

**U.S. Department of Education**

**Washington, D.C. 20202-5335**



**APPLICATION FOR GRANTS  
UNDER THE**

**Statewide, Longitudinal Data Systems**

**CFDA # 84.372A**

**PR/Award # R372A120012**

**Grants.gov Tracking#: GRANT11025973**

OMB No. , Expiration Date:

Closing Date: Dec 15, 2011

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## Application for Federal Assistance SF-424

**\* 1. Type of Submission:**

- ☐ Preapplication  
☒ Application  
☐ Changed/Corrected Application

**\* 2. Type of Application:**

- ☒ New  
☐ Continuation  
☐ Revision

**\* If Revision, select appropriate letter(s):**

**\* Other (Specify):**

**\* 3. Date Received:**

12/14/2011

**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:**

Montana Office of Public Instruction

**\* b. Employer/Taxpayer Identification Number (EIN/TIN):**

810302402

**\* c. Organizational DUNS:**

8095887000000

**d. Address:**

**\* Street1:**

1227 11th Avenue

**Street2:**

**\* City:**

Helena

**County/Parish:**

Lewis & Clark

**\* State:**

MT: Montana

**Province:**

**\* Country:**

USA: UNITED STATES

**\* Zip / Postal Code:**

59601-3910

**e. Organizational Unit:**

**Department Name:**

Office of Public Instruction

**Division Name:**

Office of State Superintendent

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

**Prefix:**

Ms.

**\* First Name:**

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

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## Application for Federal Assistance SF-424

### \* 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-092011-001

### \* Title:

Institute of Education Sciences (IES): Statewide, Longitudinal Data Systems Program CFDA Number 84.372A

### 13. Competition Identification Number:

84-372A2012

### Title:

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

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

Career and College Ready Montana

Attach supporting documents as specified in agency instructions.

**Application for Federal Assistance SF-424****16. Congressional Districts Of:**\* a. Applicant b. Program/Project 

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

  **17. Proposed Project:**\* a. Start Date: \* b. End Date: **18. Estimated Funding (\$):**\* a. Federal \* b. Applicant 

\* c. State

\* d. Local

\* e. Other

\* f. Program Income

\* g. TOTAL

**\* 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 in attachment.)**☐ Yes ☒ No

If "Yes", provide explanation and attach

**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: Middle Name: \* Last Name: Suffix: \* Title: \* Telephone Number:  Fax Number: \* Email: \* Signature of Authorized Representative:  \* Date Signed:

## 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.

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**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.

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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.

<p>* SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL</p> <p>Julia Dilly</p>	<p>* TITLE</p> <p>Superintendent of Public Instruction</p>
<p>* APPLICANT ORGANIZATION</p> <p>Montana Office of Public Instruction</p>	<p>* DATE SUBMITTED</p> <p>12/14/2011</p>

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## 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 \$10,000 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 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 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: Ms. \* First Name: Denise Middle Name:   
\* Last Name: Juneau Suffix:   
\* Title: Superintendent of Public Instruction

\* SIGNATURE: Julia Dilly

\* DATE: 12/14/2011

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

**1. Project Director:**

Prefix: \* First Name: Middle Name: \* Last Name: Suffix:

Address:

\* Street1:   
Street2:   
\* City:   
County:   
\* State:   
\* Zip Code:   
\* Country:

\* Phone Number (give area code) Fax Number (give area code)

Email Address:

**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:**

## Abstract

The abstract narrative must not exceed one page and should use language that will be understood by a range of audiences. For all projects, include the project title (if applicable), goals, expected outcomes and contributions for research, policy, practice, etc. Include population to be served, as appropriate. For research applications, also include the following:

- Theoretical and conceptual background of the study (i.e., prior research that this investigation builds upon and that provides a compelling rationale for this study)
- Research issues, hypotheses and questions being addressed
- Study design including a brief description of the sample including sample size, methods, principals dependent, independent, and control variables, and the approach to data analysis.

[Note: For a non-electronic submission, include the name and address of your organization and the name, phone number and e-mail address of the contact person for this project.]

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## You may now Close the Form

**You have attached 1 file to this page, no more files may be added. To add a different file, you must first delete the existing file.**

\* Attachment: 2011 SLDS Grant Project Abstract.pdf

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## 5. ABSTRACT

**Title:** College and Career Ready Montana

**Priority:** Priority #3: Postsecondary Data

**Additional State Agency Responsible for Grant Activities:** Montana University System

**Project Description:** The Montana Office of Public Instruction (OPI) requests \$3,977,861 over three years for implementation of *College and Career Ready Montana* under Priority # 3 of the *Statewide, Longitudinal Data Systems Grant for FY 2012* to link the OPI's K-12 data warehouse and the Montana University System (MUS) postsecondary data warehouse.

We like to believe that our students are college and career ready, but the fact is, we aren't sure. We are lacking access and linkages to longitudinal student transcript data that can help us design accurate solutions to help ensure student success. This grant will support three key goals:

Goal #1: Establish data linkages between K-12 and postsecondary partners by creating an electronic student transcript repository for K-12 education. Under its 2009 SLDS grant, the OPI is completing a K-12 data warehouse and associated tools. 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 will facilitate the exchange of transcript information between qualified entities.

Goal #2: Create an Interagency K-20 Data Governance Council. This proposal expands on the data governance structure developed for the K-12 data warehouse. Correct and appropriate use and interpretation of data for K-20 analysis can be ensured only if both owners and users of data possess a shared understanding of the meaning and representation of the data. Key to this effort is the creation of data governance structures to guide data collection, sharing, and use. An interagency K-20 Data Governance Council will be created to lead and guide this effort.

Goal #3: Implement business intelligence and web reporting tools for users of K-20 data. Business Intelligence tools will facilitate state and federal reporting; provide more accurate, consistent data; and allow the various stakeholders to track groups of students and learn how the educational services they have received have contributed to their success.

The OPI will expand OPI's K-12 warehouse to link K-12 data and establish interoperability with the MUS system, primarily through development of a standard transcript that can be compared and used by all units of the university system. These data will then be combined with postsecondary transcript information so that schools can be informed regarding the quality and performance of curricula with respect to college readiness. The K-12 data warehouse will be expanded to house the additional data and provide reports and dashboards. The OPI will help the LEAs extract the data from their legacy systems, and design and implement an electronic student records and transcript exchange, with data from the LEAs and MUS flowing to the OPI.

The deliverables, tied to the Priority #3 requirements, are to form a project and data governance structure, plan, and systems; provide data research analyst and business analyst positions; produce accessibility documentation; establish procedures to ensure data integrity, security, and quality; train users how to accurately enter data; establish procedures to monitor the accuracy of data entering the system; provide staffing to help validate data, ensure accuracy, and generate reports; create the exchange mechanism with the MUS; collect and validate data from the K-12 districts; develop transport and validation mechanisms to move data from LEAs to the OPI; deliver K-12 transcript to universities; establish secure access; develop and provide training on the use of data tools and products; develop a professional development module for data interpretation and application; secure an outside evaluator; and establish research partnerships.

## Project Narrative File(s)

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\* Mandatory Project Narrative File Filename: 2011 SLDS Grant Project Narrative.pdf

[Delete Mandatory Project Narrative File](#)

[View Mandatory Project Narrative File](#)

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To add more Project Narrative File attachments, please use the attachment buttons below.

[Add Optional Project Narrative File](#)

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## 6. PROJECT NARRATIVE

### (a) Need for Project

#### **Introduction**

Montana looms large in American mythology as *the last best place*, a place where rugged individualism prevails and folks live an enviable life unfettered by too much progress, bureaucracy, or government. While the fantasy may be fairly harmless for people who don't live here, it can pose tremendous obstacles that only add to the challenges of extreme distance, lack of transportation options, low income, and general frontier-state living that many Montana students face daily.

We like to believe that our students are college and career ready, but the fact is, we aren't sure. Despite numerous supports from the middle-school to postsecondary level, too many low-income, first generation, and minority students are not succeeding in college and don't have the desired skills and experience to enter the workforce. Superintendents, principals, parents, and students are desperate to know what went wrong and how to correct it. We are lacking access and linkages to longitudinal student transcript data that can help us understand which students are enrolling in postsecondary education and where students struggle and where they thrive so that we can design accurate solutions to help ensure student success. While demand for data is high, because of significant challenges in balancing the state budget, legislative funding to create the systems to identify, gather, analyze, and report meaningful data has been insufficient to completely meet the need.

Montana is a local-control state, which presents challenges for any centralized activity. Further complicating our efforts to implement statewide, longitudinal data systems to inform educational policy decisions is the constitutional separation of our K-12 and postsecondary education systems. The **Montana Office of Public Instruction (OPI)** is responsible for K-12 education and operates under the leadership of an elected Superintendent of Public Instruction and a seven-member Board of Public Education appointed by the Governor and approved by the Senate. OPI works with 417 school districts (more than 200 of which serve fewer than 100 students each) serving nearly 142,000 K-12 students enrolled in public education. The **Montana University System (MUS)**, which includes 14 universities and colleges serving more than 47,000 students, is the responsibility of the Board of Regents and its appointed Commissioner of Higher Education, housed in the Office of the Commissioner of Higher Education (OCHE).

#### **History and Status of the Current Data Systems**

The Montana Constitution, Article X, Section (1)(c) states "The legislature shall provide a basic system of free quality public elementary and secondary schools." In 2005, the Montana legislature passed Senate Bill 152 to define a *basic system*, including a procedure to assess and track student achievement in the educational programs, and appropriated funding to create a statewide student information system to serve as the foundation of a statewide longitudinal data system for k-12 education.

The Montana legislature has provided funding for the statewide student information system, the state's educator information systems, including resources to update of the state's educator

licensure system (scheduled for completion in the spring of 2012), and the system for collecting master schedules, personnel assignments, and course offerings from school districts (scheduled for implementation during the 2012-13 school year).

In 2010, the Superintendent of Public Instruction, Commissioner of Higher Education, Board of Regents, Board of Public Education and the legislature’s Education and Local Government Committee completed a 15-month process for establishing Shared Policy Goals and Accountability Measures and adopted four goals detailed on page 13 of this proposal. Each adopted goal includes a set of objectives and accountability measures, which depend on valid, reliable, and robust data systems for their attainment. (See *Appendix A* for the Shared Policy Goals document.)

In 2011, the Montana legislature approved Senate Joint Resolution 26, which requested interim monitoring (Montana’s legislature is in session for 90 days every odd-numbered year, thus the need for interim activity) of K-12 education and progress on implementing state actions to create a culture of effective data use and to improve student performance. In the seven months since the legislative session ended, the OPI has made three presentations to the interim committee on the goals, objectives, and status of the state’s education data systems. The OPI is using the Data Quality Campaign’s 10 State Actions to Support Effective Data Use to assess its progress and to report to the committee. (See *Appendix A* for OPI’s Data Quality Campaign progress report.)

The Superintendent of Public Instruction and the Commissioner of Higher Education convene a joint meeting of their leadership teams on a regular basis (three to four times per year) to discuss topics related to the P-20 education pipeline, transitions from K-12 to postsecondary, and ways to provide mutual support for P-20 initiatives. Regular topics include the State Superintendent’s Graduation Matters Montana initiative, the adoption of the common core state standards, dual enrollment and dual credit options, measures of college participation and success, and the information systems to support these efforts. Both the Superintendent of Public Instruction and the Commissioner of Higher Education recognize the importance of a strategic investment in collection, management, and use of data to measure the success of our P-20 education systems.

#### OPI Data System

In 2011, the Montana legislature established Pathway to Excellence (Montana Code Annotated 20-7-103 and 104) to promote education excellence in Montana’s public schools through data-driven decision making with the intent that Montana K-12 public education maintains a focus on continuous improvement and increased academic achievement for public school students. The OPI was directed to establish a publicly available data system that displays an educational data profile for each school district that includes, at a minimum:

- Contact information and a link to the district website
- State criterion-referenced testing (CRT) results
- Program and course offerings
- Student enrollment and demographics by grade level
- Graduation rates

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, each

student is assigned a unique statewide student identifier (SSID) that does not permit a student to be individually identified by users of the system. The Board of Public Education mandates that this unique student identifier be included on the student's permanent record. Using AIM, the OPI collects student-level enrollment, demographic, and program participation information. Student-level information about points at which students exit, transfer in, transfer out, drop out, or complete P-12 education programs is maintained in AIM. 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.

The Montana Office of Public Instruction was awarded a 2009 SLDS grant to establish its K-12 education data warehouse, Growth and Enhancement of Montana Students (GEMS), and implement a data governance structure within the OPI, which is on track for completion in December 2012. (As part of its SLDS site visit in October 2010, the U.S. Department of Education recognized our strengths around policies, processes, capacity considerations, stakeholder buy-in and partnership, sustainability, knowledge transfer, and data validation.) The grant is facilitating the migration of data within the OPI's numerous legacy systems to the new data warehouse and providing resources for the OPI to implement business intelligence tools for use by a broad community of users. When completed, GEMS will provide access to multiple years of longitudinal data in order to track school and student information across time; remove barriers to obtaining data in a usable form for decision makers; and store all data collected by the OPI to provide an effective, timely, and efficient approach to analyze student and school performance.

#### Montana University System Data System

The Montana University System maintains a student unit record-level longitudinal data warehouse containing enrollment, course information, and graduation data of students enrolled in state-sponsored 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 Board of Regents mandates collection of all Montana high-school transcripts. The Office of the Commissioner of Higher Education maintains the warehouse and supplies the campuses with reporting and critical analysis tools. The Montana Board of Regents uses 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 employees. The MUS also has 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 in place since 2007 provides the MUS with access to past and current Unemployment Insurance (UI) wage records. Because of this linkage, the MUS has been able to analyze the percentage of graduates who find employment in Montana, the level of wages they command, and the industries employing them.

#### **Project Goals**

This grant will support three key goals of the K-20 SLDS project.

Goal #1: Establish data linkages between K-12 and postsecondary partners by creating an electronic student transcript repository for K-12 education

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 career and college readiness. In the transition from K-12 to postsecondary, Montana's educational policymakers are interested in raising college continuation rates (the percentage of students that enrolled in college somewhere in the United States during the fall following high-school graduation), 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 2010, of the recent Montana high-school graduates attending the MUS, 29.3% were enrolled in at least one remedial math or writing course.

To address these questions, Montana needs data systems with the capacity to link data across time and programs. An electronic student transcript repository for K-12 education that leverages previous investments in data systems is the most logical and cost-effective approach.

Under its 2009 SLDS grant, the OPI is completing a K-12 data warehouse and associated tools. 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 will allow us to facilitate the exchange of transcript information between qualified entities.

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

*Goal #2: Create an Interagency K-20 Data Governance Council*

This proposal expands on the data governance structure developed for GEMS, which establishes a strong, engaged OPI Governance Board and system to oversee data for the OPI and local education agencies. The K-20 SLDS links the K-12 data system with the MUS system. Correct and appropriate use and interpretation of data for K-20 analysis can be ensured only if both owners and users of data possess a shared understanding of the meaning and representation of the data. Key to this effort is the creation of data governance structures to guide data collection, sharing, and use. An interagency K-20 Data Governance Council will be created to lead and guide this effort.

*Goal #3: Implement business intelligence and web reporting tools for users of K-20 data*

Business Intelligence (BI) tools will facilitate state and federal reporting; provide more accurate, consistent data; and 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 BI tools will be invaluable for the State Superintendent and the OPI, the Governor and the legislature, the Montana Board of Public Education (K-12), boards of trustees, administrators, and teachers. These reports and analyses 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.

### **Priority #3 Required Capabilities and Key Elements to Be Developed**

The Office of Public Instruction and its partners have chosen Priority #3, *Postsecondary Data*.

The following table identifies which requirements are in place in Montana's OPI GEMS system and the MUS system and describes the proposed K-12/postsecondary linked systems and the key elements to be developed.

<b>Governance and Policy Requirements</b>			
<b>Requirement</b>	<b>GEMS</b>	<b>MUS</b>	<b>K-20 Linked</b>
<u>Need and Uses:</u> address the State's key postsecondary education policy questions; provide data and data-use tools for decision-making at multiple levels	The data system addresses the State's key K-12 education questions. It provides data and data use tools that can be used in education decision-making at multiple levels.	The data system addresses the State's key postsecondary education questions. It provides data and data use tools that can be used in education decision-making at multiple levels.	The linked data systems will meet this requirement by enabling a detailed measurement of college readiness. The project will use tools from the GEMS project to provide three levels of reporting capabilities: pre-prepared static reports, reports that are configurable, and ad-hoc analysis.
<u>Governance:</u> include a clearly-articulated governance structure including representatives from key postsecondary organizations, including postsecondary institutions; have clearly defined roles and responsibilities to manage collection, maintenance, and sharing of post-secondary data with K-12 system and the use of those data; identify the entities responsible for operation of the SLDS and include a common understanding	As part of the GEMS project, the OPI has developed a clearly articulated governance system, which includes clearly defined roles and responsibilities to manage collection, maintenance, and sharing of data.	The Office of the Commissioner of Higher Education manages a data governance system that contains representatives from each institution within the MUS.	The OPI will be responsible for the operation of the linked data systems. One of our project goals is to create a representative Data Governance Council to perform the identified governance tasks.

of data ownership, management, confidentiality, and access; provide means to resolve differences among partners.			
<u>Institutional Support:</u> include support from relevant stakeholders (including support from the agency providing a State WDQI grant if applicable); include authorization to develop and implement connections across the K-12 SLDS and post-secondary systems; commit necessary staff and other resources	As demonstrated by our letters of support (see <i>Appendix B</i> ) and legislation described above, the OPI has strong institutional support from relevant stakeholders within and outside the agency. The system is staffed by four full-time qualified employees with data warehouse expertise.	The Board of Regents' Strategic Plan emphasizes a three-pronged approach to improving information technology focusing on integrating information systems, improving network connectivity, and developing data warehouses to create a more effective and efficient system. The system is staffed by two full-time employees with data warehouse expertise.	Section 20-7-104, MCA requires the development and implementation of longitudinal data systems to match student level K-12 and higher education data. Development and implementation of connections across the K-12 and postsecondary data systems also is part of the Board of Regents strategic plan. The OPI GEMS data team will transition to the K-20 system, but additional personnel are needed, as described in Section (e) Staffing. Montana does not have a WDQI grant.
<u>Sustainability:</u> Demonstrate ongoing support from SLDS partners for, at a minimum, system maintenance, quality control, and user training	The OPI commits ongoing staff and other resources for the minimum system requirements of system maintenance, quality control, and user training.	The MUS commits ongoing staff and other resources for the minimum system requirements of system maintenance, quality control, and user training.	This project builds upon tools and processes that are already in place for the GEMS project. The Microsoft suite of products provides for low cost of ownership and uses a well understood toolset. This allows for significant customization without the need to engage a third party. The warehouse will leverage the existing expertise of the GEMS staff, providing an in-house group who understand how to modify the system.

Technical Requirements			
Requirement	GEMS	MUS	K-20 Linked
<u>Privacy Protection and Data Accessibility</u> : ensure the confidentiality of individual data; include public documentation that defines data accessibility	To protect individual student data, the OPI has adopted a Student Records Confidentiality Policy that complies with FERPA, state laws, and federal education programs administered by the OPI. The system includes public documentation that clearly articulates what data is accessible, to which users, and for what purposes.	To protect individual student data The MUS has adopted policies that comply with FERPA, state laws, and federal education programs administered by the MUS. The system includes public documentation that clearly articulates what data is accessible, to which users, and for what purposes.	The linked data systems will include reports and tools that are controlled by a secure system that ensures student confidentiality, while granting access to individuals who have a legitimate educational reason for accessing the data. The data available for analysis will include all the data currently in the K-12 data warehouse as well as additional data proposed to be collected as part of this grant (K-12 transcripts and higher education data as described in <i>Appendix A</i> .) Data imported into the linked system from the MUS will not be personally identifiable. The combined system will protect the confidentiality of individual data, consistent with the requirements of FERPA and other State laws and policies concerning confidentiality of individual student records. The Data Governance Council will update the GEMS public documentation that clearly articulates what combined system data are accessible, to which users, and for what purposes.
<u>Data Quality</u> : ensure the integrity, security, and quality of data; include an ongoing plan for	The OPI has established procedures to ensure the integrity, security, and quality of the GEMS	The MUS has established procedures to ensure the integrity, security and quality of the system data.	A Data Governance Council will be appointed to 1) establish procedures to ensure the integrity, security and quality of the

training those entering or using the data; include procedures for monitoring the accuracy of the information	data. Funding is in place to train school personnel on data quality practices to ensure the quality of data that are imported into the warehouse. Procedures are in place for monitoring the accuracy of data entering GEMS.	Data are entered by trained professionals in the Admissions and Records Office at each campus. Procedures are in place for monitoring the accuracy of data entering the system.	system data 2) train individuals who use the data; and 3) establish procedures for monitoring the accuracy of data entering the system. (There is no new data entry into the linked system. It leverages the processes already in use by OPI and the MUS.) This grant will support additional staff (see <i>Section (e) Staffing</i> ) who understands both data sets to help design and present training.
<u>Interoperability:</u> use a common set of data elements with common data standards to allow interoperability and comparability of data; at a minimum, link postsecondary data system to the State's K-12 SLDS with a mechanism established for ongoing data exchange	GEMS uses K-12 statewide student identifiers (SSID) and maps fields to the Common Education Data Standards (CEDS).	The MUS collects the K-12 statewide student identifier (SSID) and uses the Classification of Instructional Programs (CIP) codes.	See <i>Appendix A</i> for a graphic of proposed interoperability of the linked data systems. The linked data systems will adhere to the data model established by the OPI. This grant will support the processes and information technology to create the exchange mechanism with the MUS and collect and validate the data required for analysis; collect and validate the data required for analysis from the K-12 districts; develop the transport mechanism to move data from LEAs to the OPI; establish electronic delivery of the K-12 transcript to Montana universities; and produce useful, actionable reports.
<u>Enterprise-wide Architecture:</u> include an enterprise-wide data architecture that links records across	The OPI has developed an enterprise-wide architecture with the GEMS project for K-12 education. The	The MUS has created a data model that supports future linkages to K-12 allowing longitudinal	The link between the K-12 and higher education systems is the Statewide Student Identifier (SSID). The SSID is collected in the higher education

information systems and data elements across time and allows for longitudinal analysis; include at a minimum a system for assigning unique student identifiers, data dictionary, data model, and business rules	GEMS data model is scalable to allow linkages to post-secondary information systems.	analysis.	system when student information is captured from the transcript. Within the linked data systems, the SSID will be the primary key that will allow analysis over time. The GEMS system includes a metadata repository that will be used to provide the data dictionary and documentation of business rules. The data model used for GEMS will be updated with the additional information collected from higher education and the school districts.
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Data Use Requirements			
Requirement	GEMS	MUS	K-20 Linked
<u>Secure Access to Useful Data for Key Stakeholder Groups:</u> provide appropriate and secure access to key stakeholder groups; balance access with privacy protection and confidentiality	The OPI controls access to GEMS by assigning user roles. This allows the system to restrict access to confidential data to only those individuals who have both a need to see the data (the role) and a direct relationship to the students. Data are provided at an aggregate level to all interested parties, subject to the OPI's Student Confidentiality Policy. Access to unmasked or personally identifiable data is restricted to those who have a legitimate educational need to see the information.	Secure access to MUS data is role-based and controlled by the Office of the Commissioner of Higher Education. Data are provided in the aggregate level on reports located at <a href="http://www.mus.edu">www.mus.edu</a>	The Data Governance Council will develop policy to determine access to the data using role-based security. The OPI and the MUS will implement the policy in conjunction with existing policies that protect student and family privacy. Access to unmasked or personally identifiable data will be restricted to those who have a legitimate educational need to see the information.

