
- USED Federal Data Model Prototype Project

Council of Chief State School Officers (CCSSO) Decision Support Architecture Consortium (DSAC)
Executive Partner (2004 – Present)
Analyzing technical needs and providing solutions to over 26 states through the CCSSO. Providing state and local education agencies with technical gap analysis, system architecture design, and project planning. Researching and documenting best practices of enterprise systems such as unique ID, student record-level collections, enterprise directories, data warehouses, security frameworks, portals, and vertical SIF implementations.

United States Open e-Learning Consortium
Chief Technologist (2001 – 2005)
Worked with 18 states to develop consensus on K-12 educational needs at the school, district, regional, state, and federal level. Directed efforts to build co-development agreements between major specification bodies in the K-12 space; IMS Global, SIF, ADL, OKI, and GEM. Guided the adoption of the IMS QTI ASI model in the SIF specification body.

IMS Global Learning Consortium, Inc.
Specification Development Manager/Technical Advisory Board Editor (2003 – 2004)
Managed development teams to design, establish, document, and publish specifications. Wrote narrative specifications for the IMS development teams, as well as designed and drove new context documentation for the specification. Worked with other specification and standard bodies (SIF, IEEE, ISO, etc.) on co-development.

Safety Net Solutions, Inc.
Vice President of e-Learning (2002 – 2003)
Vice President of Operations (2001 – 2002)

Massachusetts Department of Education
Director of Information Systems (1999 – 2001)
Responsible for long-term strategic planning, budgeting, and forecasting for the department. Oversaw the completion of numerous large-scale information management system projects. Evaluated vendor contracts and responsible for contract completion. Represented the department in negotiations with the Federal Government and with other states.

EDUCATION

Graduate Work in Programming – MIT (1990 – 1994)
B.A. in Print/Broadcast Journalism – University of Rhode Island (1987)

SELECTED HONORS AND PROFESSIONAL APPOINTMENTS

- Schools Interoperability Framework Association (SIFA) Technical Board Member (2002 – Present)
  - Instructional Services Task Force Lead (Present)
  - Data Model Task Force Co-Lead (2007 – Present)
- Co-Chairperson, (SIFA) Technical Board (2006 – Present)
- Choice Solutions, Inc.: Education Strategy Advisory Board (Present)

Diana G James

(b)(6)

PROFESSIONAL EXPERIENCE

Manager **2001 - Present**
Department of Elementary & Secondary Education - Jefferson City, MO

Oversee the Applications Development and Database section for the agency which consists of 19. Provide assistance and support for the agency in the area of technology which consists of web based applications for the collection of data from and dissemination of funding to 523 public school districts and 16 Charter Schools in the state of Missouri. Act in both Program and Project Manager roles.

- Program Management of the Applications Development and Support as well as the Database Administration teams.
- Project Management of small, medium, and large projects.
- Consult with and advise various levels of DESE staff concerning authomation possibilities for the Department.
- Act as Deputy for the IT Director.
- Serve on Statewide committees dealing primarily with Applications and Database.
- Member of Prime Vendor contract committee that is responsible for renegotiating the prime vendor contract for the State.
- Participated, as manager, in the evaluation and purchase of hardware, database and software components for the agency.
- Developed standards committee for the creation of design and development standards to be utilized in the software development area.
-

Computer Technology Consultant **1997-2000**
Rose International - Jefferson City, MO

Worked as a sub-contractor for the State of Missouri, through Anderson Consulting, on a Y2K project. Performed developer and team lead roles. Managed 6 staff as team lead.

Quality Assurance Analyst/Project Manager **1988 - 1997**
Edward Jones St Louis, MO

Part of a Quality Assurance team ensuring compliance with standards and verification that the system developed met the stated requirements.

QualityAssurance Analyst **1985 - 1988**
Office of Administration, State of Missouri Jefferson City, MO

Performed quality assurance testing and developed test scripts.

TECHNICAL SUMMARY

Operating Systems:	Windows 3.1x through Windows XP, MS DOS, VM/ESA, MVS
Hardware:	IBM PC, IBM 327x series
Software/Other:	Microsoft Access, HTML, MS .NET Framework (VB .NET) Cobol, JCL, IDMS, DB2, Oracle, MVS/TSO, MS Office Suite, MS Project Enterprise, MS Visio, COOL:Gen, ClearAccess

EDUCATION/CERTIFICATIONS

Project Management Certification State of Missouri, 2003
Bachelor of Journalism, University of Missouri-Columbia, December 1980
Additional studies in Computer Science at University of Missouri, Rolla; Lincoln University, Jefferson City, Missouri

PROFESSIONAL ORGANIZATIONS

Project Management Institute **2002 - Present**

ADDITIONAL ACTIVITIES

Mentoring Committee **2002**
State of Missouri

Member of a team developing a mentoring program for future IT Directors for the State. Developed criteria for both mentors and mentees with which to do matching and developed feedback forms for the CIO or his designee to review.

Risk Management Committee **2002**
State of Missouri

Member of a team working on a subsection of the Missouri Best Practices for Project Management, dealing with Risk Management. The team created forms, descriptions, and guidelines to be used in the Risk Management controls of Project Management. The committee followed the recommendations of Project Management Institute.

Application Development Methodology Committee **2007 - Present**
State of Missouri

Serving as a member of the Application Development Methodology Committee. The purpose of this committee is to develop a common and consistent methodology of standards and guidelines to be used in the process of Software Development. In addition, templates will be provided.

Architecture Review Committee – Applications Domain **Present**

Serving as a member of the Applications Domain sub-committee of the overall Statewide Architecture Review Committee. The goal of the overall committee is to enhance coordination, simplify integration, build a consistent infrastructure and generally allow greater efficiencies in the development of technology solutions. The purpose of this committee is to establish standards and guidelines for software tools as well as assessing proposed software tools to ensure they comply.

JANE JORDAN

COMPUTER INFORMATION TECHNOLOGY SPECIALISTS II

SUMMARY OF QUALIFICATIONS

- Team building, leadership, and conflict resolution and management skills used to establish and maintain effective working relationship with program groups to determine data needs based on state and federal requirements
- Technical expertise in analysis, design and creation of Oracle database systems and tables, optimize loading data in Oracle tables from mainframe sql tables, VSAM files and tape storage using Oracle sqlldr utility
- Ability to review and analyze processes and calculations in current programs, documentation and reports on multiple platforms to determine adhoc reporting needs
- Unique analytical problem-solving ability used to provide consultative guidance in sql queries to other application developers

EDUCATION

Bachelor of Science University of Missouri, Columbia Missouri, December 1974

Information Technology Equipment and Software operated

- Windows XP , Microsoft Office Outlook, Word, Access and Excel
- TCP/IP Implementation
- TOAD by Quest Software
- Clear Access Manager and Clear Access
- ETL and Copy Manager
- AIX Operating System on RS6000 using VI editor and kornshell
- Oracle database using SQL, SQLPlus, PL/SQL and Enterprice Manager
- Easyflow software for flow chart documentation
- Mainframe DOS/VSE operating system using JCL, COBOL, CSP, Easytrieve on VSAM files, sql tables and tape data storage
- EDEN Education Data Exchange Network Submission system
- Instruction in Microsoft SQL server, Microsoft Project Management, CoolGen, Visual Basic and Crystal Reports

ACHIEVEMENTS

- Work with program areas to analyze information about education programs at state, district and school level and transfer data used to evaluate effectiveness and efficiency of federal education programs to U.S. Department of Education using EDEN (Education Data Exchange Network) online internet tool. Resulting dataset populates annual CSPR federal reporting.
- Create a school improvement system measuring Adequate Yearly Progress (AYP) to comply with No Child Left Behind Act (NCLB) requirement that all schools, districts and states show that students are making adequate yearly progress in communication arts and mathematics
- Reporting system created to measure performance standards including thirteen measures of student performance in five areas of academic achievement, reading achievement, ACT achievement, career preparation and education persistence.

EMPLOYMENT HISTORY Department of Elementary Education State of Missouri

- Computer Information Technology Specialists II 2005 to present
- Comupter Information Technology Specialist I 1998-2005
- Computer Information Specialist III (title change) 1997-1998
- Programmer Analyst II 1992-1997
- Programmer 1991-1992
- Programmer Trainee 1988-1991

STEVEN KING

PROFESSIONAL EXPERIENCE

ESP Solutions Group, Inc.
Vice President (2005 – Present)
Responsibilities include project design and direction, data system architecture planning, data analysis, and strategy for local, state, and federal education agencies. Leadership and architectural direction for data warehouse and data inventory efforts. Acts as Project Director for ESP client engagements.

Recent Client Projects

- Project Director, Alaska Dept of Education and Early Development, Education Information Reporting Portal Project
- Project Director, North Carolina Dept of Public Instruction, EDEN/ EDFacts Reporting Project
- Project Director, Maine Dept of Education, Data Inventory Project Phase I
- Information systems architect, Missouri Dept of Elementary and Secondary Education, MOSIS project
- Consultant, US Department of Education, EDEN/EDFacts Support

Wyoming Department of Education
Director, Data Management Unit (2003 – 2005)
Managed department data collection, reporting and management activities aimed at maximizing the utility of agency information for decision making while minimizing the burden placed on schools and districts. Responsibilities included coordinating staff activities and priorities, policy development and recommendation, collaboration with schools and district on collection design and schedule, liaison to federal program offices and organizations. Also responsible for overseeing the internal technology plan and network infrastructure for the WDE.

Information Resources Manager (1989 – 2003)
Coordinated WDE data collection and reporting activities. Responsibilities included collection form design and automation; liaison work with schools, districts, and federal program offices; training of WDE and school district staff on data collection, collection design, and data driven decision making. Designed and built the Department's Oracle data system and warehouse. Designed and constructed the Department's first website.

Education Technology Consultant (1985 – 1989)
Consulted with Wyoming schools and districts on how to use technology in classrooms for instruction. Responsibilities included conducting workshops and trainings; curriculum design and review; and coordinating with state professional organizations. During this time, implemented and installed the first network for the WDE and the first e-mail system in state government.

Whisman School District (Mountain View, CA)
Computer Resource Teacher (1981 – 1982)
Taught computer science and computer literacy to middle school students. Trained district teachers in the use of computers in their classrooms and subject areas.

