

# **U.S. Department of Education**

Washington, D.C. 20202-5335



## **APPLICATION FOR GRANTS UNDER THE**

**STATEWIDE LONGITUDINAL DATA SYSTEM RECOVERY ACT GRANTS  
CFDA # 84.384A  
PR/Award # R384A100026**

Closing Date: NOV 19, 2009

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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.).

<b>Application for Federal Assistance SF-424</b>		Version 02	
* 1. Type of Submission		* 2. Type of Application: * If Revision, select appropriate letter(s):	
<input type="checkbox"/> Preapplication		<input checked="" type="checkbox"/> New	
<input checked="" type="checkbox"/> Application		<input type="checkbox"/> Continuation      * Other (Specify)	
<input type="checkbox"/> Changed/Corrected Application		<input type="checkbox"/> Revision	
* 3. Date Received: 12/3/2009		4. Applicant Identifier:	
5a. Federal Entity Identifier:		* 5b. Federal Award Identifier: NA	
<b>State Use Only:</b>			
6. Date Received by State:		7. State Application Identifier:	
<b>8. APPLICANT INFORMATION:</b>			
* a. Legal Name: Montana Office of Public Instruction			
* b. Employer/Taxpayer Identification Number (EIN/TIN): 810302402		* c. Organizational DUNS: 809588700	
<b>d. Address:</b>			
* Street1:		1227 11th Avenue	
Street2:			
* City:		Helena	
County:		Lewis & Clark	
State:		MT	
Province:			
* Country:		USA	
* Zip / Postal Code:		59620	
<b>e. Organizational Unit:</b>			
Department Name: Montana Office of Public Instruction		Division Name: Office of the State Superintendent	
<b>f. Name and contact information of person to be contacted on matters involving this application:</b>			
Prefix:		* First Name:	
Ms.		Madalyn	
Middle Name:		J	

\* Last Name: Quinlan

Suffix:

Title: Chief of Staff

Organizational Affiliation:

Montana Office of Public Instruction

\* Telephone  
Number:

(406)444-3168

Fax Number:

(406)444-2893

\* Email: MQUINLAN@MT.GOV

**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:**

84.384A

CFDA Title:

Statewide Longitudinal Data System Recovery Act Grants

**\* 12. Funding Opportunity Number:**

ED-GRANTS-072909-001

Title:

Statewide Longitudinal Data System Recovery Act Grants

**13. Competition Identification Number:**

384A2009-1

Title:

Statewide Longitudinal Data System Recovery Act Grants

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

State of Montana

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

Montana P-20 Data Linkages: Building the Capacity to Communicate

Attach supporting documents as specified in agency instructions.

**Attachment:**

Title :

File :

**Attachment:**

Title :

File :

**Attachment:**

Title :

File :

**Application for Federal Assistance SF-424**

Version 02

**16. Congressional Districts Of:**

\* a. Applicant: MT-all

\* b. Program/Project: MT-all

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

**Attachment:**

Title :

File :

**17. Proposed Project:**

\* a. Start Date: 7/1/2010

\* b. End Date: 6/30/2013

**18. Estimated Funding (\$):**

a. Federal	\$ 8733492
b. Applicant	\$ 0
c. State	\$
d. Local	\$
e. Other	\$
f. Program Income	\$
g. TOTAL	\$ 8733492

**\* 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

**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: Ms. \* First Name: Denise

Middle Name:

\* Last Name: Juneau

Suffix:

Title: Superintendent of Public Instruction

\* Telephone Number: (406)444-5658 Fax Number: (406)444-2893

\* Email: OPISUPT@MT.GOV

\* Signature of Authorized Representative:

\* Date Signed:

**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: 1894-0008

Expiration Date: 02/28/2011

Name of Institution/Organization:  
Montana Office of Public Instruc...

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	\$ 664,584	\$ 733,512	\$ 752,440	\$ 0	\$ 0	\$ 2,150,536
2. Fringe Benefits	\$ 206,264	\$ 231,805	\$ 242,372	\$ 0	\$ 0	\$ 680,441
3. Travel	\$ 3,653	\$ 3,653	\$ 6,278	\$ 0	\$ 0	\$ 13,584
4. Equipment	\$ 35,000	\$ 0	\$ 0	\$ 0	\$ 0	\$ 35,000
5. Supplies	\$ 38,000	\$ 38,000	\$ 38,000	\$ 0	\$ 0	\$ 114,000
6. Contractual	\$ 1,225,633	\$ 2,490,614	\$ 634,013	\$ 0	\$ 0	\$ 4,350,260
7. Construction	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
8. Other	\$ 294,050	\$ 292,150	\$ 149,650	\$ 0	\$ 0	\$ 735,850
9. Total Direct Costs (lines 1-8)	\$ 2,467,184	\$ 3,789,734	\$ 1,822,753	\$ 0	\$ 0	\$ 8,079,671
10. Indirect Costs*	\$ 223,938	\$ 238,201	\$ 191,682	\$ 0	\$ 0	\$ 653,821
11. Training Stipends	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
12. Total Costs (lines 9-11)	\$ 2,691,122	\$ 4,027,935	\$ 2,014,435	\$ 0	\$ 0	\$ 8,733,492

**\*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?  Yes  No

(2) If yes, please provide the following information:

Period Covered by the Indirect Cost Rate Agreement: From: 7/1/2009 To: 6/30/2010 (mm/dd/yyyy)

Approving Federal agency:  ED  Other (please specify): \_\_\_\_\_ The Indirect Cost Rate is 16.3%

(3) For Restricted Rate Programs (check one) -- Are you using a restricted indirect cost rate that:

Is included in your approved Indirect Cost Rate Agreement? or,  Complies with 34 CFR 76.564(c)(2)? The Restricted Indirect Cost Rate is 0%



**U.S. DEPARTMENT OF EDUCATION**  
**BUDGET INFORMATION**  
**NON-CONSTRUCTION PROGRAMS**

OMB Control Number: 1894-0008

Expiration Date: 02/28/2011

Name of Institution/Organization:  
Montana Office of Public Instruc...

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	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
2. Fringe Benefits	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
3. Travel	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
4. Equipment	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
5. Supplies	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
6. Contractual	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
7. Construction	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
8. Other	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
9. Total Direct Costs (lines 1-8)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
10. Indirect Costs	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
11. Training Stipends	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
12. Total Costs (lines 9-11)	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0

## ASSURANCES - NON-CONSTRUCTION PROGRAMS

Standard Form 424B (Rev.7-97)

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
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 sub-agreements.
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 (Clear Air) Implementation Plans under Section 176(c) of the Clear 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. "1721 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

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 the 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.