<p><u>Data Use Deliverables:</u> include reporting and analysis tools; ensure early and sustained engagement of representatives of user groups to identify information needs and recommend improvements</p>	<p>GEMS contains a full suite of Business Intelligence tools, including standard reports and adhoc queries. The OPI regularly convenes a stakeholder advisory committee, which provides input on design, information needs, and areas of improvement. The advisory group also helps design a local district portal, which will allow them to import and analyze their own district data.</p>	<p>The MUS utilizes a variety of reporting and analysis tools, including standardized reports in MS Access. Data liaisons from each campus meet regularly to identify information needs and improvements.</p>	<p>The Data Governance Council will engage representatives of user groups to identify information needs and improvements. Data use deliverables may include K-12 feedback, post-secondary feedback, and consumer information reports and dashboards as defined by the Data Governance Council that can be used to evaluate the performance of Montana students and their readiness for higher education. In addition, the evaluator will engage representatives of user groups in recommending improvements to data use deliverables.</p>
<p><u>Training on the Use of Data Tools and Products:</u> include a professional development program to prepare end-users to effectively use data-use products</p>	<p>The OPI has hired a temporary employee to produce training content and materials for an on-line learning management system.</p>	<p>The MUS provides orientations and on-the-job training to prepare end-users to use its data products, including front-end reporting training on MS Access and other reporting tools.</p>	<p>We envision a multi-faceted approach to training end users, including face-to-face training, on-line resources such as FAQs, computer-based training, and on-line real-time training to train both on the data and the use of the tools. This grant will support modification of the on-line learning management system and user training.</p>
<p><u>Professional Development on Data Use:</u> include a professional development program to help end-users effectively interpret and apply data to inform</p>	<p>The GEMS website will include a module dedicated to helping end-users interpret and apply data and will include metadata to describe individual elements as well as metrics</p>	<p>The MUS promotes professional development through periodic meetings with campus end users to improve data utilization.</p>	<p>The linked K-20 data systems' website will include a module dedicated to helping end-users interpret and apply data and will include metadata to describe individual elements as well as metrics defining cohorts, success,</p>

decision making and improve practices	defining cohorts, success, attendance, attrition, retention, etc. Information on interpretation and application also will be included in the packaged electronic learning management system and in system policy documents. Guidance also will be available through help-desk support provided by the business analyst and data research analyst.		attendance, attrition, retention, etc. Information on data interpretation and application also will be included in the packaged electronic learning management system and in system policy documents. Guidance also will be available through help-desk support provided by the business analyst and computer systems analyst. Face-to-face training will be provided to key end users as described in <i>Section (c) Project Timeline</i> . This grant will support development and implementation of professional development.
<u>Evaluation of Data Products, Training, and Professional Development</u> : include a process for evaluating the effectiveness of data-use deliverables and training and development programs	OPI will pilot an electronic learning management system during the December 2012 rollout of the GEMS system. The training will include the ability to administer tests and to monitor how those who take the training perform on the test.	The MUS seeks regular feedback from campus liaisons and data end users in an effort to evaluate data products and training.	The linked K-20 data systems will use the GEMS electronic learning management system, which includes the ability to administer tests and to monitor how those who take the training perform on the test. This grant will support an independent evaluator who will design and implement a participatory, continuous improvement evaluation model for data-use deliverables and training and development programs.
<u>Partnerships with Research Community</u> : have a policy in place for processing requests for data for research purposes and communicating the	The OPI uses its system data for in-house research (e.g., Indian achievement gap, whole school improvement) and provides data to others such as	FERPA defines the process by which the MUS will release data for research purposes. Researchers are required to sign the student confidentiality policy.	Most research in Montana is done by the University of Montana or Montana State University (and individual graduate students working to complete theses). Measured Progress, the OPI's testing

scope of available data; establish partnerships to assist in answering questions that can inform policy and practice; actively disseminate research and analysis findings to the public while ensuring confidentiality of individual student data	Upward Bound, Measured Progress (OPI's testing vendor), and individual researchers. The Student Record Confidentiality Policy defines the process by which the OPI will release data for research purposes.	Data are released by individual campuses or on a system-wide basis by OCHE.	vendor, also uses Montana data for research. The Data Governance Council will identify additional research partners. This grant will support at least one annual statewide conference where K-12 and post-secondary educators will discuss best practices, research results, and policy implications.
<u>Sustainability Plan:</u> include a plan for sustaining the deliverables and training beyond the life of the grant	GEMS has a low cost of ownership. The existing staff will be able to maintain the current K-12 deliverables.	The MUS data warehouse operations are part of the OCHE base budget. The MUS can sustain its current deliverables.	The linked data systems will use the existing K-12 warehouse, which has a low cost of ownership. It is expected that the existing staff will be able to maintain the deliverables beyond the life of this grant. The training provided during this grant will be a mix of live sessions and computer-based materials. The live sessions will be recorded and archived on the OPI web site for future use. The computer-based materials will also be retained on the OPI web site and learning management system. The OPI and MUS will develop a joint funding request for presentation to the Montana legislature to fully sustain this project.

**Support for State Education Improvement Efforts, Goals, and Accountability Systems**  
America COMPETES Act: The K-20 data system seeks to fulfill the twelve data elements required by section 6401(e)(2)(D) of the America COMPETES Act. (See *Attachment A* for chart.)

The OPI has made significant progress for data element #8, assigning a teacher identifier with the ability to match teachers to students and data element #10, obtaining and storing student-level college readiness test scores. **The one element that Montana has not found the resources to implement for its longitudinal data system is data element #9 – Student-level transcript information, including information on courses completed and grades earned.**

In 2009, the OPI presented an unsuccessful general fund budget request to the Montana legislature for electronic student transcripts. While the education appropriation committee was receptive to the concept, the Montana legislature was unwilling to fund new proposals when faced with significant challenges in balancing the state budget in the wake of the recession. Without an identified funding source for the design and implementation of an electronic student records and transcript exchange, the OPI and its postsecondary partners have not been able to move forward with electronic student transcripts.

With this grant, the OPI and OCHE will be able to build the linkages that will allow Montana educators, policymakers, and researchers to answer questions about career and college-readiness in a meaningful way. As proposed in this application, electronic student record and transcript exchanges will link student demographics, course taking, teacher qualifications and experience, and delivery modes with student success in postsecondary pursuits.

*Shared Policy Goals:* The K-20 data system will support the State's four shared policy goals adopted by the Montana Office of Public Instruction, Montana University System, Board of Public Education, and Montana Legislature:

1. *Align high-school outcomes with college readiness expectations to facilitate the transition from high school to college.*  
When completed, the K-20 data system will provide five-year trend data for remediation rates of freshmen entering the MUS from Montana public high schools, allowing partners to track the desired decline in remediation rates.
2. *Increase college participation of Montana high-school graduates*  
When completed, the K-20 data system will provide five-year trend data for Montana public high-school graduates enrolling in the MUS to help partners track the desired increase in enrollment.
3. *Expand distance learning opportunities.*  
When completed, the K-20 data system will provide baseline and five-year trend data for Montana public high-school student enrollment in distance learning, allowing partners to track the desired increase in enrollment.
4. *Utilize k-20 data to improve student access and achievement.*  
When completed, the K-20 data system will track student access and achievement information and generate timely, topical reports to inform policy and practice that improves student access and achievement.

*The OPI Strategic Directions:* This grant will directly support OPI 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 its strategic directions.

### **Implications of Failure to Meet the Goals**

The primary implication of failure to achieve the goals of the grant will be a lack of understanding of reasons that Montana public education and higher education are not achieving policy goals. Without support from this grant, Montana won't have the resources to complete transfer of transcripts, to provide a link from K-12 to higher education courses; to use data to assess college readiness; or to align expectations between K-12 and college. Failure to meet our grant goals means that we still won't clearly understand barriers to student success.

### **(b) Project Deliverables**

Our project deliverables are directly related to our grant goals and the Priority #3 requirements. The following table details Montana's K-20 SLDS deliverables for each of the requirements that we will address in work to be funded under this grant:

<i>1. Governance and Policy Requirements</i>
a. Governance
1. Form project governance structure
2. Establish K-20 project governance plan and systems
3. Form K-20 data governance structure for linking postsecondary data to K-12 data
4. Establish K-20 data governance plan and systems for linking postsecondary data to K-12 data
b. Institutional support
1. Provide dedicated K-20 data research analyst and business analyst positions to meet requirements of the K-20 data system project
<i>2. Technical Requirements</i>
a. Privacy Protection and Data Accessibility
1. Produce documentation that clearly articulates what SLDS data are accessible to which users and for what purposes
b. Data quality
1. Establish procedures to ensure the integrity, security, and quality of the K-20 system data
2. Train high-school representatives how to accurately enter data
3. Establish procedures for monitoring the accuracy of data entering the K-20 data system
4. Provide dedicated staffing who understands both data sets to help validate data, ensure accuracy and generate reports
c. Interoperability
1. Create the exchange mechanism with the MUS and collect and validate the data required for analysis
2. Produce useful, actionable reports
3. Collect and validate the data required for analysis from the K-12 districts
4. Develop transport and validation mechanisms to move data from LEAs to the OPI
5. Establish electronic delivery of the K-12 transcript to Montana universities
6. Establish secure access

3. <i>Data Use Requirements</i>
a. Training on the use of data tools and products
1. Develop a training program on Microsoft Business Intelligence tools
2. Provide training on the use of data tools and products to users
b. Professional development on data use
1. Develop a professional development module to help end-users effectively interpret and apply data
c. Evaluation of data products, training, and professional development
1. Secure an outside evaluator to design and implement a participatory, continuous improvement evaluation model for the data products, training, and professional development components of the K-20 data system
d. Partnerships with research community
1. Establish research partnerships with MUS and the Board of Public Education to provide analysis and reporting of data for questions outside standard reports

### (c) Timeline for Project Deliverables

#### Implementation

The K-12 GEMS data warehouse will be expanded to house the additional data and provide the reports and dashboards that the K-20 solution requires. This approach makes sense for Montana because of the low cost of ownership of GEMS, the availability of an experienced, in-house team to make the required modifications, and the flexibility of the solution. While the OPI will house and maintain the solution, the delivery of the reports to the public will be made via web pages that are co-branded between the OPI and MUS.

The basic design of the proposed system envisions the data from the LEAs and MUS flowing to the OPI. The OPI will import the data into the GEMS data warehouse and will provide reports and dashboards. The LEAs also will electronically deliver their transcripts to a third-party transcript service. This is required in order to ensure that the state assigned student identifier (SSID) currently used within the OPI is included on the student transcript and is delivered to all Montana institutions of higher education on a consistent basis. The SSID will be included in the MUS data warehouse and will become the link between higher education data and the K-12 data.

A key component of the design is to make the solution easy to use for the LEAs. The OPI envisions building a transfer system that will allow the LEAs to send the data required for analysis and the transcript to a single location (the transfer system). This system will then provide the data to both the third-party transcript service and to the OPI for inclusion in the data warehouse. We believe this design allows the greatest flexibility, follows best practices, and provides a framework that the OPI can leverage in the future for other types of data. Please see the diagram in *Appendix A* for a graphical representation of the proposed data flow.

#### Enterprise Architecture

As part of the GEMS project, the OPI established an Enterprise Architecture that is used when new projects are started. This document will be used to inform the decisions made during the K-20 data warehouse project. An Enterprise Architecture is a living structure, so it may be modified

during the project, but significant changes are not anticipated to accommodate the proposed changes to GEMS or the envisioned data exchanges.

*Collection and validation of the data required for analysis from the K-12 districts*

The K-20 Data Governance Council will define the data set required for analysis and the data standards that the data collection will follow. A large portion of the envisioned data is not yet collected by the OPI. In order to collect the data from the LEAs, the project needs to help the LEAs extract the data from their legacy systems and design a delivery system to deliver the data to the OPI for inclusion in the data warehouse.

Montana's LEAs vary widely in the systems they use and the local IT expertise available to help with the extraction and transportation of data. While many LEAs will have the expertise to provide the required data once the data set is defined, the project anticipates working with each high school individually to obtain the needed data. The OPI also anticipates the need to work directly with the vendors of the student information systems in use at the LEAs.

At the beginning of the project, LEAs will be surveyed to help the OPI understand the type and amount of assistance each LEA will need as well as the need to work with third-party vendors. For the smallest LEAs, the project will also be prepared to provide a manual entry option to collect data that does not currently reside in a student information system at the LEA. The solution envisions a simple set of data collection screens delivered via the web to collect the required data.

Based on feedback from LEA personnel, the OPI does not believe that the current method used to obtain data from the LEAs is robust enough to handle the additional data required for this K-20 project. In order to successfully collect the required data without placing an undue burden on the LEAs, the OPI proposes to build a new electronic transport mechanism.

The project will consult the OPI's existing LEA advisory committee to help develop the requirements for the design of a new transport mechanism. Based on previous discussions, the OPI believes that it will need to provide multiple options to the LEAs for the solution to be effective. The solution will also need to communicate with multiple entities, so that each LEA can build one connection to the transport service and use it to deliver data both to the OPI and to a third-party transcript service.

Larger LEAs have expressed a desire to move to a SIF-based solution, and the OPI believes that School Interoperability Framework (SIF) will be part of the solution. However, smaller LEAs believe the costs associated with SIF outweigh the benefits and a flat file transport may be more appropriate. The final decision on the transport mechanism(s) will be made at the conclusion of the requirements phase of the project, and may include a variety of electronic transport options, including SIF, flat files, web services, and manual entry.

Another key component of transporting data is the validation of the data and feedback to the LEAs on validation errors. The same LEA advisory council that helps develop the transport mechanism will help design the validation solution. The techniques employed will depend somewhat on the transport mechanism, and the OPI believes that it will be able to leverage the

existing Microsoft toolset from the GEMS project to perform the validation and deliver reports to the LEAs.

The effort involved to develop the proposed solution and to work with each district will be significant and constitutes more work than the proposed in-house team will be able to handle. In order to ensure success in a timely manner, the OPI believes that a third party should be engaged to assist with these tasks and to provide third-party software, as needed. The project timeline allows time to engage third-party assistance for both the extraction of the data and the creation of the transport solution.

*Creation of the exchange mechanism with the MUS and collection and validation of the data required for analysis*

The MUS currently maintains the data required for analysis in a central data warehouse and has experienced staff to maintain this warehouse. The Oracle solution utilized by the MUS provides for easy extraction of data, so obtaining the data is not anticipated to be an issue.

The MUS and OPI have tentatively agreed on a proposed data set (see *Appendix A*), which the K-20 Data Governance Council can use as a starting point to determine the set of data elements to be transferred. The K-20 Data Governance Council will also establish the standards that the data set will be based on.

While the data set is being finalized, the project team will agree on a transport mechanism from MUS to the OPI. Since the OPI and MUS do not anticipate the updates from MUS to be frequent, the team believes that a simple, automated secure FTP transfer between the sites will be sufficient to handle the transport of the data.

The proposed data set to be transferred is currently housed within the MUS data warehouse. The data are validated for accuracy when imported into the MUS data warehouse. Significant additional validation should not be required when the data are imported into the K-20 data warehouse. The additional validation will focus on the accuracy of matching student records between the two systems. The tools used for validation will be the same as those used for the LEA data transport.

*Data Interoperability*

The postsecondary data provided by the MUS will include data elements listing students' majors, as well as degrees and certificates received. The coding for these elements will be based on the federal Classification of Instructional Programs (CIP codes). In addition, the necessary data elements will be included in the postsecondary dataset that enable the identification of first-time, degree-seeking students, as defined by the Integrated Postsecondary Education Data System (IPEDS).

*Electronic delivery of the K-12 transcript to higher education*

A key to the success of bringing MUS data together with K-12 data is the ability to match records between the two systems. Currently, there is no common student identifier that the two systems share.

Beginning in February 2012, high schools will be required to include the SSID on all transcripts. Likewise, the MUS already requires colleges to collect and store the SSID when it is present on a student's transcript. When the SSID is collected, the MUS data warehouse imports the SSID and stores it with other student data. The SSID captured in this process is the only common identifier between the systems. The process outlined above is largely manual and, as a result, prone to errors. The OPI believes that, in order to ensure accuracy and completeness of data, this process should be automated to the extent possible.

The OPI could build an automated electronic delivery system between Montana high schools and Montana universities, but believes that developing a proprietary solution, for use only within Montana, is limiting. Third-party solutions already exist to assist in the delivery of transcripts and have the added benefit of being capable of delivering transcripts nationwide. The OPI intends to contract with a third party to take advantage of this greater flexibility.

An RFP will be created and the responses evaluated for the most cost-effective solution that will meet Montana's needs. In order to create the RFP, a committee consisting of representatives from the LEAs, MUS, and OPI will meet to write the requirements, including the desire that the solution work with the transport service envisioned to move data from the LEAs to the OPI.

#### *Creation of the reports and dashboards needed to analyze the data*

A key deliverable of the project will be the creation of reports, dashboards, and tools needed to analyze the data brought together from K-12 and higher education.

The OPI strongly believes that the Microsoft tools installed as part of the GEMS project will be able to meet the reporting needs of the K-20 SLDS. These tools allow the capability to create parameter-driven reports, charts, and graphs that can be 'drilled into' as well as *ad-hoc* analysis via Microsoft Excel and Power Pivot. Additionally, data can easily be exported into other tools if the existing tools are not sufficient.

The K-20 Data Governance Council, in consultation with stakeholders, will determine the type of analysis required. This group will define the data and the reports needed to provide a starting point for analysis. The Montana High School Follow-up Report produced by the MUS currently measures college participation, remediation, and retention rates of recent graduates from Montana high schools. It is envisioned that this report will serve as a starting point for a new, more detailed report that incorporates the course-level information supplied by the new K-20 data link.

As part of the GEMS project, the OPI has developed expertise in the Microsoft tools used to import data into the warehouse and to create reports. These in-house resources will be used to create the reporting required for this project.

#### *Modification of the existing K-12 data warehouse (GEMS) to a K-20 solution*

The K-12 data warehouse currently being built as the result of the successful 2009 SLDS grant will handle the additional data and reporting needs without major modification. The GEMS solution is built on the Microsoft platform. We propose to use the OPI project team assembled for the GEMS project to perform the changes required to expand the data warehouse to a K-20 solution.

The only change to the physical infrastructure environment required for expanding the GEMS data warehouse to a K-20 solution is the expansion of storage. The rest of the GEMS environment, such as the network connectivity and servers, are robust enough that the additional data and reports envisioned for this project should not require an upgrade. There will be additional changes required to house the new transport service mechanism. While the current OPI infrastructure environment will need to be increased to house the new solution, the use of virtual servers and available space within the physical environment should keep these costs at a minimum.

#### Ensuring system accessibility and security

The existing GEMS solution has a robust security system that will be used to control the delivery of reports and analysis associated with the proposed solution. The existing security solution controls access to data based on both the role of the individual that is signed-in as well as his or her assigned work location.

Using this same model, it is anticipated that the only change that will be required to the security system is the creation of additional roles and locations. The current system is designed to handle additional roles and assigned locations via a web interface currently administered by the OPI Security Manager.

The addition of authorized users requires the signature of an authorized representative. This model will be followed for the K-20 solution. The OPI will also provide, on a regular basis, to each authorized representative a list of individuals who have access to data sets and locations to validate that this list is appropriate, accurate, and up-to-date.

While the GEMS system is secure, it does provide for a publicly accessible set of reports and dashboards that provide critical information while maintaining the privacy of individual students. This portion of the GEMS solution will be expanded to include the reports and analysis that K-20 requires.

The current GEMS web site also provides a way for researchers to request access to data that is not available to the general public. This system uses an automated workflow to route the request to the OPI's Data Privacy Committee for review and approval. This request system will be modified to allow the request of K-20 data.

#### Data governance

This proposal will expand on the highly successful data governance structure developed through the 2009 SLDS Grant. The K-20 SLDS will expand OPI's K-12 warehouse to link K-12 data and establish interoperability with the postsecondary system, primarily through the ability to develop a standard transcript that can be compared and used by all units of the university system. These data will then be combined with postsecondary transcript information so that secondary and postsecondary schools can be informed regarding the quality and performance of secondary school curricula with respect to college readiness.

Correct and appropriate use and interpretation of data for K-20 analysis can be ensured only 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. A K-20 Data Governance Council will be created to lead and guide this effort. The council will provide data leadership, data stewardship, and data coordination and collaboration. It will ensure data quality, identify areas for data improvement, and work to ensure appropriate data dissemination. The council's duties will include fostering data-driven decision-making throughout agencies, resolving data ownership issues, and improving the quality of data collection, reporting, and usage. Through the creation and enforcement of robust data security and confidentiality policies, the council will manage data vulnerabilities and create information sharing throughout program offices.

The council will include representatives appointed by the Superintendent of Public Instruction and the Commissioner of Higher Education and will report to these two education leaders. Each representative will be responsible for managing and improving the longitudinal data system in his or her respective areas of expertise, and collecting system-specific metadata to be incorporated into the K-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 their understanding that the data belong to each program office, not to the IT department that may build the system. This principle is key to the effectiveness of a K-20 Data Governance Council. With respect to interoperability, data exchange policies and procedures will need to be established by the council with each agency responsible for its respective data.

The OPI will hire a business analyst to serve as a data quality manager and who will manage the work of the council. That person will work with the K-20 core data stewards committee, representing various data domains in each agency, and in the university system and its units. The business analyst will also conduct needs assessments and implement work plans established by the council. The council will adopt policies, procedures, and guidelines for the establishment and operation of the K-20 Data Governance Council.

The work proposed for this project builds upon past accomplishments and work in progress. The current GEMS data governance system has been operational for the past year and a half. The GEMS data governance council conducts the majority of the policy development work and is strongly supported by the data stewards committee. This committee analyzes the impact of new data reports and collections and helps the data governance council craft solutions that represent the best and most cost-efficient approach. One byproduct is heightened awareness by all OPI staff of the importance of a data governance process. There is now widespread understanding of and support for the data governance process. It is not viewed as an encumbrance, but rather as a process that can improve and make more efficient new data collections and approaches. Because the K-20 grant proposes to use the existing data governance group as a model and use the

existing staff to expand the existing committee, Montana will be able to accelerate its startup work and move quickly into implementation.

OPI's FERPA-compliant Student Records Confidentiality policy, which requires annual staff training regarding the use of the policy and general security issues, has led to increased data security and informs data governance decisions.

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

Implementation of the K-20 data governance system will incorporate the following components:

- Leadership: The data governance council will include senior leadership from each agency. In addition, the council will have its own business analyst who will work with the data stewards from the various agencies. The business analyst will serve as a data steward coordinator under the direction of the data governance council.
- Data Quality Management. Data policies and procedures adopted by agencies will be reviewed by the council to assure data quality, including validation rules. The council will take the lead in developing and establishing a statewide data quality and validation process for personnel who provide the data in the field. The council will work to ensure the quality and integrity of the data in the system through the implementation of a state data audit system, which will assess data quality, validity, and reliability. Training opportunities will be provided to OPI staff and school and district personnel to support their work and ensure quality customer service.
- Controlled Analysis and Reporting. Since each agency will have its own data available for use in the K-20 data warehouse, there will be clear and available documentation of each agency's data model and processes. Metadata, such as a data dictionary, business rules, standard reports, calendars, database schemas, and source code will be developed. This system will make data dictionaries publicly available. Data Specs, a system to standardize and make available all K-12 data, is being used for the K-12 data warehouse and will be expanded for the K-20 warehouse, making the data more usable and accessible. University of Montana and Montana State University Planning and Analysis Offices will be technical consultants for this work. In addition CSPAC, the Certification Standards and Practices Advisory Council, will provide additional technical consultation.
- Security and Confidentiality. Infrastructure components will be built into the K-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 overall security plan for the K-20 data. All employees are expected to follow each agency's policy for protection of confidential information, including the release of personal 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 higher education and university system units 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 addressed and compliance ensured.

- Resource Management. The data governance council will ensure that adequate resources are made available to address issues as they arise. Policies and procedures will be developed with an eye toward accommodating potential and likely future requirements. Montana will make use of the resources available through the SLDS grantees group and the Data Quality Campaign. Other resources from which to draw include University of Montana and Montana State University Planning and Analysis offices, CSPAC, Montana's Math and Science Initiative, and the P-20 collaborative.
- Data Use and Accessibility. The K-20 Data Governance Council will develop and implement processes that 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, schools, and districts and through statewide conferences regarding data collection and appropriate use of the data for longitudinal analysis.