James Logan High School (Union City, CA)
Mathematics and Computer Science Teacher (1978 – 1981)

TECHNOLOGY PROFICIENCY

Database Management Systems: MS SQL Server; Analysis Services, Oracle, MS Access, Visual FoxPro
eXtensible Markup Language: XML schema development, XML style sheets and transformations (XSLT)
Web development: HTML CSS

Programming Languages: PL/SQL, Java, C, C++, Pascal, Logo, Visual Basic, SVG, SQL

EDUCATION

Teaching Credential in Mathematics, Life Science – San Jose State University (1978)
B.A. in Mathematics – University of California, San Diego (1977)

PROFESSIONAL ORGANIZATIONS

- Schools Interoperability Framework Association (SIFA)
  - Board of Directors (2005 – Present)
  - SIFA Treasurer (2008)
- Education Information Management Advisory Consortium (formerly EIAC)
  - EIAC Chair (1999 – 2000), EIAC Vice Chair (1998 – 1999)
  - General Statistics Permanent Standing Task Force
    - Chair (2004 – 2005)
    - Vice Chair (2002-2004)
  - General Statistics Sub-committee
    - Chair (1997– 1998)
    - Vice Chair (1996-1997)
- National Forum on Education Statistics
  - Forum Vice Chair (1994)
  - Technology, Dissemination, and Communication Committee
    - Chair (1993 – 1994)
    - Vice Chair (1992-1993)
  - Education Indicators Task Force Chair (2002-2005)
  - Security Guide Task Force Chair (1996-1998)

Jeremy J. Kintzel

(b)(6)

Professional Experience

research associate, Missouri Dept. of Higher Education (Jefferson City, MO) Aug. 2006 present

- administered collection of student unit-record enrollment, term registration, and completions data from 33 public campuses (220,000 students in fall 2006 enrollment dataset)
- conducted auditing and analysis of student-level data using SAS (intermediate proficiency) in a UNIX environment
- served as Missouri coordinator of the National Center for Education Statistics Integrated Postsecondary Education Data System (IPEDS)
- represented the Department on research, data, and policy issues at regional and national conferences and workshops
- provided ad-hoc analysis and formal written reporting on data and research issues to the Missouri General Assembly, Office of the Governor, the Coordinating Board for Higher Education, the State Auditor, national education organizations, and other stakeholders
- provided research support and consultation on data issues associated with statewide strategic planning
- compiled and coordinated publication of the *Statistical Summary of Missouri Higher Education*
- co-authored an extensive grant-funded report on financial aid distribution at selected public four-year institutions
- edited revision of formal documentation governing collection of student-level enrollment and completions data collected from public postsecondary institutions
- managed collection and analysis of aggregate surveys from postsecondary institutions on student demographics, transfer, financial aid distribution, career / technical education, and other areas of ongoing policy focus
- negotiated and managed memorandum of understanding with the University of Missouri Columbia Department of Economics which provides additional data management and research support

program specialist, Missouri Dept. of Higher Education (Jefferson City, MO) Sept. 2005 Aug. 2006

- participated in state-level policy development and/or Department initiatives focusing on mathematics, engineering, technology, and science (METS), early childhood education and health, developmental education, transfer / articulation, assessment and accountability, P-20 coordination, dual / advanced credit, program inventory management, and teacher education
- served as primary or supporting Department liaison to statewide and regional organizations, including ACT, the MOREnet Council, the Missouri Developmental Education Consortium, Missouri Assessment Consortium, and other state agencies
- co-drafted revised Recommended High School Core Curriculum, adopted by the CBHE in June, 2006

adjunct instructor (English composition and literature), Kansas City Kansas Community College Aug. 2000 Dec. 2005

teacher (language arts), Morgan County R-II High School (Versailles, MO) Aug. 2003 May 2005

adjunct instructor (English composition), Penn Valley Community College (Kansas City, MO) Aug. 2000 July 2003

teacher (language arts), Hayden High School (Topeka, KS) Aug. 1998 May 2000

special needs vocational coach, DeSoto High School (DeSoto, KS) Sept. 1997 May 1998

contract instructional designer, Pryor Resources (Shawnee, KS), Helzberg Diamond Shops (Kansas City, MO) Aug. 1996 Sept. 1997

instructor / graduate teaching assistant, Kansas State University (Manhattan, KS) Aug. 1994 May 1996

Education

Master of Information Systems Management (data administration and management), Keller Graduate School of Management /DeVry University June 2008

Certificate (education), Ottawa University (Ottawa, KS) May 1998

Master of Arts, (English), Kansas State University (Manhattan, KS) May 1996

Bachelor of Arts, (English), Pittsburg State University (Pittsburg, KS) May 1994

References Available Upon Request

GLYNN D. LIGON, Ph.D.

PROFESSIONAL EXPERIENCE

ESP Solutions Group, Inc.
President and Chief Executive Officer (1993 – Present)
Founded leading K-12 education data services firm. Responsible for overall strategic direction and operational performance of the firm. Client-facing responsibilities include the development and management of strategic information services and technology projects, evaluation of the effectiveness of programs, and design and development of large-scale software applications. Clients include the U.S. Department of Education and dozens of state education agencies.

Austin Independent School District
Executive Director, Dept. of Management Information (1985 – 1993)
Responsible for managing the activities of the department. Served on the Superintendent's Cabinet. Provided coordination and efficiency among the District's offices, collecting, analyzing, and reporting information. Directed the activities within six major areas: 1) research, evaluation and student testing; 2) student records, eligibility, transfers, and District elections; 3) systems and applications computer programming; 4) computer operations and production; 5) telecommunications for voice, data, and video transmissions; 6) and planning and projections for student enrollment and facility use.

Director, Office of Research and Evaluation (1983 – 1985)
Responsible for providing AISD with information for the improvement of instructional programs. Supervised federally and locally funded project evaluations. Prepared, administered, and reviewed various budgets under which the office is funded. Recruited, screened, and hired competent personnel. Supervised all research activities conducted in the District by external agencies. Acted as a general consultant to the AISD staff in all phases of evaluation. Served as official liaison between the public, the media and the District.

Senior Evaluator (1972 – 1983), Austin I.S.D. and Edgewood I.S.D.
Systemwide Testing, Compensatory Education, Title VII Bilingual Program, ESEA Title VII Bilingual Project, ESEA Title I Program

Edgewood I.S.D. and Mission I.S.D. (Texas)
Teacher (1969 – 1972)

EDUCATION
Ph.D. in Educational Psychology – The University of Texas at Austin (1980)
M.A. in Psychology and Education – Texas A & M University (1971)
B.A. in Psychology – Baylor University (1969)

PUBLICATIONS AND PAPERS
Extensive list of evaluation papers and other publications. Available upon request.

SELECTED HONORS AND PROFESSIONAL APPOINTMENTS
American Educational Research Association: Vice President (1991-1993)
Southwest Educational Research Association: President (1990-1991)
United States Department of Education: Evaluation Review Panel (1992-2000)
National Education Goals Panel: Data Definition Task Force (1993-1995)

PROFESSIONAL ORGANIZATIONS

- American Educational Research Association
  - Division H, Public School Evaluation, Program Chair (1987)
  - Division H, Pre Post Press Editor (1988 – 1990)
  - Vice President (1991 – 1993)
- Southwest Educational Research Association
  - Secretary (1987 – 1989)
  - President Elect; Program Chair (1989 – 1990)
  - President (1990 – 1991)
- Directors of Research and Evaluation of Large City Schools
  - Chair (1989)
- Texas Joint Urban Evaluation Council
  - Chair (1987 – 1989)
  - Chair (1991 – 1993)
- National Association of Test Directors
  - Board Member (1989 – 1993)

PROFESSIONAL APPOINTMENTS

- Commissioner's Advisory Committee for Research & Evaluation (Texas Education Agency), Chair (1988 – 1990)
- Council of Chief State School Officers Steering Committee, National Assessment Planning Project (1988 – 1989)
- Steering Committee for the Community Needs Assessment for Travis County, City of Austin, and the United Way; Chair of the Technical Advisory Committee (1988)
- Annual Texas Testing Conference, Planning Committee (1986 – 1988); Steering Committee (1988 – 1993)
- Information Systems Advisory Committee, Texas Education Agency (1988 – 1990)
- Science Academy of Austin Advisory Board (1988 – 1993)
- National Center for Education Statistics Interstate Student Records Transfer Task Force (1989 – 1993)
- Research and Development Center Committee on Collaboration, University of Texas (1989)
- Cooperative Education Data Collection and Reporting Standards Task Force (1990)
- Evaluation Review Panel, United States Department of Education (1992 – Present)
- National Education Goals Panel, Data Definition Task Force (1993 – 1995)
- Campus Leadership Team, Anderson High School (1994 – 1996)

Liza Merriman

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SUMMARY OF QUALIFICATIONS

Solutions-focused, team oriented .NET developer capable of leading projects from concept to completion. Over six years experience with strong analytical skills combined with object oriented programming techniques. Enjoys all aspects of the project including meeting with customers, analysis, documentation, development, troubleshooting, testing and implementation. Strives to meet deadlines and learn innovative technology in order to increase reliability and improve productivity.

TECHNICAL PROFICIENCIES

- Languages: VB.NET, Visual Basic, COOL:Gen, HTML, SQL, JavaScript, VBScript, ASP, XML
- Tools: Visual Studio .NET 2003 and 2005, MKS, Crystal Reports, Crystal Enterprise, COOL:Gen, Microsoft Office Project, Microsoft Suite (Word, Excel, PowerPoint, Access, Outlook, FrontPage), Adobe PDF, TOAD, Advanced Query Tool, FTP, Telnet, SnagIt, AJAX, Team Foundation Server(TFS), Oracle, SQL Server, ANTS Profiler

PROFESSIONAL EXPERIENCE

Missouri Office of Administration –Information Technology Services Division
Department of Elementary and Secondary Education Support
Computer Information Technologist, 2002 – present

- Promoted to a Computer Information Technologist II in June 2005 and a Computer Information Technologist III in March 2008.
- Technical Lead of ITSD - DESE Applications Development Division
- Responsible for mentoring new employees as well as researching and documenting new technologies and methodologies.
- Perform analysis and document requirement specifications for upcoming VB.NET web applications, data processes, and Crystal Reports.
- Designed, developed and currently maintains many VB.NET web applications ranging from internal maintenance screens and systems to high volume data collection web applications.
- Designed, developed and currently maintains several Crystal Reports, including the statewide Educator Inappropriate Certification Report.
- Developed the front end of the department's newest data access functionality. All new VB.NET applications use this Microsoft.NET web service to process transactions, select, update, delete, and insert records to our database tables.
- Lead developer in fulfilling the department's goal in regards to using new advanced technology by creating a Microsoft.NET web service in conjunction with a COOL:Gen client which resulted in programming the first VB.NET payment.
- Known within the department by coworkers as a knowledgeable resource regarding VB.NET, MKS, and Crystal Reports.
- Primary contact for the DESE Payment Management System. This includes the web application and the payment calculations.
- Troubleshoot and diagnose many application errors in the development, test, and production environments.
- Volunteered to assist developers in other Missouri state departments regarding .NET and Crystal Reports.
- Provide training courses onsite to other developers in the group who are interested in learning new functionality.
- Participate in code walkthroughs and customer and developer specification walkthroughs to ensure that the applications, reports and data processes are designed and developed per ITSD-DESE standards.
- Provide application training and customer service to DESE clients.