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 Representative:**

**Name of Authorized Certifying Representative:** Denise Juneau

**Title:** Superintendent of Public Instruction

**Date Submitted:** 12/03/2009

### Disclosure of Lobbying Activities

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

<b>1. Type of Federal Action:</b> <input type="checkbox"/> Contract <input checked="" type="checkbox"/> Grant <input type="checkbox"/> Cooperative Agreement <input type="checkbox"/> Loan <input type="checkbox"/> Loan Guarantee <input type="checkbox"/> Loan Insurance	<b>2. Status of Federal Action:</b> <input checked="" type="checkbox"/> Bid/Offer/Application <input type="checkbox"/> Initial Award <input type="checkbox"/> Post-Award	<b>3. Report Type:</b> <input type="checkbox"/> Initial Filing <input type="checkbox"/> Material Change <b>For Material Change only:</b> Year: 0 Quarter: 0 Date of Last Report:
<b>4. Name and Address of Reporting Entity:</b> <input checked="" type="checkbox"/> Prime <input type="checkbox"/> Subawardee Tier, if known: 0 Name: Address: City: State: Zip Code + 4: -  <b>Congressional District, if known:</b>	<b>5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime:</b> Name: Address: City: State: Zip Code + 4: -  <b>Congressional District, if known:</b>	
<b>6. Federal Department/Agency:</b>	<b>7. Federal Program Name/Description:</b>  CFDA Number, if applicable:	
<b>8. Federal Action Number, if known:</b>	<b>9. Award Amount, if known: \$0</b>	
<b>10. a. Name of Lobbying Registrant</b> (if individual, last name, first name, MI): Address: City: State: Zip Code + 4: -	<b>b. Individuals Performing Services</b> (including address if different from No. 10a) (last name, first name, MI): Address: City: State: Zip Code + 4: -	
<b>11.</b> Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.	Name: Denise Juneau Title: Superintendent of Public Instruction Applicant: Montana Office of Public Instruction Date: 12/02/2009	
<b>Federal Use Only:</b>		Authorized for Local Reproduction Standard Form LLL (Rev. 7-97)

## 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 any 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 \$10,000 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 or 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 subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

**APPLICANT'S ORGANIZATION**

Montana Office of Public Instruction

**PRINTED NAME AND TITLE OF AUTHORIZED REPRESENTATIVE**

Prefix:                      First Name: Denise    Middle Name:

Last Name: Juneau    Suffix:

Title: Superintendent of Public Instruction

Signature: \_\_\_\_\_    Date: 12/03/2009

**SUPPLEMENTAL INFORMATION  
REQUIRED FOR  
DEPARTMENT OF EDUCATION GRANTS**

**1. Project Director:**

Prefix:      \* First Name:                  Middle Name:                  \* Last Name:                  Suffix:  
Ms.          Madalyn                                                                                                    Quinlan

Address:

\* Street1:                  1227 11th Avenue  
Street2:  
\* City:                          Helena  
County:                          Lewis & Clark  
\* State:                          MT\* Zip / Postal Code: 59620 \* Country: USA

\* Phone Number (give area      Fax Number (give area  
code)                                  code)  
(406)444-3168                          (406)444-2893

Email Address:

MQUINLAN@MT.GOV

**2. Applicant Experience**

Novice Applicant                   Yes                   No                   Not applicable

**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:**

**Attachment:**

Title :  
File :

# Project Narrative

## Project Narrative - Project Abstract

### Attachment 1:

Title: **Project Abstract Pages: 1** Uploaded File: **S:\Data Warehouse\IES Longitudinal Grant Appl\2009 Grant Application\Application & Forms Submittal\Project Abstract.pdf**

## Project Abstract

Project Title: Montana P-20 Data Linkages: Building the Capacity to Communicate

The Montana Office of Public Instruction (OPI), in partnership with the Office of the Commissioner of Higher Education, the Department of Public Health and Human Services, and the Department of Labor and Industry, requests \$8,733,492 of IES assistance to establish a P-20 longitudinal data system, including the policy and technological foundations for the system.

This grant proposal includes five Project Outcomes:

- (1) establishing data linkages among state agency partners to connect from early childhood to K-12 to postsecondary and the workforce;
- (2) creating an electronic student transcript repository for K-12 education;
- (3) creating a data governance structure for P-20;
- (4) implementing business intelligence and web reporting tools for users of P-20 data; and
- (5) developing a system of P-20 performance measurement and reporting.

In developing this grant application, Montana has reviewed the data system capabilities and elements required for Statewide Longitudinal Data Systems. The focus of this grant proposal is to address data linkages among early childhood programs, K-12, postsecondary institutions and the workforce development services. Specifically, this request is intended to address Montana's remaining five required data system elements for which the state has not yet secured resources:

- the capacity to communicate with higher education data systems;
- student-level transcript information, including information on courses completed and grades earned;
- student-level college readiness test scores;
- information regarding the extent to which students transition successfully from secondary school to postsecondary education, including whether students enroll in remedial coursework; and
- other information determined necessary to address alignment and adequate preparation for success in postsecondary education.

The proposed project outcomes address all of the seven data system capabilities required by the IES grant program. The major activities of the grant include identifying the methods for matching student-level data across the data systems of the state agency partners in a manner that maintains confidentiality and protects individual privacy. With resources from this grant, Montana proposes to create an electronic student transcript repository for storing information about student course-taking and course completion. A transcript will be generated for every student at the end of every grade. An Interagency P-20 Data Governance Workgroup will be established to create a data governance structure with supporting policies and procedures. OPI and its partnering agencies will use business intelligence tools and web reporting to improve user access to valid and reliable data from a P-20 data warehouse. A primary use of the reporting tools will be to report on performance measures identified by education policymakers and the legislature through an interim legislative committee process that is currently underway. In addition, OPI and stakeholder groups will collaborate to develop additional performance indicators connecting early childhood programs and K-12 education.

# Project Narrative

## Project Narrative - Project Narrative

### Attachment 1:

Title: **Project Narrative** Pages: **28** Uploaded File: **S:\Data Warehouse\IES Longitudinal Grant Appl\2009 Grant Application\Application & Forms Submittal\Project Narrative.pdf**

**MONTANA P-20 DATA LINKAGES:  
BUILDING THE CAPACITY TO COMMUNICATE**

**Project Narrative**

(a) Need for Project

The Montana Office of Public Instruction (OPI), in partnership with the Office of the Commissioner of Higher Education (OCHE), the Department of Public Health and Human Services (DPHHS), and the Department of Labor and Industry (DLI), requests \$8,733,492 of IES assistance to establish a P-20 longitudinal data system, including the policy and technological foundations for the system. OPI will do this by (1) establishing data linkages among state agency partners to connect from early childhood to K-12 to postsecondary and the workforce; (2) creating an electronic student transcript repository for K-12 education; (3) creating a data governance structure for P-20; (4) implementing business intelligence and web reporting tools for users of P-20 data; and (5) developing a system of P-20 performance measurement and reporting.

The mission of OPI is "to provide the vision, advocacy, support, and leadership for schools and communities to ensure that all students meet today's challenges and tomorrow's opportunities."