#### Training and professional development

Simply stated, this project will be successful only if people use the system. There are two types of training necessary for this project. The first is providing technical assistance/training to school personnel in order to ensure data quality of the data being provided from the K-20 system. Existing training already available through OPI's student information system and the Montana University system will be reviewed and modified to address the new K-20 data collection requirements. Training will be made available through webinars, regional trainings, and website-based training.

The second type of training is geared toward appropriate use of the data for longitudinal analysis. Key to the creation of a K-20 warehouse is a plan for how to make the best use of the combined data made available to both secondary and postsecondary schools. A recent report from the Higher Education Research Institute at the University of California at Los Angeles, which brings together data from its freshman survey and graduation numbers from the National Student Clearinghouse, could serve as an example of how data could be used. Such a report could help determine if campuses have actually improved retention rates or if they have simply attracted better students.

To ensure accurate analysis and interpretation, K-20 education data require a sophisticated, multi-faceted analysis and an accurate understanding of what lies behind the data. There is a great need to find useful, productive approaches to sharing, analyzing, and ultimately arriving at valid conclusions from the K-20 warehouse. Educators' inexperience with data analysis and interpretation can result in incorrect conclusions and inappropriate instructional and classroom management decisions. A systemic approach to data coaching needs to be developed and followed. Initially, training will be provided for end users. However, as time goes by and best practice models become available, a train-the-trainer approach is envisioned. A data coaching strategy must be implemented on a long-term basis to ensure that new teachers and teachers arriving from other school systems are able to get up to speed quickly.

Components of the data coaching strategy will include presentations, frequently asked questions (FAQ) sheets, and context-sensitive help. Every user of the system will have a certain level of information available to assist in navigating the environment. Each user also will be provided a set of recommended web-based mini-courses to demonstrate examples and provide opportunities to improve knowledge-level of the environment. This will include desktop- and server-based solutions. Each component will have a series of training materials developed specifically for, and targeted to, that set of functionality.

Training materials must include, but are not limited to, online webinars, manuals, online help, recordings of training sessions for online distribution, materials for face-to-face end user sessions, and manuals for train-the-trainer sessions. The OPI must approve course materials, training plan, and training approach prior to conducting courses. Course materials may change over the duration of the project based on feedback from trainees.

The above-mentioned tools will be used to create a robust learning environment. Our planned approaches include:

- Websites and blogs designed to share work and invite analysis. FERPA and Montana's student record confidentiality policy have dampened collaborative work in analysis of student data because the small numbers of students being analyzed prevented exposure of the data. The warehouse will provide a much richer data forum (which will be "scrubbed" of individual records) and, due to its longitudinal aspect, will provide more data that will not need to be masked, making it more possible than ever before to share and analyze data.
- Presentations. Funds are built into the grant to provide presentations statewide regarding the uses of the data warehouse. The K-12 warehouse already provides for a trainer who will develop and upload presentations onto the OPI website to help the any level of user make the best use of the data. This model will be extended to the K-20 warehouse, providing in-person and website-based approaches.
- Conferences. At least one conference is planned to present cutting edge research using K-20 data. Researchers will have a forum to showcase their work and present what they have learned. Teachers from K-12 schools and the university system analysts will be learn how to use the K-20 data to inform their own teaching. Sessions will bring teachers and university experts together to discuss the data and determine strategies to improve student performance. Ultimately these sessions will also provide insight into how to further tailor the K-20 warehouse to meet these needs. It is expected that the warehouse will be designed in a way that allows the OPI and MUS to make changes to it as is necessary. Currently, the Montana OPI sponsors a highly successful MBI (Montana Behavioral Initiative) conference in the summer on the campus of Montana State University. This conference is well attended and would be a model for how the K-20 conference would be organized. Holding it at a university during the summer months when teachers are not as busy and able to focus on this research would be ideal.
- Presentations to the Board of Public Education, the Board of Regents and committees of the Montana Legislature. Presentations will be provided to these important policy makers on how the K-20 warehouse meets the demand for informed policy decisions. In order to secure ongoing funding and support, it is critical that legislators understand the value of these systems.

The OPI will hire a business analyst to help develop the training plan and provide technical assistance to users. Training on specific business intelligence tools will also be provided on a regular basis to agency personnel who will use the tools. Training on the use of the electronic student transcripts will be provided to the LEAs, OPI, and the Montana University System staff.

#### Evaluation

The OPI will contract with an independent evaluator over the course of the grant to design and manage a participatory evaluation process focused on continuous improvement of training, professional development, and end-user deliverables and to prepare the K-20 team to sustain a continuous improvement process beyond the life of the grant.

#### Sustainability

Sustainability is crucial to the success of this project. Since the GEMS data warehouse was designed on the Microsoft platform, it provides low total cost of ownership. We will also work to ensure that other third-party vendor licensing and maintenance fees are low and sustainable. The OPI and MUS will develop a joint funding request for presentation to the Montana legislature to fully sustain this project. In addition, the OPI will work with the technical teams at the larger LEAs to provide training and guidance to make sure they are capable of supporting the solution from their side.

#### Federal Reporting

The K-20 data linkage will serve to meet critical federal reporting requirements established by the American Recovery and Reinvestment Act of 2009. Specifically, this new linkage will provide the data necessary to fully address requirements in Indicator C-12 of the Assurances and Indicators committed to by the Governor of Montana as a condition of receipt of State Fiscal Stabilization Funds as described below:

*Provide, for the State, for each LEA in the State, for each high school in the State and, at each of these levels, by student subgroup (consistent with section 1111(b)(2)(C)(v)(II) of the ESEA), of the students who graduate from high school consistent with 34 CFR 200.19(b)(1)(i) who enroll in a public IHE (as defined in section 101(a) of the HEA) in the State within 16 months of receiving a regular high school diploma, the number and percentage (including numerator and denominator) who complete at least one year's worth of college credit (applicable to a degree) within two years of enrollment in the IHE.*

#### **Timeline**

The deliverables identified in Section (b) above will be achieved through the joint efforts of the Montana Office of Public Instruction and the Office of the Commissioner of Higher Education, and our agency partners with input and support from the colleges and universities in the Montana University System, public high-school administrators, software vendors, and professional services contractors in accordance with the timeline below. The timeline indicates the remaining tasks to complete GEMS and provides the schedules for initiation and completion of tasks needed to complete each deliverable and principal parties responsible for completing tasks.

Task	Responsibility	Start	End
Remaining tasks to complete GEMS			
Conduct end-user training sessions #2	GEMS Project Team	7/12	7/12
Build domain #7 – Transportation Domain	GEMS Project Team	7/12	8/12
Stabilize domain #6 – Education Staff Domain	GEMS Project Team	7/12	8/12
Integration and performance testing	GEMS Project Team	7/12	8/12
Produce user training materials	GEMS Project Team	7/12	8/12
User acceptance testing	GEMS Project Team	8/12	8/12
Stabilize domain #7 – Transportation Domain	GEMS Project Team	8/12	10/12
Deploy domain #6 – Education Staff Domain	GEMS Project Team	8/12	8/12
Integration and performance testing	GEMS Project Team	8/12	9/12
Deploy domain #7 – Transportation Domain	GEMS Project Team	10/12	10/12
Stabilize domain #8 – Career Education Domain	GEMS Project Team	10/12	11/12
Integration and performance testing	GEMS Project Team	10/12	11/12
User acceptance testing	GEMS Project Team	10/12	11/12
Produce user training materials	GEMS Project Team	10/12	11/12
Deploy domain #8 – Career Education Domain	GEMS Project Team	11/12	12/12
Engagement closure	GEMS Project Team	12/12	12/12
Deliverable 1.a.1 Form K-20 project governance structure			
1.a.1.a Appoint Project Leadership Team	OPI Executives	7/12	7/12
1.a.1.b Adopt structure, assign member roles and responsibilities	Project Leadership Team	7/12	9/12
1.a.1.c Begin ongoing project management based on the combined K-20 data system	Project Leadership Team	9/12	6/15
Deliverable 1.a.2 Establish K-20 project governance plan and systems			
1.a.2.a Review GEMS project governance plan as model	Project Leadership Team	7/12	7/12
1.a.2.b Modify GEMS plan as needed	Project Leadership Team	7/12	7/12
1.a.2.c Create project documentation – charter, management plan, etc.	Project Leadership Team	9/12	11/12
1.a.2.d Hold regular project management meetings	Project Leadership Team	7/12	6/15
1.a.2.e Report monthly to the state project management office and quarterly to the legislative finance committee	Project Leadership Team	9/12	6/15
Deliverable 1.a.3 Form K-20 data governance structure for linking postsecondary data to K-12 data			
1.a.3.a Assign Data Governance Council Members	Superintendent and Commissioner of Higher Education	7/12	7/12
1.a.3.b Adopt structure, assign member roles and responsibilities	Data Governance Council	7/12	9/12
1.a.3.c Begin ongoing data management based on the combined K-20 data system agenda	Data Governance Council	9/12	ongoing

Task	Responsibility	Start	End
Deliverable 1.a.4 Establish K-20 data governance plan and systems for linking postsecondary data to K-12 data			
1.a.4.a Review GEMS data governance plan as potential model	Data Governance Council	9/12	11/12
1.a.4.b Modify GEMS data governance plan as needed	Data Governance Council	11/12	12/12
1.a.4.c Establish and articulate K-20 data governance systems	Data Governance Council	12/12	3/13
Deliverable 1.b.1 Provide dedicated K-20 data research analyst and business analyst positions to meet requirements of the K-20 data system project			
1.b.1.a Confirm job descriptions and advertise positions	Project Leadership Team	7/12	7/12
1.b.1.b Select and interview finalists	Project Leadership Team	8/12	8/12
1.b.1.c Hire data research analyst and business analyst	Project Leadership Team	9/12	1/13
1.b.1.d Analysts begin	Data Research Analyst, Business Analyst	1/13	ongoing
Deliverable 2.a.1 Produce documentation that clearly articulates what SLDS data are accessible to which users and for what purposes			
2.a.1.a Develop vision for data	Data Governance Council	1/13	6/13
2.a.1.b Determine what data are needed	Data Governance Council	1/13	6/13
2.a.1.c Determine what data are available	Data Governance Council	1/13	6/13
2.a.1.d Understand and apply related regulations and policies	Data Governance Council	1/13	6/13
2.a.1.e Establish who can see what data	Data Governance Council	7/13	12/13
2.a.1.f Publish documentation	Data Governance Council	11/13	4/14
Deliverable 2.b.1 Establish procedures to ensure the integrity, security, and quality of the K-20 system data			
2.b.1.a Review existing OPI and MUS procedures	Data Governance Council	1/13	4/13
2.b.1.b Modify and adopt based on above deliverables	Data Governance Council	4/13	7/13
2.b.1.c Implement procedures	Data Governance Council	7/13	7/13
Deliverable 2.b.2 Train high-school representatives how to accurately enter data			
2.b.2.a Review existing GEMS and AIM training	SLDS Project Team	1/13	3/13
2.b.2.b Modify and enhance training programs	SLDS Project Team	3/13	6/14

Task	Responsibility	Start	End
to includes K-20 data			
2.b.2.c Develop training schedule	SLDS Project Team, Stakeholders	1/14	2/14
2.b.2.d Provide training to high-school representatives	SLDS Project Team, LEAs	1/14	6/14
Deliverable 2.b.3 Establish procedures for monitoring the accuracy of data entering the K-20 data system			
2.b.3.a Review existing OPI validation procedures	SLDS Project Team,	1/13	3/13
2.b.3.b Modify and adopt based on above deliverables	SLDS Project Team, MUS Team	1/14	5/14
2.b.3.c Implement procedures	SLDS Project Team	5/14	5/14
Deliverable 2.b.4 Provide dedicated staffing who understands both data sets to help validate data, ensure accuracy and generate reports			
2.b.4.a Assign new data research analyst and business analyst to the K-20 project.	OPI Executives	1/13	1/13
2.b.4.b Secure training for the K-20 data research analyst and business analyst	SLDS Project Team	1/13	7/13
Deliverable 2.c.1 Create the exchange mechanism with the MUS and collect and validate the data required for analysis			
2.c.1.a Develop data set for transfer to OPI	SLDS Project Team, MUS Team	6/13	7/13
2.c.1.b Develop validation routines	SLDS Project Team, MUS Team	7/13	10/13
2.c.1.c Agree on exchange frequency	SLDS Project Team, MUS Team	7/13	8/13
2.c.1.d Gather requirements for transfer mechanism	SLDS Project Team, MUS Team	6/13	7/13
2.c.1.e Develop and sign an MOU to govern the sharing of data	SLDS Project Team, MUS Team	7/13	10/13
2.c.1.f Develop routines to import data	SLDS Project Team, MUS Team	10/13	1/14
2.c.1.g Test transport, validation and import routines	SLDS Project Team, MUS Team	1/14	2/14
2.c.1.h Implement transfer and import of MUS data	SLDS Project Team, MUS Team	2/14	2/14
Deliverable 2.c.2 Produce useful, actionable reports			
2.c.2.a Review and incorporate stakeholder/end-user input into data, reports and site requirements	Data Research Analyst, Stakeholders	1/13	7/13
2.c.2.b Develop reports and dashboards	SLDS Project Team	7/13	8/14
2.c.2.c Develop co-branded site	SLDS Project Team, MUS Team	7/13	9/13
2.c.2.d Test reports	SLDS Project Team, Stakeholders	8/14	10/14

<b>Task</b>	<b>Responsibility</b>	<b>Start</b>	<b>End</b>
2.c.2.e Implement reports and dashboards	SLDS Project Team	10/14	10/14
<b>Deliverable 2.c.3 Collect and validate the data required for analysis from the K-12 districts</b>			
2.c.3.a Develop Montana standard transcript	Board of Public Education Committee, Data Governance Council, other Stakeholders	7/12	4/13
2.c.3.b Send proposed state transcript to Board of Public Education for formal approval and adoption	SLDS Project Team, Board of Public Education	4/13	10/13
2.c.3.c Develop data set for transfer to the OPI	SLDS Project Team, LEAs	6/13	7/13
2.c.3.d Develop manual data entry system	SLDS Project Team, LEAs	7/13	10/13
2.c.3.e Develop routines to import data into the warehouse	SLDS Project Team	7/13	10/13
2.c.3.f Work with high school districts to extract data	SLDS Project Team, HS LEAs	7/13	1/14
2.c.3.g Test import routines and manual entry system	SLDS Project Team, HS LEAs	1/14	5/14
2.c.3.h Develop sustainability plan	SLDS Project Team, HS LEAs	7/13	10/13
2.c.3.i Begin transport of data to the OPI (same as task 2.c.4.h)	SLDS Project Team, LEAs	8/14	8/14
<b>Deliverable 2.c.4 Develop transport and validation mechanisms to move data from LEAs to the OPI</b>			
2.c.4.a Work with the LEAs to determine preferred method of transfer	SLDS Project Team, LEAs	1/13	4/13
2.c.4.b Work with the LEAs to determine preferred validation method	SLDS Project Team, LEAs	1/13	4/13
2.c.4.c Write RFP to solicit assistance with the build of the transport mechanism and validation routines	SLDS Project Team, LEAs	4/13	7/13
2.c.4.d Select vendor and sign contract	SLDS Project Team	7/13	11/13
2.c.4.e Build transport mechanism and validation process	SLDS Project Team, LEAs	11/13	5/14
2.c.4.f Build infrastructure to house additional data and transport mechanism	SLDS Project Team, LEAs	11/13	2/14
2.c.4.g Test transport and validation processes	SLDS Project Team, LEAs	5/14	8/14
2.c.4.h Implement transport and validation processes	SLDS Project Team, LEAs	8/14	8/14
<b>Deliverable 2.c.5 Establish electronic delivery of the K-12 transcript to Montana universities</b>			
2.c.5.a Work with the LEAs and MUS to	SLDS Project Team,	1/13	7/13

<b>Task</b>	<b>Responsibility</b>	<b>Start</b>	<b>End</b>
determine requirements	LEAs, MUS Team		
2.c.5.b Write RFP to solicit bids	SLDS Project Team, LEAs, MUS Team	4/13	10/13
2.c.5.c Evaluate RFP and select vendor	SLDS Project Team, LEAs, MUS Team	10/13	1/14
2.c.5.d Test and implement selected solution	SLDS Project Team, LEAs, MUS Team	1/14	7/14
<b>Deliverable 2.c.6 Establish secure access</b>			
2.c.6.a Implement process to establish secure access to K-20 system as instructed by the Data Governance Committee (Deliverable 2.b.1)	SLDS Project Team	7/14	10/14
2.c.6.b Modify existing research request system to handle routing of K-20 data requests	SLDS Project Team	7/14	10/14
<b>Deliverable 3.a.1 Develop a training program on Microsoft Business Intelligence tools</b>			
3.a.1.a Review existing GEMS training and revise if needed	Business Analyst	6/13	6/14
<b>Deliverable 3.a.2 Provide training on the use of data tools and products to users</b>			
3.a.2.a Identify expanded audiences for training	Data Governance Council	6/13	9/13
3.a.2.b Schedule and deliver training	Business Analyst	6/14	6/15
3.a.2.c Work with teacher education programs to expand awareness of data tools and products	Data Governance Council	6/14	6/15
<b>Deliverable 3.b.1 Develop and provide a professional development module to help end-users effectively interpret and apply data</b>			
3.b.1.a Research best practices for analyzing and presenting data to policymakers to inform decisions about college readiness	Data Research Analyst	1/13	7/13
3.b.1.b Research best practices for using data to inform curriculum and instruction	Data Research Analyst	1/13	7/13
3.b.1.c Work with education programs within OPI and MUS to identify audiences and develop and provide professional development for users	Business Analyst and Data Research Analyst	7/13	6/15
3.b.1.d Create an on-line learning module to help end-users effectively interpret and apply data	Business Analyst and Data Research Analyst	1/15	6/15
<b>Deliverable 3.c.1 Secure an outside evaluator to design and implement a participatory, continuous improvement evaluation model for the data products, training, and professional development components of the K-20 data system</b>			
3.c.1.a Develop and release RFP for evaluator services	Project Leadership Team	7/12	9/12
3.c.1.b Select evaluator	Project Leadership Team	11/12	11/12
3.c.1.c Develop evaluation plan	Project Leadership Team	1/13	1/13
3.c.1.d Implement year one evaluation	Project Leadership	1/13	6/13

Task	Responsibility	Start	End
	Team, Evaluator		
3.c.1.e Review, update, and implement year two evaluation plan	Project Leadership Team, Evaluator	7/13	6/14
3.c.1.f Review, update, and implement year three evaluation plan	Project Leadership Team, Evaluator	7/14	6/15
3.c.1.g Develop and implement sustainability plan for evaluation beyond the evaluator contract	Project Leadership Team, Evaluator	7/14	6/15
Deliverable 3.d.1 Establish research partnerships with MUS and the Board of Public Education to provide analysis and reporting of data for questions outside standard reports			
3.d.1.a Identify research partners and appoint representatives to Data Governance Council	Superintendent of OPI and Commissioner of Higher Education	7/12	7/12
3.d.1.b Identify initial researchable questions to be investigated	Data Governance Council	10/12	6/13

### **Grant Coordination**

The Montana Office of Public Instruction is completing its GEMS system with support from a 2009 SLDS grant. The GEMS data warehouse will be operational in January 2012 and the full implementation will be completed by December 2012, just as planning and preparation steps for this grant give way to implementation. All necessary systems are in place to track all funds received and expenditures made from this grant and ensure separation from expenditures made pursuant to our 2009 SLDS grant. The scope of work and budget presented in this application take strict account of the distinction between the two initiatives and the resources being used to accomplish the work on the proposed and existing grants. As described in the *Project Management and Governance Plan in Section (d)*, the work on the two grants will involve the use of many of the same individuals who are completing the work on the existing grant. FTE and other resource usage will be strictly separated for accounting purposes and tracked separately over the life of the grants.

### **(d) Project Management and Governance Plan**

#### **Project Location**

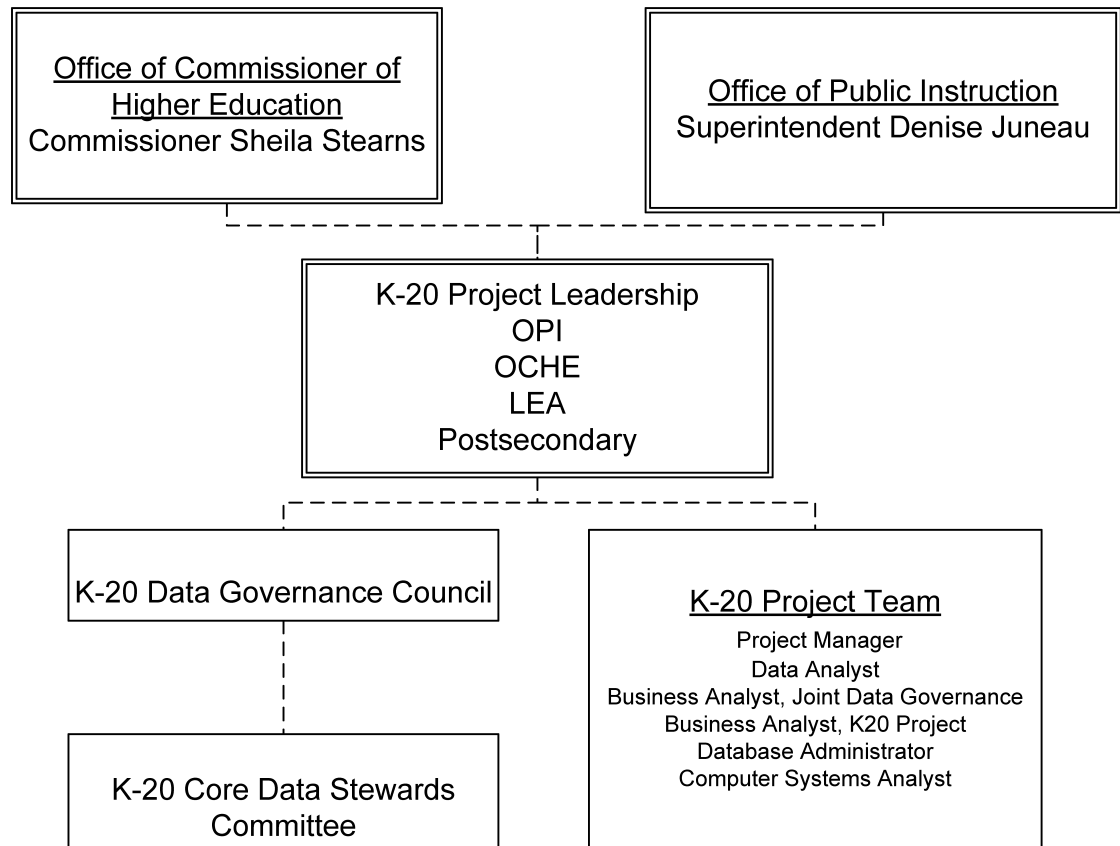
Montana's K-20 SLDS project is located within the Office of Public Instruction.

#### **Responsibility for Project Approval and Oversight**

The Office of Public Instruction will have authority for and oversight of the project throughout the grant. The OPI's partnering agencies include Office of Commissioner of Higher Education and the units of the Montana University System. Letters of support are provided by the University of Montana and the Commissioner of Higher Education on behalf of the MUS. (Please see Letters of Support in *Appendix B*.)

All phases of this project will be managed by the GEMS project manager. The project manager will report to the OPI Chief of Staff and the Office of the Commissioner of Higher Education. The Superintendent of Public Instruction will be the project sponsor. The project manager, project leadership team, and project teams will keep this project on task and will be responsible for ensuring that grant goals are met.

### Organization Chart



### Partners and Roles

*The Montana Office of Public Instruction* is the lead agency for the project and will actively manage project activities and convene meetings. The OPI is completing the GEMS K-12 data warehouse that will link to the postsecondary system to create a K-20 SLDS. The Superintendent of Public Instruction has designated a project manager and will designate agency representatives to the project leadership team, implementation team, and K-20 Data Governance Council.