- Assisted in interviewing processes for vacant Computer Information Technologist positions.
- Produce spreadsheets for customers by writing complex SQL queries. These spreadsheets contain data that cannot be accessed through any of the developed web applications or reports.
- Received several ACTS cards which are recognition rewards offered by the State of Missouri Office of Administration.
- Lead developer in the implementation of the department's first VB.NET 2005 web application which utilized the 2.0 frameworks new features such as master pages, tree views and AJAX.

PROFESSIONAL AFFILIATIONS

- ITSD-DESE Application Development Standards Committee
- ITSD-DESE Application Design Standards Committee
- ITSD-DESE Report Standards Committee

EDUCATION AND TRAINING

- A.S Web Development and Computer Programming, State Fair Community College – Jefferson City, MO
- COOL:Gen Development Environment training, Computer Associates – Plano, TX
- Crystal Reports 9 Development and Design (Onsite) - Jefferson City, MO
- Introduction to XML, MOTEC – Jefferson City, MO

References: Available upon request
Code and Specification samples: Available upon request

Dr. Tom Ogle: Project Co-Director
Department of Elementary and Secondary Education
Jefferson City, MO

Qualifications:

Project Management Skills: Managed projects at section, business unit and agency levels with members from multiple organizations, information technology units and varied functional areas. Worked with team members to develop and implement innovative solutions and to identify and resolve problems.

Data Analysis Skills: Provided assistance daily to various members of the Missouri education community in locating and explaining summary education statistics and in performing ad hoc queries of longitudinal aggregate data in our data repository at state, district, school, teacher and class levels.

Data Collection Experience: Managed agency's primary data collection system for past 17 years and served as agency designated reviewer for all data collection form changes and new data collection form development.

Professional Experience:

Director of School Core Data Section, 1995 to Present
Department of Elementary and Secondary Education
Directed combined sections responsible for aggregate data collections used for state accountability system and entitlement payments as well as production of state agency summary reports. Managed transition from PC diskette collection system to Web based system including oversight of the development of web pages for use by both school district and state agency staff. Also provided oversight for development of process for transfer of data to legacy mainframe computer system and to data repository for ad hoc reporting. Since 1995 served as team leader for the agency-wide Core Data Team comprised of data stewards from various business units responsible for maintenance and enhancement of primary data collection systems within our agency.

Director of Classification Data, 1988 to 1995
Department of Elementary and Secondary Education
Directed section responsible for aggregate data collections used for state accountability system. Managed transition from paper collection system to PC diskette collection system including oversight of the development of microcomputer program modules for use by school district staff and process for diskette data file upload to state mainframe computer. Provided technical support for school district staff.

Microcomputer Consultant, 1985 to 1988
Department of Elementary and Secondary Education
Provided consultation to staff in over 500 Missouri public school districts related to implementation of microcomputer technology for instruction. Reviewed and negotiated microcomputer equipment grant applications from school districts.

Co-Founder, 1980 to 1985
Century Next Computers
Started and directed operations of two retail microcomputer stores. Developed and implemented business plan including direct management of one location and associated outside sales staff.

High School Teacher, 1976 to 1983
Boone County R-VI School District
Taught Vocational Agriculture students and served as building and program administrator.

Other Experience:

Chair of the Metadata Task Force National Forum on Education Statistics 2008

Chair of the Decision Support Literacy Task Force of the National Forum on Education Statistics, 2004 to 2005.

Member of General Statistics Permanent Standing Task Force of the Council of Chief State School Officers, an advisory group related to EDEN, sponsored by USDOE, 2001 to present.

Chair of the Technology in Schools Task Force of the National Forum on Education Statistics, 1998 to 2002.

Chair of the Education Information Advisory Committee of the Council of Chief State School Officers, 1998 to 1999.

Chair of the Technology, Dissemination and Communication Committee of the National Forum on Education Statistics, 1997 to 1998.

Education:

Ph.D., University of Missouri-Columbia, 1987

M.Ag.Stu., University of Queensland-Brisbane, 1976

M.Ed., University of Missouri-Columbia, 1974

B.S., University of Missouri-Columbia, 1973

Publications:

U.S. Department of Education, National Center for Education Statistics. *Technology in Schools: Suggestions, Tools, and Guidelines For Assessing Technology in Elementary and Secondary Education,* NCES 2003-313, prepared by Tom Ogle (chair), Morgan Branch, Bethann Canada, Oren Christmas, John Clement, Judith Fillion, Ed Goddard, N. Blair Loudat, Tom Purwin, Andy Rogers, Carl Schmitt, and Mike Vinson of the Technology in Schools Task Force, National Forum on Education Statistics. Washington DC: 2002

Recent Presentations:

"Metadata System Guidance for State and Local Education Agencies" NCES Summer Forum And Data Conference 2008 Washington DC, July 2008

"Show Me the Data: Growing Quality Data in Missouri" NCES Summer Forum And Data Conference 2007 Washington DC, July 2007

"Metadata System Guidance for State and Local Education Agencies" NCES Summer Forum And Data Conference 2007 Washington DC, July 2007

"Best Practices: Submitting Data to EDEN" NCES Summer Forum And Data Conference 2006 Washington DC, July 2006

"Successful Implementation from Kick-Off to Sign-Off" 19th Annual MIS Conference Orlando, FL February 2006

"EDEN as Viewed from the State Perspective," 18th Annual MIS Conference, New Orleans, Louisiana, February 24, 2005.

"Improving the Quality of District-Level Education Data: Technical Strategies and Policy Considerations," 18th Annual MIS Conference, New Orleans, Louisiana, February 24, 2005.

"Highly Qualified Teacher Identification," 18th Annual MIS Conference, New Orleans, Louisiana, February 24, 2005.

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SHELLY A. PAREY

OBJECTIVE

To further my knowledge in the Information Technology field and to be a benefit to the company that I work for. I would like the opportunity to utilize my skills as a project manager and to continue learning.

EMPLOYMENT

October 2000-Present State of Missouri (OA Information Tech. Services Division) Jefferson City, Missouri

Current Position: Computer Information Technology Supervisor

- State Certified Project Manager; one of three project managers in the applications development group that supports the Department of Elementary and Secondary Education (DESE).
- Assigns tasks to the project team members, develops and maintains project plans, creates all project management related documents per the State Project Management standards, and ensures that all DESE standards are being followed.
- Assists manager in evaluation of project team members.
- Supervisor for a team of 6 developers, coordinating vacation times, assignments, and reviews.
- Management of the IT priority system; which includes enhancements, production issues, and new projects for multiple systems at DESE.
- Member of the Development and Design Standards team.
- Develops and maintains Advantage:Gen, VB.NET, and Crystal applications.
- Develops header graphics and layouts for system web pages as needed.
- Provides customer support and assistance.

1995-2000 Speedline Electrovert Camdenton, Missouri

Final Position: Purchasing Agent

- Responsible for the forecasting, purchasing, and inventory control for a variety of electrical and mechanical parts.
- Worked with engineers and suppliers in product development for better quality and cost control.
- Participated in the implementation of a new software system.
- Established departmental problem-resolution procedures.

EDUCATION/CERTIFICATION

1996-2000 Columbia College Lake Ozark, Missouri

- Bachelor of Science, Computer Information Systems (2000)
- Associate in Arts (1998)

1993-1995 Missouri State University Springfield, Missouri

2004-2007 IT Advisory Board Jefferson City, Missouri

- Project Management certification for the State of Missouri

SKILLS

- Microsoft Project 2007
- Microsoft Project Server 2007
- Advantage:Gen 6.0
- VB.NET
- Visual C++
- HTML
- ASP
- JavaScript
- Crystal Reports
- Toad (Oracle query and maintenance)
- AQT (SQL Server query and maintenance)
- Microsoft Office
- Adobe Photoshop 7.0
- Adobe Imageready 7.0
- Microsoft Image Composer

Michael John Podgursky

Telephone numbers

Office:(573) 882-4574
FAX: (573) 882-2697
E-Mail: PodgurskyM@Missouri.Edu

Academic Background

Degrees: Ph.D., University of Wisconsin-Madison, 1980
M.A., University of Wisconsin-Madison, 1976
B.A., Cum Laude, University of Missouri-Columbia, 1974

Professional Associations

American Economic Association
American Education Finance Association
Society of Labor Economists

Employment

Professor of Economics University of Missouri Columbia Fall, 1995 - present
Scholar-in-residence. Ewing Marion Kauffman Foundation. Kansas City. Fall, 2005 Fall, 2006
Middlebush Professor of Economics, Fall, 2002 Fall, 2005
Economics Department Chair, University of Missouri - Columbia, Summer 1995 Fall, 2005
Professor of Economics, Department of Economics, University of Massachusetts at Amherst, Fall, 1993 -Summer, 1995
Associate Professor of Economics, University of Massachusetts at Amherst, Fall, 1987 - Summer, 1993
Assistant Professor of Economics, University of Massachusetts at Amherst, Fall, 1980 - Summer, 1987.
Associate Director, Massachusetts Institute for Social and Economic Research, University of Massachusetts at Amherst, Summer 1992 - 1995.
Visiting Assistant Professor of Economics, Notre Dame University, Spring, 1986.
Cooperating Faculty, Labor Relations and Research Center University of Massachusetts, 1980 to 1995.
Lecturer, Department of Economics, Notre Dame University, 1979-80

Selected Publications

Books:

Dale Ballou and Michael Podgursky. Teacher Pay and Teacher Quality. Kalamazoo, MI: W.E. Upjohn Institute, 1997.

Articles and Published Reports:

M. Podgursky. 2006. Is It Time To Rethink Teacher Pensions in Maryland? Baltimore, MD: Abell Foundation and Maryland Public Policy Institute. http://www.abell.org/publications/detail.asp?ID=123

M. Podgursky and R. Tongrut. "(Mis)-Measuring the Relative Pay of Teachers." Education Finance and Policy. Vol. 1 No. 4 (Fall 2006), pp. 425-440.

M. Podgursky and M. Springer. "K-12 Public School Finance in Missouri: An Overview." Regional Economic Development. Federal Reserve Bank of St. Louis. Volume 2 No. 1 (2006), pp. 31-50.

M. Podgursky. "Is There a 'Qualified Teacher' Shortage?" Education Next. Vol. 6 No. 2 (Spring, 2006), pp. 27-32.

M. Podgursky. "Teacher Licensing in U.S. Public Schools: The Case for Simplicity and Flexibility." Peabody Journal of Education. Vol. 80 No. 3 (2005), pp. 15-43.