The agency is currently pursuing five key strategic directions, which include:

1. Ensure that every child begins school and graduates with the knowledge and skills necessary for success in the 21st century global society by strengthening Montana education from preschool through college and the workforce.
2. Improve student achievement in struggling schools by providing leadership for school turnaround efforts across the state.
3. Provide current and accurate educational information to the state, school districts, and communities to promote data-driven policy decisions and assist in improving teaching and learning.
4. Improve school-community relationships and student performance through the development and implementation of a comprehensive communication plan.
5. Provide systematic training opportunities and focused staff development for OPI staff to support their work and ensure quality customer service.

Of the five strategic directions of the agency, this grant will directly assist OPI with strategic direction 3: *Provide current and accurate educational information to the state, school districts, and communities to promote data-driven policy decisions and assist in improving teaching and learning.* By improving the quality and accessibility of education information, the OPI and its partners will make progress toward achieving all of its strategic directions.

## Status and Limitations of the Current System

The data system elements required by the USED for this grant competition are the same 12 elements required by the State Fiscal Stabilization Fund for a statewide P-16 education data system. These elements are described in section 6401(e) (2) (D) of the America COMPETES Act. The 12 elements are shown in the table below. The checked items indicate elements that have been implemented in Montana.

<p>(i) Preschool through grade 12 education and postsecondary education</p> <p>With respect to preschool through grade 12 education and postsecondary education--</p>	<ul style="list-style-type: none"> <li>✓ a unique statewide student identifier that does not permit a student to be individually identified by users of the system;</li> <li>✓ student-level enrollment, demographic, and program participation information;</li> <li>✓ student-level information about the points at which students exit, transfer in, transfer out, drop out, or complete P-16 education programs;</li> <li>• the capacity to communicate with higher education data systems; and</li> <li>✓ a state data audit system assessing data quality, validity, and reliability.</li> </ul>
<p>(ii) Preschool through grade 12 education</p> <p>With respect to preschool through grade 12 education--</p>	<ul style="list-style-type: none"> <li>✓ yearly test records of individual students with respect to assessments under section 1111(b) of the Elementary and Secondary Education Act of 1965;</li> <li>✓ information on students not tested by grade and subject;</li> <li>• a teacher identifier system with the ability to match teachers to students;</li> <li>• student-level transcript information, including information on courses completed and grades earned; and</li> <li>• student-level college readiness test scores.</li> </ul>
<p>(iii) Postsecondary education</p> <p>With respect to postsecondary education, data that provide--</p>	<ul style="list-style-type: none"> <li>• information regarding the extent to which students transition successfully from secondary school to postsecondary education, including whether students enroll in remedial coursework; and</li> <li>• other information determined necessary to address alignment and adequate preparation for success in postsecondary education.</li> </ul>

The OPI implemented a statewide student information system, AIM (Achievement in Montana) in the 2006-07 school year. At the first point of contact with the public school system, OPI assigns each student a unique statewide student identifier that does not permit a student to be individually identified by users of the system. Using AIM, OPI collects student-level enrollment, demographic, and program participation information. Student-level information

about the points at which students exit, transfer in, transfer out, drop out, or complete P-12 education programs is maintained in AIM. The Board of Regents of Higher Education has adopted a policy requiring all Montana high school transcripts sent to the Montana University System to include the K-12 statewide student ID. Within OPI's production data systems, the agency stores the yearly test records of individual students with respect to assessments and information on students not tested by grade and subject. The OPI also has a basic data audit system assessing data quality, validity, and reliability within the AIM system.

Of the six data system elements that Montana has not yet achieved, the OPI has already secured state funding for the teacher identifier system with the ability to match teachers to students. The Montana legislature has provided state general fund dollars to build a school staffing module, which will link data from teacher education programs at the institutions of higher education within Montana to the OPI data systems for educator licensure and for reporting school district teaching assignments. As part of its system development, the OPI will implement the NCES Secondary School Course Classification System. In addition, the OPI will, for the first time, collect data on salaries and benefits for K-12 educators employed in the public school system by creating linkages with the state Teachers Retirement System. The new school staffing module will allow the state to collect information at the individual teacher and staff level and use that data to report on teacher preparation, qualifications, and effectiveness; to monitor the supply and demand for educators; and to evaluate incentives implemented by the State of Montana to recruit and retain qualified educators in critical shortage areas identified by the state. This new data system module is expected to be brought on line for the 2011-12 school year.

In March 2009, the Montana Office of Public Instruction was awarded an IES Statewide Longitudinal Data Systems grant for the development of a K-12 Data Warehouse and the implementation of a Data Governance structure within the OPI. In the first year of the grant, which began in July, the OPI is developing an Enterprise-wide Data Architecture and developing the Data Governance structure. Ultimately, the grant funding will facilitate the migration of data within OPI's numerous legacy systems to the new K-12 data warehouse and provide resources for OPI to implement business intelligence tools for use by a broad community of users.

The focus of this new grant proposal is to address the data linkages among early childhood programs, K-12, postsecondary institutions and the workforce development services. Specifically, this request is intended to address Montana's remaining five required data system elements:

- the capacity to communicate with higher education data systems;
- student-level transcript information, including information on courses completed and grades earned;
- student-level college readiness test scores;
- information regarding the extent to which students transition successfully from secondary school to postsecondary education, including whether students enroll in remedial coursework; and
- other information determined necessary to address alignment and adequate preparation for success in postsecondary education.

As stated in the request for applications under this grant program, to be considered for grant funding the state longitudinal data system (SLDS) must have the following seven capabilities:

- Enable states to examine student progress and outcomes over time, including student's preparation to meet the demands of postsecondary education, the 21st century workforce, and the Armed Forces
- Facilitate and enable the exchange of data among agencies so that data may be used to inform policy and practice
- Link student data with teachers and enable the matching of teachers and students so that a given student may be matched with the particular teachers primarily responsible for providing instruction in various subjects
- Enable the matching of teachers with information about their certification and teacher preparation programs
- Enable data to be easily generated for continuous improvement and decision-making, including timely reporting to parents, teachers and school leaders on achievement of their students
- Ensure the quality and integrity of the data contained in the system
- Provide the state with the ability to meet the reporting requirements for the USED, especially for the State Fiscal Stabilization Funds and *EDFacts*.

For each objective in this grant proposal, the narrative includes a statement about which data system capabilities and elements are addressed by the objective.

In writing this grant proposal, the OPI is joined by its partners in the Office of the Commissioner of Higher Education, the Department of Public Health and Human Services, and the Department of Labor and Industry. Our inter-agency discussions have re-enforced what many of us already know, which is that the "capacity to communicate" is about much more than technological solutions. The capacity to communicate must be supported by shared policies, procedures, and agreements. As result, this grant application is heavily focused on the interagency Data Governance structure and supports that the agencies will need to successfully link data across information systems. The ultimate goal is to build secure information systems for the purpose of improving outcomes for Montanans while protecting the privacy of our citizens.

Each of the partners in this grant has invested substantial resources in the development of information systems to meet their programmatic needs. In addition to the system developments described above for K-12, a brief description follows of the data system developments underway for the other state agency partners.

