Application for Federal Assistance SF-424 — Version 02

* 1. Type of Submission:	* 2. Type of Application:	* If Revision, select appropriate letter(s):
○ Preapplication	● New	
● Application	○ Continuation	* Other (Specify)
○ Changed/Corrected Application	○ Revision	

* 3. Date Received:	4. Applicant Identifier:
03/14/2007	

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: Nebraska Department of Eduation

* b. Employer/Taxpayer Identification Number (EIN/TIN):	* c. Organizational DUNS:
470491233	808819882

d. Address:

* Street1: 301 Centennial Mall South
  Street2: Sixth Floor
* City: Lincoln
  County:
* State: NE: Nebraska
  Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 68509-4987

e. Organizational Unit:

Department Name:	Division Name:
Nebraska Dept of Education	Ed Support Services

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

Prefix: * First Name: Robert
Middle Name: M
* Last Name: Beecham
Suffix:

Title: Senior Administrator

Organizational Affiliation:

* Telephone Number: 402.471.4740   Fax Number: 402.471.0774

* Email: bob.beecham@nde.ne.gov

Application for Federal Assistance SF-424	Version 02

9. Type of Applicant 1: Select Applicant Type:

X: Other (specify)

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

State Education Agency

* 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-121806-001

* Title:

Statewide Longitudinal Data Systems CFDA 84.372A

13. Competition Identification Number:

84-372A2007-1

Title:

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

* 15. Descriptive Title of Applicant's Project:

Nebraska Statewide Longitudinal Data System

Attach supporting documents as specified in agency instructions.

Application: R372A070002

Application for Federal Assistance SF-424   Version 02

16. Congressional Districts Of:

* a. Applicant: NE-ALL   * b. Program/Project: 84.372

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

17. Proposed Project:

* a. Start Date: 08/01/2007   * b. End Date: 07/31/2010

18. Estimated Funding ($):

* a. Federal	3,468,335.00
* b. Applicant	(b)(4)
* 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.)

○ Yes   ● No

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

☑ ** I AGREE

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

Authorized Representative:

Prefix: Mr.   * First Name: Robert

Middle Name: M

* Last Name: Beecham

Suffix:

* Title: Senior Administrator

* Telephone Number: 402.471.4740   Fax Number: 402.471.0774

* Email: bob.beecham@nde.ne.gov

* Signature of Authorized Representative: Bob Beecham   * Date Signed: 03/14/2007

Application: R372A070002

Application for Federal Assistance SF-424	Version 02

* Applicant Federal Debt Delinquency Explanation

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

Application: R372A070002

Attachments

AdditionalCongressionalDistricts

File Name   Mime Type

AdditionalProjectTitle

File Name   Mime Type

Application: R372A070002

SUPPLEMENTAL INFORMATION REQUIRED FOR DEPARTMENT OF EDUCATION GRANTS

1. Project Director

* Name:
Robert

M

Beecham

* Address:
301 Centennial Mall South

Sixth Floor

Lincoln

NE: Nebraska

68509-4987

USA: UNITED STATES

* Phone Number:
402.471.4740

Fax Number:
402.471.0774

Email:
bob.beecham@nde.ne.gov

2. Applicant Experience:

● 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:

FileName   MimeType

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

* Name of Institution/Organization
Nebraska Department of Eduation

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 add 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	$261,420.00	$266,650.00	$271,981.00			$800,051.00
2. Fringe Benefits	$101,014.00	$101,476.00	$101,935.00			$304,425.00
3. Travel	$36,970.00	$39,439.00	$39,439.00			$115,848.00
4. Equipment	$29,070.00					$29,070.00
5. Supplies	$5,688.00	$4,176.00	$4,176.00			$14,040.00
6. Contractual	$486,000.00	$761,000.00	$761,000.00			$2,008,000.00
7. Construction						$0.00
8. Other	$23,463.00	$24,481.00	$24,481.00			$72,425.00
9. Total Direct Costs (lines 1-8)	$943,625.00	$1,197,222.00	$1,203,012.00	$0.00	$0.00	$3,343,859.00
10. Indirect Costs*	$48,366.00	$37,803.00	$38,307.00			$124,476.00
11. Training Stipends						$0.00
12. Total Costs (lines 9-11)	$991,991.00	$1,235,025.00	$1,241,319.00	$0.00	$0.00	$3,468,335.00

**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: 07/01/2005 To: 06/30/2008 (mm/dd/yyyy)

   * Approving Federal agency: ● ED ○ Other (please specify):

(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)?