M. Podgursky, R. Monroe, D. Watson. "Teacher Pay, Mobility, and Academic Quality." Economics of Education Review. Vol. 23 (2004). Pp. 507-518.

M. Podgursky. "Fringe Benefits: AFT and NEA Teacher Salary Surveys." Education Next Vol. 3 No. 3 (Summer 2003), pp. 71-78.

M. Podgursky, M. Ehlert, R. Monroe, D.Watson, J. Wittstruck. "Student Loan Defaults and Enrollment Persistence."
Journal of Student Financial Aid. Vol. 32. No. 3, 2002, pp. 27-42.

D. Ballou and M. Podgursky. "Seniority, Wages and Turnover Among Public School Teachers." Journal of Human Resources. Vol. 37. No. 4 (Fall 2002), pp. 892-912.

M. Podgursky. "Statistical Analyses of Economics NRC Scores." in Evaluating Research Productivity University of Kansas. Merrill Advanced Studies Center Report No. 105. June 2001. pp. 47-50.

D. Ballou and M. Podgursky. "Defining Merit: How Should We Pay Teachers?" Education Next Vol. 1 No. 1
(Spring 2001), pp. 16-25. http://www.educationnext.net/2001sp/16ballou.html

D. Ballou and M. Podgursky. "Reforming Teacher Preparation and Licensing: What Does the Evidence Show?" Teachers College Record Vol. 101, No. 1 (Winter 2000), pp. 5-26.

D. Ballou and M. Podgursky. "Teacher Recruitment and Retention in Public and Private Schools." Journal of Policy Analysis and Management, Vol. 17, No. 3, June 1998, pp. 393-417.

D. Ballou and M. Podgursky. "Some Unanswered Questions Concerning National Board Certification" Education Week
June 11 1998.

D. Ballou and M. Podgursky. "Rural Schools," Rural Development Perspectives. Vol. 10, No. 3, (June 1995), pp. 6-16.

D. Ballou and M. Podgursky. "What Makes a Good Principal? How Teachers Assess the Performance of Principals." Economics of Education Review, Vol. 14, No. 3, (1995) pp. 243-252.

D. Ballou and M. Podgursky. "Recruiting Smarter Teachers." Journal of Human Resources, Vol. 30, No. 2 (Spring 1995), pp. 326-338.

D. Ballou and M. Podgursky. "Teacher Quality in Public and Private Schools," Proceedings of the Social Statistics Section, American Statistical Association Annual Meetings, 1994.

Contributions to Edited Volumes:

M. Podgursky. "Teams versus Bureaucracies: Personnel Policy, Wage-Setting, and Teacher Quality in Traditional Public, Charter, and Private Schools." in Mark Berends (ed.) Charter Schools: Their Growth and Outcomes. Mahwah, NJ: Lawrence Erlbaum Associates, Inc. 2007 forthcoming.

M. Podgursky. "Is Teacher Pay 'Adequate?'" in Paul Peterson and Martin West (eds) School Money Trials. Brookings Institution Press, 2007 forthcoming.

M. Podgursky. "Improving Academic Performance in U.S. Public Schools: Why Teacher Licensing is (Almost) Irrelevant" in Fredrick Hess, Andrew Rotherham, and Kate Walsh (eds.) Teacher Training and Quality: New Directions in Policy. Cambridge, MA: Harvard Educational Press, 2004, pp. 255-278.

M. Podgursky. "Regulation Versus Markets: The Case for Greater Flexibility in the Market for Public School Teachers." in Margaret Chang and Herbert Walberg (eds) Tomorrow's Teachers Richmond CA: McCutchan. 2002. pp. 117-148.

Referee/ Reviewer: American Economic Review, Review of Economics and Statistics, Journal of Human Resources, Industrial and Labor Relations Review, Industrial Relations, Growth and Change, Applied Economics, Cambridge Journal of Economics, Small Business Economics, Contemporary Policy Issues, Eastern Economic Journal, Education Matters, Teachers College Record, Educational Researcher, Economics of Education Review, Journal of Policy Analysis and Management, Education Evaluation and Policy Analysis

National Science Foundation, Smith-Richardson Foundation, Fordham Foundation

Other Professional Service

National Research Council, Panel on Teacher Preparation. 2005-present.
Editorial Board, Education Finance and Policy, 2004-present
Board of Directors, Missouri Show Me Institute. 2005-present
Advisory Board,. National Center for Teacher Quality. Washington, D.C. 2003-present.
Advisory Board. American Board for Certification of Teachers Excellence, Washington, D.C. 2001- present
Technical Board of Advisors, Department of Education Reform, University of Arkansas, 2005-present
NCES School Finance Technical Review Panel, 2004-present
IES expert review panel, 2004.
ERIC Advisory Board, 2004-present
Member, Cleveland Conference, 2005-present

Recent Funded Research

National Center for Education Statistics. Research Potential of State Administrative Data on Teacher Pay and Benefits. (2006).

Co-Investigator, National Center for Performance Incentives, Vanderbilt University, (IES research center, 2006-2011).
($550,000)

Co-Investigator, Center for Analysis of Longitudinal Data in Education Research (CALDER), Urban Institute (IES research center, 2007-2009.

Ewing Marion Kauffman Foundation. "The Market for Math and Science Teachers in the K.C. Metro Area." ($60,000).

Missouri Department of Higher Education/ Lumina Foundation. Affordability, Access and Performance of Missouri Public Higher Education Institutions. 2000-2004 ($490,000)

Smith Richardson Foundation. Personnel Policy in Traditional Public, Private, and Charter Schools 2001- ($63,000)

(b)(6) (b)(6)
Work: 573-751-6859
micah.porter@oa.mo.gov

Micah Porter

Experience

2000–Present State of Missouri – OA-ITSD Jefferson City, MO
Computer Information Technologist
- Develop and Maintain Department Web & GUI Applications
- Responsible for critical state applications such as:
  - Educator Certification System
  - School Funding Formula
- System Analysis and Design
- Mentor to New Developers

2000–2000 State of Missouri - DESE Jefferson City, MO
Software Developer – Internship
- Development and Maintenance of Department Applications
- Application Security Administration
- Project Specification Development

1997–2000 Columbia College - Lake Campus Columbia, MO
Computer Lab Technician / Assistant
- Assisted Students With Computer Related Assignments
- Managed Campus LAN
- Responsible for 26 Computer Systems

Education

2002–2004 William Woods University Fulton, MO
- **Masters in Business Administration**

1996–2001 Columbia College Columbia, MO
- **B.S., Computer Information Systems**
- Minors in Both Management and History.
- Graduated with Honors.

Teaching

2002– Present State Fair Community College Sedalia, MO
- **Teach online courses in "Intro to CIS", "XML", and "Java"**

Technology

Microsoft operating system; MS Office Suite, MS Visual Basic .NET, HTML, ASP, XML, Java, and Cool:Gen.

References

Available Upon Request

MICHELLE LYNN WAGNER

(b)(6)

OBJECTIVE

Seeking a position where I can fully utilize my varied background, skills, and education.

EDUCATION

May 2004 Lincoln University, Jefferson City, MO 65101
Bachelor of Science Degree with a major in Computer Information Systems

GPA 3.814 Magna Cum Laude

Courses: Data Files and Databases, System Development and Methodology, Perl, Ruby, Visual Basic, Beginning and Intermediate COBOL, Computer Graphics, Internet Programming HTML and Java, Networking, Microsoft Office.

WORK HISTORY

9/04 to Present **Office of Administration**
Information Technology Services Division – DESE
Computer Information Technologist I

Create and maintain Oracle PL/SQL and SQL Server T-SQL scripts. Convert existing Oracle PL/SQL scripts to SQL Server T-SQL. Set up data transformation packages in SQL Server to ftp data to the mainframe and run T-SQL scripts. Set up jobs using SQL Server Enterprise Manager to run T-SQL scripts. Analyze, modify, test, implement code and verify data accuracy. Create and modify tables. Make data corrections and move code, data and tables from one environment to another. Load data using Oracle SQLLOADER utility. Implement applications on AIX. Install and test new software such as Advanced Query Tool and iWay DataMigrator.

- Visual Basic .NET training through MOTEC
- SQL Server training through MOTEC
- Crystal Reports XI through MOTEC

12/00 to 9/04

Department of Economic Development
Management Information Systems
Clerk IV

Routinely worked with Microsoft Access, Word, Excel and Outlook, generated queries and reports from Microsoft Access and Excel, processed and tracked hardware and software maintenance renewals, maintained software licensing information, data entry, prepared purchase requisitions, assisted staff with miscellaneous IT projects.

- Perl training through MOTEC

4/97 to 12/00

Department of Economic Development
Neighborhood Assistance Program
Clerk Typist II

Created and maintained Microsoft Access databases, routinely worked with Microsoft Outlook, Word, Excel and Access, assisted with the creation and maintenance of the NAP website, assisted with the development of the NAP FAS database, generated queries and reports from Microsoft Access databases, data entry, training in Microsoft Office, training in customer service, assisted with the preparation and development of contracts, directed incoming telephone calls, assisted the general public, created and maintained files, arranged travel and accommodations, prepared purchase supply requisitions, processed expense accounts, sorted and distributed mail, prepared internal and inter-departmental documents.

10/95 to 4/97

Department of Economic Development
Community and Economic Development
Receptionist (Clerk Typist II)

Directed incoming telephone calls, assisted the general public, logged State cars in and out, filed car packets and mileage forms, sorted and distributed mail, prepared purchase and supply requisitions, maintained supply inventory.

12/93 to 6/95

Missouri Senate
Senator John D. Schneider
Secretary

Receptionist, worked with the Senate Calendar, scheduled group tours for schools and other organizations, typed correspondence to constituents

and other agencies, received incoming telephone calls, created filing system, maintained all files, worked with Community Service Directory for the Senator's district, handled all incoming and outgoing mail, transcribed letters, data entry, received and sent faxes, ran errands within the Senate and House, communicated with various State and Federal agencies and out-of-state departments, and implemented ideas for the workflow.

RELATED SKILLS

- Dependable, enthusiastic and quick to learn.
- Independent works with minimal supervision and contributes to a team.
- Ability to communicate and maintain effective working relationships with others.
- Effectively handles multiple tasks.