Office of Commissioner of Higher Education: The Montana University System (MUS) maintains a student unit record-level, longitudinal data warehouse. The warehouse contains enrollment, course information, and graduation data of students enrolled in postsecondary education in Montana. This rich set of data includes student demographics, assessment outcomes, course grades and instructors, as well as the ability to track transfers between MUS institutions, and the ability to track cohorts of students over time. The Office of the Commissioner of Higher Education maintains the warehouse and supplies the campuses with reporting and analysis tools. The Montana Board of Regents utilizes this information system to assess critical performance indicators and key measures within its strategic plan. The warehouse includes data from 2001 forward and is supported by two full-time FTE. The MUS has also

developed a data sharing agreement with the Montana Department of Labor and Industry that enables the agencies to track the workforce outcomes of MUS graduates. A Memorandum of Understanding with the Department of Labor and Industry has been in place since 2007 and provides the MUS with access to historical and current Unemployment Insurance (UI) wage records. Because of this linkage with UI data, the MUS has been able to analyze the percentage of graduates that find employment in Montana, the level of wages they command, and the industries employing them.

#### Department of Public Health and Human Services:

The Department of Public Health and Human Services is taking measured steps to move safety net eligibility programs from mainframe legacy systems to web-based, rules-engine models. The new Combined Healthcare Initiative and Montana Eligibility System (CHIMES) encompasses information systems for Medicaid, Supplemental Nutrition Assistance Program (SNAP)<sup>1</sup>, and Temporary Assistance to Needy Families (TANF). The CHIMES-Medicaid web-based system was successfully implemented in October 2009. The design phase for CHIMES-SNAP and CHIMES-TANF is underway with implementation slated for October 2011. The three programs will be independent but linked for end-users through enterprise architecture, service-oriented rules-governed data sharing, and a common client index. Web portals will ease interfaces and access with partner agencies. The Childcare Under the Big Sky (CCUBS) Early Childhood web-based system has interfaces with TANF and Child Protective Services (CAPS), manages eligibility and payments for child care services, manages contract and payments with providers for many contract types, and manages child care licensing data. The CCUBS system tracks all children who are affiliated with receiving scholarships for child care and can reference families as well. Children can also be linked to provider types and locations. A diagram of the relationships among the Early Childcare Programs is included in Appendix A.

Department of Labor and Industry: MontanaWorks is an Oracle-based database. The system contains employer, job, and job seeker information. MontanaWorks also includes Workforce Investment Act (WIA) training, Trade Assistance Act training, American Recovery and Reinvestment Act of 2009 (ARRA) training and numerous other state and federal training programs. State apprenticeship data will be added to MontanaWorks soon.

Montana's Unemployment Insurance (UI) system is an Oracle platform with attached imaging and workflow capabilities. UI information provides wage data which can be identified by occupation and industry thus making this data useful for linking educational and workforce skills training to wage and benefit outcomes over a worker's lifetime.

#### (b) Project Outcomes

This grant proposal is designed to meet five project objectives:

- (1) Establish data linkages among state agency partners to connect from early childhood to K-12 to postsecondary, job training and apprenticeships and the workforce;

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<sup>1</sup> The Supplemental Nutrition Assistance Program (SNAP) provides a basic safety net to millions of people by providing monthly benefits to eligible low-income families which can be used to purchase food.

- (2) Create an electronic student transcript repository for K-12 education;
- (3) Create an Interagency P-20 Data Governance Workgroup;
- (4) Implement business intelligence and web reporting tools for users of P-20 data; and
- (5) Develop a system of P-20 performance measurement and reporting.

#### 1. Data Linkages from Early Childhood to K-12 to Postsecondary to Workforce

For several years, a significant portion of the public policy discussions about how well Montana's education system is performing has been focused on transitions and "readiness" --- school readiness for young children and K-12 students and career and college-readiness for high school and postsecondary students. To address these questions about school, college and career readiness, Montana needs data systems with the capacity to link data across time and across programs.

By linking data from early childhood programs to K-12 programs, the state will be able to evaluate programs and identify early childhood practices that are most closely correlated with student success in the K-12 years. The data linkages are likely to include children's demographic information, early childhood program participation, information from screening and assessments, and information on the quality and types of early childhood programs. Building data interfaces will allow agencies to analyze trends, program effectiveness, and to address weaknesses within programs. The P-20 data warehouse provides opportunities to link information related to service interventions for children, determine if services are complementing or duplicating each other, and identify service area gaps. These data system linkages will inform agency processes for developing early warning systems to identify at-risk students and populations. The longitudinal data will also help OPI identify barriers to teaching and learning and develop the strategies to eliminate the barriers.

By linking data from safety net programs such as Temporary Assistance for Needy Families and the Supplemental Nutrition Assistance Program, OPI and DPHHS will facilitate (1) the evaluation of program effectiveness and impact on long-term student success and (2) the determination of eligibility for school-based programs such as the national school lunch program.

Currently, through the Early Childhood Project at Montana State University (MSU), DPHHS has a database for recording and verifying training and education of Early Childhood teachers/caregivers and training/professional development of each licensed or registered person annually. Information is collected related to college credits earned in the areas of early childhood, elementary education, special education, and business. The highest level of education attained is recorded in the system, including degrees earned and the granting institutions. All self reports are verified. The database includes records for approximately 1000 early childhood teachers/caregivers statewide on the detailed information and tracks over 5000 professionals in their continuing education/annual training requirements. There is currently an interface between this database and the Early Childhood system (CCUBS). The potential exists to draw linkages at some future date to the P-20 data warehouse via the CCUBS interface with the data warehouse.

By creating the P-20 data warehouse and common client index with Early Childhood, OPI, OCHE, and DLI, the potential exists to link information about children in early childhood programs with information about their parents and successful workforce outcomes. For example, the DPHHS data system provides the ability to track teen parents receiving services and staying in school, or parents who are receiving scholarships to attend college or contribute to the workforce, or those who have obtained GEDs. Data from the P-20 data warehouse can be used to assess how services support each other and to analyze outcomes, immediate (by relationship) and long term (individual child).

In the transition from K-12 to postsecondary, Montana's education policymakers are interested in raising college continuation rates<sup>2</sup>, college retention rates, and college graduation rates. A key factor in improving these rates is to know how well K-12 public schools are preparing students for postsecondary coursework. For example, in the fall of 2008, of the recent Montana high school graduates attending the Montana University System, 29.3% were enrolled in at least one remedial math or writing course. By improving the data linkages between the K-12 and postsecondary systems, researchers, analysts and policymakers can identify strategies and target resources to decrease remediation rates and improve college readiness.