Application: R372A070002

ED Form No. 524

Tracking Number: GRANT00232435

| | * Name of Institution/Organization Nebraska Department of Eduation | 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 add all instructions before completing form. |

SECTION B - BUDGET SUMMARY
NON-FEDERAL FUNDS

Budget Categories	Project Year 1 (a)	Project Year 2 (b)	Project Year 3 (c)	Project Year 4 (d)	Project Year 5 (e)	Total (f)
1. Personnel	(b)(4)					
2. Fringe Benefits						
3. Travel						
4. Equipment						
5. Supplies						
6. Contractual						
7. Construction						
8. Other						
9. Total Direct Costs (lines 1-8)						
10. Indirect Costs						
11. Training Stipends						
12. Total Costs (lines 9-11)						

SECTION C - BUDGET NARRATIVE (see instructions)

Application: R372A070002

ED Form No. 524

ABSTRACT

Data are one of an educational institution's most valuable, but underused, assets. At the Nebraska Department of Education and in our schools and districts across the state, we have collected and managed data about students, staff, courses, programs, and schools in order to report on the status and progress of our educational system to the people of Nebraska, its lawmakers, and the federal government. We also use the data to inform a host of planning and operational decisions, both administrative and instructional in nature. These decisions range from day-to-day management concerns, to student-focused instructional strategies, and far-reaching policy making.

Unfortunately, the modular nature of the evolution of education data systems throughout the nation, including Nebraska, has led to many systems that fall short of contemporary best practices for data management and use (e.g., Thorn, 2001; Heritage & Yeagley, 2005; and Tacheny & Plattner, 2005). Put simply, despite the vast amounts of time, money, energy, and expertise invested in the collection of education data, our stakeholders do not yet have access to enough timely, high quality data to adequately inform their decision making.

Having acknowledged this, we believe that the implementation of a statewide longitudinal data system will enable us to remedy common organizational barriers to data quality and align the past and current education data we possess with our future collection efforts. To this end, education data in Nebraska are in the process of being transformed into information that is useful, accurate, reliable, timely, and cost-effective.

Toward that end, Nebraska has already invested considerable time and money in the design and development of a statewide longitudinal data system. In 2004 Nebraska began the development of a new student and staff record system. Already implemented is the student and staff unique ID, and automated data collection system that gathers student, staff and assessment data, and a data warehouse. The system was piloted in SY 2005-06 and is running in parallel with older systems in SY 2006-2007. Full implementation to the public school portion of the system will be in the 2007-2008 school year. While many of the essential components of a statewide longitudinal data system are already in place, there are several other components that are lacking or limited thus not allowing Nebraska to have a comprehensive system.

In order to make it comprehensive we are asking for support from this grant program to complete our data architecture by adding special education and curriculum data to the system. To improve our capability to exchange student data within FERPA guidelines we are proposing the creation of an electronic transcript facility. To improve the sharing of data with our key stakeholders we need to create a truly comprehensive decision support system. Finally, we are asking this grant program to supplement our existing training program by adding resources to assist our regional training partners.

Although Nebraska has already targeted resources for, and initiated the planning and development of, our statewide longitudinal data system, the system as envisioned in this application does not yet exist. We are committed to accomplishing the task, but acknowledge that limitations in state funding will not permit full-scale implementation in the foreseeable future without the support requested in this application. If support is awarded, we are confident that the our statewide longitudinal data system will be fully implemented by the end of 2010.

STATE WIDE LONGITUDINAL DATA SYSTEM GRANTS
RFA NUMBER: NCES-07-02 / CFDA NUMBER: 84.372

Nebraska Department of Education
301 Centennial Mall South
P.O. Box 94987
Lincoln, Nebraska 68509
Robert Beecham, Senior Administrator, Education Support Services
bob.beecham@nde.ne.gov - (402) 471-4740

Today's educators are data rich but information poor—Don Hall (2004)

I Introduction

Data are one of an educational institution's most valuable, but underused, assets. At the Nebraska Department of Education, in our schools and districts across the state, we have collected and managed data about students, staff, courses, programs, and schools in order to report on the status and progress of our educational system to the people of Nebraska, its lawmakers, and the federal government. We also use the data to inform a host of planning and operational decisions, both administrative and instructional in nature. These decisions range from day-to-day management concerns, to student-focused instructional strategies, and far-reaching policy making.