Paul Gerard Wright

3608 West Hilton Drive - Columbia, MO 65203
(1)( )

PROFESSIONAL EXPERIENCE

Chief Information Officer **2001-Present**
Interim Chief Information Officer **2000-2001**
Department of Elementary & Secondary Education - Jefferson City, MO
Oversee Information Technology section for the agency which consists of 40 employees and an annual budget of $3 million. Provide direction for the agency in the area of technology which consists of web based applications for the collection of data from and dissemination of funding to 524 public school districts in the state of Missouri. The Information Technology section consists of networking, database administration, and software development groups.
Primary duties include:

- Implementing Missouri Project Management Best Practices in the Department.
- Continuing to develop Project Management databases to be used as part of the Best Practices implementation.
- Developing and implementing disaster recovery procedures for the Department.
- Re-vamping the Information Technology (IT) section and creating a functional organization chart of the new organiztion.
- Working with business divisions to institute a Project Management Office and distributed software development as part of the IT restructuring.
- Establishing IT Liaison positions within the divisions. These Liaisons will be a main link between the divisions and the IT section.
- Providing Liaison training.
- Establishing a communications plan between IT and various areas and levels of the Department.
- Participating in the Information Technology Advisory Board (ITAB) meetings, which consists of the IT Directors from each State agency. Also, participating in various ITAB sub-committees, such as IT Consulting Review Committee, Performance Measures Committee, and Total Cost of Ownership/Return on Investment (TCO/ROI) Committee.

Manager - Information Technology **1996-2001**
Department of Elementary & Secondary Education - Jefferson City, MO
As project manager for Information Systems Information Strategy Plan (ISP), researched toolsets for integration into the Department's new client/server environment, recruit college full-time and interns, work with agencies for contract personnel, responsible for new development activities. Provide supervisory activity (performance management, training, etc.) for internal staff (manage 7 staff) and manage all development contract staff (15 from three contract agencies).

- Interim-CIO from September 2000 to present.
- Managed a team and participated in the development of an Information Strategy Plan (ISP) for the agency.
- Participated, as manager, in the evaluation and purchase of hardware, database and software components for the agency's transition from mainframe to client/server. This included Computer Assisted Software Engineering (CASE) toolset and hardware operating environment (NT and AIX).
- Developed standards committee for the creation of over 40 standards to be utilized in the software development area.
- Developing a web-based transactional application in order to better understand and manage the development tools installed.
- Teamed with the Assistant CIO to develop a brochure for use in college campus recruiting and job fairs.
- Designed and developed a database to track campus recruiting candidates via laptop. This data is then transferred to a web server for viewing by all State agencies.
- Designed and developed databases for tracking user work requests, change control management and a knowledge database for technical problem/resolution. This is part of an overall Project Management system that I am developing for the Department.

- o Member of Prime Vendor contract committee that is responsible for renegotiating the prime vendor contract for the State.

Analyst **1996-1996**
University Extension-OSEDA - Columbia, MO
Provided Visual Basic and Access development and support to the Missouri Department of Elementary & Secondary Education.

Computer Technology Consultant **1993-1996**
Columbia, Missouri
Consult in areas such as, interactive multimedia authoring, CBT development, HTML, long-term technology planning for businesses, and training; software design and development in Visual Basic; design and installation of BBS and Internet servers.

Supervising Systems Analyst **1988-1993**
Chevron Petroleum Technology Company - San Ramon, California
Responsible for providing work direction to a team of 9 Programmers and Systems Analysts in support of Chevron exploration and production departments for overseas operations. Perform work reviews, administer salary, develop budget (of $1million yearly) and strengthen client relations.

- o Strengthened client relationship through periodic 'face-to-face' meetings to discuss current projects' status and other general concerns.
- o Designed and co-developed an on-line order entry system used by Computer Operations at 3 company sites.
- o Designed a manpower billing reporting system utilizing MVS/SAS and REXX for the San Ramon site. System was used by client organization as well as internally.

Supervising Systems Analyst **1984-1988**
Chevron Information Technology Company - San Ramon, California
Responsible for providing work direction to a team of 8 Programmers and Systems Analysts in support of Chevron Chemical Company operations. Tasks included performance review, salary administration, budgeting, and client liaison.

- o Developed and implemented methods for 24 hour support of all Chevron Chemical systems, including on-line and batch IMS, Nomad and RAMIS.
- o Formulated standards and wrote programmers guide that itemizes these standards, including programming style, documentation and many other support functions.

Data Communications Analyst **1983-1984**
Chevron Information Technology Company - San Francisco, California
Participated in a 1 year rotational assignment program learning aspects of general data communications. Assignment was made available to only 7 employees.

- o As a project analyst, installed and re-configured remote controllers at 3 Chevron sites during a restructuring of the Chevron telecommunications network. Worked alone and on a tight deadline installing at Midwest sites.
- o As a network analyst, designed new telecommunications hubs for the Chevron network in Atlanta, Richmond and San Francisco. A multi-million dollar project tying all sites in the East to the San Francisco-based mainframe.

Programmer/Analyst **1979-Current**
Chevron Information Technology Company - San Francisco, California
Developed procedures in support of Chevron Chemical's multi-million dollar order entry system, which consisted of on-line and batch IMS, Nomad, RAMIS and MARK IV applications.

- o As project lead, designed and installed an on-line perpetual inventory system, for all Chevron Chemical warehouses, using IMS and PL/1.

Professional Recruiter **1982-Current**
Chevron Corporation
State of Missouri - Jefferson City, MO
As team lead, made all preparations for recruiting activities at 5 universities for the recruitment of computer science, MIS and EE graduates. Conducted on-campus interviews at these schools. Recruited technical professionals via job fairs. Contacted, interviewed and recommended technical contractors.

- o Recommended and administered scholarship and departmental cash gift budgets for 5 major universities.
- o Evaluated criteria and recommended schools for recruiting activities.
- o Chevron Recruiting Team Leader for 4 campuses (University of Missouri-Columbia, University of California-Santa Barbara, California State University-Chico). Duties included making all arrangements for interviewing, arranging for participation in career fairs, making recruiting team assignments, travel arrangements and remaining in contact throughout the year with campus contacts.
- o State of Missouri recruiter at the University of Missouri-Columbia, Central Missouri State University, State Fair Community College, Columbia College, and Westminster College. Duties included making all arrangements for interviewing, arranging for participation in career fairs, making recruiting team assignments, travel arrangements and remaining in contact throughout the year with campus contacts.

TECHNICAL SUMMARY

Operating Systems:	Windows 3.1x through Windows XP, MS DOS, VM/XA, VM/ESA, MVS, Macintosh, DEC UNIX (ULTRIX), IBM AIX
Hardware:	IBM PC, Macintosh, IBM 327x series SNA terminals, DEC 5000/200
Software/Other:	Microsoft Access, Visual Basic 6.0, HTML, MS .NET Framework (VB .NET) Nomad2, SAS, MARK IV, FORTRAN, PL/1, JCL, IMS, MVS/TSO, MS Office Suite, MS Project, MS Visio, Qbasic, COOL:Gen, Clearaccess, FoxPro
Project Management:	Yankovich & Yourdon - SDM/70; Project Management seminar conducted by MTW Consulting 1997; Project Assessment Quotation session held by the State of Missouri's Office of Administration; Business Scorecard Development workshop conducted by the Missouri Excellence organization.

EDUCATION/CERTIFICATIONS/AWARDS

IT Director of the Year State of Missouri, June 2008
Partnership Appreciation Award (Support of the Cisco Academy Program) - 2008
Project Management Certification State of Missouri, March 2001
Master of Science, Management of Information Systems, ISIM University, January 2001
Bachelor of Arts, Computer Science, University of Missouri-Columbia, December 1978

PROFESSIONAL ORGANIZATIONS

Project Management Institute **2002 - Present**

ADDITIONAL ACTIVITIES

IT Recruiting Committee **2006 - Present**
State of Missouri

Central Missouri State University (CMSU) – School of Business **2005**
Warrensburg, MO

Information Technology Advisory Board (ITAB) **2005 - Present**
State of Missouri

Project Management Standing Committee (PMSC) **2003 - Present**
State of Missouri

Missouri Value Assessment Program Committee (MOVAP) **2003 - Present**
State of Missouri

Performance Management Committee **2003 - Present**
State of Missouri

Missouri Technical Training & Education Center (MOTEC) **2002 - 2004**
Jefferson City, MO

Regional Technical Education Council (RTEC) - Jefferson City **2002 - Present**
Jefferson City, MO

University of Missouri – College of Business, Marketing Advisory Board **2001 - Present**
Columbia, MO

State Fair Community College (SFCC) **2000 - Present**
Sedalia, MO

Central Missouri State University (CMSU) – School of Business **1998 - Present**
Warrensburg, MO

Business Information Technology (BIT) Career Institute **1998 - Present**
Central Missouri State University - Warrensburg, MO

Jefferson City Information Technology Coalition (JCITC) **1997-Present**
Jefferson City, MO

JASON YOUNG

PROFESSIONAL EXPERIENCE

ESP Solutions Group
2006 – Present *Project Manager*
Experience managing client projects, related workflow, and deliverables. Responsibilities include project requirements gathering, project documentation, project scheduling for data system implementations, maintaining client relationships, coordination of project tasks, adherence to schedules, managing communication with subcontractors, and updating ESP's project website and content. Other relevant duties include oversight of Microsoft data loading and transformation technologies and educational data systems analysis.

Recent Client Projects

- Project Manager for Missouri Department of Elementary and Secondary Education's Longitudinal Data Collection System
- Project Manager for Missouri Department of Elementary and Secondary Education's State Identification System

State of Missouri
1999 – 2006 *Information Technology Specialist*
Team lead responsible for maintenance of the Missouri Department of Elementary and Secondary Education Information Technology infrastructure. Work experience included expertise in Microsoft Server technology, Cisco network systems, Microsoft .Net application programming, and Microsoft Database technologies.

Specific duties and technologies:

- Design and support of Microsoft Active Directory system.
- Design and support of Microsoft Exchange Server system.
- Administration of Cisco router, switch, content switch, intrusion prevention, and firewall.
- Design and support of state-wide area network connecting state operated schools.
- Design and support of Business Objects Enterprise Server providing web and desktop reporting.
- Design and support of public and secured .Net based web applications.
- Design and support of Microsoft SQL Server databases.

TECHNICAL PROFICIENCY

Database Environments: Microsoft SQL Server, Microsoft SQL Server Integrated Services Cisco network systems, Microsoft .Net Framework

Programming Languages: Visual Basic .Net, SQL

EDUCATION

1999 B.S. – Columbia College of Missouri

Budget Narrative

Budget Narrative

Attachment 1:
Title: Pages: Uploaded File: **1235-4_BudgetNarrative.pdf**

Missouri Longitudinal Data System Grant Application: Budget Narrative

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This document explains and details the calculations that went into the construction of the project budget. There is a section for each line of the budget; Personnel, Fringe, Travel, etc. The budget narrative also justifies the distinction of the funding requests across the various sub-projects in the proposal that add up to the total amount requested. The sub-project values were totaled in each category to get the final project totals.