The OPI will serve as the fiscal agent and lead organization, including executing and monitoring subcontracts. Based on our successful experience with our current SLDS grant, we have developed and refined internal management processes that ensure timely, cost-efficient production of high-quality work. Our proposed system for sound management of this project includes:

- A partnership that involves strong communication between the Montana team and the US Department of Education
- Strong management of subcontractors and consultants
- Fiscal controls to ensure that resources are closely monitored
- Quality control procedures that ensure accomplishment of project goals and deliverables

*The Office of the Commissioner of Higher Education manages the Montana University System data warehouse, which will be linked to the OPI GEMS system to create a K-20 SLDS. The Commissioner of Higher Education will designate agency representatives to the project leadership team, implementation team, and data governance council. OCHE will actively participate in designing and implementing the system linkage and accomplishing project deliverables.*

Both the Office of Public Instruction and the Office of the Commissioner of Higher Education will provide in-kind funding support for this grant through staffing, office space, office equipment, telephone and postage expenses, and supplies.

### **Project Governance**

One major challenge of linking data systems is that the individual entities that own and operate them have their own policies and processes for managing those systems. Linking data systems and adding data elements will generate many policy and procedural questions that need to be answered before the full set of linkages is complete. Through our experience building and improving data systems such as AIM and GEMS, the OPI has learned that a strong governance system including high-level representatives of all agencies is critical to success. Our proposed governance structure is illustrated in the chart above. The success of this project relies on the partnerships among the OPI, OCHE, units of the Montana University System, and local schools and districts throughout Montana. The Office of Public Instruction will take the lead role for this team.

A governance-level project leadership team will outline the project requirements and activities, work on policy issues, define and manage the full scope of the project, allocate resources, manage risks, and resolve issues that may arise during the course of the project. The project leadership team will include the project manager and at least one representative from the OPI, OCHE, high-school administration, and postsecondary administration.

### **Management Protocol to Complete Deliverables on Time and within Budget**

The project leadership team will oversee completion of deliverables on time and within budget. The Data Governance Council and the K-20 project team will have direct responsibility for conducting and completing the tasks as specified on the timeline in Section (c).

As noted in the timeline in Section (c), the project leadership team will develop a project Governance Plan that includes agreed-upon management protocols for completing the project. Members will review and consider the OPI GEMS governance model and project management model that includes planning documents for change control management, communications, governance, issue management, project charter, risk evaluation, and a risk plan. There are also resources available to the OPI through the Department of Administration's project management

office, which oversees all state agencies on large IT projects. The Department of Administration also helps agencies develop and issue Requests for Proposal (RFPs) and offers project management training to state employees. The OPI is accountable to both the Department of Administration's State Information Technology Services Division and the Legislative Finance Committee and will be required to provide them with regular updates for this project.

The following project management controls will be used for all SLDS tasks, enabling the project team to accomplish the proposed deliverables with efficiency, cost-effectiveness, transparency, and accountability:

- Specific project initiation and planning tasks will occur at the beginning of the award. As part of these tasks, the project manager will work with task leaders to establish the project environment, establish policies and procedures, and finalize a detailed work plan.
- Specific policies and procedures, such as a formal agreement between the OPI and the MUS to link data systems, will be developed to ensure successful implementation. Policies and procedures include, but may not be limited to, a risk management plan, issue resolution process, communications plan, and change requests.
- Throughout the life of the grant, regular meetings will be held, status reports will be provided to the leadership team, and the project work plan will be updated.

The Project Leadership Team will report on the status of the project to both the Superintendent of Public Instruction and the Commissioner of Higher Education.

### **Management System**

The Superintendent of Public Instruction has identified a K-20 SLDS project manager who will provide grant and project management oversight. Other project team staff includes the data warehouse data base administrator, two business analysts, an IT specialist, a shared data research analyst, and other individuals as the project dictates. The project may also have sub-teams that will handle tasks specific to one agency. These sub-teams will report to the project manager on a regular basis. The project manager will provide regular status reports to the project leadership team.

Using this proposal as a basis, the project team will define the tasks, time requirements, costs, and responsibilities for the project. A comprehensive work plan will be developed based on this activity. Meetings will be held to evaluate and ensure alignment of the work plans. Microsoft Project will be used to track activities and ensure that the project stays within the project scope and is kept on time and on budget.

The grant and all proposed tasks will be managed according to Montana and industry project management standards to ensure that all tasks and deliverables are completed on time and within budget. Project risks will be identified and mitigated, and strategies will be developed to ensure maximum success of individual tasks and the project as a whole.

### **Management of subcontractors and consultants**

The OPI will work closely with subcontractor staff so that the project team acts as a cohesive unit. Statements of Work will specify expected roles and responsibilities of each subcontractor. The team includes project staff, subcontractors, and consultants. As a standard practice, the OPI

ensures that all appropriate controls and legal remedies are incorporated into its subcontracts. The subcontracts will specify mutually agreed-upon tasks to be performed, including deliverables schedules, staffing, and subcontractor budgets. The OPI follows well-established State of Montana procedures for engaging consultants. There are standard consulting agreement formats that specify tasks and fees. Communication processes, including weekly status reports, risk evaluations, and face-to-face meetings, are designed to facilitate intra- and inter-organizational interactions.

### **Fiscal Controls**

The key to effective control of a project's expenditures are detailed work plans and a project budget coupled with systematic reviews of actual performance against plans and the ability to adjust the plan and budget as required. The project manager will conduct an internal review of work progress and budget status at least monthly and note any variances to the project plan. Accomplishments will be compared to the planned workflows and budgets for the month, and payments will be tied to completed deliverables. No payments will be made until the project leadership team signs off on the deliverable.

### **Quality Control**

*Quality* is informed by best practices and defined by end-users. Best-practice research and stakeholder input and feedback are tightly woven into this project. While the project manager is ultimately accountable for all aspects of the project, all team members share responsibility for quality. The OPI's accountability for this project extends to the Superintendent of Public Instruction, Commissioner of Higher Education, State Information Technology Services Division, and the Legislative Finance Committee. All of these entities require regular status reports.

The OPI has a reputation for successful IT projects and producing quality work. The project team is empowered to manage the project with the full support of leadership. Quality control exists at all levels of the project and will be addressed smoothly and quickly by the K-20 project leadership team.

### **Tracking and Reporting**

Activities, accomplishments, and financials will be carefully tracked for this grant following state Project Management Office and industry standards. Financial activities will be tracked through the State's accounting system (SABHRS), which provides for daily, monthly, and annual financial monitoring. Project activities will be tracked using Microsoft Project. The project management structure described above includes the tracking and monitoring capability to provide timely, detailed, and accurate reports as required.

### **Stakeholder Input**

At a minimum, the stakeholders involved in this project will include the Office of Public Instruction, local school education agencies, the legislature, the Board of Public Education, the Board of Regents, the Office of Commissioner of Higher Education, and units of the university system. The OPI also will involve representatives from education associations, including the MEA-MFT (teachers union), the Montana School Boards Association, School Administrators of Montana, Montana Rural Education Association, AA School Districts, Montana Small Schools

Alliance, Montana School Business Officials, and the Montana Indian Education Association.

The OPI will work with these stakeholder groups to obtain input and gather data with respect to project leadership, end-user deliverables, project evaluation, and continuous improvement.

In order to ensure the ongoing involvement of diverse stakeholders, the GEMS advisory committee will continue its role, helping to define the requirements for the electronic transcript and determine the web reporting tools for users of K-20 data. This council includes representatives from schools of various sizes, geographical locations, resources, and approaches in terms of student information systems.

Montana's recent Electronic Transcript Pilot Project involved the University of Montana, two of the state's four-year postsecondary institutions, the UM-Helena College of Technology (two-year postsecondary), five Montana high schools, the Governor's Office, Office of Public Instruction, and Office of the Commissioner of Higher Education in

1. investigating the applicability and utility of electronic transcripts in documenting individual student records at the K-12 and higher education level
2. assessing the seamlessness between the K-12 and higher education record
3. investigating the logistics of loading, hosting, and accessing the electronic transcript record, and
4. determining the ability for mining the database for information that will ultimately improve student success

The participants in the transcript project will be consulted to benefit from the findings and lessons learned as we implement the K-20 project.

The OPI and its partners will continue to reach out to and consult with key stakeholder groups as this project progresses. Input from these stakeholders is critical to ensuring that the systems that are developed meet the needs of stakeholders both for the near- and long-term. Frequent communications regarding the status of this project will be important for keeping stakeholders involved.

### **Communication and Coordination with the U.S. Department of Education**

Close communication the U.S. Department of Education is a critical ingredient for project success. Direction, guidance, and input from the federal program staff are important in the design and implementation of the proposed tasks. To ensure effective communication, the OPI proposes monthly contact involving the USED staff, the project manager, and the OPI task leaders as appropriate; frequent communication between USED staff and the project manager; at least bi-weekly conversations among all project team members; monthly progress reports that address recent developments, issues requiring attention, deviations from the proposed schedule, and suggestions for overcoming obstacles; and, attending all required meetings, including a two-day meeting each year in Washington, DC.

As a result of our participation in the 2009 SLDS grant and other US Department of Education grant programs, the Montana Office of Public Instruction is keenly aware of the value of maintaining close communication and coordination with the Department of Education and of making the best advantage of additional department resources. For example, our recent GEMS

Project benefitted tremendously from the Personnel Exchange Network, which funded site visits to Kansas and Oregon that helped hone our approach. And, the GRADS360 website has allowed us to see what other states are doing and gain inspiration from them.

### **(e) Staffing**

Resumes for all individuals mentioned by name in this section are included in *Appendix C*. Qualifications of individuals to be hired are included in *Section 7 – Budget Narrative*.

#### **Montana Office of Public Instruction (In-Kind)**

The Office of Public Instruction will dedicate existing staff, who are members of the K-12 data warehouse team, to create linkages between K-12 and MUS data systems. These staff will participate in the successful achievement of all three goals.

Madalyn Quinlan, Chief of Staff, is the delegated project sponsor for the Superintendent of Public Instruction. Quinlan will serve on the Project Leadership Team with a specific focus on reporting on and promoting the project to legislative committees, the Board of Public Education, higher education partners, education associations, and the Governor's Office. She will be involved in establishing the K-20 Data Governance Council (Goal #2 – 15%), coordinating agency policies regarding data systems, allocating state education agency resources to the project, and requesting funding to sustain the effort from the Governor and legislature. Quinlan serves on the agency's Data Privacy and Security Committee along with the agency's Chief Legal Counsel and the Administrator of the Measurement and Accountability Division. This committee reviews requests from researchers and others for data that are not publicly posted.

Jim Gietzen, Administrator, Information Technology Division, will supervise the work of the grant-funded Project Manager. He will serve on the Project Leadership Team as well as the Project Team. His time will be allocated (35%) to the implementation of the K-20 data linkages and the electronic student transcript (Goal #1). As a member of the project teams, Gietzen will also participate in the K-20 Data Governance Council (Goal #2 – 5%) and in Reporting and Analysis work (Goal #3 – 10%). Gietzen joined the OPI in 2007. He has more than 20 years of experience in application development, network services, and project management.

Thomas Dougherty, Chief, Systems Development Bureau, will supervise the work of the Database Administrator and the Computer Systems Analyst. He will also serve as a member of the Project Team and provide project management services until the SLDS project manager is available. His time will be allocated to the implementation of the K-20 data linkages and the electronic student transcript (Goal #1- 10%) and the access and system security (Goal #3 – 5%). Dougherty has more than ten years of IT industry experience and five years of project management experience. He joined the OPI in 2009.

Sue Mohr, Administrator, Measurement and Accountability Division, will supervise the work of three of the grant-funded positions: two business analysts and the data research analyst. Her focus will be on K-20 Data Governance (Goal #2- 25%) and Reporting and Analysis (Goal #3– 15%). She will also assist with the development of the K-20 data linkages (Goal #1 – 10%).

Mohr joined the OPI in 2009. Mohr oversees the work units that include the statewide student information system, the analysis of student assessment results, the reporting required by No Child Left Behind, Montana's participation in the National Assessment of Education Progress (NAEP), and K-12 data governance work associated with the GEMS project. Mohr has more than 30 years of experience in data and analysis in the education and workforce development fields.

Denise Bond, Research Analyst, Measurement and Accountability Division, manages student assessment data and the calculation of Adequate Yearly Progress. She is actively involved in the planning and implementation of the GEMS data warehouse. Her time will be allocated to Reporting and Analysis (Goal #3 – 20%). Bond has more than eighteen years of experience in analyzing and reporting data in the fields of K-12 education, workforce training, and TANF Employment and Training.

### **Office of the Commissioner of Higher Education (In-Kind)**

Tyler Trevor, Associate Commissioner for Planning and Analysis in the Office of the Commissioner of Higher Education, represents the Montana University System (MUS) for the K-20 data linkages project. He has been integrally involved in developing this grant application and the high-level design for the exchange of K-20 data. He will serve on the Project Leadership Team. His time will be allocated to creating K-20 data linkages (Goal #1 – 10%) and the K-20 Data Governance (Goal #2 – 5%). His primary job responsibilities include managing MUS information and data warehousing, conducting system-wide institutional research, and facilitating the on-going development of a system-wide strategic plan. Trevor has more than 20 years of experience working in the area of institutional research and analysis.

### **Project Team Staff (Grant-Funded)**

The following describes, by outcome area, the positions that will be funded by the grant. Four of these six positions will be filled by staff currently employed at the Office of Public Instruction.

#### Project Manager (All Goals)

Jamey Ereth, Senior Project Manager, currently manages the GEMS data warehouse project and will continue in this project management role for the K-20 linkages project following the completion of the 2009 SLDS project. A significant portion of her time (50%) will be allocated to contract management for the electronic student transcripts (Goal #1). She will work closely with the business and data research analysts to ensure the effective facilitation of the K-20 Data Governance Council (Goal #2 – 20%) and the implementation of business intelligence tools (Goal #3 – 30%). Ereth will lead the Project Leadership Team and the Project Team. She has sixteen years of experience in the information technology field, serving in increasingly more complex roles as a help desk technician, programmer, computer support specialist, program manager, and project manager.

#### Database Administrator (Goals #1 and #3)

Jake Massman, Database Administrator and Software Engineer, currently serves as the DBA for the GEMS data warehouse project and will continue in this role for the K-20 linkages project following the completion of the 2009 SLDS project. The majority of Massman's time (80%) will be allocated to the implementation of the electronic student transcript service (Goal #1) with the

remainder of his time (20%) allocated to the implementation of the business intelligence features (Goal #3). Massman will serve on the Project Team. He has 12 years of experience as a programmer, software engineer, and DBA and has developed several custom applications in a variety of operating systems.

*Computer Systems Analyst (Goals #1 and #3)*

Kurt Wolfe, Computer Systems Analyst, currently serves as the Computer Systems Analyst for the GEMS data warehouse project and will continue in this role for the K-20 linkages project following the completion of the 2009 SLDS project. The majority of Wolfe's time (80%) will be allocated to the implementation of the electronic student transcript service (Goal #1) with the remainder of his time (20%) allocated to the implementation of the business intelligence features (Goal #3). Wolfe will serve on the Project Team. He has more than 20 years of programming experience with most recent experience using VB.Net and TSQL to design, develop, and maintain in-house web applications to support K-12 education data collections.

*Business Analyst – Governance (Goal #2)*

Erin Thielman, Business Analyst, currently serves as the Data Governance business analyst for the GEMS project and will continue in this data governance role for the K-20 linkages project following the completion of the 2009 SLDS project. Thielman's time (100%) will be allocated to the establishment of the K-20 Data Governance Council (Goal #2) and coordination of data governance with the overall goals of the project. Thielman will serve on the Project Team. She has two years of experience working on Data Governance for the 2009 SLDS project.

*Business Analyst (All Goals)*

One business analyst will be hired to work with the LEAs and with OPI staff to validate K-12 data with respect to how it will be expanded for use in the K-20 data system (Goal #1 – 30%). The business analyst will assist in staffing the K-20 Data Governance Council (Goal #2 – 35%), develop issue papers with the K-20 data stewards, and determine how to resolve data issues between the LEAs, OPI, OCHE, and units of the university system. The analyst will work with the computer systems analyst to develop business processes that ensure that the data warehouse fulfills the enterprise's strategic objectives; identify and define the warehouse purpose and target user groups; and develop data quality processes and policies (Goal #3 – 35%).

*Data Research Analyst (All Goals)*

One data research analyst will be hired to provide data analysis and validation of the combined data from OPI and OCHE (Goal #1 – 10%). This position will assist with the K-20 Data Governance Council (Goal #2 – 30%) and work with stakeholders, including LEAs and units of the university system, to analyze the data and develop and produce reports that address how a K-20 system can improve the K-12 instructional system (Goal #3- 60%). This position will also identify best practices within Montana and in other states regarding how best to use the data. The position will take the lead in sharing this information with the LEAs and university system through the website, individual presentations, and the statewide conference.

## Other Attachment File(s)

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\* Mandatory Other Attachment Filename:

<input type="text"/>	<a href="#">Delete Mandatory Other Attachment</a>	<a href="#">View Mandatory Other Attachment</a>
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# Education and Local Government Interim Committee

61st Montana Legislature

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## COMMITTEE STAFF

LEANNE KURTZ, Research Analyst  
JEREMY GERSONITZ, Staff Attorney  
CLAUDIA (CJ) JOHNSON, Secretary

## SHARED POLICY GOALS AND ACCOUNTABILITY MEASURES FOR THE K-20 PUBLIC EDUCATION SYSTEM 2013 BIENNIUM

This document on shared policy goals and accountability measures represents a merging of the following efforts that have involved leaders from the legislature, the executive, the K-12 education system and the university system during the 2011 interim:

- Board of Regents strategic goals and objectives
- Board of Public Education strategic goals and objectives
- Superintendent of Public Instruction strategic goals and objectives
- Shared policy goals and accountability measures developed by the Education and Local Government Interim Committee (ELG) Subcommittee on Shared Policy Goals

The shared policy goals developed collaboratively between the ELG Subcommittee and the state education agencies reflect a shared commitment to:

1. Aligning high school outcomes with college readiness expectations to facilitate the transition from high school to college
2. Increasing college participation of Montana high school graduates
3. Expanding distance learning opportunities
4. Utilizing K-20 data to improve student access and achievement

This document is nonbinding. The ELG shall review, update, approve, and renew this understanding each biennium with the Montana Board of Regents, the Office of the Commissioner of Higher Education, the Board of Public Education, and the Superintendent of Public Instruction so that it may become the basis of state public policy in regard to the K-20 education system.

As a statement of public policy goals for public education in Montana, this document reflects the ELG's commitment to a basic system of free quality public elementary and secondary schools and to academic quality throughout the Montana University System such that funding a high quality public K-20 education system is a critical goal of the State of Montana. This document, in conjunction with the definition of a basic system of free quality public elementary and secondary

schools established in section 20-9-309, MCA, will provide the policy direction needed to maintain a quality public K-20 education system in Montana.

The authors of this document urge that it, along with 20-9-309, MCA, be used by the legislature in the 2011 legislative session to frame education budget initiatives and other policy recommendations for the 2013 biennium.

<b>Table 1</b> <b>K-20 Shared Policy Goals, Objectives, and Accountability Measures</b> <b>2013 Biennium</b>		
Shared Policy Goal	Objectives	Accountability Measure
1. Align high school outcomes with college readiness expectations to facilitate the transition from high school to college	1.0 Decrease remediation rates of freshman entering the Montana University System from Montana public high schools	Remediation rates of freshman entering the Montana University System from Montana public high schools steadily decrease. [Measure -- 5 year trend data]
2. Increase college participation of Montana high school graduates	1.0 Increase the percentage of Montana high school graduates who participate in accredited postsecondary education	Increase the percentage of Montana high school graduates enrolling in college. --All postsecondary --All Montana postsecondary --MUS [Measure -- 5 year trend data]
3. Expand distance learning opportunities	1.0 Create easy access to distance learning opportunities through the development of a virtual academy and through improvements to current virtual college capabilities	Increase the percentage of Montana high school students who participate in distance learning --Higher Ed baseline distance learning enrollment currently available. --High School baseline distance learning enrollment not currently available, but will be collected starting Fall 2010 [Measure -- 5 year trend data]
4. Utilize K-20 data to improve student access and achievement	1.0 Link K-12 and Higher Education data systems	By June 30, 2013, the electronic link between MUS data and OPI data will be established.

## **K-20 SHARED POLICY GOALS**

WHEREAS, Article VIII, section 12, of the Montana Constitution vests in the Legislature the responsibility to ensure strict accountability of all revenue received and spent by the state, counties, cities, and towns and all other local governmental entities, and Article X, section 1, requires the Legislature to fund and distribute in an equitable manner to the school districts the state's share of the cost of the basic elementary and secondary school system; and

WHEREAS, Article X, section 9, of the Montana Constitution vests in the Board of Regents of Higher Education the full power, responsibility, and authority to supervise, coordinate, manage, and control the Montana University System and to supervise and coordinate other public institutions assigned to it by law; and

WHEREAS, Article X, section 9, of the Montana Constitution states that the Board of Public Education shall exercise general supervision over the public school system; and

WHEREAS, section 20-3-106, MCA, grants supervision of certain aspects of the public schools and districts of the state to the Superintendent of Public Instruction; and

WHEREAS, Article X, section 8, of the Montana Constitution states that the elected board of trustees in each school district shall exercise supervision and control of schools in the district; and

WHEREAS, economic challenges facing the state require prioritizing a K-20 education system that serves economic development and job creation; and

WHEREAS, agencies of the education community have increasingly, and to positive effect, shared leadership with the Education and Local Government Interim Committee; and

WHEREAS, an understanding of shared policy goals and accountability measures for the entire K-20 public education system, shared by the Board of Regents, Commissioner of Higher Education, Superintendent of Public Instruction, Board of Public Education, and Education and Local Government Interim Committee, would represent an important advance in interagency cooperation and in the quality of education policymaking; and

WHEREAS, shared policy goals must be systematically tied to accountability measures in order to ensure timely and effective implementation of policy; and

WHEREAS, the ELG Subcommittee on Shared Policy Goals, comprised of four legislators and representatives from the Board of Regents, the Board of Public Education, the Office of Public Instruction, and the Office of the Commissioner of Higher Education, has identified statewide public education policy goals and accountability measures for the K-20 public education system, with the collaboration of the state education agencies;

This UNDERSTANDING crafted by the Education and Local Government Interim Committee and the Board of Regents, the Board of Public Education, the Office of Public Instruction, and the Office of the Commissioner of Higher Education, identifies the statewide public education policy goals and related accountability measures (see Table 1) that will be used as a policy goal setting and assessment tool for policymakers, the state education boards and agencies, and the general public in evaluating the achievement of the policy goals; and that will be used, in conjunction with 20-9-309, MCA, as a guide to drive decision packages and funding mechanisms for the state funding that is appropriated to the K-20 public education system by the Montana State Legislature.

Furthermore:

1. The Office of the Commissioner of Higher Education and the Office of Public Instruction shall prepare a Shared Policy Goals and Accountability Measures Report presenting appropriate and current data for these goals and accountability measure in an easy-to-read format.
2. This report shall be presented to the House and Senate Education Committees and the Joint Appropriations Subcommittee on Education by the 10<sup>th</sup> legislative day of the 62nd Legislature (2011 legislative session).
3. This report shall be posted to the Board of Regents, Office of the Commissioner of Higher Education, Board of Public Education, and Office of Public Instruction, and the Education and Local Government Interim Committee websites by January 1 of each odd-numbered year.

The signatures below denote that the signatories fully participated in and support the shared policy goals and accountability measures cited herein.

This document expires June 30, 2013.