Unfortunately, the modular nature of the evolution of education data systems throughout the nation, including Nebraska, has led to many systems that fall short of contemporary best practices for data management and use (e.g., Thorn, 2001; Heritage & Yeagley, 2005; and Tacheny & Plattner, 2005). Put simply, despite the vast amounts of time, money, energy, and expertise invested in the collection of education data, our stakeholders do not yet have access to enough timely, high quality data to adequately inform their decision making.

Having acknowledged this, we believe that the implementation of a statewide longitudinal data system will enable us to remedy common organizational barriers to data quality and align the past and current education data we possess with our future collection efforts. To this end, education data in Nebraska are in the process of being transformed into information that is useful, accurate, reliable, timely, and cost-effective. This transformation is a function of a convergence of factors that have presented themselves in the past several years, including:
- ✓ landmark national and state legislation that requires timely, high quality education data be available to inform educational decision making
- ✓ unprecedented organizational receptiveness to change at the state and local education agency levels, as well as in their governing bodies (e.g., school boards and legislatures)
- ✓ ground-breaking technological advances that improve data collection and management techniques, and afford improved accessibility for a wide range of stakeholder uses
- ✓ consolidated federal reporting in the form of the Education Data Exchange Network (EDEN) that encourages integrated and efficient state data submissions
- ✓ refined methods for securing education data and protecting individual privacy
- ✓ transformed stakeholder expectations that useful, accurate, reliable, cost-effective, and
- ✓ timely education data will be accessible to them for informing decision making

Statement of Purpose. With the help of a three-year IES award, we will leverage existing state and local commitment to improving education data quality and use in Nebraska by developing, implementing, and sustaining a statewide longitudinal data system that utilizes individual student information. This system will improve the utility, accuracy, reliability, and timeliness of our data; reduce redundancy within our collections; decrease reporting burden on our schools and districts; streamline federal reporting; improve stakeholder access to longitudinal data; guide data-driven decision making at all levels of education; enable data exchange across institutions within the state and with other states; protect privacy and confidentiality; and support research to improve our understanding of effective management and instructional policies. The foundation of our system is based on the findings of a thorough business needs analysis designed to identify stakeholder data use and information needs. The enterprise-wide data architecture will reflect a complete revision and upgrade to our data model, data dictionary, business rules, metadata standards, and quality assurance procedures, and incorporate proven technologies, national data and technical standards, unique student identifiers, and user-friendly interfaces.

This application for support represents our detailed plan for collaborating with partners in our state and with partners in other states to:

- ✓ identify and document stakeholder information needs
- ✓ build on our existing efforts to build a statewide longitudinal data system
- ✓ transform our business practices to support such a system
- ✓ train our stakeholders to use such a system to improve education decision making
- ✓ institutionalize the system within the core planning and operations of the NDE
- ✓ communicate the products and processes undertaken throughout this endeavor with other interested parties (e.g., other SEAs, post-secondary institutions, and IES)

Although Nebraska has already targeted resources for, and initiated the planning and development of, our statewide longitudinal data system, the system as envisioned in this application does not yet exist. We are committed to accomplishing the task, but acknowledge that limitations in state funding will not permit full-scale implementation in the foreseeable future without the support requested in this application. If support is awarded, we are confident that our statewide longitudinal data system will be implemented by the end of 2010.

II Need for the Project

Background. Nebraska has undergone a tremendous change in its education structure in the past year. In June of 2006 over 200 small elementary only school districts were dissolved and merged into PK-12 school districts. This dramatic change in our education structure has resulted in the following picture:

- 254 public school districts in SY 2006-07
- Public school enrollment of 280,000 in SY 2006-07
- 17 Education Service Units, regional units which will provide staff training and technical assistance
- The nations only state assessment system approved by the USED, that is classroom based. School districts report performance of their students on state standards rather than on a single state test. In SY 2005-06 this included:

- Reading Performance

  72 percent of 4th graders, 71 percent of 8th graders and 75 percent of 11th graders scoring proficient on state standards.