PR/Award # R372A090054

e1

Personnel

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – State**	$127,490	The Missouri Department of Elementary and Secondary Education is committed to the successful implementation of a LDS to improve educational outcomes. As a sign of this commitment, DESE will contribute in-kind funding for 2.0 FTE for each year of this project. Additional staff throughout the organization have been and will continue to support the MOSIS efforts 2 MOSIS FTE technical associates, 12 FTE data stewards focusing on program area specific data and integration, 3 FTE Core Data technical support, 1 FTE Computer Information Technology Supervisor, 6 FTE Computer Information Technology Specialists.
	Year 2 – State	$127,490	" "
	Year 3 – State	$127,490	" "

Fringe

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – State**	$79,209	On behalf of its employees, the Missouri Department of Elementary and Secondary Education contributes a total of 20.71 percent for retirement, social security, workers compensation, and unemployment insurance. These expenses will provided as an in-kind contribution from DESE.
	Year 2 – State	$79,209	" "
	Year 3 – State	$79,209	" "

Travel

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**	$7,450	DESE staff and P-20 Council members will select two participants to attend the two day meeting in DC.
	Year 2 – Grant	$17,500	DESE staff and P-20 Council members will select two participants to

Project	Funding Source	Amount	Justification
			attend the two day meeting in DC. UM and the P-20 collaborative will select participants to present and attend conferences related directly to the MOSIS Longitudinal Data System research activities.
	Year 3 – Grant	$17,568	DESE staff and P-20 Council members will select two participants to attend the two day meeting in DC. UM and the P-20 collaborative will select participants to present and attend conferences related directly to the MOSIS Longitudinal Data System research activities.

Equipment

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**	$150,000	The State IT Department will work with vendors providing software applications for MOSIS to determine the exact hardware and operation systems software required. Procurement will be through standard State IT processes. The estimate used here is based upon current hardware configurations within IT, discussions with potential vendors, and discussions with other SEAs implementing similar solutions. MOSIS anticipates procuring communications, staging, operational, longitudinal database, and reporting servers as needed whenever current servers already supporting DESE operations are not adequate.
	Year 2 – Grant	$25,000	The State IT Department will contract for standard maintenance and support for the equipment and software purchased for MOSIS.
	Year 3 – Grant	$25,000	The State IT Department will contract for standard maintenance and support for the equipment and software purchased for MOSIS.
	Year 1 – State	$494,500	DESE is poised to capitalize on the opportunities presented by this grant application as evidenced by the state-of-the-art facilities and equipment currently in place. The secured data center is climate controlled and maintains UPS power protection plus a fire suppression system ($10,000). A combined security system, Application Guardian System (database side) and Active Directory, provide a secure environment to house the confidential data ($2,500). The database system operates on a combination of Oracle 8 running on IBM RISC processors and

Project	Funding Source	Amount	Justification
			Microsoft SQL Server running on clustered IBM servers running Windows Server and cluster services ($100,000). The student identification system (MOSIS) is comprised of a dual process IBM server running JBoss as an application server and a separate dual processor IBM server database server running Microsoft SQL server ($60,000). The database system is further enhanced by a Business Objects/Crystal Enterprise XI cluster running on four IBM servers with dual processors (3.2GHz) for reporting ($300,000). Finally, Microsoft's IIS 6 running on a dual processor IBM server provides a stable and secure web environment ($2,000). The test environment is also used for training on OLAP and knowledge discovery ($20,000). DESE will continue to provide the aforementioned equipment, security systems, and housing at an estimated cost of $494,500.

Supplies

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – State**	None	
	Year 2 – State	None	
	Year 3 – State	None	

PR/Award # R372A090054 e3

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e4

Contractual

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$4,092,080	Total requested for Contractual Services in Year 1.
			MOSIS Training and Support System - $475,000 is being requested for this component in year one for contracted services and is broken out as follows:
		$5,000	Requirements Gathering: DESE, the Core Data User Group, the Regional Professional Development Centers (RPDC), contractors, and the other members of the P-20 Council will develop, review, and approve the MOSIS Training and Support System Plan Requirements. Contracted services will be used to procure professional assistance to support the development of this plan. (40 hours x $125/hour)
		$10,000	System Design: DESE, the Core Data User Group, the Regional Professional Development Centers, contractors, and the other members of the P-20 Council will develop, review, and approve the MOSIS Training and Support System design plan. Contracted services will be used to procure professional assistance to support the development of this plan. (80 hours x $125/hour)
		$145,000	System Development: The Regional Professional Development Centers already have training facilities and processes along with relationships with the LEAs and schools. Each RPDC will prepare and submit to DESE a training plan and proposal in response to a request prepared by DESE. These funds will support the development of the training materials and programming. (8 training components x 18,125)

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$50,000	Users Guide and Technical Documentation: DESE will contract for the writing of the MOSIS Users Guide and Technical Documentation. This document will contain high-level descriptions of all components of MOSIS, and will reference the detailed documentation provided for each component by the contractors.
		$240,000	System Training: DESE will contract with three Regional Professional Development Centers to schedule and deliver training on each component of MOSIS as it is rolled out to users. Cost calculations are based upon 3 training centers, each serving approximately 175 districts, and delivering 40 hours of training for each of 8 components of MOSIS. (40 hours X 8 training components = 320 Hours X 3 Centers = 960 Hours @ $250 = $240,000).
		$12,500	Pilot Implementation and Support: Contract services will be used to support the pilot rollout of the MOSIS Training and Support System. (100 hours x $125/hour)
		$12,500	Production Implementation and Support: Contract services will support the production rollout of the MOSIS Training and Support System. (100 hours x $125/hour)
			Longitudinal Data Repository - $1,380,500 is being requested for this component in year one for contracted services and is broken out as follows:

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$50,000	Requirements Gathering: DESE, the Core Data User Group, contractors, and the other members of the P-20 Council will develop, review, and approve the MOSIS Longitudinal Data Repository requirements. Contracted services will be used to procure professional assistance to support the development of these requirements. (400 hours x $125/hour)
		$75,000	System Design: DESE, the Core Data User Group, contractors, and the other members of the P-20 Council will develop, review, and approve the MOSIS Longitudinal Data Repository system design. Contracted services will be used to procure professional assistance to support the development of this design. (600 hours x $125/hour)
		$650,000	MOSIS Longitudinal Data Repository System Development: DESE will procure the development and integration services or purchase as required.
		$155,000	Design Longitudinal Data Repository Update/ETL Processes: DESE will procure the design and development of the Longitudinal Data Repository update/ETL process.
		$37,500	Technical Documentation: DESE will contract for the writing of the MOSIS Longitudinal Data Repository Technical Documentation.
		$50,000	Longitudinal Data Repository System Training: The contractor will be required to provide system training and knowledge transfer for DESE and State IT staff.
		$63,000	Pilot Implementation: The contractor will be required to successfully pilot the Longitudinal Data Repository with internal DESE and State IT systems, State Report Manager data from pilot LEAs, and the portal.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$75,000	Production Implementation: After a successful pilot, a phased production implementation will begin.
		$25,000	Design the Expansion of MOSIS: This phase is related to the expansion of the MOSIS Data Collection System. In order to implement additional data collections in MOSIS it is required to go through a phase where the collection, data elements, and business rules are defined.
		$200,000	Implement Additional MOSIS State Report Manager (SRM) Data Collections: Two of the new SRM collections (submission cycles) will be implemented to convert legacy aggregate data to unit records. 4 new collections @ $50,000 per collection.
			Reporting and Analysis Portal - $715,500 is being requested for this component in year one for contracted services and is broken out as follows:
		$37,500	Requirements Gathering: The reporting requirements are a crucial component of the overall MOSIS system. Therefore, the portal must have comprehensive requirements. Knowledge exchange with the DESE will be essential. Carefully crafted requirements are a priority. DESE, the Core Data User Group, contractors, and the other members of the P-20 Council will develop, review, and approve the MOSIS reporting requirements. Contracted services will be used to procure the professional assistance to support the development of these requirements.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$62,500	System Design: DESE, the Core Data User Group, contractors, and the other members of the P-20 Council will develop, review, and approve the MOSIS Reporting and Analysis Portal system and report design. Contracted services will be used to procure professional assistance to support the development of this design.
		$175,000	System Development: DESE will procure the development or purchase of the portal and associated reporting tools, and/or integrate with the existing Business Objects tool.
		$37,500	Technical and User Documentation: The contractor will produce both technical and user documentation and integrate it with the training plans of each Regional Professional Development Centers.
		$50,000	System Training: Training for internal DESE and State IT staff to ensure complete knowledge transfer of the reporting and analysis portal. Special emphasis will be placed on training for report design and creation.
		$75,000	Portal Integration at DESE: DESE and State IT will work with the contractor to integrate the portal and reporting services with the data warehouse and other applications. Contractor will be responsible for ensuring the integration is complete and seamless.
		$75,000	Portal Security Integration: This essential step in the process allocates proper role assignment, authentication, and access to the secure data contained within the data reporting and analysis portal.
		$25,000	Pilot Implementation: The contractor will be required to successfully pilot the portal and reporting services with internal DESE and State IT systems and State Report Manager.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$100,000	Develop Reporting Cubes: The reporting cubes will reflect the questions and reporting requirements basic to the success of MOSIS. The contractor will deliver a specified number of cubes as defined in the requirement documents.
		$78,000	EDFacts Reporting: DESE must recreate its EDFacts reporting process to accommodate the new authoritative data sources in unit record format rather than in aggregate statistics. Additional data will also be available for EDFacts inclusion. A contractor will be engaged to work with DESE to facilitate this transition and to create an ongoing EDFacts reporting process.
			Data Sharing Standards and Interoperability - $50,000 is being requested for this component in year one for contracted services and is broken out as follows:
		$35,000	ISA: The Information Systems Architecture will engage the P-20 Council members, LEAs, and State IT in a comprehensive review and documentation of policies and standards for all systems including MOSIS. A contractor will be engaged with expertise in the contents and process for developing this architecture.
		$15,000	Data Dictionary/Metadata Review and Documentation: DESE will work with their contractor to document the data elements, definitions, and option sets for all MOSIS-related collections, repositories, and reports.
		$100,000	**DESE FTEs:** Two full-time contract staff to support the overall project, with focus on providing help and assistance to school and district users of MOSIS. Legislative limitations on State FTEs require that these be contractors.