Dated this 17<sup>th</sup> day of August 2010

(b)(6)

Representative Wanda Grinde, Chair  
Education and Local Government  
Committee

(b)(6)

Senator Kelly Gebhardt, Vice Chair  
Education and Local Government  
Committee

(b)(6)

Representative Bob Lake, Chair  
ELG Shared Policy Goals Subcommittee

(b)(6)

Christian Clayton, Chair  
Board of Regents

(b)(6)

Sheila Stearns, Commissioner  
Commissioner of Higher Education

Patty Myers, Chair  
Board of Public Education

(b)(6)

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Denise Juneau, ~~S~~uperintendent  
Office of Public Instruction



September 2011

## Data Quality Campaign: 10 State Actions to Support Effective Data Use OPI Assessment of Montana's Ability to Implement

- 1. Link state K-12 data systems with early learning, postsecondary education, workforce, social services and other critical agencies**
  - Out of scope for GEMS
  - First implementation will be with DPHHS if we get the Direct Certification grant
- 2. Create stable, sustained support for robust state longitudinal data systems**
  - Out of scope for GEMS
  - From the DQC
    - Ensure state budgetary investment for the maintenance and growth of statewide P-20/W longitudinal data systems
    - Create the political demand for data sharing – share the advantages of having information follow individual students, even across state and district lines, and to break down traditional silos.
- 3. Develop governance structures to guide data collection, sharing and use**
  - ✓ GEMS will accomplish
- 4. Build state data repositories (e.g., data warehouses) that integrate student, staff, financial and facility data**
  - ✓ GEMS will accomplish
- 5. Implement systems to provide all stakeholders with timely access to the information they need while protecting student privacy**
  - ✓ GEMS will accomplish
- 6. Create progress reports with individual student data that provide information educators, parents and students can use to improve student performance**
  - ❖ GEMS will lay the groundwork, but will not complete this goal
  - ❖ From the DQC
    - Ensure that on-line access to these reports are available to appropriate users while protecting student and teacher privacy by limiting access to appropriate users.
    - Support the development of early warning systems, growth models and predictive analysis tools that use longitudinal student data to inform and improve teaching and learning.
- 7. Create reports that include longitudinal statistics on school systems and groups of students to guide school-, district-, and state-level improvement efforts**
  - ✓ GEMS will accomplish

**8. Develop a purposeful research agenda and collaborate with universities, researchers and intermediary groups to explore the data for useful information**

- ❖ GEMS will make this possible, but it is not currently in scope
- ❖ From the DQC

- Encourage the development of strategic partnerships with universities, researchers, and intermediary groups to help establish a robust research agenda.
- Ensure that researchers have appropriate access to longitudinal data.

**9. Implement policies and promote practices, including professional development and credentialing, to ensure educators know how to access, analyze and use data appropriately**

- Out of scope for GEMS
- From the DQC

- Require educators seeking certification and certification upgrades to show competence in data analysis, interpretation and use.
- Promote and support educator professional development with regard to data access, use and analysis.
- Ensure that educator and leadership preparation programs have appropriate data to conduct analysis for programmatic improvement.
- Support the development of a culture of data at the district level by emphasizing the role of robust data systems in the school improvement planning process and professional development activities.
- Support district efforts to provide educators access to the appropriate technology to enable data access, analysis, and communication at the building level.

**10. Promote strategies to raise awareness of available data and ensure that all key stakeholders, including state policymakers, know how to access, analyze and use the information**

- ✓ GEMS will accomplish
- ✓ From the DQC

- Promote training on data use for parents, students, school board members, state executive and legislative staff, SEA personnel, education writers and journalists, community leaders, and the general public.
- Ensure that stakeholder training is provided in multiple formats.

**Proposed MUS Data Elements for OCHE - OPI Data Exchange**

<b>Data Element</b>	<b>Description</b>	<b>Definition</b>	<b>Codes</b>	<b>Data Type</b>
OPID	Office of Public Instruction Student Id	K-12 unique identifier	goradid_additional_id	VARCHAR2 (50 Byte)
STUDENT_CAMPUS	University identifies whether the campus where the student is enrolled is a UM campus or an MSU campus. Main Campus refers to the individual campus where the student is enrolled. Student Location indicates the physical location of the student	Student's campus affiliation and location	3 characters: University U=UM M=MSU Main Campus Z=Bozeman L=Billings V=Havre F=Great Falls C=Billings COT M=UM Missoula T=College of Technology at Missoula W=Western Montana College H=Helena College of Technology N=Montana Tech S=Colleg	VARCHAR2 (3 Byte)
TERM	Year and term when the student is enrolled.	Current term	6 characters: 4-digit year, plus 00-19=Winter 20-39=Spring 40-69=Summer 70-99=Fall	VARCHAR2 (6 Byte)
GENDER	Student's declared gender.	Gender	F=Female M=Male N=Not reported	VARCHAR2 (1 Byte)
ETHNIC_CODE	Code for student's declared race/ethnicity, if reported. Students are not required to report race/ethnicity.	Ethnicity code	1=White 2=Black 3=Hispanic 4=Asian 5=Indian 6=Other 7=Missing	VARCHAR2 (1 Byte)
BIRTH_DATE	Student's date of birth.	Birth date	Date	DATE
AGE	Student's current age.	Current age	3-digit number	NUMBER (3)
COUNTY_CODE	Two-digit license plate code indicating student's Montana county of residence when admitted. Null for students from outside Montana.	Code for Montana county of origin	Montana license plate codes; see stvcnty	VARCHAR2 (5 Byte)
COUNTY	Montana county name.	Montana county name	30 characters	VARCHAR2 (30 Byte)
ADMIT_CODE	Code indicating the student's type of admission.	Admission type code	FT=Freshman Traditional FN=Freshman Non-Trad FE=Freshman Early Admit TR=Transfer GR=Graduate ND=Nondegree	VARCHAR2 (2 Byte)
ADMIT_DESC	Description of student's type of admission, as above.	Admission type	30 characters	VARCHAR2 (30 Byte)
ADMIT_TERM	Year and term when the student was admitted.	Term student admitted	6 characters: 4-digit year, plus 00-19=Winter 20-39=Spring 40-69=Summer 70-99=Fall	VARCHAR2 (6 Byte)

**Proposed MUS Data Elements for OCHE - OPI Data Exchange**

<b>Data Element</b>	<b>Description</b>	<b>Definition</b>	<b>Codes</b>	<b>Data Type</b>
PREV_COLLEGE_CODE	Code for the college most recently attended by a transfer student or graduate student. Codes were developed by ACT.	Code for previous college attended	4 characters; see stvsbgi for MT college codes UC=Other US College FC=Foreign College (ignore AP0000,IB0000,PADI,USARMY,USMARI,USNAVY)	VARCHAR2 (4 Byte)
PREV_COLLEGE_DESC	Name of college most recently attended.	Previous college	30 characters	VARCHAR2 (30 Byte)
PREV_COLLEGE_STATE	State code for college most recently attended.	Code for state of previous college	Postal state codes; see stvstat	VARCHAR2 (3 Byte)
HIGH_SCHOOL_CODE	High school previously attended by new freshmen student. Codes developed by ACT are used for Montana high schools.	Code for previous high school attended	6 characters; see stvsbgi for MT school codes UH=Other US High School FH=Foreign High School	VARCHAR2 (6 Byte)
HIGH_SCHOOL_DESC	Name of high school most recently attended.	High school	30characters	VARCHAR2 (30 Byte)
HIGH_SCHOOL_STATE	State code for high school most recently attended.	State code for previous high school	Postal state codes; see stvstat	VARCHAR2 (3 Byte)
HS_GRAD_DATE	Date of high school graduation.	High school graduation date	Date	DATE
HS_GPA	High school grade point average (GPA).	High school GPA	0-4.00 (may be higher if converted from another system)	VARCHAR2 (14 Byte)
HS_RANK	Rank in high school graduating class.	High school class rank	4-digit number: 1 - maximum class size	NUMBER (4)
HS_SIZE	Number of students in high school graduating class.	High school class size	4-digit number	NUMBER (4)
HS_PERCENTILE	Percentile ranking in high school graduating class.	High school class percentile	0-100	NUMBER (5,2)
ACT_COMP	ACT comprehensive score, if submitted.	ACT composite score	13150	NUMBER (5)
ACT_ENGLISH	ACT English score, if submitted.	ACT English score	13150	NUMBER (5)
ACT_MATH	ACT math score, if submitted.	ACT math score	13150	NUMBER (5)
GED	General Educational Development (GED) score, if submitted.	GED score	36161	NUMBER (5)
SAT_VERBAL	SAT verbal score, if submitted.	SAT verbal score	200-800	NUMBER (5)
SAT_MATH	SAT math score, if submitted.	SAT math score	200-800	NUMBER (5)
ASSET_ALGEBRA				NUMBER (5)
ASSET_NUMBERS	Asset numbers score, if submitted.	Asset numbers score	0-99	NUMBER (5)
ASSET_READING	Asset reading score, if submitted.	Asset reading score	0-99	NUMBER (5)
ASSET_WRITING	Asset writing score, if submitted.	Asset writing score	0-99	NUMBER (5)
COMPASS_ENGLISH	Compass English score, if submitted.	Compass English score	0-999	NUMBER (5)

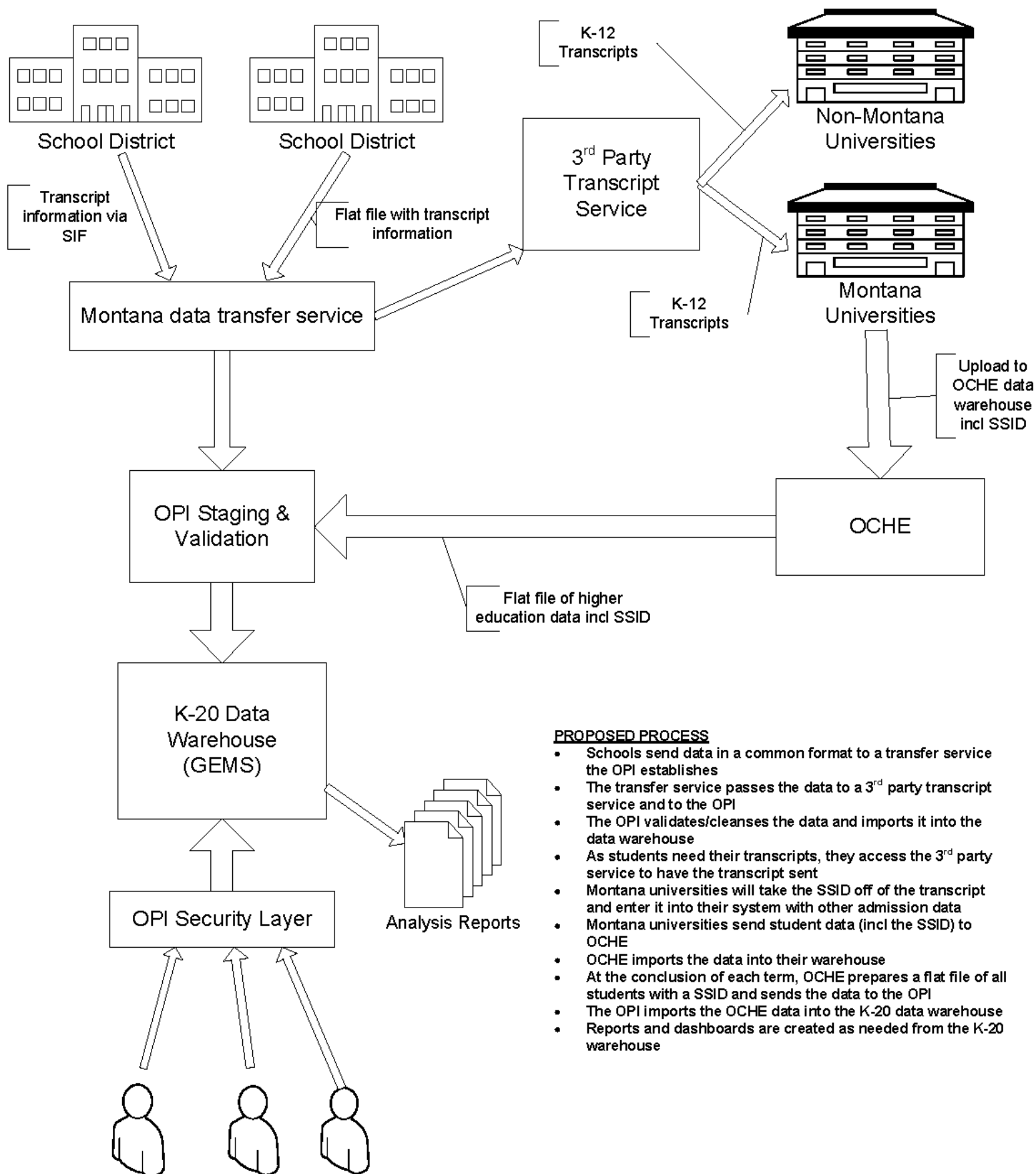
**Proposed MUS Data Elements for OCHE - OPI Data Exchange**

<b>Data Element</b>	<b>Description</b>	<b>Definition</b>	<b>Codes</b>	<b>Data Type</b>
COMPASS_MATH	Compass math score, if submitted.	Compass math score	0-999	NUMBER (5)
COMPASS_ALGEBRA				NUMBER (5)
COMPASS_READING	Compass reading score, if submitted.	Compass reading score	0-999	NUMBER (5)
COMPASS_WRITING	Compass writing score, if submitted.	Compass writing score	0-999	NUMBER (5)
FT_PT	Indicates whether student is enrolled full time or part time. Full-time undergraduates carry 12 or more credits, and full-time graduate students carry 9 or more credits.	Full-time/part-time status	F=Full time P=Part time Null for continuing education	VARCHAR2 (1 Byte)
STU_TYPE	Indicates student's type for the current term; see codes for further explanation.	Student type code	0=Undeclared C=ContinuingE=Adult/Continuing Education N=New First Time R=Returning S=Special T=Transfer X=Transient	VARCHAR2 (1 Byte)
STU_DESC	Description of student's type, as above.	Student type	30characters	VARCHAR2 (30 Byte)
STATE_CREDITS	Cumulative total of academic credits completed each term	State-funded credits attempted for term	6-digit number (2 decimals)	NUMBER (6,2)
MAJOR1	Code for the primary major in which the student is enrolled.	Primary major code	4 characters; see stvmajr	VARCHAR2 (4 Byte)
MAJOR1_DESC	Name of student's primary major.	Primary major	30 characters	VARCHAR2 (30 Byte)
MAJOR1_CIP	Federal CIP (Classification of Instructional Programs) code for the student's primary major.	CIP code of first major	6 characters; see stvcipc	VARCHAR2 (6 Byte)
REM_writ	Remedial writing indicator	Completed remedial writing this semester	Y/N	VARCHAR2 (1 Byte)
REM_math	Remedial math indicator	Completed remedial math this semester	Y/N	VARCHAR2 (1 Byte)
AWARD_CAT_CODE	Code for category of student's certificate or degree.	Award category code	21=Postsec cert <1 yr 22=Postsec cert >1<2 yr 23=Associate degree 24=Baccalaureate degree 25=Postsec cert>2<4 yr 31=First prof degree 32=Post prof degree 41=Postbacc cert 42=Masters degree 43=Post Masters cert 44=Doctoral degree	VARCHAR2(2)
AWARD_CAT_DESC	Description of student's certificate or degree category, as above.	Award category	30 characters	VARCHAR2(30)

**Proposed MUS Data Elements for OCHE - OPI Data Exchange**

<b>Data Element</b>	<b>Description</b>	<b>Definition</b>	<b>Codes</b>	<b>Data Type</b>
AWARD_MAJOR1	Code for the primary major with which the student graduated.	Primary major code	4 characters; see stvmajr	VARCHAR2(4)
AWARD_MAJOR1_DESC	Name of student's primary major.	Primary major	30 characters	VARCHAR2(30)
AWARD_MAJOR1_CIP	Federal CIP(Classification of Instructional Programs) code for the student's primary major.	CIP code for primary major	4 characters; see stvcipc	VARCHAR2(6)

# Proposed Data Flow



## PROPOSED PROCESS

- Schools send data in a common format to a transfer service the OPI establishes
- The transfer service passes the data to a 3<sup>rd</sup> party transcript service and to the OPI
- The OPI validates/cleanses the data and imports it into the data warehouse
- As students need their transcripts, they access the 3<sup>rd</sup> party service to have the transcript sent
- Montana universities will take the SSID off of the transcript and enter it into their system with other admission data
- Montana universities send student data (incl the SSID) to OCHE
- OCHE imports the data into their warehouse
- At the conclusion of each term, OCHE prepares a flat file of all students with a SSID and sends the data to the OPI
- The OPI imports the OCHE data into the K-20 data warehouse
- Reports and dashboards are created as needed from the K-20 warehouse

State Fiscal Stabilization Fund/America COMPETES Act: The data system also seeks to fulfill the twelve elements required by the State Fiscal Stabilization Fund for a statewide P-16 education data system, described in section 6401(e)(2)(D) of the America COMPETES Act.

Montana has either completed or has identified the resources to complete eleven of the twelve elements of the America COMPETES Act. The checked items indicate elements that have been completed in Montana as of December 2011.

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

The OPI has made significant progress on the data elements for 1) assigning a teacher identifier with the ability to match teachers to students; and 2) obtaining and storing student-level college readiness test scores. The one element that Montana has not found the resources to implement for its longitudinal data system is data element #9 – Student-level transcript information, including information on courses completed and grades earned.

In 2009, the OPI presented an unsuccessful general fund budget request to the Montana legislature for electronic student transcripts. While the education appropriation committee was receptive to the concept, the Montana legislature was unwilling to fund new proposals when faced with significant challenges in balancing the state budget in the wake of the recession.

Without an identified funding source for the design and implementation of an electronic student records and transcript exchange, the OPI and its postsecondary partners have not been able to move forward with electronic student transcripts.

With this grant application, OPI and OCHE will be able to build the linkages that will allow Montana educators, policymakers, and researchers to answer questions about career and college-readiness in a meaningful way. As proposed in this application, electronic student record and transcript exchanges will link student demographics, course taking, teacher qualifications and experience, and delivery modes with student success in postsecondary pursuits.



**MONTANA UNIVERSITY SYSTEM**  
**Office of the Commissioner of Higher Education**

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2500 N Broadway ♦ PO Box 203201 ♦ Helena, Montana 59620-3201  
(406) 444-6570 ♦ FAX (406) 444-1469

December 2, 2011

The Honorable Denise Juneau  
Superintendent of Public Instruction  
P.O. Box 202501  
Helena MT 59620-2501

Dear Superintendent Juneau:

On behalf of the Montana University System (MUS) and the Board of Regents, I am pleased to acknowledge and support Montana's IES Statewide Longitudinal Data Systems grant from the U.S. Department of Education. The Montana University System and the Office of the Commissioner of Higher Education are committed to partnering with OPI to develop better, statewide data systems and we believe that this grant request is an excellent vehicle to accomplish this task.

It is critical that the K-20 educational community work together to develop robust data systems capable of linking information in order to promote informed decision making and continual quality improvement. Efforts are being made to draw links that better depict student experiences and success, not only within the educational system, but throughout Montana's workforce. This stream of information begins with K-12 data and we recognize the challenges and importance of developing a strong, multi-faceted data system that not only meets the needs of numerous school districts, but also provides the foundation for statewide research and data linkages.

The Montana University System fully supports the efforts of the Office of Public Instruction in seeking resources to improve Montana's education policymaking tools and looks forward to assisting in implementation efforts if Montana is fortunate enough to receive funds. We are eager to work with OPI and other statewide partners to continue the development of Montana's K-20 data system.

Sincerely

(b)(6)

A yellow rectangular box redacting the signature of Sheila M. Stearns.

Sheila M. Stearns  
Commissioner of Higher Education  
Montana University System



The University of  
**Montana**

**Office of the President**  
The University of Montana  
Missoula, Montana 59812-3324

Office: (406) 243-2311  
FAX: (406) 243-2797

December 9, 2011

The Honorable Denise Juneau  
Superintendent of Public Instruction  
P.O. Box 202501  
Helena MT 59620-2501

Dear Superintendent Juneau,

The University of Montana is committed to helping with the development of a statewide P-20 longitudinal data system and happy to support Montana's IES State Longitudinal Data Systems grant from the U.S. Department of Education. As one of Montana's flagship universities, The University of Montana recognizes the importance of developing a sustainable data system that is capable of linking student-level transcript information from graduates of Montana high schools to data generated by students when they attend a Montana University System campus.

In order to better align outcomes and expectations between Montana's K-12 and higher education systems, it is vital that we develop the data necessary to measure and identify those elements in students' educational experiences that are driving factors in producing successful students, both in high school and college. One data point that is critical to measure is the connection of student success in milestone courses in high school, like Algebra II or the completion of four years math, and the eventual success students experience in the Montana University System. In order to produce this type of information it is essential that transcript data from high school is linked to equivalent levels of data generated by students in college.

Increasing career and college readiness, improving college participation, and producing a more educated population are common goals shared by Montana's K-12 and higher education sectors. If we are to obtain our goals, we must utilize data to help guide strategies and measure outcomes. The linkage of K-12 and postsecondary data proposed in Montana's IES State Longitudinal Data Systems grant is critically important to the advancement of these shared goals.

Thank you for your leadership on this important project.

Sincerely,

Royce C. Engstrom  
President

RCE/kc  
Englet303



PO BOX 201706  
Helena, MT 59620-1706  
(406) 444-3064  
FAX (406) 444-3036

## Education and Local Government Interim Committee 62nd Montana Legislature

### SENATE MEMBERS

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TOM FACEY  
BOB HAWKS  
LLEW JONES  
BOB LAKE  
FREDERICK (ERIC) MOORE

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KRISTIN HANSEN  
EDITH (EDIE) MCCLAFFERTY  
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MATTHEW ROSENDALE

### COMMITTEE STAFF

LEANNE KURTZ, Lead Staff  
DANIEL WHYTE, Staff Attorney  
CLAUDIA (CJ) JOHNSON, Secretary

December 6, 2011

The Honorable Denise Juneau  
Superintendent of Public Instruction  
P.O. Box 202501  
Helena MT 59620-2501

Dear Superintendent Juneau:

On behalf of the Montana Legislature's Education and Local Government Interim Committee, I am pleased to sign this letter of support for Montana's IES State Longitudinal Data Systems grant from the U.S. Department of Education. The objectives of this grant address the shared policy goals agreed upon by the Education and Local Government Committee, the Board of Public Education, the Board of Regents, the Commissioner of Higher Education, and the Superintendent of Public Instruction. These goals reflect a shared commitment to align high school outcomes with college readiness expectations to facilitate the transition from high school to college; increase college participation of Montana high school graduates; expand distance learning opportunities; and utilize K-20 data to improve student access and achievement.

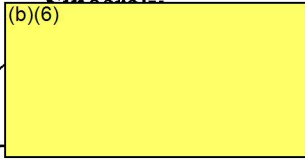
Earlier this year, the Montana's 62<sup>nd</sup> Legislature passed Senate Bill 329, which directed the Superintendent of Public Instruction to gather, maintain, and distribute longitudinal, actionable data and noted that "actionable data analysis must be produced to promote academic improvement". In addition, the Legislature approved Senate Joint Resolution 26, which directs the Education and Local Government Committee to monitor K-12 education and the progress on implementing state actions to create a culture of effective data use and to improve student performance. Since June, our committee has received presentations from the Office of Public Instruction and the Data Quality Campaign about the importance of actionable data related to P-20 education and the progress that Montana is making in building its statewide longitudinal data systems. These presentations and discussions have helped to advance our committee's awareness and understanding of the important possibilities associated with these data systems.

I believe that the committee's unanimous approval for submitting this letter of support reflects a consensus on the value of building robust data systems to support informed decision-making. We commend the Superintendent of Public Instruction and the Commissioner of Higher Education for partnering on this application to the U.S. Department of Education. Given the progress that OPI has made in building a data warehouse for K-12 education, we think that the state is well-

positioned to use this next source of funding to create the linkages necessary for measuring and improving the readiness of our students to transition from high school to college and careers.

Thank you for pursuing this grant opportunity.

Sincerely,  
(b)(6)



 Elsie Arntzen  
Committee Chair

c: Education and Local Government Committee Members



# Board of Public Education

November 30, 2011

PO Box 200601  
Helena, Montana 59620-0601  
(406) 444-6576  
www.bpe.mt.gov

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Commissioner of  
Higher Education

Denise Juneau,  
Superintendent of  
Public Instruction

Brian Schweitzer, Governor

## EXECUTIVE SECRETARY:

Pete Donovan

The Honorable Denise Juneau  
Superintendent of Public Instruction  
P.O. Box 202501  
Helena MT 59620-2501

Dear Superintendent Juneau:

The Montana Board of Public Education is pleased to provide this letter of support for Montana's IES State Longitudinal Data Systems grant from the U.S. Department of Education.