- Reading Participation

  At least 95 percent of the students must have been assessed in reading.

- Mathematics Performance

  74 percent of 4th graders, 69 percent of 8th graders and 72 percent of 11th graders scoring proficient on state standards.

- Mathematics Participation

  At least 95 percent of the students must have been assessed in mathematics.

- Other Academic Indicator *Writing*

  The other academic indicator for elementary and middle school: 62 percent of 4th graders and 61 percent of 8th graders scoring proficient on statewide writing assessments.

- Other Academic Indicator *Graduation Rate*

  The other academic indicator for high school: high school graduation rate of 83.97 percent.

- Assessment Quality

  Quality of assessments must be rated Good, Very Good or Exemplary

Although student achievement in Nebraska is promising, like other states, we are concerned about achievement gaps that occur within some student subgroups (e.g., although 86 percent of all students recently met the Adequate Yearly Progress standards, only 69 percent of Hispanics, 63 percent of special education students, and 56 percent of Limited English Proficient students met the standards; similarly, 87 percent of White 4th graders scored at or above basic on NAEP reading, but only 44 and 51 percent of Blacks and Hispanic students scored at or above basic).

Federal Reporting. Currently, education data in Nebraska are maintained in separate "stovepipes" using different file standards. These separate data repositories increase burden, redundancy, and expense, and decrease productivity, comparability, and the timeliness of our reporting. A considerable amount of staff time is spent running tables and accessing files in response to requests from our data users. Although there is some collaboration across offices with respect to data collections, too many decisions about survey development and data standards are still being made independently by different agency offices. Thus, we are not positioned to respond efficiently to changes in reporting requirements because districts must be resurveyed to obtain data in a different format, which adds burden across the state.

More specifically, our current system is not able to efficiently meet the following basic information retrieval and federal reporting demands:
- ✓ course information needed to determine Highly Qualified Teacher Status
- ✓ kindergarten teacher counts for Common Core of Data reporting
- ✓ student eligibility for program participation
- ✓ participation of a single student in multiple programs
- ✓ "agency" and "school" data consistency across program areas
- ✓ OCR reporting (the data are not available at the state level)
- ✓ student mobility (with implications on generating accurate graduation rates)
- ✓ data verification—e.g., we do not currently have the data needed to explain how the number of students assessed for special education may be higher than the number of

students in special education by grade/subject.
- ✓ student double counting prevention

The advent and arrival of the U.S. Department of Education's Education Data Exchange Network (EDEN) System has challenged the way state education agencies conduct business. Despite our voluntary participation as a proof of concept site for EDEN precursors (e.g., the Integrated Performance Benchmarking System), many SEAs, including ours, are finding that this consolidated reporting requires that data be integrated from our many different stand-alone collection repositories. We need to integrate these data by means of a single data warehouse so that the Nebraska longitudinal data system will meet all submission expectations and requirements detailed in the Education Data Exchange Network (EDEN) Workbook.

Although Nebraska submitted all Priority 1 & 2 and some Priority 3 EDEN files in the latest collection, data silos limited our ability to link collections from schools and districts across systems, meaning that we invested a considerable amount of time merging databases to generate required data for EDEN. Replacing our inefficient disparate data systems will enable us to generate federal reports out of one data warehouse rather than a dozen stovepipe systems—and it will permit staff to spend less time on data preparation and more time on data quality. This capability applies to EDEN reporting as well as No Child Left Behind Act of 2001 (NCLB), other federal reporting, and even many of our annual statewide reports. Our proposed system will enable the NDE to access individual student information and thereby reduce collection/reporting cycle times for the purpose of:

(1) reducing local education agency reporting burden
(2) enabling the NDE to generate accountability reports in a more timely manner
(3) providing accurate data to schools so that they can improve instructional decision making
(4) providing data to districts so that they can improve administrative decision making
(5) providing accurate data to parents/community members so that they can better understand the state of their schools and make better informed decisions about school improvement

Existing Commitments for Accomplishing these Goals. Nebraska has committed itself to the development of the Nebraska Student and Staff Records System (NSSRS). In 2005 Nebraska began to assign a unique student identifier to all public and not pubic PK-12 students. During the 2006-07 school year, Nebraska conducted a parallel implementation that required public school districts to submit student and staff data both the traditional way and through the new NSSRS. Public districts will submit data only through the NSSRS beginning in the fall of 2007. Non public schools are still in the process of assigning their unique ID and will have the opportunity to operate parallel this fall. Throughout the development of the NSSRS System to date, the NDE has worked to build consensus about data element definitions, code sets, and business rules, including how data are collected and used, and how they to be organized in and retrieved from a database.