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$300,000	**Project Management, Oversight, and Control:** DESE will procure onsite and external project management, oversight, and control to manage the MOSIS Longitudinal Data System Project, and to track, document, and resolve project issues and risk. Costs are based upon current expenditures within DESE for similar work associated with the MOSIS ID implementation and the early stages of the State Report Manager data collections. (1 Project Manager, .5 Project Director, .33 Systems Architects, .5 Content Experts) These experts are listed in the staffing section of the narrative. Hourly rates are blended and discounted based upon current contract levels.
			University of Missouri Research/Development and Analysis of Teacher Quality This activity is part of the enterprise portal and reporting objective of MOSIS. These efforts will research and design analysis and reporting processes for MOSIS users specifically focused on teacher preparation and professional development. $158,580 is being requested for this component in year one for contracted services and is broken out as follows:
		$31,680	Primary Researcher I Summer Hours: During the summer, the primary researcher will devote a full month to the analyses and report design. $198/hour x 160 hours.
		$28,512	Primary Researcher I School Year Hours: During the school year, the primary researcher will use a release class period to conduct the analyses and report design. $198/hour x 144 hours.
		$19,520	Primary Researcher II Summer Hours: During the summer, the primary researcher will devote a full month to the analyses and report design. $122/hour x 160 hours.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
		$17,568	Primary Researcher II School Year Hours: During the school year, the primary researcher will use a release class period to conduct the analyses and report design. $122/hour x 144 hours.
		$18,300	Researcher School Year Hours: During the school year, the researcher will use a release class period to conduct the analyses and report design. $122/hour x 150 hours.
		$34,000	Graduate Research Assistant: During the school year and the summer, the graduate researcher will assist in the analyses and report design. $20/hour x 1,700 hours.
		$9,000	Graduate Student Support (Tuition/Insurance): The graduate student compensation will also include support for tuition and insurance costs.
			Teacher Certification System- $800,000 is being requested for this component in year one for contracted services and is broken out as follows:
		$50,000	Requirements Gathering: DESE and the Educator Certification Office will work with a contractor to ensure that all requirements are documented.
		$75,000	System Design: DESE and the Educator Certification Office will work with a contractor to ensure that all requirements are incorporated into the system design.
		$675,000	System Development: DESE will develop, contract for the development, or purchase the required system. The cost has been estimated from presentations by potential vendors, and through discussions with other states with comparable systems.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – Grant**		
			Design and Implement P-20 Collaborative - $112,500 is being requested for this component in year one for contracted services and is broken out as follows:
		$50,000	Requirements Gathering: The members of the P-20 Council will work together and with a contractor to detail the requirements for comprehensive collaboration and effective leveraging of the MOSIS data and reporting tools.
		$62,500	Design: The members of the P-20 Council will work together and with a contractor to design the features and functions of the P-20 Collaborative.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 2 – Grant**		
		$2,241,332	Total requested for Contractual Services in Year 2.
			MOSIS Training and Support System - $112,500 is being requested for this component in year two for contracted services and is broken out as follows:
		$12,500	Users Guide and Technical Documentation: DESE will contract for the updating of the MOSIS Users Guide and Technical Documentation. This document will contain high-level descriptions of all components of MOSIS, and will reference the detailed documentation provided for each component by the contractors. Year two will focus on document clean up and enhancement.
		$50,000	System Training: Year two will focus on continued development, enhancement, and delivery of MOSIS trainings.
		$50,000	System Maintenance and Support: Year two will provide ongoing support and maintenance for the MOSIS Training System as implemented in the Regional Professional Development Centers.
			Longitudinal Data Repository - $350,000 is being requested for this component in year two for contracted services and is broken out as follows
		$50,000	MOSIS Longitudinal Data Repository System Development: Year two will focus on continued development, enhancement, and delivery of the MOSIS Longitudinal Data Repository.

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 2 – Grant**		
		$50,000	Design Longitudinal Data Repository Update/ETL Processes: Year two will focus on continued development of the Longitudinal Data Repository update/ETL process to encompass additional data sources and content.
		$50,000	Longitudinal Data Repository System Training: The contractor will be required to provide continued system training and knowledge transfer for DESE and State IT staff. This amount allows the contractor to perform key functions while internal staff observe and/or participate as a knowledge transfer activity.
		$100,000	LDS Maintenance and Support: The contractor will be required to provide support and maintenance for the LDS system. This amount is based upon review of the level of effort and costs in other SEAs with both in-production systems and those in a planning stage.
		$50,000	Additional MOSIS SRM Data Collection: Data elements required for EDFacts or other reporting but not in a current collection, or an additional submission cycle for a collection will be configured and implemented.
		$50,000	Support and Maintenance: The MOSIS SRM Data Collection submissions that have been configured and implemented through this grant will be supported and maintained by the contractor.
			Reporting and Analysis Portal - $420,000 is being requested for this component in year two for contracted services and is broken out as follows:

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 2 – Grant**		
		$50,000	System Training: Ongoing training for internal DESE, and State IT staff to ensure complete knowledge transfer of the reporting and analysis portal. Special emphasis will be placed on expert training for report design and creation.
		$50,000	Production Implementation: The contractor will be required to successfully complete a phased rollout of the next tranche of functions of the portal and reporting system and services to districts, DESE, and State IT staff.
		$75,000	Support and Maintenance: The contractor will be required to provide support and maintenance for the reporting and analysis portal system.
		$75,000	Testing and QA of Reporting Portal System: The contractor will be required to successfully demonstrate system accuracy via testing of the reporting and analysis portal system.
		$75,000	Integrate Reports into Portal: The contractor will be required to integrate specified and approved reports into the reporting and analysis portal system by creation of the interoperability among the Longitudinal Data Repository and other authoritative data sources throughout DESE or other official partner repositories.
		$75,000	Roll Out Reports to Users: The contractor will be required to roll out reports in the production environment to districts, DESE, and State IT staff.

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 2 – Grant**		
		$20,000	EDFacts Reporting: DESE must keep its EDFacts reporting process up-to-date to accommodate the new authoritative data sources in unit record format rather than in aggregate statistics and to respond to annual changes in the EDFacts specifications. Additional data will also become available for EDFacts inclusion. A contractor will be engaged to work with DESE to facilitate the ongoing EDFacts reporting process.
			Data Sharing Standards and Interoperability - $30,000 is being requested for this component in year two for contracted services and is broken out as follows:
		$15,000	Information Systems Architecture: The Information Systems Architecture will continue to engage the P-20 Council members, LEAs, and State IT in a comprehensive review and documentation of policies and standards for all systems including MOSIS. A contractor will be engaged with expertise in the contents and process for developing and enhancing this architecture.
		$15,000	Data Dictionary/Metadata Review and Documentation: DESE will continue to work with their contractor to document the data elements, definitions, and option sets for all MOSIS-related collections, repositories, and reports.
		$110,000	**DESE FTEs:** Two full-time contract staff will support the overall project internal to DESE. Legislative limitations on State FTEs require that these be contractors. A COLA adjustment has been added.
		$330,000	**Project Management, Oversight, and Control:** Continued onsite and external project management, oversight, and control to manage the MOSIS Longitudinal Data project, and to track, document, and resolve project issues and risk will be provided by a contractor. Costs are based upon current expenditures within DESE for similar work associated

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 2 – Grant**		
			with the MOSIS ID implementation and the early stages of the State Report Manager data collections. A COLA adjustment is included.
			University of Missouri Research/Development and Analysis of Teacher Quality - $165,082 is being requested for this component in year two for contracted services and is broken out as follows:
		$32,960	Primary Researcher I Summer Hours: During the summer, the primary researcher will devote a full month to the analyses and report design. $206/hour x 160 hours. A COLA adjustment has been added.
		$29,664	Primary Researcher I School Year Hours: During the school year, the primary researcher will use a release class period to conduct the analyses and report design. $206/hour x 144 hours. A COLA adjustment has been added.
		$20,320	Primary Researcher II Summer Hours: During the summer, the primary researcher will devote a full month to the analyses and report design. $127/hour x 160 hours. A COLA adjustment has been added.
		$18,288	Primary Researcher II School Year Hours: During the school year, the primary researcher will use a release class period to conduct the analyses and report design. $127/hour x 144 hours.
		$19,050	Researcher School Year Hours: During the school year, the researcher will use a release class period to conduct the analyses and report design. $127/hour x 150 hours. A COLA adjustment has been added.
		$35,700	Graduate Research Assistant: During the school year and the summer, the graduate researcher will assist in the analyses and report design. $21/hour x 1,700 hours. A COLA adjustment has been added.

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 2 – Grant**		
		$9,100	Graduate Student Support (Tuition/Insurance): The graduate student compensation will also include support for tuition and insurance costs. A COLA adjustment has been added.
			Teacher Certification System - $422,500 is being requested for this component in year two for contracted services and is broken out as follows:
		$50,000	System Integration at DESE: DESE and State IT will work with a contractor to ensure integration and interoperability of the teacher certification system with all other components of MOSIS.
		$50,000	Users Guide and Technical Documentation: DESE will contract for the writing and publication of the users guide and technical documentation for the teacher certification system.
		$50,000	Training: Teacher certification system training for knowledge transfer to DESE and State IT staff.
		$100,000	Pilot Rollout and Support: Before full project implementation, a pilot will be conducted to ensure the system works as designed and performs acceptably. This pilot will be more extensive than most to ensure the complex relationships among the data sources and reports are meeting the requirements.
		$75,000	Production Rollout and Support: Using a phased approach, DESE and the Certification Office will roll out the system in production mode with the support of the contractor and the State IT Department.
		$97,500	Maintenance and Support: Annual maintenance and support of the teacher certification system will be contracted.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 2 – Grant**		
			Design and Implement P-20 Collaborative - $301,250 is being requested for this component in year two for contracted services and is broken out as follows:
		$100,000	Design: The members of the P-20 Council will work together and with a contractor to design the features and functions of the P-20 Collaborative. Contracted services will be used to procure professional assistance to support the development of the design plan.
		$157,500	System Development: The P-20 Council will manage the development or contracting for the development of the collaborative activities based upon MOSIS data.
		$31,250	Documentation: A significant component of this phase is the development of user documentation. This documentation will be created in partnership with the P-20 Council appropriately be presented through the portal for use.
		$12,500	Training: A training plan will be developed for all the user groups and communities of interest that will be enhanced over time as the collaborative features of the portal are rolled out and usage increases.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 3 – Grant**		
		$1,825,834	Total requested for Contractual Services in Year 3.
			MOSIS Training and Support System - $112,500 is being requested for this component in year three for contracted services and is broken out as follows:
		$12,500	Users Guide and Technical Documentation: DESE will contract for the writing of updates to the MOSIS Users Guide and Technical Documentation. This document will contain high-level descriptions of all components of MOSIS, and will reference the detailed documentation provided for each component by the contractors. Year three of this phase will focus on document clean up and enhancement.
		$50,000	System Training: Year three of this phase will focus on continued development, enhancement, and delivery of MOSIS trainings.
		$50,000	System Maintenance and Support: Year three will provide ongoing support and maintenance for the MOSIS Training System.
			Longitudinal Data Repository - $250,000 is being requested for this component in year three for contracted services and is broken out as follows:
		$50,000	Longitudinal Data Repository System Training: The contractor will be required to provide continued system training and knowledge transfer for DESE and State IT staff. At the end of this year, DESE and State IT staff must be fully independent in their knowledge and support of the functionality of the system.
		$100,000	LDS Maintenance and Support: The contractor will be required to provide support and maintenance for the LDS system.