In the workforce, employers seek information about the skill level of the labor force, including math, science, technical, and writing skills. From the P-20 data warehouse, the Office of Public Instruction will be able to link information about high school course-taking patterns, including vocational courses, with workforce services information. As a result, there will be greater ability to answer many of the questions raised by employers about the skill level of the labor force and to improve the state's competitive advantage in terms of economic development and diversification. Even more important, from an overall economic development point of view, labor pipelines will be easier to establish between postsecondary institutions including colleges of technology programs and key industry development areas. These talent pipelines will be key for laid off workers and discouraged and re-entry workers seeking to re-skill in new occupations in emerging industries. The warehouse will provide the ability to obtain information regarding what new skills will be in demand based on the changing local economic mix. By using the information in the warehouse those new skills will be readily identified and provided through the Montana postsecondary and the workforce training system. Simply put, the challenge for Montana is not to find jobs for people but instead to find people for the new jobs appearing in the local economy. Information from the postsecondary data warehouse will also be linked to workforce services and unemployment insurance data for research and analysis purposes.

The Department of Labor and Industry will use its MontanaWorks database system to supply information to OPI. Data collected by MontanaWorks will be matched to data in the P-20 data warehouse through either real-time or nightly data exchanges to OPI. The data is currently collected in an Oracle format and will have to be converted to SQL so that OPI can receive the data. All relevant data with regard to identifiers will need to be housed and transferred via approved secured environments. DLI estimates they will assign 1 FTE per year to complete any

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<sup>2</sup> The college continuation rate is the percent of students that enrolled in college somewhere in the United States during the fall following high school graduation.

programming needed for data transfers between MontanaWorks and OPI as well as about 300 contracted hours to assist with data conversion.

For the purposes of this grant, the UI Division will provide quarterly wage files to the data warehouse adhering to confidentiality and security restrictions. The files can be structured to meet the needs of the statistical analysis of the study. The DLI estimates part of one FTE will be needed for this function

As stated above, there are many diverse systems that need to link in order to populate the proposed warehouse and to effectively use the warehouse for analysis. (Please see Appendix A for a diagram of Proposed P-20 Data Warehouse Linkages.) The diversity of the data systems and their locations present a number of challenges including, the transport mechanism that will be used between systems, the methodology to match information between systems, the establishment of common definitions and interpretation for the data set, and an acceptable data audit process which provides the appropriate level of confidentiality required by each agency.

Of particular concern is the ability to match student data across the different data systems. The OPI maintains a unique student identifier, but neither DPHHS nor DLI have the K-12 student identifier in their systems. (The OCHE began collection of the K-12 student ID in 2009.) A method will have to be devised to link a student's ID to the identifier used in other systems. In particular, the individual's social security number is used in some of the systems, and for privacy reasons, the OPI does not access or maintain a student's SSN. It is anticipated that an independent system will need to be developed or acquired that will assist in the matching of student data among the different systems.

These challenges of creating linkages and matching data are significant, but not unique to Montana. The project anticipates a establishing a group of individuals to further define these issues, research solutions that other SEAs have used, and develop an approach for Montana to follow.

The first year of the project has been allocated to establishing a method to match data between systems, agree upon transport techniques, and agree upon the initial data set to be traded. Once these items are agreed upon, an additional year and three contractors have been allocated to develop the required software and to test the solution prior to the first exchange of information.

Due to the highly sensitive nature of the new linkages and the data that will be housed in the proposed data warehouse, the OPI feels that an independent review of security is warranted. A consultant will be engaged to review and analyze the level of vulnerabilities on the networks and servers and to evaluate network security architecture, policies, and processes. This effort will also review and assess the strength of the policies and procedures in place to restrict access to sensitive data. As explained in the upcoming data governance section, a lawyer will be hired to work with agency lawyers to ensure that legal issues related to data sharing are properly addressed. It is anticipated that the lawyer will also be involved the data security review as well.

The security review will be conducted once the proposed linkages are agreed upon, but before actual development of the linkages commences. It will encompass the data systems used by OPI,

the Office of Commissioner of Higher Education, the Department of Health and Human Services and the Department of Labor and Industry.

A one-time review of security will provide valuable information as the P-20 longitudinal data system is designed and implemented, but the sensitivity of the data contained within the P-20 data warehouse demands an ongoing review of security. The OPI intends to implement industry best practices to review, assess and address security issues on an ongoing basis. In order to give this issue the attention it deserves, the agency intends to add an information systems security officer to staff to manage and execute the process.

How does this Objective address System Requirements?

Montana's Objective #1 addresses the following required system capabilities:

- Enable states to examine student progress and outcomes over time, including student's preparation to meet the demands of postsecondary education, the 21st century workforce, and the Armed Forces
- Facilitate and enable the exchange of data among agencies so that data may be used to inform policy and practice
- Enable the matching of teachers with information about their certification and teacher preparation programs (by establishing linkages from OCHE to OPI)
- Enable data to be easily generated for continuous improvement and decision-making, including timely reporting to parents, teachers and school leaders on achievement of their students
- Provide the state with the ability to meet the reporting requirements for the USED, especially for the State Fiscal Stabilization Funds and *EDFacts*.

Montana's Objective #1 addresses the following required system data elements:

- Student-level information about the points at which students exit, transfer in, transfer out, drop out, or complete P-16 education programs
- The capacity to communicate with higher education data systems;
- Student-level college readiness test scores (can be provided from OCHE for students enrolled in MUS)
- Information regarding the extent to which students transition successfully from secondary school to postsecondary education, including whether students enroll in remedial coursework; and
- Other information determined necessary to address alignment and adequate preparation for success in postsecondary education.

## 2. Create Electronic Student Transcript Repository for K-12 Education

It is a goal of the OPI to establish a method to make available information related to a student's transcripts to qualified recipients in a secure manner.

Under its 2009 IES grant, the OPI plans to develop a K-12 data warehouse and associated tools. It is OPI's intention to build upon the K-12 data warehouse and add data as it becomes available to the agency. The next set of data that the OPI intends to collect and store is student-level transcript information, including information on courses completed and grades earned. This data

is not currently captured by the agency and will be a significant increase in the amount of data the agency collects. The benefit to OPI is that the project will allow the agency to facilitate the exchange of transcript information between qualified entities.

The information associated with the transcripts is also an important component of the P-20 data warehouse and can be used to assist decision-makers in assessing state and local efforts to increase student performance and career readiness.

The OPI has a number of goals associated with electronic student transcripts, including:

- The capture of data associated with a student's transcript on at least an annual basis throughout a student's K-12 academic career,
- The collection of postsecondary transcript data from public institutions of higher education in Montana
- The storage of the transcript data in the P-20 data warehouse,
- The transfer of the transcript data to qualified recipients in a secure manner,
- The storage of K-12 transcripts in the Montana higher education data warehouse for use within the higher education system

The OPI believes that there are a number of qualified recipients of transcript data including students and parents, public institutions of higher education in Montana, institutions of higher education throughout the US (including private institutions in Montana) and co-academic organizations (e.g. the armed forces, scholarship organizations, certificate boards). Due to the number of potential trading partners, the OPI intends to establish a relationship with a national organization that can facilitate the transfer of student-level transcript data between the OPI and other qualified recipients.