The Board appreciates the ongoing efforts of the Office of Public Instruction to build a statewide longitudinal data system for K-12 education. Already, we have seen the benefit of having student level data to support the Graduation Matters Montana initiative and our state's effort to close the achievement gap for subgroups of students.

The objectives of this grant address the Shared Policy Goals agreed upon by the Education and Local Government Committee, the Board of Public Education, the Board of Regents, the Commissioner of Higher Education and the Superintendent of Public Instruction. These goals reflect a shared commitment to align high school outcomes with college readiness expectations to facilitate the transition from high school to college; increase college participation of Montana high school graduates; expanding distance learning opportunities; and utilize K-20 data to improve student access and achievement.

We appreciate your leadership in building effective working relationships between K-12 education and postsecondary. The proposed rule, which is scheduled for adoption by the Board of Public Education in January 2012, to require the statewide student identifier to be included in a student's permanent record and transcript is a small step, but it will help to lay the groundwork for the successful development of electronic student transcripts from K-12 to postsecondary. The Board of Public Education recognizes the value of linking data about student course taking patterns; teacher preparation, qualifications and experience; transitions from high school to postsecondary; and success in college and the workforce.

Thank you for applying for this grant opportunity.

Sincerely,  
(b)(6)

Patty Myers  
Chair

Pete Donovan  
Executive Secretary

December 5, 2011

The Honorable Denise Juneau  
Superintendent of Public Instruction  
P.O. Box 202501  
Helena MT 59620-2501

Dear Superintendent Juneau:

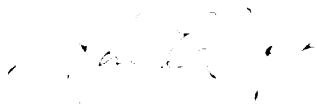
Billings Public Schools is pleased to provide this letter of support for Montana's IES State Longitudinal Data Systems grant from the U.S. Department of Education. Our school system enthusiastically supports the ongoing efforts of the Office of Public Instruction to build a statewide longitudinal data system for K-12 education. We appreciate the efforts by OPI to partner with local school districts in the creation of the warehouse to make the best use of our collective information technology resources.

As the Information Technology director for Montana's largest school system and a member of the Office of Public Instruction's advisory committee for the development of the state's K-12 education data warehouse, I recognize the need for cohesive, consistent, and meaningful student data not only at the elementary and secondary levels, but at the post secondary level as well. By partnering with OPI and our higher education system, districts like Billings can better assist our students with applications for post secondary education and financial aid. We will also be able to continually analyze student preparedness and achievement to ensure that we are appropriately preparing our students for their post secondary plans.

Earlier this year, Billings Public Schools signed on to the state superintendent's Graduations Matters initiative. Joining this initiative helps to highlight and increase our community's awareness of the activities that Billings has underway to improve academic success and graduation rates for our students. To truly measure "success," we will need access to the data and data linkages that will be fostered by this grant application. Electronic student transcripts will help us to connect state and local information about student course selection patterns and teacher preparation, qualifications and experience to determine how we can improve transitions from high school to postsecondary and success for Billings students in college and the workforce.

Thank you for applying for this grant opportunity.

Sincerely,



Karen ES Palmer, Director of Technology  
Billings Public Schools

December 9, 2011

The Honorable Denise Juneau  
Superintendent of Public Instruction  
P.O. Box 202501  
Helena MT 59620-2501

Dear Superintendent Juneau:

On behalf of the School Administrators of Montana (SAM) and the Montana Association of Secondary School Principals (MASSP), we are pleased to provide this letter of support for Montana's IES State Longitudinal Data Systems grant application from the U.S. Department of Education. Our associations support the ongoing efforts of the Office of Public to build a statewide longitudinal data system for K-12 education. Both SAM and MASSP endorse the goals of OPI's grant proposal is to build a more efficient and standardized mechanism for exchanging data with school districts and to provide an electronic student transcript service.

This service will benefit students, parents and school districts by providing efficient and accessible processes for students and schools to submit electronic transcripts with students' applications to postsecondary institutions. The proposed transcript service will also save time for school counselors and other school personnel whose duties include the processing of transcripts for college applications.

Another benefit of the electronic student transcripts is that it will connect state and local information about student course enrollment patterns and teacher preparation, qualifications and experience to determine how we can improve transitions from high school to postsecondary options and the workforce. This is valuable information for improving our decision-making at all levels of education planning.

Thank you for applying for this grant opportunity. When the grant is secured, SAM and MASSP look forward to collaborative endeavors to maximize this program that is good for students, our public education system and the citizenry of the state of Montana.

Sincerely,

(b)(6)

Darrell Rud  
Executive Director  
School Administrators of MT

Bruce Clausen  
President  
MT Association of Secondary School Principals

# VEXCEL

December 6, 2012

Vexcel Corporation  
5775 Flatiron Parkway  
Suite 200  
Boulder, CO 80301  
(303) 415-6000

To whom it may concern,

The Growth and Enhancement for Montana Students (GEMS) Portal is currently in development with the Vexcel Delivery Team (consisting of Vexcel Corporation, a wholly-owned subsidiary of Microsoft Corporation, acting as the prime contractor along with its subcontractors, Aspect Software, Inc. and Microsoft Corporation) working in conjunction with the Office of Public Instruction (OPI). The solution is focused on providing the Montana education community broader access to key K-12 student and performance data supporting trend analysis and advanced analytic capabilities.

The GEMS solution will provide both public and secure access to much needed reporting and dashboard capabilities. The underlying GEMS architecture leverages a solid Microsoft foundation using core technologies of SQL Server 2008 and SharePoint 2010. SQL Analysis Services is being leveraged to create a high-performing dimensional data warehouse which will serve as the heart of the GEMS system. Multiple "data domains" are being architected in the data warehouse to include Assessment, Student Characteristics, Enrollment, Homeless, Neglected and Delinquent Students, Migrant Students and Limited English Proficient. Integrated with the user experience provided through SharePoint, users can traverse both structured and advanced reporting capabilities which give the user a more self-service experience.

This model supports the OPI goals of creating a high-performing data warehouse which not only meets the immediate needs of K-12 community, but establishes a foundation which can be extended to include Early Childhood, Higher Education and Labor domains to provide a full P-20 analytical view of education related information. GEMS is leveraging OPI investments already made in the Microsoft platforms and the Vexcel Team is providing training and key knowledge transfer sessions to OPI staff supporting the OPI goal of a maintainable solution. These factors contribute to our confidence in the future expansion of both the data warehouse and portal environment to service P-20 capabilities.

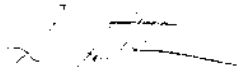
Members of the OPI Team have included Statewide Longitudinal Data System (SLDS) team members, OPI-IT resources, Project Management and both mid-level and upper level management. These resources have been valuable in both providing direction and guidance where needed and

# VEXCEL

understanding where elements fall within scope for the OPI organization and the Vexcel Delivery Team. To support the GEMS progression, OPI has provided IT resources, staffing resources for our Domain interview process and technical staff to build-out elements which are not under the Vexcel Delivery Team's direct control. Without the support we have been given to date, we would not be able to maintain our current time line of delivery a first domain by mid-January 2012. The OPI team has a genuine desire to help the Vexcel Delivery Team produce a quality product giving both Montana State user and federal funding sources value for their money.

The Vexcel Delivery Team has experience in a wide variety of custom data warehouse solutions across the national education community and includes a recent P-20 initiative just started by the Aspect component of the Vexcel Delivery Team. Our team will continue to bring ideas and knowledge from these experiences to OPI as the GEMS project continues. Together we look forward to continuing our partnership and improving education technology for our clients.

Sincerely yours,



Kevin Fletcher CPA  
Vice President and CFO

# Jamey LeeAnn Ereth

## Experience

**May 2010 – Present – MT Office of Public Instruction**

Helena, MT

### **Senior Project Manager**

- Plan, develop and lead major information systems with the Office of Public Instruction
- Project Management of K12 SLDS Data Warehouse build
  - Lead K12 SLDS Project Team
  - Planning
  - Design
  - Development
  - Implementation
  - Outreach to stakeholder communities
- Oversee Data Governance Committee
- Research, Analysis and Management
- Business Process Management
- Participate in the development and enforcement of policies, rules and laws

**May 2008 – March 2010 - MT Dept. of Public Health & Human Services**

Helena, MT

### **MACWIS Program Manager**

- Responsible for managing all programmatic and policy aspects related to the planning, design, development and implementation of a new Statewide Automated Child Welfare Information System (SACWIS) in Montana.
- Project Management
- Business Analysis
- State Procurement
- Directly supervise two Business Analysts

**March 2004 – May 2008 - MT Dept. of Public Health & Human Services**

Helena, MT

### **Computer Support Specialist**

- Project/Contract Management
- Manage the design, development, implementation and ongoing maintenance of the major data systems within the department.
- Apply knowledge and develop procedures to meet agency demands, identify department needs, gather requirements and problem solve

**December 1998 –March 2004 - MT Dept. of Public Health & Human Services, Helena, MT**

### **Programmer Analyst**

- Analysis and Design: performed requirements analysis for system definition; developed system specifications; provided technical assistance to staff, users and management; develops conceptual and detail system design.
- Programming, Testing and Implementation: Developed program specifications and modifications; wrote and compiled computer programs; participated and coordinated unit, integration and system testing; implemented systems in production environment; prepared system and user documentation / training.
- Provided recovery of production systems; performed administrative duties as assigned; provided database and development software training to Programmer / Analysts; assisted in RFP and Contract preparation, review and monitoring.

**May 1996 - December 1998 - MT Dept. of Public Health & Human Services Helena, MT**  
**Help Desk Technician**

- Provide first level problem resolution for all DPHHS staff. DPHHS has approximately 3000 employees.
- Log all incoming trouble calls. These include communication problems (LAN, Mainframe, RS6000), Application problems and IS Equipment problems.
- Communicate with Network staff to resolve end user problems.

**July 1994 – May 1996 - MT Dept. of Public Health & Human Services Helena, MT**  
**Administrative Support**

- Managed, collected and entered confidential disease related information into database
- Responded to public inquiries related to HIV/STDs
- Performed typical office duties as needed for the HIV/STD Program staff

**Education**

**September 1994 – May 1996**

*University of Montana College of Technology - Helena, Montana*

*Associates of Applied Science Degree in Computer Technology/Computer Programming*

**September 1990 – December 1992**

*Carroll College - Helena, MT*

**State Provided Education:**

February 2011 – Managing Projects (ESI – George Washington University)

December 2010 – Contract Management Principles and Practices (ESI – George Washington University)

August 2009 – Child Welfare Information System Regional Training (24 hours)

June 2008 – Developing and Managing Budgets

August 2008 - Child Welfare Information System Regional Training (24 hours)

September 2008 – Montana Child Abuse and Neglect Training (MCAN) (80 hours)

September 2007 – Microsoft Project (24 hours)

January 2007 – System Development Life Cycle (40 hours)

January 2007 – Introduction to Project Management (40 hours)

May 2004 – Principles of Upper Management (80 hours)

June 2003 – Oracle Web Applications (8)

July 2001 – Oracle Designer (40 hours)

December 1999 – Oracle Forms and Reports (20 hours)

June 1999 – Systemation - Systems Analysis and Project Management (40 hours)

## Jake Massman

(b)(6)

### DATABASE ADMINISTRATOR, SOFTWARE ENGINEER

#### PROFILE

Have worked on a variety of different computer systems, and have helped design and develop several custom applications in different operating systems.

Currently building longitudinal data warehouse for the Montana Office Of Public Instruction.

Proven abilities in a wide range of areas, including:

UNIX, Windows, Linux OS

Visual Basic, VB.NET

Visual C++, C#

SQL, Java, J2EE

SQL Server, DB2, and Oracle database design

DB Administration for SQL Server, DB2 databases

FoxPro, Access database experience

Crystal Reports, FoxPro, SSRS report design

#### EXPERIENCE

##### **The Office Of Public Instruction, Helena, MT**

01/10-Present

###### *Database Administrator, GEMS Project*

Responsible for maintaining SQL Server databases, reviewing all changes to the databases, and managing security on them. Insure that all OPI database standards are instituted, and insure that sensitive data is protected.

Responsible for all DBA duties in the GEMS project, the data warehouse being built with the SLDS grant for Montana. Build SSIS packages, build and deploy cubes with SSAS, develop reports with SSRS, and manage distribution of the content through SharePoint.

##### **Logistic Systems Inc., Missoula, MT**

11/99-01/10

###### *Software Engineer, Lead Programmer*

Responsible for writing and maintaining code for a variety of custom designed software applications for a Record Management System. Designed and maintained relational databases which are used by our software applications.

Responsible for Data Conversion tasks with clients. Any data that new clients possess must be converted from their old systems into our company's database architecture, and I am responsible for designing, documenting, and implementing these conversions.

##### **Physics Department, USF, San Francisco, CA**

1994-1999

###### *Physics Lab instructor, Research Science*

Taught Physics labs and tutored students in Mathematics and Physics.

Worked on NASA funded research for Professor Benton of the USF Physics Department. Gathered automated measurements and worked crunching large amounts of data using UNIX machines and homemade software applications.

#### EDUCATION

##### **University of San Francisco, San Francisco, CA**

1994-1999

Completed major in Mathematics.

Completed minors in Physics and Philosophy.

University President's Scholarship recipient, 1994-1999. This scholarship is the most generous academic scholarship that USF awards.

Awarded ARCS scholarship, 1998. A merit based academic scholarship awarded to outstanding sciences students throughout northern California.

(b)(6)

**KURT D WOLFF**

(b)(6)

## Professional Objective

Obtain a challenging software development position with a dynamic organization offering opportunities to work with state of the art technologies

## Professional Summary

- Twenty plus years of programming experience with most recent experience using VB.Net and TSQL to develop enhance and maintain in-house web applications.
- Extensive database design and development experience with most recent experience using Microsoft SQLServer 2008 R2.
- Widespread experience developing reporting solutions using Crystal Reports.
- Data Warehouse and Business Intelligence experience using SSIS, SSAS, SSRS, SharePoint, PerformancePoint and PowerPivot
- Ability to communicate with users and technical staff to determine user requirements, design software solutions, define testing strategies and prepare documentation.

## Work Experience

2/2010 – Present

**Office of Public Instruction, Helena, MT**

### **Computer Systems Analyst**

Design, develop and maintain in-house web applications to support educational data collections. Develop reporting solutions using Crystal Reports. Support data warehouse and business intelligence activities for a Statewide Longitudinal Data System using SSIS for extract, transform and load activities, SSAS for cube design and development activities, SSRS, SharePoint and PerformancePoint for business intelligence reporting activities. Programming experience using VB.Net and TSQL in a Microsoft SQL Server 2008 R2 environment.

4/2007 – 7/2009

**Centara Capital Management Group San Diego, CA**

### **Programmer Analyst**

Designed, developed and maintained custom software enhancements for a SalesLogix Customer Relationship Management system. Developed analytical reports using Crystal Reports. Programming experience using Visual Basic, VBScript and TSQL in a Microsoft SQL Server 2005 environment.

12/1999 - 11/2006

**Applied Micro Circuits Corporation San Diego, CA**

### **Programmer Analyst IV**

Managed all relational database activities for Informix and SQLServer 2000 environments. Developed and maintained in-house applications and customized SalesLogix, a Customer Relationship Management system. Developed analytical reports using Crystal Reports. Programming experience using Visual Basic/VBA and Java.

- 3/1999 - 12/1999      **Sempra Energy San Diego, CA**  
**Software Developer**  
 Maintained and enhanced bidding, scheduling, and settlement client/server applications used to purchase and distribute electrical energy. Programming experience using Visual Basic, VBA/Excel, TSQL, and Java.
- 10/1995 - 3/1999      **San Diego Superior Court San Diego, CA**  
**Systems Analyst**  
 Designed, developed, and implemented a client/server Minutes Information Tracking System to automate courtroom hearing activities. Programming experience using Visual Basic, MQSeries and C.
- 5/1995 - 9/1995      **Mikohn Gaming Corporation Las Vegas, NV**  
**Consultant**  
 Defined requirements and contributed to the design of a proprietary Casino Information Management System. Developed graphical user interfaces. Programming experience using C++ and Visual Basic.
- 4/1992 - 4/1995      **MGM Grand Hotel Casino Las Vegas, NV**  
**Project Leader**  
 Supervised Programmer Analysts and managed programming tasks to ensure the quality and timely completion of casino accounting and marketing applications. Analyzed, designed, developed and implemented software applications for casino and marketing applications. Programming experience using Cobol.
- 2/1990 - 3/1992      **Desert Inn Hotel Casino Las Vegas, NV**  
**Programmer Analyst**  
 Designed and developed software applications to satisfy user requirements for casino accounting, customer credit, player tracking and marketing operations. Programming experience using RPG II and RPG III.
- 4/1988 - 1/1990      **Ramada Express Hotel Casino Laughlin, NV**  
**Systems Analyst**  
 Managed information services for a four hundred-room hotel casino. Coordinated information services with all departments to achieve operational goals. Developed interfaces between various Computer Off the Shelf accounting, marketing and casino applications. Programming experience using RPG II.
- 7/1987 - 3/1988      **Deer Valley Unified School District Phoenix, AZ**  
**Data Systems Programmer**  
 Developed and maintained applications for a Student Information System. Programming experience using Cobol.

## Education

National University San Diego, CA  
 Masters: Software Engineering  
 Graduated: 11/1998

University of Montana Missoula, MT  
 Bachelors: Computer Science  
 Graduated: 6/1987

**Excellent References Available Upon Request**

# ERIN P.K. THIELMAN

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## SUMMARY OF QUALIFICATIONS

In-depth analytical experience for state K-12 educational data system with strength in understanding and utilizing highly technical and ever-changing information. Complimentary service in the U.S. Air Force, providing leadership, teamwork and innovative solutions. Focused to provide integrity, leadership and a strong work ethic to enhance student access and success.

## PROFESSIONAL EXPERIENCE

### OFFICE OF PUBLIC INSTRUCTION: State of Montana, Helena

January 2010-Present

#### Business Analyst

Responsible for analyzing Montana's first Data Warehouse (State Longitudinal Data System) for the K-12 educational system providing long-lasting benefits for public education and student performance.

- Data Governance Facilitator. Gather and prioritize data governance issues for resolution. Supervise the Data Governance efforts of 17 agency personnel. Serve as a key resource on Data Governance efforts to the Deputy Superintendent, Chief of Staff, and various division administrators.
- Demonstrate Project Management skills as the Data Governance Project Coordinator and the Data Warehouse Business Analyst. Oversee implementation of the highly technical and detail-oriented Data Governance process. Gathers requirements from Subject Matter Experts for use in developing the Data Warehouse.
- Ensure and maintain compliance with Agency, State, and Federal requirements for a Data Governance Structure.
- Work to define and appoint data stewards and data stakeholders.

### U.S. BANK: Denver, Colo.

2009

#### Personal Banker

Responsible for processing teller transactions and loan applications.

- Processed key bank functions, including more than 70 loan applications, with a 94 percent accuracy rate, the highest in the branch, and worked with a wide range of customers from diverse backgrounds.
- Assisted the Branch Manager with accounting reports.

### PUBLIC EMPLOYEE'S RETIREMENT ASSOC. (PERA)

2007- 2008

#### Denver, Colo.

#### Investment Department Intern

Responsible for research needed to comply with Colorado Legislature's Sudan Divestment Bill, requiring PERA to withdraw investments from companies financially involved with Sudan.

- Performed significant research regarding the advantages and disadvantages of PERA having a global mandate, coordinated research with investment managers and consultant and presented findings.
- Researched and presented information on the design PERA's Request for Proposals (RFP) for a new custodian bank, hedging and currency alpha opportunities and infrastructure opportunities.

#### Legal Department Intern

Responsible for research and presentation to PERA's General Counsel and for cataloguing and archiving Law Library documents.

- Researched potential investment company activities and whether international countries had financial sanctions against them.

**UNIVERSITY OF COLORADO: Colorado Springs, Colo.****2008****Statistics Lab Instructor and Tutor**

Responsible for helping university students with statistic courses.

- Lab Instructor. Instructed approximately 50 students utilizing Microsoft Excel and statistics applications.
- Open-session tutor. Answered statistics questions and provided study and time-management techniques.

**UNITED STATES AIR FORCE: Langley AFB, Va.****2003- 2004****Professional Paralegal**

Responsible for examining, adjudicating and settling claims filed for and against the United States pursuant to Air Force Instructions. Conducted training session for more than 100 military personnel.

- Interviewed witnesses, conducted investigations and recommended claims settlement.
- Diligently and consistently asserted claims against carriers liable for damage to personal property in the amount of \$250,000.
- Assisted with maintaining a budget in excess of \$485,000; continuously updated and reviewed financial documents for discrepancies: enabled error-free monthly reconciliations with the Finance Office.
- Exceeded Air Force goal of 10 days by processing all personal property claims in an average five days: determination and ambition led directly to operational efficiency.

**Technical Logistics Expert****2000- 2003****Scott AFB, Ill., and Spangdahlem Air Base, Germany**

Responsible for developing a Microsoft Office Access database that tracked deployed equipment assets worth \$700,000, using strong technical background to analyze and innovate. Slashed research time by 50 percent.

- Analyzed inventory on 780 items valued at \$64,000, warehoused and conducted asset inspections to ensure quality and serviceability of the entire inventory.
- Integral member of closing-out department fiscal year, dealing with \$289 million in transactions.

**EDUCATION AND TRAINING**

- Bachelor's Degree (cum laude), University of Colorado in Economics with a minor in Geography (2008)
- George Washington Certified Project Manager (GWCPM), George Washington University (2010)
- ESI Project Management Training
- Pikes Peak Community College Tutor Training
- United States Air Force Train the Trainer Course

**AWARDS AND PROFESSIONAL MEMBERSHIP**

- Project Manager Institute (PMI)
- National Defense Service Medal
- Air Force Good Conduct Medal
- Air Force Achievement Medal for acting as ambassador to the Ukraine Military Generals
- Phi Theta Kappa National Honor Society

## **Madalyn Quinlan**

(b)(6)

**QUALIFICATIONS:** Over 16 years of experience in a leadership position in the state education agency, supervising the agency's communication functions, legislative agenda, personnel, and student assessment functions; and overseeing and providing management support for several of OPI's data collection and reporting initiatives.

### **EDUCATION:**

B.A. Public Administration, Georgetown University, Washington, DC, 1979.

Masters Program in Economics, University of Montana, Missoula, Montana, 1982-1984. 2 years full-time in graduate program. All but dissertation.

### **EMPLOYMENT:**

#### **Office of Public Instruction (1995-present), Chief of Staff**

Management and leadership responsibilities in the Superintendent's Office include the coordination of OPI's legislative agenda, including budgets requests for state level activities and K-12 funding; communicating with schools and the public about Montana's K-12 education system; overseeing and providing management support for several of OPI's data collection and reporting efforts; supervising the personnel functions of the state office; and working closely with the agency's State Assessment Director.

Areas of expertise include the school funding in Montana and how it works, taxation to support public education, state budgeting processes, and the fiscal and non-fiscal data collection and management efforts of the Office of Public Instruction.

Represented the Superintendent of Public Instruction in the development of shared policy goals, objectives and performance measures for P-20 education in collaboration with the Board of Public Education, the Board of Regents of Higher Education, the Commissioner of Higher Education and the legislative Education and Local Government Committee.

Represents the state education agency on the Education Information Management Advisory Consortium (EIMAC) of the Council of Chief State School Officers. Served as chair of EIMAC for 2009-10.

Represented the state education agency on the National Forum of Education Statistics from 2001-2009.

Participated in task forces that developed the following National Forum for Education Statistics publications:

- *Accounting for Every Student: A Taxonomy for Standard Student Exit Codes*, April 2006
- *Managing an Identity Crisis: Forum Guide to Implementing New Federal Race and Ethnicity Categories*, September 2008

#### **Office of Public Instruction (1990-1995), Revenue Analyst**

Analyzed data and authored reports on all aspects of school funding to education policy makers. Shared a leadership role in the development of OPI's legislative proposals. Staffed the State Superintendent on issues related to the State Land Board.