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 3 – Grant**		
		$50,000	Additional MOSIS SRM Data Collection: Data elements required for EDFacts or other reporting but not in a current collection, or an additional submission cycle for a collection will be configured and implemented.
		$50,000	Support and Maintenance: The MOSIS SRM Data Collection submissions that have been configured and implemented through this grant will be supported and maintained by the contractor.
			Reporting and Analysis Portal - $220,000 is being requested for this component in year three for contracted services and is broken out as follows:
		$50,000	System Training: Ongoing training for internal DESE and State IT staff to ensure complete knowledge transfer of the reporting and analysis portal. Special emphasis will be placed on expert training for report design and creation.
		$75,000	Support and Maintenance: The contractor will be required to provide support and maintenance for the reporting and analysis portal system.
		$25,000	Testing and QA of Reporting Portal System: The contractor will be required to successfully demonstrate system accuracy via testing of the reporting and analysis portal system.
		$25,000	Integrate Reports into Portal: The contractor will be required to integrate approved reports into the reporting and analysis portal system.
		$25,000	Roll Out Reports to Users: The contractor will be required to roll out reports to districts, DESE, and State IT staff.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 3 – Grant**		
		$20,000	EDFacts Reporting: DESE must continue to update its EDFacts reporting process to accommodate the new authoritative data sources in unit record format rather than in aggregate statistics. Additional data will also be available for EDFacts inclusion. Annual changes to EDFacts requirements must be met. A contractor will be engaged to work with DESE to implement the ongoing EDFacts reporting process.
			Data Sharing Standards and Interoperability - $30,000 is being requested for this component in year three for contracted services and is broken out as follows:
		$15,000	Information Systems Architecture: The Information Systems Architecture will continue to engage the P-20 Council members, LEAs, and State IT in a comprehensive review and documentation of policies and standards for all systems including MOSIS. A contractor will be engaged with expertise in the contents and process for developing and enhancing this architecture.
		$15,000	Data Dictionary/Metadata Review and Documentation: DESE will continue to work with their contractor to document the data elements, definitions, and option sets for all MOSIS-related collections, repositories, and reports.
		$125,000	**DESE FTEs:** Two full-time contract staff to support the overall project, with focus on providing help and assistance to school and district users of MOSIS. Legislative limitations on State FTEs require that these be contractors. A COLA adjustment has been added.

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 3 – Grant**		
		$363,000	**Project Management, Oversight, and Control:** Continued onsite project management, oversight, and control to manage the MOSIS Longitudinal Data project, and to track, document, and resolve project issues and risk.
			University of Missouri Research/Development and Analysis of Teacher Quality - $171,584 is being requested for this component in year three for contracted services and is broken out as follows:
		$34,240	Primary Researcher I Summer Hours: During the summer, the primary researcher will devote a full month to the analyses and report design. $214/hour x 160 hours.
		$30,816	Primary Researcher I School Year Hours: During the school year, the primary researcher will use a release class period to conduct the analyses and report design. $214/hour x 144 hours.
		$21,120	Primary Researcher II Summer Hours: During the summer, the primary researcher will devote a full month to the analyses and report design. $132/hour x 160 hours.
		$19,008	Primary Researcher II School Year Hours: During the school year, the primary researcher will use a release class period to conduct the analyses and report design. $132/hour x 144 hours.
		$19,800	Researcher School Year Hours: During the school year, the researcher will use a release class period to conduct the analyses and report design. $132/hour x 150 hours.

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 3 – Grant**		
		$37,400	Graduate Research Assistant: During the school year and the summer, the graduate researcher will assist in the analyses and report design. $22/hour x 1,700 hours.
		$9,200	Graduate Student Support (Tuition/Insurance): The graduate student compensation will also include support for tuition and insurance costs.
			Teacher Certification System - $272,500 is being requested for this component in year three for contracted services and is broken out as follows:
		$50,000	Training: Teacher certification system training for knowledge transfer to DESE and State IT staff.
		$50,000	Pilot Rollout and Support: Before full project implementation, a pilot will be conducted to ensure the system works as designed and performs acceptably.
		$75,000	Production and Support: Using a phased approach, DESE and the Certification Office will roll out the system in production mode with the support of the contractor and the State IT Department.
		$97,500	Maintenance and Support: Annual maintenance and support of the teacher certification system will be contracted.
			Design and Implement P-20 Collaborative This activity is part of the enterprise portal and reporting objective of MOSIS. The best process for achieving data quality and usage is to support collaborative relationships based upon the data. $281,250 is being requested for this component in year three for contracted services and is broken out as follows:

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Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 3 – Grant**		
		$31,250	Documentation: A significant component of this phase is the development of user documentation. This documentation will be created in partnership with the P-20 Council appropriately be presented through the portal for use.
		$50,000	Training: A training program will be provided for all the user groups and communities of interest that will be enhanced over time as the collaborative features of the portal are rolled out and usage increases.
		$50,000	Integration into Portal: The integration of the collaborative tools and users into the portal will be contracted.
		$50,000	Pilot Implementation: Before full project implementation, a pilot will be conducted to ensure the system works as designed and performs acceptably. A pilot also creates both the foundation and the interest for full participation.
		$50,000	Production Implementation: Using a phased approach, DESE and the P-20 Collaborative will roll out the system in production mode with the support of the contractor and the State IT Department. Based upon the results of the pilot and the guidance of user groups, full implementation will be launched.
		$50,000	Content Analysis/Reporting Collaboration: As usage in the system builds and collaboration expands, the contents and reporting will be enhanced.

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System	**Year 1 – State**	$129,822	DESE has collaborated with several nationally known vendors to incorporate shelf products into the tools used to help collect, manage and distribute data. DESE has paid maintenance on these systems for the past 3 years and has allocated dollars for 3 additional years of maintenance.
	Year 2 – State	$135,664	“ ”
	Year 3 – State	$141,769	“ ”

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Construction

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System		None	

Other

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System		None	

Indirect Costs

Project	Funding Source		Amount	Justification
MOSIS Longitudinal Data System	Year 1	Grant	$282,867.57	6.9% approved indirect cost rate
	Year 2	Grant	$155,859.40	"
	Year 3	Grant	$127,194.73	"

Training Stipends

Project	Funding Source	Amount	Justification
MOSIS Longitudinal Data System		None	

Budget Summary Page 1

MOSIS SLDS Budget Summary	Y1	Y2	Y3
MOSIS Training and Support System			
Requirements Gathering	$5,000		
System Design	$10,000		
System Development	$145,000		
Users Guide and Technical Documentation	$50,000	$12,500	$12,500
System Training	$240,000	$50,000	$50,000
Pilot Implementation and Support	$12,500		
Production Implementation and Support	$12,500		
System Maintenance and Support		$50,000	$50,000
Longitudinal Data Repository			
Requirements Gathering	$50,000		
System Design	$75,000		
MOSIS Longitudinal Data Repository System Development	$650,000	$50,000	
Design Longitudinal Data Repository Update/ETL Processes	$155,000	$50,000	
Technical Documentation	$37,500		
System Training	$50,000	$50,000	$50,000
Pilot Implementation	$63,000		
Production Implementation	$75,000		
LDS Maintenance and Support		$100,000	$100,000
Design Expansion of MOSIS	$25,000		
Implement Additional MOSIS SRM Data Collections	$200,000	$50,000	$50,000
Support and Maintenance of MOSIS Expansion		$50,000	$50,000
Reporting and Analysis Portal			
Requirements Gathering	$37,500		
System/Report Design	$62,500		
System Development	$175,000		
Technical and User Documentation	$37,500		
System Training	$50,000	$50,000	$50,000
Portal Integration at DESE	$75,000		
Portal Security Integration	$75,000		
Pilot Implementation	$25,000		
Production Implementation		$50,000	
Support and Maintenance		$75,000	$75,000
Develop Reporting Cubes	$100,000		
Testing and QA		$75,000	$25,000
Integrate Reports into Portal		$75,000	$25,000
Rollout Reports to Users		$75,000	$25,000
EDFacts Reporting	$78,000	$20,000	$20,000
Data Sharing Standards and Interoperability			
ISA Policy	$35,000	$15,000	$15,000
Data Dictionary/Metadata Review and Documentation	$15,000	$15,000	$15,000
HW/SW Licenses	$150,000	$25,000	$25,000
DESE FTE (2 Contract Staff)	$100,000	$110,000	$125,000
Project Management, Oversight, and Control	$300,000	$330,000	$363,000
Travel	$6,000	$6,000	$6,000
Page 1 Subtotals	$3,177,000	$1,383,500	$1,131,500
	Page 1 Total		$5,692,000

Budget Summary Page 2

MOSIS SLDS Budget Summary			
	Y1	Y2	Y3
UM Research / Development and Analysis of Teacher Quality			
Primary Researcher I Summer Hours	$31,680	$32,960	$34,240
Primary Researcher I School Year Hours	$28,512	$29,664	$30,816
Primary Researcher II Summer Hours	$19,520	$20,320	$21,120
Primary Researcher II School Year Hours	$17,568	$18,288	$19,008
Researcher School Year Hours	$18,300	$19,050	$19,800
Graduate Research Assistant	$34,000	$35,700	$37,400
Graduate Student Support (Tuition/Insurance)	$9,000	$9,100	$9,200
Travel/Conferences	$1,450	$1,500	$1,568
Teacher Certification System			
Requirements Gathering	$50,000		
System Design	$75,000		
System Development	$675,000		
System Integration at DESE		$50,000	
Users Guide and Technical Documentation		$50,000	
Training		$50,000	$50,000
Pilot Rollout and Support		$100,000	$50,000
Production Rollout and Support		$75,000	$75,000
Maintenance and Support		$97,500	$97,500
Design and Implement P-20 Collaborative			
Requirements Gathering	$50,000		
Design	$62,500	$100,000	
System Development		$157,500	
Travel/Conferences		$10,000	$10,000
Documentation		$31,250	$31,250
Training		$12,500	$50,000
Integration into Portal			$50,000
Pilot Implementation			$50,000
Production Implementation			$50,000
Content Analysis/Reporting Collaboration			$50,000
Indirect Costs	$282,868	$155,859	$127,195
Page 2 Subtotals	$1,355,398	$1,056,191	$864,097
	Page 2 Total		$3,275,686
	Grand Total		$8,967,686