The transfer of transcript information will be accomplished using the School Interoperability Framework (SIF), which is emerging as the industry standard for the exchange of student data. The OPI K-12 SLDS project will define how SIF will fit into the overall enterprise architecture, while this grant will build on that foundation to implement SIF to exchange data with a national transcript service. Because this is anticipated to be the initial implementation of SIF within the agency, the project team will need to purchase a SIF software development kit and a SIF Zone Integration Server (ZIS).

Due to the number of potential data connections among agencies and the implementation of SIF, an additional Computer Systems Analyst/Programmer will be added to both OPI and OCHE staff to assist with the establishment of the connections and to oversee and enhance the connections on an ongoing basis. The OPI anticipates the connections described in this section as a first step. It is expected that other state agencies will contribute information to the P-20 data warehouse in the future.

At the conclusion of the initiative, the OPI will have longitudinal transcript information stored in its data warehouse. Using its business intelligence tools, OPI will make data available through dashboards, web portals and reporting. These tools and data can then be used to supply information to state decision-makers to improve student academic performance and college and career-readiness.

The transcript data represents a significant increase in the amount of data stored in the data warehouse and will necessitate a review of the OPI's current data audit process and procedures. Data audits are critical to ensuring data quality, validity and reliability especially as more data are added to the data warehouse. While many of the elements needed for a data audit such as data standards and definitions are addressed in the original design of the K-12 data warehouse, other items such as statistical checks and on-site audits will need to be reviewed and updated. The OPI's current data audit process is primarily an ad-hoc manual effort and will need to be enhanced to adequately allow for increased dataset and new data. It is anticipated that OPI staffing will need to be increased in order to accommodate the quantity of data collected and to formalize the existing processes.

The project will spend three months reviewing the existing process procedures and developing a recommendation based on the new data being collected and reported. (This effort will also encompass the new data collected from other agencies.)

How does this Objective address System Requirements?

Montana's Objective #2 addresses the following required system capabilities:

- Enable states to examine student progress and outcomes over time, including student's preparation to meet the demands of postsecondary education, the 21st century workforce, and the Armed Forces
- Facilitate and enable the exchange of data among agencies so that data may be used to inform policy and practice
- Link student data with teachers and enable the matching of teachers and students so that a given student may be matched with the particular teachers primarily responsible for providing instruction in various subjects
- Enable data to be easily generated for continuous improvement and decision-making, including timely reporting to parents, teachers and school leaders on achievement of their students
- Provide the state with the ability to meet the reporting requirements for the USED, especially for the State Fiscal Stabilization Funds and *EDFacts*.

Montana's Objective #2 addresses the following required system data elements:

- Student-level information about the points at which students exit, transfer in, transfer out, drop out, or complete P-16 education programs
- The capacity to communicate with higher education data systems;
- Student-level transcript information, including information on courses completed and grades earned;
- Information regarding the extent to which students transition successfully from secondary school to postsecondary education, including whether students enroll in remedial coursework; and
- Other information determined necessary to address alignment and adequate preparation for success in postsecondary education.

### 3. Interagency P-20 Data Governance Workgroup

This proposal seeks to expand on the data governance structure which will be developed in the 2009 IES Grant. That grant provides resources to establish a strong, engaged OPI Governance Board and system which will oversee data for the OPI and local educational agencies. It also funds the development of a K-12 longitudinal data system.

The proposed P-20 project will expand these longitudinal data systems so that state K-12 data systems will link to and establish interoperability with early learning (pre-K), postsecondary education, workforce, social services and additional state agency data systems as Montana is able to identify them. Correct and appropriate use and interpretation of data for P-20 analysis can only be ensured if both owners and users of data possess a common understanding of the meaning and representation of the data.

Key to this effort is the creation of governance structures to guide data collection, sharing and use. An Interagency P-20 Data Governance Workgroup will be created to lead and guide this effort. The workgroup will provide data leadership, data stewardship, data coordination and collaboration, ensure data quality, identify areas for data improvement and work to ensure appropriate data dissemination. The workgroup's duties will include fostering data-driven decision-making throughout agencies, resolving data turf issues, improving the quality of data collection, reporting and usage, and through the creation and enforcement of robust data security and confidentiality policies, managing data vulnerabilities and creating information sharing throughout program offices.

The workgroup will be comprised of representatives, appointed by agency directors, from all organizations participating in the P-20 project. Each representative will be responsible for 1) managing and improving the longitudinal data system in their respective areas of expertise; and 2) collecting system specific metadata to be incorporated into the P-20 data dictionary. Representatives will be expected to understand the business processes of their program areas, and serve as liaisons for other related areas and offices for which they provide representation. One critical criterion for selection of representatives will be based on their understanding that the data belongs to each program office, not to the IT department which may build the system. This principle is key to the effectiveness of an Interagency P-20 Data Governance Workgroup. With respect to interoperability, data exchange policies and procedures will need to be established by the workgroup with each agency responsible for its respective data.

The workgroup will assign a program director who will also serve as a data quality manager and hire two business analysts who will serve as data steward coordinators working with data stewards in each agency. They will also conduct the needs assessments and implement work plans established by the workgroup. The workgroup will adopt policies and procedures and guidelines for the establishment and operation of the P-20 Data Governance system.

As indicated previously, the work proposed for this project will build upon past accomplishments and work in progress. In the past three years, Montana has made significant steps in its handling of data and in formalizing data collection processes. Through the establishment of the AIM (Achievement in Montana) student information system, Montana now has a consistent and confidential statewide student identifier, a data collection schedule, a database of definitions, formats, code sets, business rules, data dictionary and other information about data elements it

collects from districts and schools. The OPI has a web site for student data collections with schedules, definitions, answers to frequently asked questions, web-based training and seminars plus face to face regional training for data submissions, and verification and validation procedures for AIM data. Reports are provided to submitters to check the accuracy of their submitted data, and validation checks on data in the AIM database are done regularly. OPI has a Student Records Confidentiality policy which is FERPA-compliant and requires annual staff training regarding the use of the policy and general security issues. This policy has led to higher quality data and has increased data security making Montana more prepared for implementation of a P-20 longitudinal data system.

Montana is implementing a data governance system through the 2009 IES grant which will further the work performed in the past three years. This system will align and strengthen the use of data between the SEA and LEAs in Montana. A project manager and two business analysts will be hired to oversee the 2009 IES grant. One outcome will be the establishment and operation of a K-12 data governance leadership committee.

Staff hired and the leadership committee established in the 2009 IES Grant will be the basis for the work proposed in the P-20 grant thus enabling Montana to “jump start” the crucial start up phase of the project. By extending the work of the existing staff and expanding the existing committee, Montana will be able to telescope its startup work and move quickly into implementation.

Building a structure to house and deliver data and developing the processes to integrate data from across a myriad of agencies is not enough. Data mapping is a key element in establishing effective data exchange among agencies which span the executive, judicial and state education realm. Additionally, data quality best practices must be in place at the data collection sources, (schools, preschools, the department of health, job training agencies, and higher education) to ensure that decisions and policies are based on correct data, research findings will generate accurate conclusions, and agencies and schools will be appropriately informed regarding effective programs and practices. A solid P-20 governance system will help ensure success with both the data quality and the mapping of the elements stored in the warehouse.