**Office of the Legislative Fiscal Analyst (1984-1990), Associate Analyst**

Prepared revenue estimates for state general fund revenues and revenues to the school equalization aid account; staffed legislative committees on school funding and long range building; developed understanding of school funding, taxation, and the legislative process.

# Tyler Trevor

MUS Associate Commissioner for Planning & Analysis

## **BACKGROUND INFORMATION**

Tyler Trevor is the Associate Commissioner for Planning and Analysis in the Office of the Commissioner of Higher Education in the Montana University System. The primary responsibilities of his position include, managing University System information and data warehousing, conducting system-wide institutional research, and facilitating the on-going development of a system-wide strategic plan.

Prior to his current role in the Montana University System, Tyler held the position of associate vice chancellor for academic and student affairs and director of institutional research in the Nevada System of Higher Education. He has spent a seventeen year career in higher education working for system offices and colleges in three different states. Tyler received bachelor's degrees in political science and sociology from Montana State University, and a master's degree in applied sociology from California State University, Humboldt.

## **PROFESSIONAL EXPERIENCE**

**Associate Commissioner for Planning & Analysis** June 2007 to Present  
Montana University System, Office of the Commissioner of Higher Ed., Helena, MT

**Responsibilities:** The Associate Commissioner is charged with the following responsibilities:

- Develop and maintain system-wide information resources, including data warehouse and institutional research & analysis functions;
- Facilitate the on-going development of a system-wide strategic plan;
- Develop strategies for the university system's media relations and communications with various constituent groups and the general public; and
- Work collaboratively with campus representatives to coordinate the university system's governmental relations

**Director of Institutional Information & Research** 2006 to 2007  
Montana University System, Office of the Commissioner of Higher Ed., Helena, MT

**Associate Vice Chancellor for Academic & Student Affairs** 2003 to 2006  
Nevada System of Higher Education, System Administration, Reno, NV

**Director of Institutional Research and Assessment** 1997 to 2003  
Truckee Meadows Community College, Reno, NV

**Coordinator of Institutional Research and Analysis** 1995 to 1979  
College of the Siskiyous, Weed, CA

## **EDUCATION**

Master of Arts, Applied Sociology – Research Methods 1994 to 1995  
Humboldt State University, Arcata, CA

Bachelor of Science, Sociology 1993 to 1994  
Montana State University, Bozeman, MT

Bachelor of Science, Political Science 1988 to 1992  
Montana State University, Bozeman, MT

## PROFILE:

Information Technology Manager with extensive experience in the financial services industry. Strong program and project management background with experience in application development management, team building and coaching. Proven successful in the development of technology solutions that enable strategic business objectives. Consummate team player that strives to meet the goals of the organization. Selected areas of strength include:

<b>Program Management:</b>	Proven track record in managing project portfolios in excess of \$15MM per annum. Disciplined in the project lifecycle including; developing project scope, defining required resources, negotiating contractual arrangements, estimating time and cost of projects and monitoring project performance.
<b>Strategic Planning:</b>	Able to assess current technology, understand business strategies and work with business unit managers and executive teams to develop technology plans, priorities and budgets.
<b>Applications Development:</b>	Experienced with the management of large development teams in financial systems. Strong problem solving, communication and interpersonal skills have provided the ability to effectively oversee the on time and on budget delivery of complex systems that meet the client's needs.
<b>Client Relationship Building:</b>	Able to develop solid relationships with internal and external clients in order to assure the delivery of systems that achieve business objectives.

## PROFESSIONAL EXPERIENCE:

**STATE OF MONTANA**, Helena, Montana

**Current**

**Systems Development Bureau Chief**, Office of Public Instruction (11/2007 – 1/2009)

**IT Division Administrator**, Office of Public Instruction (1/2009 – present)

Directs daily operations of the IT division, including application development, network services and web development; analyzing workflow, establishing priorities, developing standards, policies, and information technology plans, providing for data security and control, disaster recovery, and setting deadlines. Works with private consultants and systems development service providers to arrange contracts for services, provide information, and to serve as contractual liaison for the office. Develops materials for and solicits "Requests for Proposals" from private contractors, evaluates proposals, negotiates terms, awards, and monitors contracts for large, complex systems design and development projects.

**ABN AMRO NORTH AMERICA**, Chicago, Illinois

**1980 – 2007**

LaSalle Bank NA and North American subsidiaries of ABN AMRO Bank NV, a top 20 global bank with assets of more than \$1 trillion and 105,000 employees in 53 countries. Standard Federal Bank was acquired by LaSalle Bank in 1997.

**Senior Program Manager, First Vice President,**

LaSalle Bank, Chicago, Illinois (06/2006 – 06/2007)

Responsible for Personal Financial Services program with annual IT budget of \$15MM. Provided leadership and day-to-day management of a team of up to 24 project managers including hiring, resource assignments, prioritization, issues escalation, customer communication and senior management reports. Worked with onshore and off-shore partners to effectively staff and deliver projects on time and on budget.

- Successfully reorganized a team that had been without a manager for six months. Established stricter adherence to process and procedure which resulted in improved project performance and monitoring.
- Met the challenge of maximizing resource allocations during a period of budget cuts without impacting project performance.
- Used ability to navigate in a highly matrixed organization to drive quick escalation and resolution of issues which improved customer service and kept projects on time and within budgets.

**First Vice President,** LaSalle Bank, Chicago, Illinois (09/2005 – 06/2006)

Interim role responsible for overseeing the transfer of existing policies and procedures to newly selected off-shore partners. Worked with multiple development, support and infrastructure teams to identify a comprehensive list of existing processes and validate the accuracy via detailed reviews. Supervised the updating of the documentation, insured that processes were understood by the new team and that roles and responsibilities were well defined.

**Client Executive, First Vice President,** LaSalle Bank, Troy, Michigan (05/2003 – 09/2005)

Represented all IT services to the ABN AMRO Mortgage Group (AAMG), a division of LaSalle Bank and a top 10 national wholesale mortgage lender. Managed an annual IT project budget of \$22MM. Provided leadership and management to a team located in five metropolitan areas across three states that included six Account Managers and up to twenty-four matrixed project managers and their development teams. Responsibilities included: internal client liaison, project portfolio management, demand planning for six month book of business, process improvement initiatives, financial management and reporting.

- Hired and trained original Account Management team and established all reporting and processes required for successful client support.
- Worked closely with the president of AAMG to monitor project budgets and successfully increased and decreased monthly run rate in accordance with organizational business plans.
- Was an early adopter of using offshore resources to complement in-house staff in order to adequately meet the business' changing demands.

**PMO Manager, Vice President,** LaSalle Bank, Troy, Michigan (02/2000 – 05/2003)

Managed the AAMG PMO with annual project budget of \$15MM. Led team of 12 project managers. Responsible for project lifecycle management including financials, requirements, issue resolution, testing, and implementation. Management accountability included oversight

of the PMO budget, matrixed project teams, applicant interviews, hiring, resource allocation and team organization at multiple job sites.

- Assumed control of a PMO that had an underutilized project methodology and a poor track record of controlling projects. As part of a global initiative, volunteered to be the pilot area to learn the Capability Maturity Model (CMM) methodologies and successfully instituted CMM based processes that resulted in higher project predictability.
- Instituted regular meetings with senior management in the client organization to insure project performance was clearly understood.
- Built relationships and cross-functional teamwork that enabled the integration of the PMO fully into the IT team.

***Development Manager, Vice President,***

Standard Federal Bank, Troy, Michigan (1984 – 02/2000)

Oversaw support and development of mortgage systems for number one single-family mortgage lender in Michigan. Managed application development teams that grew in size and complexity. Responsible for day to day management of the team including hiring, resource assignments, prioritization, problem solving, strategic planning, internal client relationship management and reporting to senior management. Direct report to the CIO.

- Built development/support team from a small group of individuals to a large, multi-disciplined team able to handle multiple, complex projects concurrently.
- Oversaw mortgage portion of 12 bank mergers, multiple loan sales and the creation of processes and programs to sell loans into the secondary market.

**EDUCATION:**

**George Washington University**

Masters Certificate in Project Management, 2002

**Oakland University, Rochester Michigan**

Bachelor of Science, Computer Information Sciences, 1980

# Thomas “Tab” Dougherty

## Experience

9/2009 – Present Montana Office of Public Instruction Helena, MT

### **Systems Development Bureau Chief**

- Manage a staff of 8 Computer Systems Analysts and 2 Database Administrators.
- Participate in planning and leadership teams for topics such as School Staffing, Identity Management, Service Oriented Architecture, Direct Certification, and IT policy updates.
- Plan for and implement new technologies for the OPI.
- Participate in grant writing and grant implementation for the Direct Certification Process Improvement Project.
- Participate in the Pearson SLDS Advisory Council.
- Attended the past 2 NCES MIS Conferences.

10/2008 – 9/2009 Hewlett-Packard Company Houston, TX

### **Project Manager**

- Managed quality assurance and testing activities on HP servers and switches.
- Determined project scope, including hardware, software, and testing resources, as well as budget.
- Met with several different stakeholder groups to plan projects and ensure schedule and deliverables are met.
- Reported testing results on a weekly basis to key team members, or as requested.
- Closely tracked the status of 5 - 7 projects at any one time using internal tracking tools as well as Microsoft Project and SharePoint.

10/2002 – 10/2008 Hewlett-Packard Company College Station, TX

### **Project Manager & Sales Manager**

- Manage ~30 projects, generating revenue of over \$2 million annually.
- Scope projects and plan resources for computer hardware and software related projects.
- Interact with project leads to ensure deadlines/deliverables are met.
- Generate cost estimates and submit financial transactions.
- Visit the customers we work with on a monthly basis to conduct planning and review the project and budget.
- Perform interviews to hire new employees.

6/2000 – 10/2002 Compaq Computer Corp. College Station, TX

### **Project Supervisor**

- Work with the project manager to scope new projects.
- Supervise 5-8 projects at any given time.

- Fully understand the technical details the projects that I am supervising.
- Manage a team of 5-12 employees.
- Ensure that projects remain within budget and scope.
- Report status back to project sponsors.
- Conduct interviews and training for new employees.
- Conduct annual performance reviews.

1/1998 – 6/2000                      Compaq Computer Corp.                      Bryan, TX

**Lab Supervisor**

- Manage 3,000+ pieces of inventory, including shipping & receiving.
- Maintain 2 working labs, including network and phone maintenance.
- Assist employees with computer issues and hardware repairs.
- Maintain a pool of 40 productivity machines.
- Manage a Microsoft Exchange server as well as a file server for the entire facility, which includes tape backups of both servers.

**Education**

2002 – 2005                      University of Phoenix Online                      Phoenix, AZ

- M.B.A., Business Administration

1993 – 1998                      Texas A&M University                      College Station, TX

- B.S., Computer Science.

**Interests**

Computers, fitness, outdoor activities, music production

**Other**

- Proficient with Microsoft Office suite as well as MS Project.
- Received my EMT-Basic Certification in January, 2009.
- Volunteered at the Emergency Department of the College Station Medical Center from July 2008 – January 2009.

## **Sue Mohr**

(b)(6)



### **QUALIFICATIONS:**

Over 30 years of combined experience in leadership, program management, research, analysis, planning, design, implementation, and evaluation for programs involved in education, labor market data including unemployment insurance data, workforce and financial data used for policy-making and decision-making by leaders and legislators. Broad and deep understanding of uses of data between agencies specifically between education, K-16 and workforce training, labor market and unemployment insurance data. Experienced in analysis and oversight/governance of data in multiple departments including Office of Public Instruction, Unemployment Insurance wage data, labor market data, apprenticeship data and employment and training data.

### **EDUCATION and TRAINING:**

Utah State University: Bachelor of Science, emphasis on statistical survey and analysis, economics public policy  
Series 7 and 66 NASD financial licenses for financial analyst.

### **EMPLOYMENT:**

#### **Division Administrator, Measurement and Accountability, Montana Office of Public Instruction (2009 – present)**

Responsible for the development and implementation of the State's Student Information System. Responsible for the development of the accountability tracking system for calculating school performance in Montana. Provide direction, guidance and support in data collections and analyses for federal and state reporting requirements. This includes reporting for student disaggregated enrollment, highly qualified teacher information, Common Core of Data and EDEN files. Oversee other reporting requirements and analyses in collections such as home-school information, graduation, completion, drop-out and assessment data.

Direct the implementation of Montana's participation in the NAEP assessment where Montana students can demonstrate their achievement levels in the "Nation's Report Card." Participated on national boards and advisory committees, presentations delivered at national meetings, advisory positions to state education agencies, in-depth studies and understandings of state assessments, designing, overseeing and carrying out analyses in various ways, equating studies, validity studies, sampling plans and statistical analyses.

Jointly manage the K12 Data warehouse project specifically overseeing the development and implementation of the OPI data governance process. Organized committee structure, committee appointments, charter development and operation of data governance committee process.

**Education Savings Analyst, MT Guaranteed Student Loan Program, Office of the Commissioner of Higher Education (2007 – 2009)**

Administration of statewide program, Liaison between state and program managers. Oversee all aspects of Montana's 529 College Savings Program including mutual funds, fixed funds. Manage and compare performance of products compared to other similar funds using Morningstar model portfolios. Developed partnerships to market college plans, develop and deploy marketing plan and develop and conduct presentations.

**Financial Analyst, DA Davidson, Helena Branch (2006 to 2007)**

Conduct all aspects of building a successful financial planning practice within a three person team.

Provide financial plans, portfolio construction and analysis, development of proposals, presentations to clients. Presentations to women's groups, high school students, 4-H members at the state convention.

**VP, Operations, Workforce One (Broward County Employment and Training), Fort Lauderdale, FL (2005)**

Oversee three one stop workforce centers encompassing all of Broward County. Set up job fairs for worker shortages in the aftermath of Hurricane Wilma; set up emergency welfare payment offices throughout the county after Hurricane Wilma threw thousands of workers into temporary unemployment.

**Executive Director, Montana Job Training Partnership, Helena, MT 1990 to 2005**

Nonprofit corporation responsible for all local delivery of workforce programs in Montana including administration of over \$8 to \$10 million of federal grants ensuring that funds are used in accordance with state and federal policy and according to the direction of local workforce investment boards. Arrange, schedule and manage multiple grants (50 grants in 100 locations across Montana). Ensured performance requirements were met, conducted audits and compliance reviews and ensured that all grant conditions were met by grantees. Deep understanding of how to use labor market data to develop talent pipelines between growing and emerging industry and workers through development of training programs including programs offered in 2 year college of technology and 4 year university programs. Instituted first real time reporting system accessible to grantees, state and federal managers. Member of numerous national workforce policy councils.

**Administrator, Employment and Policy Division, MT Dept of Labor and Industry, 1986 to 1990.**

Responsible for Research and Analysis Bureau providing labor market data, unemployment insurance statistics, prevailing wage data and wage and employment data. Conducted occupational and industrial wage and employment research studies. Responsible for state job training bureau overseeing local job training program delivery as Governor's liaison. Assisted at the state level with using labor market data to provide improved workforce training to Montanans.

**Administrator, Labor Standards Division, MT DOLI, 1985 to 1986**

Responsible for state administration of minimum wage and overtime law, prevailing wage and child labor law and the state apprenticeship program. Instituted first local prevailing wage system which used wage information reported to the Department by region of the state.

**Bureau Chief, Unemployment Insurance Tax Bureau, MDOLI, 1983 to 1985.**

Administered state unemployment tax program collecting \$65 M annually of UI taxes from 25,000 employers. Oversight of employer audits, and collections. Supervised 40 employees and fifteen field staff across Montana who worked directly with employers. Developed first coordinated approach in which Mt Dept of Revenue, Unemployment Insurance, Workers Comp and the IRS cooperated in audits of known fraudulent employers.

**Management and Budget Analyst, MDOLI, 1977 to 1982.**

Conducted research studies, researched and helped write unemployment law re-write which resulted in an actuarially sound tax system and put the UI trust fund into solvency where it has remained ever since. After helping pass legislation, I was asked to implement the tax system with the assistance of programming staff to ensure the new re-write followed the requirements of the new law.

Budget analyst for the MDOLI ensuring that budgets were developed and maintained according to state and federal law.

**MEMBERSHIPS AND ACHIEVEMENTS**

Member, U.S. Dept of Labor Enterprise Council developing quality initiatives for state and local job training councils.

President, MT Women's Capital Fund a microenterprise lending organization.

Secretary, National Workforce Association advocating for local delivery of workforce programs at the national and congressional level.

Member of National Association of Counties Employment and Labor Steering Committee

Member, MT Human Service Coalition and MT Nonprofit Association

Member, Rural High Skills Consortia

Member, Helena Business and Professional Women

Past board member, Helena Eaglemount

Past Member, Women Investment Professionals at D.A. Davidson

Received on Quality Lab Grant for US Department of Labor Denver Region and formed first Montana Council for Workforce Quality.

Organized two of the largest US Dept of Labor Quality Academies in the US in Billings and Coeur d'Alene involving participants from the northwest US plus WY, ND and SD.

Successful recipient of first three year grant to serve severely disabled in remote parts of Montana.

Testified before Congress regarding challenges of operating job training programs in frontier areas.

## Denise Bond

(b)(6)

### QUALIFICATIONS:

I have 18 years of experience in analyzing and reporting data including K-12, workforce training, and TANF Employment and Training data. Due to the nature of individual information collected, confidentiality is the utmost importance when reporting. I am a solutions-oriented Computer Systems Analyst with notable success in assisting with research, analysis, planning, design, implementation, and evaluation of a client tracking system in direct support of federal, state, and local requirements.

- Track record of increasing responsibility in systems analysis and development, and full lifecycle project leadership.
- Demonstrated capacity to implement innovative reports that drive awareness, decrease data errors, and strengthen organization's performance.
- Hand-on experience leading all stages of system development efforts, including requirements, definition, design, architecture, testing, and support.
- Outstanding team member abilities; able to coordinate all phases of project-based efforts while motivating, and leading project teams.
- Adept at developing effective policies and procedures, project documentation, and milestones.

### CORE COMPETENCIES:

Business Impact Analysis; Regulatory Adherence; Data Integrity/Recovery; Disaster Recovery Planning; Contingency Planning; Research & Development; Risk Assessment; Cost Benefits Analysis

- **Networking:** Ethernet, Wireless, WAN, Web Conferencing, Terminal Server Technology.
- **Languages:** Basic, HTML, PL/SQL
- **Tools:** dBase III, dBase IV, Visual FoxPro, Oracle 10g, Crystal Reports Developer Edition, Microsoft Office System (including Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Microsoft Access, and Microsoft Outlook), Microsoft Project, and Microsoft FrontPage.

### EDUCATION and TRAINING:

Associate of Applied Science-Small Computer Systems, Miles Community College, Miles City, MT 1993

Crystal Reports Developer, Systems Analysis and Design, Databases and SQL, Programming with Visual Basics and Java, Excel 2010 and PowerPivot

National Workforce Professional 1 Certificate, Dynamic Works Institute

**PROFESSIONAL EXPERIENCE:**

The Office of Public Instruction, Helena, MT  
*Operations Research Analyst*

10/06-Present

Provide research, data management and data analysis for K-12 education assessment data to determine compliance with state and federal statutes, rules, and regulations for public schools and districts to provide Montana K-12 education data to the public and policy makers. Interpret and apply federal and state statutes regarding reporting requirements, review the business rules for reporting purposes, data confidentiality and right-to-know statutes, regulations, requirements, and other mandates. Apply proper methodologies used in providing annual calculation tables; develop methods for determining data accuracy to meet multiple internal and external data analyses requests. Debug, compile, analyze, and validate data accuracy and completeness. Work closely with OPI programmers to ensure data accuracy in regards to the Accountability Process. Verify scoring accuracy for all subgroup disaggregation (e.g., free/reduced lunch participation, students with disabilities). Apply research strategies and complex technology solutions to analyze data and prepare report summaries using MS Office Suite (Access, Excel, Word, PowerPoint), for the Superintendent, division administrators and other OPI management staff. Served as a liaison to OPI Small Schools Accountability Process committees for the purpose of identifying thresholds. Prepare data for the Adequate Yearly Progress Press Release on OPI's website and reports for the schools and districts annually. Provide finalized data in the form of spreadsheets, PDF files, database files, and hardcopies. Respond to requests for information by OPI staff members by creating queries to extract data sets using Structured Query Language (access), conduct research, compile resources, disseminate results, and conduct presentations. Designed a simulation model for the Superintendent, division administrators, and other OPI management staff for review of Adequate Yearly Progress results. Design and prepare documents for in-office reports, in coordination with OPI public relations, publications, and program staff. Update and modify the Adequate Yearly Progress procedures and user guides. Validate data accuracy and completeness of the Achievement in Montana (AIM) student information system data. Validate data accuracy and completeness of student achievement data and Adequate Yearly Progress reports residing in Growth and Enhancement of Montana Students (GEMS).

Montana Department of Labor and Industry, Helena, MT  
*Temporary Computer Programmer*

11/05-09/06

Provided expertise in tracking client information and developed a system to track outcomes for a federal program. Identified specific tables, fields, and participant data designed to track federal, state, and local requirements. Assisted with the design of Oracle 10g Forms; canvases, tabs, and reports. Created Oracle 10g canvas and tabs to complete data entry on a federal pilot program. Queried tables using PL/SQL to define and correct data inaccuracies. Assisted with creating edit/validation triggers, procedures, and program units used in reference to blocks and fields. Provided training on client tracking methodologies and performance measures. Compiled federal and state documentation regarding performance and data validation. Assisted with the design and documentation for the user manual.

**Denise Bond, page 3**

Montana Job Training Partnership, Inc. (MJTP, Inc.), Helena, MT  
*Systems Analyst*

04/99-11/05

Promoted from MIS Specialist to Systems Analyst to debug, correct, and maintain a Management Information System including identifying and implementing system enhancements. Maintained communication with state and federal agencies involved in the use or support of the system, and with supervisors, staff, local and state boards, and others. Provided support to stakeholders by analyzing data, evaluated the effectiveness of the workforce delivery system and the quality of service. Designed custom reports on program activity, outcomes, and fiscal information. Tracked performance standards, prepared documents, and reported to boards, committees, managements, staff, and end-users. Identified strengths and weaknesses of the Management Information system in meeting the needs of the organization and others. Identified solutions including new programs, corrections of existing programs, or development of new systems or uses for the existing system. Ensured the accuracy of the system by analyzing information requirements, and ensured all appropriate data was collected, analyzed, and disseminated. Attended many federally sponsored training, technical assistance, and stakeholder events focusing on performance related issues. Served as a presenter at a federally sponsored regional conference and participated as a member of a national federally sponsored performance accountability committee.

**Key Contributions:**

- Assisted system developers with the design, development, testing, and implementation including identifying data elements, and reports for the Visual FoxPro Management Information Tracking System.
- Debugged, corrected, and maintained computer programs for the Management Information Tracking System, including troubleshooting problems, identifying and implementing system enhancements.
- Developed and maintained user guides, training materials, and support documentation.
- Provided training to boards, committees, management, staff, and remote users on the use of the Management Information Tracking system.

Career Development Program, Miles City, MT  
*Computer Systems Coordinator/Office Manager*

09/93-04/99

Responsible for all data entry of several job training programs into state and local databases. Assisted Program Director with the grant writing process. Designed and maintained web page. Prepared quarterly reports and facilitated internet research. Published and designed workshop agendas and pamphlets. Maintained all hard copy files of confidential client information. Supervised part time secretary and all files for completeness. Provided training to clients on Introduction to Computers and various software packages.

**ACHIEVEMENTS and AWARDS:**

The Office of Public Instruction's 2010 recipient of the Governor's Award for Excellence in Performance.