Statement of Need: The following section addresses the technical and governance requirements listed in section 4 of the request for application.

I. A unique, permanent student identifier assigned by the State or through a process coordinated by the State --

In 2005, as part of the Nebraska Student and Staff Record System, the Nebraska Department of Education established the NDE Student Identifier. Using the eScholar UniqID product, Nebraska assigned the unique, permanent NDE Student ID to all public school students that are

being served in PK-12 programs in Nebraska's 254 public school districts. Our goal is to assign the NDE Student ID to all students served in any approved or accredited school, whether public or non public. The NDE Student ID has also been assigned to about 60% of Nebraska's non public school students. Nebraska has chosen not to assign the NDE Student ID to individuals in schools that are exempt from state regulations. While the deployment and implementation of the NDE Student ID was very successful in Nebraska's public school districts, it has not yet been fully implemented in many of our small non public schools.

A limitation of the Nebraska Student ID is the inability of many small non public schools to access the web to assign the NDE Student ID due to a lack of technical capability. This grant program will augment training programs to enable all approved and accredited schools, whether public or non public to assign a unique ID to all their students.

II. An enterprise-wide data architecture --

Nebraska is developing an enterprise-wide data architecture that addresses the requirements outlined in the requirements section of the grant; however, there are several components that are not yet included in the data architecture. The Nebraska model is based on the data collection model that is contained in the eScholar Complete Data Warehouse. The foundation of the architecture is a series of templates that allow local schools to transfer data from their local student information systems directly into the Nebraska data warehouse. At present, this scheme does not include special education or curriculum data. Special education data is contained in the stand-alone Special Education Student Information System (SESIS) and curriculum data is contained in a very old paper-based system. The following is a point by point analysis of the current status, weaknesses and needs of Nebraska's data architecture:

- Nebraska's architecture is based upon analysis of information needs at school, district, State, and Federal levels. In preparation for developing our new student record system we made the assumption that data would need to be available at the school level and above but not by individual classrooms. This is a weakness in our design and can be corrected with support from the grant to incorporate the major systems that were left out of the original design, especially special education and curriculum.
- Nebraska is committed to providing all data elements required for the ED*Facts* reporting system. Nebraska has already been approved an "EDEN only state" for the Consolidated State Performance Report and for several special education reports. Working with our partner, eScholar, our goal is to build an automated function to produce the EDEN reports directly from our warehouse with a minimum of human intervention. A weakness of our current system is that we still do not have all of the EDEN data elements in our system. The grant will help us to create a truly comprehensive system by adding special education and curriculum data elements.
- The Nebraska architecture does allow for longitudinal analysis of student achievement growth and program evaluations. The longitudinal data that will be available will be an indispensable resource for analysis of performance and evaluation data; however, the analysis will be much different than in most other states. Nebraska's STARS (**S**chool-based, **T**eacher-led, **A**ssessment and **R**eporting **S**ystem) is a classroom based assessment system that features the reporting of individual student performance on state or local standards rather than on a statewide assessment. Individual student achievement growth will be based on a student's proficiency on the state standards.

- The Nebraska system is limited in its relational nature and in its ability to link records across information systems. Nebraska has adopted a data model, data dictionary and is in the process of developing business rules that guide the development of reports. The process for submitting data to the warehouse include a series of validation and verification reports that require local schools to review and verify their data before it can go into the production warehouse. While we believe the internal procedures for assuring data quality are adequate we believe that such procedures are inconsistent or completely lacking at the local level. As a result, we believe this grant program can assist Nebraska by supporting the adopting of the newly developed Data Quality Curriculum. The Data Quality Curriculum was developed by a special task force of the National Forum on Education Statistics and features specific lessons that will provide local school staff with the ability to improve the quality of data that originates at the local level but is eventually reported to the state and federal level.