Therefore implementation of the P-20 Data Governance system will incorporate the following components:

- **Leadership:** The interagency workgroup will be comprised of senior leadership from each agency. In addition, the workgroup will have its own program manager who will work with the data stewards from the state agencies. In addition, a business analyst will serve as a data steward coordinator under the direction of the interagency workgroup.
- **Data Quality Management.** Data policies and procedures adopted by agencies will be reviewed by the workgroup to assure data quality, which includes validation rules. The workgroup will take the lead in developing and establishing a statewide data certification process for personnel who provide the data in the field.
- **Controlled Analysis and Reporting.** Since each agency will have its own data available for use in the P-20 data warehouse, there will be clear and available documentation of each agency’s data model and processes. Metadata will be developed which includes a data dictionary, business rules, standard reports, calendars, database schemas and source code.

- **Security and Confidentiality.** Infrastructure components will be built into the P-20 system including authentication, access controls or role based security, firewalls, antivirus, and anti-spyware and intrusion detection. Each agency security officer must coordinate the agency's security plan with the P-20 overall security plan of the P-20 data. All employees are expected to follow each agency's policy for protection of confidential information, including the release of individual student information and data from which an individual's identity could be traced or inferred. Devising a method to connect student-level information from AIM to the pre-school, higher education and job placement and employment system while ensuring confidentiality of student information (in accordance with FERPA) will be a major part of this grant project. Other confidentiality requirements such as HIPAA must also be adhered to. In order to assure that these multiple requirements are met to the satisfaction of each agency, this grant proposes to hire an attorney whose mission will be to assure that all data collected, and used within the P-20 data warehouse is done in accordance with the relevant state and federal law, regulation and policy. The attorney will work with each agency's legal staff and with agency audit personnel to assure up front that the data audit and confidentiality requirements are met. Each agency is subject to its own federal and state audit and monitoring processes and the P-20 attorney will ensure compliance with all these requirements within the P-20 project.
- **Resource Management.** The Data Governance workgroup will ensure that adequate resources are made available to address issues as they arise. Careful staffing allocations by all the partner agencies will provide for unforeseen developments and complications which are expected to occur. Furthermore, it is expected that state and federal requirements will increase over time. Policies and procedures will be developed with an eye toward accommodating potential and likely future requirements. This project proposes to draw on expertise from contractors who have successfully assisted states in building P-20 Data Governance systems. In addition, Montana will make use of the resources available through the IES grantees group and through the Data Quality Campaign.
- **Data Use and Accessibility.** The interagency workgroup will be expected to develop and implement processes which balance timely data use and access with secure data distribution processes. In addition, considerable time and funds are associated with conducting training throughout the affected agencies, plus training in field offices and schools and districts regarding data collection and also appropriate use of the data for longitudinal analysis.

How does this Objective address System Requirements?

Montana's Objective #3 addresses the following required system capabilities:

- Facilitate and enable the exchange of data among agencies so that data may be used to inform policy and practice
- Ensure the quality and integrity of the data contained in the system

Montana's Objective #3 addresses the following required system data elements:

- The capacity to communicate with higher education data systems;
- A state data audit system assessing data quality, validity, and reliability.

#### 4. Business Intelligence and Web Reporting Tools for Users of P-20 Data

Using the funds the OPI received in its 2009 IES grant award, the OPI will further enhance and develop business intelligence (BI) tools which will improve data-driven decision making. These tools will allow the data to be combined and queried in ways that are now extremely labor intensive and therefore infrequently used. If the OPI is awarded funds for this grant, the OPI, along with its stakeholders, will be able to facilitate state and federal reporting and provide more accurate, consistent data. These tools will allow the various stakeholders to track groups of students and learn how the educational services they have received have contributed to their success.

Timely and accurate data and the powerful analyses made possible by the business intelligence tools will be invaluable for the State Superintendent and OPI, the Governor and the legislature, the Montana Board of Public Education (K-12), boards of trustees, administrators and teachers. It will assist in policy and resource allocation decisions as well as an overall ability to determine what is providing value to the education system, industry and the workforce. These tools will ultimately be the basis to driving Montana's economic future by equipping leaders and decision-makers with the right information at the right time and in the right forum.

Phase III of OPI's 2009 IES grant will be to implement business intelligence tools. These tools will help OPI develop a standard set of reports and dashboards that are requested most often. In addition, OPI will create ad hoc reports to meet other requests for information from OPI staff, other agencies, stakeholders, the legislature, and the LEAs. The agency will build on these new tools to incorporate the reporting, dashboards and interactive query tools that are required for the analysis of the additional P-20 data. As additional target audiences are identified, OPI will provide training to the new stakeholders. Training will include information on data quality as well as how to use the business intelligence tools.

During the analysis phase of this project, the OPI, DPHHS, DLI and OCHE will investigate stakeholder reporting, dashboard and interactive querying needs. This analysis will determine what data and analysis is most important for the stakeholders to see on a regular basis. The project team will then work together to define the dashboard and reporting needs as well as the degree of interactive querying that is needed. The end result will be a system that will enable users to make data-driven decisions and use the data easily and independently.

Data sharing and reporting for state and federal purposes will be streamlined through the reliance on a single source of data. Information reported to state policymakers and other state agencies will be consistent with data reported to EDEN. Built-in quality assurance features will provide greater confidence in the accuracy and consistency of our data, allowing SEA staff to spend more time on data analysis and reporting and less time on data clean-up. A further benefit is improved planning for all of our federal, state, and local education partners. With a solid foundation in place, more staff resources can be allocated to anticipating future uses of and changes to the system.

DPHHS will support the P-20 data warehouse by leveraging data from key DPHHS databases. To do this, DPHHS will update source data systems and install and develop a business

intelligence platform. DPHHS will contract the following professional services to accomplish this:

- Install BI software on DPHHS designated server.
- Develop a data mart based on 4 key source systems:
  - ✓ SNAP eligibility (CHIMES-SNAP)
  - ✓ TANF eligibility (CHIMES-TANF)
  - ✓ Child welfare (MACWIS)
  - ✓ Early Childcare (CCUBS)
- Create reports and data exchange routines.
- Train DPHHS end users to use the BI tools and reports.
- Upgrade the CCUBS database from Oracle 6i to Oracle 10g. This is necessary to provide up-to-date and supported database functionality to the business intelligence tools that will be implemented for the P-20 data warehouse.

DPHHS activities for the P-20 data warehouse will be conducted using typical system life cycle phases. (Please see the Project Timeline in Appendix A for specific phases and proposed schedule.)

As part of implementation, up to 20 DPHHS end users will be trained on how to use the reports developed in the BI software. In addition, up to five DPHHS technical and users support staff will be trained on the development and sustainment of the BI reports.