## ACRONYMS

AIM	Achievement in Montana
AP	Advanced Placement
BI	Business Intelligence
CEDS	Common Education Data Standards
CIP	Classification of Instructional Programs
COR	Contracting Officers Representative
CRT	Criterion-referenced testing
CSPAC	Certification Standards and Practices Advisory Council
DBA	Database Administrator
ESEA	Elementary and Secondary Education Act
FAQ	Frequently Asked Questions
FERPA	Family Education Rights and Privacy Act
GEMS	Growth and Enhancement of Montana Students
HEA	Higher Education Act
HIPAA	Health Insurance Portability and Accountability Act
IPEDS	Integrated Postsecondary Education Data System
IHE	Institution of Higher Education
K-20	Kindergarten through grade 20
LEA	Local Education Agency
MBI	Montana Behavioral Initiative
MCA	Montana Code Annotated
MCEL	Montana Conference of Education Leadership
MEA-MFT	Montana Education Association – Montana Federation of Teachers
MS	Microsoft
MSTI	Montana Math, Science, and Technology Initiative
MUS	Montana University System
NAEP	National Assessment of Education Progress
NTC	National Transcript Center
OCHE	Office of the Commissioner of Higher Education
OPI	Office of Public Instruction
RFP	Request for Proposal
SIF	School Interoperability Framework
SIS	Student Information System
SLDS	Statewide Longitudinal Data Systems
SSID	State-assigned student identifier
TANF	Temporary Assistance for Needy Families
TB	Terra Byte
TSQL	Transactional Structured Query Language
USED	U.S. Department of Education
WDQI	Workforce Data Quality Initiative
ZIS	Zone Integration Server

## Budget Narrative File(s)

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\* Mandatory Budget Narrative Filename:

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To add more Budget Narrative attachments, please use the attachment buttons below.

## 7. BUDGET NARRATIVE

### Personal Services

Portions of five full-time staff positions at the OPI and one staff position at the Office of the Commissioner of Higher Education will be provided as in-kind support to this grant. The six personnel who will provide in-kind support total 1.65 FTE with salaries totaling approximately (b)(4) annually for the 3-year period of the grant.

The in-kind staff will provide initial startup and planning activities for the first 6 months of the grant. These personnel will not be funded from either the 2009 SLDS grant or this grant.

This proposal includes funding for 2.0 FTE for 6 months in year 1 and 6.0 FTE for years 2 and 3 for a total cost of \$1,034,306. A summary of the salaries for these FTE is shown in the table below. A complete breakdown of salaries and benefits by goal for each year of the grant is shown in subsequent tables.

Grant Funded Positions: FTE, Base Salary and Total Compensation by Year

Position	FTE	Base Salary	Year 1 – Total Compensation	Year 2 – Total Compensation	Year 3 – Total Compensation
Project Manager	1.0	\$67,846	\$0	\$88,915	\$90,693
Database Administrator	1.0	\$65,953	\$0	\$86,685	\$88,418
Computer Systems Analyst	1.0	\$56,538	\$0	\$75,591	\$77,103
Business Analyst – Governance	1.0	\$56,538	\$0	\$75,591	\$77,103
Business Analyst – K-20 Project	1.0	\$56,538	\$37,054	\$75,591	\$77,103
Data Research Analyst	1.0	\$54,750	\$36,022	\$73,484	\$74,954
Total	6.0	\$358,163	\$73,076	\$475,856	\$485,374

The personnel, their roles, and time commitments are described in the Project Narrative, (e) Staffing.

The Project Manager will oversee the project beginning in year 2; develop project plans and timelines; help with the development, scoring, and negotiation of all RFPs as well as contract management and negotiations.

The Database Administrator will be responsible for the naming standards, database design, data dictionary, performance analysis and tuning, backup and restores, and disaster recovery.

The Computer Systems Analyst will design and develop reports and dashboards, develop business processes that ensure the data warehouse fulfills the enterprise's strategic objectives, assist in the implementation of the electronic student transcript service, and train stakeholders and OPI staff.

One Business Analyst will facilitate the establishment of the K-20 Data Governance Council; convene the council; develop governance policies and processes; convene data stewards on a regular basis; setup a training plan for school districts, OPI staff and other stakeholders; and assist with implementation of the training plan.

The second Business Analyst will work with LEA's to facilitate the exchange of data between the schools and the OPI, work with the computer systems analyst to develop business processes that ensure the data warehouse fulfills the enterprise's strategic objectives; identify and define the warehouse purpose and target user groups, and develop data quality processes and policies.

The Data Research Analyst will provide data analysis and validation of the combined data from OPI and OCHE; work with stakeholders including LEA's and units of the university system to analyze the data and develop and produce reports. This position will also identify best practices within Montana and in other states regarding how best to use the data and will take the lead in sharing this information with the LEA's and university system through the website, individual presentations and the statewide conference.

Salaries are calculated based on "market rates" for standard occupational classifications in the State of Montana's human resources system. For year 1, fringe benefits are calculated at 15.52% of salary plus \$8,796 for the employer contribution to health insurance. The salaries and benefits are inflated by 2 percent in years 2 and 3 of the grant period. The complete breakdown of salary, benefits, and health insurance are included in the budget spreadsheets as part of this grant application.

### Travel

Travel costs are estimated as follows:

- 1) Two days of mandatory training in Washington, D.C. for two senior project staff as required by the terms of the grant. Three nights of high cost lodging, per diem, airfare and ground transportation are estimated at \$1300/person. One trip is required for each year of the grant.
- 2) Two personnel exchanges in the first year of the grant at \$5,000 per exchange. Montana teams benefited greatly from visits to Kansas and Oregon under the GEMS project, so we are requesting resources for similar visits under this grant proposal.
- 3) 20 days of in-state travel for visits to LEAs in the first year of the grant. The average cost per day for mileage, per diem and lodging is \$250. In years 2 and 3, the OPI estimates a need for 50 travel days for visits to LEAs, regional trainings and technical assistance to schools.

### Equipment

Hardware costs include \$22,000 for two new blade servers for the OPI and \$19,000 for Windows Server, SQL Server, and VMware for these servers; \$17,000 for an additional 1TB for the storage area network. This proposal includes \$35,000 for seven servers for the largest school districts in the state and \$28,000 software for these servers. The OPI anticipates having to deploy servers in these districts to facilitate a SIF implementation. The total equipment budget for the grant period is \$121,000.

Supplies

Supplies include 6 laptops and docking stations for the positions funded by the grant at a cost of \$1,800 each. A new employee office package is estimated at \$1,750 for a desk, chair, and office storage. A total of \$3,500 is requested for 2 positions. Office rent and phone are estimated to be \$4,000 annually. In Year 1, the budget includes office rent and phone for two positions for six months. In Years 2 and 3, the budget includes office rent and phone for six positions for a full year.

Contractual

The contract for the statewide implementation of a national transcript service is based on a cost estimate provided to the OPI by the National Transcript Center (NTC) in November 2011. The cost estimate for implementation, services and licenses is \$1,794,950 in Year 1. This cost is associated with both the purchase of the software needed to transport the information to the OPI and a national transcript service and to vertically integrate all high school districts in Montana with the OPI. The maintenance and support costs total \$153,200 per year in subsequent years. The OPI estimates that the bulk of the implementation costs will be incurred in the second year of the grant period, following the issuance of an RFP, selection of a vendor and negotiation of a contract. Please refer to the NTC cost estimate below.

The OPI will contract with Student Information System (SIS) vendors for the OPI and on behalf of school districts to ensure interoperability and to extract and transform the data required for analysis and reporting of transcripts. Montana does not have a standard Student Information System, so the OPI will need to work with up to 10 SIS vendors to achieve this interoperability. In addition, the local education agencies do not have funds available and will need assistance from the OPI. The budget includes \$450,000 for these contracts. The OPI has received preliminary cost estimates from two of Montana's larger SIS vendors of approximately \$50,000 each.

The budget includes \$60,000 over the three-year grant period for the OPI to contract with an entity to evaluate our training, professional development and end-user products. The OPI anticipates entering into a fixed-price contract so the cost estimate does not identify the number of contract days.

Indirect Costs

The current indirect cost rate for the Montana Office of Public Instruction is 17.0%. This rate has been applied to all direct costs of this grant, with the exception of contractual services and equipment. The OPI only applies the indirect cost rate to the first \$25,000 of a contract annually. The OPI does not apply indirect costs to equipment.

Goal 1: Establish data linkages between K-12 and postsecondary partners by creating an electronic student transcript repository for K-12 education							
		Salary/ Contractor Annual Rate/ Unit Cost	FTE %	Year 1	Year 2	Year 3	3-Year Total
<b>1 Personnel</b>							
	Project Manager	67,846	0.50	0	34,601	35,293	69,895
	Database Administrator	65,953	0.80	0	53,818	54,894	108,712
	Computer Systems Analyst	56,538	0.80	0	46,135	47,058	93,193
	Business Analyst - K20 Project	56,538	0.30	8,481	17,301	17,647	43,428
	Business Analyst - Governance	56,538	0.00	0	0	0	0
	Data Research Analyst	54,750	0.10	<u>2,738</u>	<u>5,585</u>	<u>5,696</u>	<u>14,018</u>
	Total Personnel		2.50	11,218	157,439	160,588	329,245
<b>2 Fringe Benefits</b>							
	Retirement - Employer Contribution	7.17%		804	11,288	11,514	23,607
	FICA	6.20%		696	9,761	9,956	20,413
	Medicare	1.45%		163	2,283	2,329	4,774
	Worker's Comp	0.40%		45	630	642	1,317
	Unemployment Insurance	0.30%		34	472	482	988
	Health Benefits	\$ 8,796		<u>1,759</u>	<u>22,430</u>	<u>22,878</u>	<u>47,067</u>
	Total Fringe Benefits			3,500	46,864	47,802	98,166
<b>3 Travel</b>							
	IES grantees conference	1,300	2	2,600	2,600	2,600	7,800
	Out-of-state personnel exchanges	5,000	2	10,000	0	0	10,000
	In-state travel			<u>7,500</u>	<u>12,500</u>	<u>12,500</u>	<u>32,500</u>
	Total Travel			20,100	15,100	15,100	50,300
<b>4 Equipment</b>							
	2 servers and software for OPI	41,000		41,000	-	-	41,000
	Storage Area Network - 1TB	17,000		17,000	-	-	17,000
	7 Servers and software for LEAs	9,000		<u>0</u>	<u>63,000</u>	<u>-</u>	<u>63,000</u>
	Total Equipment			58,000	63,000	0	121,000

Goal 1: Establish data linkages between K-12 and postsecondary partners by creating an electronic student transcript repository for K-12 education							
		Salary/ Contractor Annual Rate/ Unit Cost	FTE %	Year 1	Year 2	Year 3	3-Year Total
<b>5 Supplies</b>							
	Laptops and docking stations for 5.0 FTE	1,800	5	3,600	5,400	-	9,000
	Office set-up (desk, chair, office storage)	1,750	2	3,500	-	-	3,500
	Office rent and phone	4,000	6	4,000	24,000	24,000	52,000
	Total Supplies			11,100	29,400	24,000	64,500
<b>6 Contractual</b>							
	Software and Services			0	323,200	33,200	356,400
	Implementation and Development			0	266,250		266,250
	Data collection and hosting			0	600,000	120,000	720,000
	Integration services			0	605,500		605,500
	Subtotal for transcript service			-	1,794,950	153,200	1,948,150
	Contract with SIS vendors for interoperability			100,000	250,000	100,000	450,000
	Total Contractual			100,000	2,044,950	253,200	2,398,150
<b>7 Construction</b>							
	Total Construction			-	-	-	-
<b>8 Other</b>							
	LEA subgrants				-		
	Total Other						
9	Total Direct Costs (lines 1-8)			203,918	2,356,754	500,690	3,061,362
10	Indirect Costs (17%)		0.17	24,806	63,547	63,323	151,676
11	Training Stipends			0	0	0	-
12	Total Costs (lines 9-11)			228,725	2,420,300	564,013	3,213,038
	NOTES						
A cost of living adjustment of 2% per year has been applied to salaries and benefits for project years 2 and 3.							
FTE percentages are for all three years unless otherwise specified. Salaries are based on 2,080 hours per year.							
The indirect cost rate (17%) is applied annually to the first \$25,000 of a contract.							

Goal 2: Create an interagency K-20 Data Governance Council							
		Salary/ Contractor Annual Rate/ Unit Cost	FTE	Year 1	Year 2	Year 3	3-Year Total
<b>1 Personnel</b>							
	Project Manager	67,846	0.20	0	13,841	14,117	27,958
	Database Administrator	65,953	0.00	0	0	0	0
	Computer Systems Analyst	56,538	0.00	0	0	0	0
	Business Analyst - K20 Project	56,538	0.35	9,894	20,184	20,588	50,666
	Business Analyst - Governance	56,538	1.00	0	57,669	58,822	116,491
	Data Research Analyst	54,750	0.30	8,213	16,754	17,089	42,055
	Total Personnel		1.85	18,107	108,447	110,616	237,169
<b>2 Fringe Benefits</b>							
	Retirement - Employer Contribution	7.17%		1,298	7,776	7,931	17,005
	FICA	6.20%		1,123	6,724	6,858	14,705
	Medicare	1.45%		263	1,572	1,604	3,439
	Worker's Comp	0.40%		72	434	442	949
	Unemployment Insurance	0.30%		54	325	332	712
	Health Benefits	\$ 8,796		2,859	16,598	16,930	36,387
	Total Fringe Benefits			5,669	33,429	34,098	73,195
<b>3 Travel</b>							
	IES Grantees conference						
	In- state travel						
	Total Travel						
<b>4 Equipment</b>							
	Total Equipment			0	0	0	0
<b>5 Supplies</b>							
	Laptop and docking stations	1,800	1		1,800	-	1,800
	Office set-up						
	Total Supplies			-	1,800	-	1,800
<b>6 Contractual</b>							
	Evaluation of grant outcomes			15,000	20,000	25,000	60,000
	Total Contractual			15,000	20,000	25,000	60,000
<b>7 Construction</b>							

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Goal 2: Create an interagency K-20 Data Governance Council							
		Salary/ Contractor Annual Rate/ Unit Cost	FTE	Year 1	Year 2	Year 3	3-Year Total
	Total Construction						
<b>8 Other</b>							
	LEA subgrants						
	Total Other						
9	Total Direct Costs (lines 1-8)			38,776	163,676	169,713	372,165
10	Indirect Costs (17%)		0.17	6,592	26,975	27,151	60,718
11	Training Stipends			0	0	0	-
12	Total Costs (lines 9-11)			45,367	190,651	196,865	432,883
	NOTES						
A cost of living adjustment of 2% per year has been applied to salaries and benefits for project years 2 and 3.							
FTE percentages are for all three years unless otherwise specified. Salaries are based on 2,080 hours per year.							
The indirect cost rate (17%) is applied annually to the first \$25,000 of a contract.							

Goal 3: Implement business intelligence and web reporting tools for users of K-20 data							
		Salary/ Contractor Annual Rate/ Unit Cost	FTE %	Year 1	Year 2	Year 3	3-Year Total
<b>1 Personnel</b>							
	Project Manager	67,846	0.30	0	20,761	21,176	41,937
	Database Administrator	65,953	0.20	0	13,454	13,724	27,178
	Computer Systems Analyst	56,538	0.20	0	11,534	11,764	23,298
	Business Analyst - K20 Project	56,538	0.35	9,894	20,184	20,588	50,666
	Business Analyst - Governance	56,538	0.00	0	0	0	0
	Data Research Analyst	54,750	0.60	16,425	33,507	34,177	84,109
	Total Personnel		1.65	26,319	99,440	101,429	227,188
<b>2 Fringe Benefits</b>							
	Retirement - Employer Contribution	7.17%		1,887	7,130	7,272	16,289
	FICA	6.20%		1,632	6,165	6,289	14,086
	Medicare	1.45%		382	1,442	1,471	3,294
	Worker's Comp	0.40%		105	398	406	909
	Unemployment Insurance	0.30%		79	298	304	682
	Health Benefits	\$ 8,796		4,178	14,804	15,100	34,082
	Total Fringe Benefits			8,263	30,237	30,842	69,341
<b>3 Travel</b>							
	Total Travel						0
<b>4 Equipment</b>							
	Total Equipment			0	0	0	0
<b>5 Supplies</b>							
	Total Supplies			0	0	0	0
<b>6 Contractual</b>							
	Total Contractual			0	0	0	0
<b>7 Construction</b>							
	Total Construction			0	0	0	0
<b>8 Other</b>							
	LEA subgrants						0
	Total Other						

Goal 3: Implement business intelligence and web reporting tools for users of K-20 data							
		Salary/ Contractor Annual Rate/ Unit Cost	FTE %	Year 1	Year 2	Year 3	3-Year Total
9	Total Direct Costs (lines 1-8)			34,582	129,677	132,270	296,529
10	Indirect Costs (17%)		0.17	5,879	22,045	22,486	50,410
11	Training Stipends			0	0	0	-
12	Total Costs (lines 9-11)			40,461	151,722	154,756	346,939
	NOTES						
A cost of living adjustment of 2% per year has been applied to salaries and benefits for project years 2 and 3.							
FTE percentages are for all three years unless otherwise specified. Salaries are based on 2,080 hours per year.							
The indirect cost rate (17%) is applied annually to the first \$25,000 of a contract.							

Grant Totals							
		Salary/ Contractor Annual Rate/ Unit Cost	FTE %	Year 1	Year 2	Year 3	3-Year Total
<b>1 Personnel</b>							
	Total Personnel			55,644	365,326	372,633	793,603
<b>2 Fringe Benefits</b>							
	Total Fringe Benefits			17,432	110,530	112,741	240,703
<b>3 Travel</b>							
	Total Travel			20,100	15,100	15,100	50,300
<b>4 Equipment</b>							
	Total Equipment			58,000	63,000	0	121,000
<b>5 Supplies</b>							
	Total Supplies			11,100	31,200	24,000	66,300
<b>6 Contractual</b>							
	Total Contractual			115,000	2,059,950	268,200	2,443,150
<b>7 Construction</b>							
	Total Construction			0	0	0	0
<b>8 Other</b>							
	LEA subgrants			0	0	0	0
	Total Other						
9	Total Direct Costs (lines 1-8)			277,276	2,645,106	792,674	3,715,056
10	Indirect Costs (17%)			37,277	112,567	112,961	262,804
11	Training Stipends			0	0	0	0
12	Total Costs (lines 9-11)			314,553	2,757,673	905,634	3,977,860
	NOTES						
A cost of living adjustment of 2% per year has been applied to salaries and benefits for project years 2 and 3.							
FTE percentages are for all three years unless otherwise specified. Salaries are based on 2,080 hours per year.							
The indirect cost rate (17%) is applied annually to the first \$25,000 of a contract.							

## **MT OPI National Transcript Center (NTC) Cost Estimate**

Pearson's experience implementing the National Transcript Center (NTC) as the statewide electronic student record and transcript exchange services in eight other states (e.g. CA, CO, IA, TX, UT, VA, WV, and WY) has demonstrated that success is attainable only through collaboration, between states and their K-12 institutions, to establish a centralized infrastructure first and then drive adoption and utilization at the institution level.

Pearson will propose a pricing structure to integrate the NTC solution with OPI and recommended Marketing and Outreach and Training plans to help drive district/LEA adoption and on-going utilization of the solution. This two-tiered approach is the most effective and sustainable solution for OPI and its 9-12 institutions based on the technical requirements and desired outcomes of linking 9-12 student data to Higher Education. A comprehensive narrative and cost structure is given below. Please note that this represents an estimate for the NTC solution and not a proposal. Firm pricing will depend on final terms and requirements.

### **Statewide Implementation of the Montana Transcript Center**

Establish a state level implementation of the NTC which is actually a Pearson hosted and managed solution sponsored by the State, that would supply all Montana 9-12 institutions with a central data broker in the cloud. We suggest the name Montana Transcript Center (MTC) for the project. This data broker would allow institutions to connect and share student record and transcript data with all other K-12 and postsecondary institutions within the state of Montana. Additionally, this solution may allow any Montana K-12 institution to exchange student record and transcript data with any of the 151,000 plus accredited institutions in the country, subject to final terms of the billing scope.

## Estimate for Statewide Edition of MTC

### Year 1 – Implementation, Services and License Cost:

Statewide Implementation Component	Scope of Product or Service	OPI Price
National Transcript Center (NTC) Software and Services	License fee for statewide electronic student record and transcript exchange for all In-State Public 9-12 Institutions – Ability to send unlimited records and transcripts to all In-State Public 9-20 Institutions (in-state K-8 and out of state and private P-20 record and transcript transactions may require a fee). Includes Marketing and Outreach, Project Management, and Training	\$323,200
National Transcript Center (NTC) Implementation and Development	Initial setup of the NTC solution, NTC interface configuration, creation of state specific data format, creation of state data translations, PDF rendering of MT K-12 student record, and PDF rendering of MT K-12 student transcript	\$266,250
Automated Data Collection Software and Hosting	Pearson Cloud Integration Services software (built on Pearson's VRF technology) provides "first-mile" automated data collection and transport. First-mile refers to the linkage between the district/LEA SIS and the transcript broker. Solution hosted by MT OPI.	\$600,000
Automated Data Collection and Integration Services	Pearson Cloud Integration Services layer includes creation of data file layouts, NTC interface configuration, NTC state SIF profile, Pearson Cloud Integration Services customization, NTC XML data extract, mapping of MT standardized datasets, and integration with the 175 districts/LEAs grades 9-12	\$605,500
Hardware	Provided by MT OPI.	n/a
Maintenance and Support	Begins year two	n/a
<b>Total</b>		<b>\$1,794,950</b>

This table represents the year one license, services and implementation fees for integrating NTC as the statewide centralized data broker

**Year 2+ – Maintenance and Support:**

<b>Maintenance and Support</b>	<b>Scope of Product or Service</b>	<b>OPI Price</b>
National Transcript Center (NTC) Software and Services	On-going license fee for statewide electronic student record and transcript exchange for all In-State Public 9-12 Institutions – Ability to send unlimited records and transcripts to all In-State Public 9-20 Institutions (in-state K-8 and out of state and private P-20 record and transcript transactions may require a fee). Includes continued Marketing and Outreach. Based on student population.	\$33,200 year 2+
Automated Data Collection Software and Services	Pearson Cloud Integration Services software (based on VRF) and hosting services. Provides “first-mile” automated data collection and transport. First-mile refers to the linkage between the school/LEA SIS and the transcripts broker. Solution hosted by MT OPI.	\$120,000 year 2+
Hardware	Provided by MT OPI.	n/a
<b>Total</b>		<b>\$153,200</b>

This table represents the annual maintenance and support and subscription license fees for year 2 and every year thereafter

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

OMB Number: 1894-0008  
Expiration Date: 02/28/2011

Name of Institution/Organization

Montana Office of Public Instruction

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	55,644.00	365,326.00	372,633.00	0.00	0.00	793,603.00
2. Fringe Benefits	17,432.00	110,530.00	112,741.00	0.00	0.00	240,703.00
3. Travel	20,100.00	15,100.00	15,100.00	0.00	0.00	50,300.00
4. Equipment	58,000.00	63,000.00	0.00	0.00	0.00	121,000.00
5. Supplies	11,100.00	31,200.00	24,000.00	0.00	0.00	66,300.00
6. Contractual	115,000.00	2,059,950.00	268,200.00	0.00	0.00	2,443,150.00
7. Construction	0.00	0.00	0.00	0.00	0.00	0.00
8. Other	0.00	0.00	0.00	0.00	0.00	0.00
9. Total Direct Costs (lines 1-8)	277,276.00	2,645,106.00	792,674.00	0.00	0.00	3,715,056.00
10. Indirect Costs*	37,277.00	112,567.00	112,961.00	0.00	0.00	262,805.00
11. Training Stipends	0.00	0.00	0.00	0.00	0.00	0.00
12. Total Costs (lines 9-11)	314,553.00	2,757,673.00	905,635.00	0.00	0.00	3,977,861.00

**\*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: 07/01/2010 To: 06/30/2013 (mm/dd/yyyy)

Approving Federal agency: ☒ ED ☐ Other (please specify):

The Indirect Cost Rate is 17.00 %.

(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 17.00 %.

<p>Name of Institution/Organization</p> <p>Montana Office of Public Instruction</p>	<p>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.</p>	
<p align="center"><b>SECTION B - BUDGET SUMMARY</b> <b>NON-FEDERAL FUNDS</b></p>		
<p>(b)(4)</p>		
<p align="center"><b>SECTION C - BUDGET NARRATIVE (see instructions)</b></p>		

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