Through this grant, CCUBS will be enhanced to provide data to the P-20 data warehouse. Modifications will include approximately 30 new criteria such as new data collection fields, data entry forms, new contract types or contracts' affiliated data elements and the development of incentives, incentive measures and/or new re-imbursement rates. Additionally, some new notices and reports will be created and existing notices and reports will require modification to adhere to the new processes.

The DPHHS project team will map state and federal reporting elements to system data elements and create automated reporting tools. This will allow staff to meet regular reporting requirements and provide more accurate, consistent data.

An additional Computer System Analyst will be hired within OPI to assist in the identification of reporting requirements. This individual will also be responsible for creating the reports and dashboards that the new target audience requires.

OPI does not have the staffing and resources to address the technical issues involved with interoperability, SIF, and data architecture. Therefore, some of the 2009 IES grant funds will be used to hire a contractor to help define the needs and address the technical requirements.

This project will include building a web site to allow educators, students, parents, and other stakeholders access to standardized reports. The web site will also provide the ability to present dashboards of data tailored to specific audiences. Depending on the needs of the stakeholder the web interface will allow simplistic data mining and ad-hoc reporting with the potential to provide

in-depth data analysis for individuals who have adequate security clearance. Standardized reports will also be available via existing avenues such as the existing OPI web site and hard copy reports, where required.

How does this Objective address System Requirements?

Montana's Objective #4 addresses the following required system capabilities:

- Enable states to examine student progress and outcomes over time, including student's preparation to meet the demands of postsecondary education, the 21st century workforce, and the Armed Forces
- Facilitate and enable the exchange of data among agencies so that data may be used to inform policy and practice
- Enable data to be easily generated for continuous improvement and decision-making, including timely reporting to parents, teachers and school leaders on achievement of their students
- Ensure the quality and integrity of data contained in the system
- Provide the state with the ability to meet the reporting requirements for the USED, especially for the State Fiscal Stabilization Funds and ED Facts

Montana's Objective #4 addresses the following required system data elements:

- Student-level transcript information, including information on courses completed and grades earned;

## 5. Performance Measurements and Reporting

The Montana Office of Public Instruction, the Office of the Commissioner of Higher Education, the Board of Regents and the Board of Public Education are engaged in a process with the Montana Legislature, through its Legislative Education and Local Government Interim Committee, to develop shared policy goals and accountability measures for K-20 education. In its 2009 legislative session, the Montana legislature adopted a resolution urging the state education policy entities to work with the Education and Local Government Interim Committee on developing K-20 shared policy goals and accountability measures that can be used by legislators, the education community, and the public to evaluate progress toward the goals and by the Montana Legislature to guide its funding decisions. The shared policy goals are to be systematically tied to accountability measures in order to ensure timely and effective implementation of policy. The resolution stated that "the goals and measures may include but are not limited to K-20 efforts to: (a) improve the affordability and availability of distance learning; (b) reduce the remediation rate of students entering postsecondary education; and (c) improve the dual enrollment process."

In the process to-date, the following goals, objectives and accountability measures have been proposed and discussed. While these goals, objectives and measures will be changed and refined in the months ahead, the following chart indicates the direction that the shared K-20 policy goals are taking.

<b>Goal</b>	<b>Objective</b>	<b>Measure</b>
Increase College Participation of Montana High School Graduates	Increase the number of Montana high school graduates that attend the Montana University System	Percentage of Montana high school graduates enrolling in postsecondary in the Fall semester immediately following graduation
Increase College Participation of Montana High School Graduates	Increase dual enrollment opportunities	Montana high school students enrolled in Early Access courses
Increase College Participation of Montana High School Graduates	Establish career pathways to give high schools students a jump start on a college degree	Number of Big Sky Pathways developed
Improve College Readiness	Decrease remediation rates of entering freshmen	Percentage of recent Montana high school graduates enrolling in at least one remedial math or writing course
Expand Distance Learning Opportunities	Create easy access to distance learning opportunities through the development of a virtual academy and through improvements to current virtual college capabilities.	Unduplicated headcount of students enrolled in at least one distance learning course
Improve the Availability of Information regarding educational attainment	Link K-12 data system with higher education's data warehouse	Status report on current efforts

One of the specific goals is to improve the availability of information regarding education attainment. In addition, all of the goals and objectives are supported by data collection and analysis. The ability to link data across K-20 and the workforce will be critical to measuring the state's progress toward these goals and objectives.

The development of goals, objectives and indicators for early childhood programs to monitor the state's progress in preparing children for school and for learning is also an objective of this grant proposal. Data linkages from early childhood programs to K-12 and beyond is critical for measuring the long-term impacts of early childhood programs on academic and career success. For example, Montana has developed a Best Beginnings STARS to Quality program, which is a voluntary quality rating improvement system that aligns quality indicators with support and incentives for early childhood programs and early childhood professionals. As part of the Best Beginnings program the state provides scholarships to enroll children in high quality early

childhood settings. A projected outcome of the Best Beginnings scholarship program is that children who are enrolled in high-quality early childhood programs, as determined by the Best Beginnings STARS to Quality program, are less likely to experience grade retention in the public school system. A second projected outcome is that Best Beginnings scholarship children who are in high quality early childhood settings and experience high quality K-12 education are more likely to graduate high school, attend college and are less likely to be convicted of a crime.

These two indicators are examples of how Montana can use data to determine if early childhood services are effective and if scholarship children are more successful in school because of their experience in a high quality program (star 3 or higher) as compared to their counterparts.

The interagency work on developing performance measures and indicators is still in its early stages. The writing of this grant has promoted discussion among the agency participants of indicators that span agency programs. For example, the State of Montana recently began funding full-time kindergarten. One of the anticipated benefits of full-time kindergarten (based on studies performed in other states) is a reduction in the number of students referred for special education services. The state could monitor high quality early childhood programs to see if these programs have a similar effect. The state might also monitor whether early childhood programs are correlated with higher rates of school attendance and other measures of K-12 student achievement.

It is the work of education policymakers and education and social service program managers to determine the goals and objectives that will be pursued by state agencies in partnership with school districts and children's services providers. With resources from this grant for business intelligence tools and web reporting, the state will be able to develop the performance measurement reporting tools to serve the needs of policymakers and the public. This project will include building a web site to allow educators, students, parents, and other stakeholders access to standardized reports. The web site will also provide the ability to present dashboards of data tailored to specific audiences. Standardized reports will also be available via existing avenues such as the existing OPI web site and hard copy reports, where required.

How does this Objective address System Requirements?

Montana's Objective #5 addresses the following required system capabilities:

- Enable states to examine student progress and outcomes over time, including student's preparation to meet the demands of postsecondary education, the 21st century workforce, and the Armed Forces
- Facilitate and enable the exchange of data among agencies so that data may be used to inform policy and practice
- Enable data to be easily generated for continuous improvement and decision-making, including timely reporting to parents, teachers and school leaders on achievement of their students

Montana's Objective #5 addresses the following required system data elements:

- The capacity to communicate with higher education data systems