III. Procedures for protecting the security, confidentiality, and integrity of data, which includes ensuring that individually identifiable information about staff and students, their history, and their families remains confidential in accordance with the Family Educational Rights and Privacy Act (FERPA) and other relevant legislation --

At the state level, we have developed a data access and management policy which outlines how data will be collected, stored and released from the state data warehouse. This document called the *Nebraska Data Access and Management Policy* can be found at: http://www.nde.state.ne.us/nssrs/

As with the need to improve data quality procedures at the local level, the implementation of procedures for protecting the security, confidentiality, and integrity of data at the local level are hit and miss. Along with the implementation of the Data Quality Curriculum mentioned earlier, we believe this grant project can improve the security of data by providing local school staff with the tools and training to improve the security of their data. Specifically, we would provide local schools with two important documents:

- *Forum Guide to Protecting the Privacy of Student Information: State and Local Education Agencies* (2004), http://nces.ed.gov/forum/pub_2004330.asp); and
- *Forum Guide to the Privacy of Student Information: A Resource for Schools (2006), http://nces.ed.gov/forum/pub_2006805.asp.*

These resources would be supplemented by training that would be provided through our regional training model provided by Nebraska's Educational Service Units.

IV. Automated reporting, with a calendar and reporting formats that ensure timely and accurate data to meet local, State, and Federal reporting requirements, including the commitment and ability to report all ED*Facts* data groups by the completion of the grant --

The full implementation of the Nebraska Student and Staff Record System will greatly improve the timely and accurate reporting of student and staff data. One advantage of the new system will be the ability of local schools to report when their data are available. For example, if a school has assessment data available it can be reported and validated well in advance of the final reporting date. The detailed schedule for reporting student and staff data can be found at: http://www.nde.state.ne.us/nssrs/. Formats for reporting student and staff data are contained in the eScholar Integration Templates™ These templates are meta data driven and provide a standards-based interface for loading thousands of data elements into eScholar from any

electronic source. The eScholar Integration Templates™ serve as a simple mapping mechanism that allows a district to load data from varied data sources. Within each Template, all eScholar data elements that exist in the National Center for Education Statistics (NCES) Data Handbooks are coded and referenced to ensure proper compliance with No Child Left Behind and EDEN data requirements. They have served as a source for the EDEN data requirements, a basis for defining additional elements in the NCES Data Handbooks, and a reference for the submission of new object definitions to the Schools Interoperability Framework (SIF) as well as the basis for the NCES Data Model effort that is now underway. A link to the Nebraska templates can be found behind the same link as the reporting schedule. Nebraska is committed to reporting all ED*Facts* data groups by the completion of the grant.

While the reporting calendars and formats are clear and understandable, once again a weakness of our architecture is the great variance in the ability of local school systems to efficiently report student and staff data in the new system. Most public schools have a local student information system but many; especially small, non-public schools do not. Nebraska has provided a tool, written in Microsoft Access that will produce the reporting templates; however the ability of some small school staff to use this tool may be lacking. In addition, even schools with a local SIS regularly experience turnover and will need to have new staff trained and retrained. We hope that this grant can provide support for the training of local school personnel in the automated reporting of student and staff data.

V. A data warehouse or comparable means for managing and storing longitudinally linked data and making them accessible to teachers, schools, districts, and researchers.

Nebraska has purchased the license and support for the eScholar Complete Data Warehouse^{TM}. The Warehouse is a sophisticated tool for managing and storing data, but other tools are required to make data available to teachers, schools, districts and researchers. The eScholar Complete Data Warehouse™ gathers, cleanses and integrates data from the wide variety of operational systems and data sources. Once loaded into the Complete Data Warehouse^{TM}, these data form a longitudinal history that can provide valuable insights into student achievement and educational effectiveness while maintaining SIF and NCES standards and meeting NCLB requirements. The Complete Data Warehouse^{TM} provides a range of 36 domains, or categories, comprised of more than 2,500 detail level data elements and —more than 1,000 additional data elements and supporting 175 different assessments.

VI. Capacity to exchange student data across institutions within the State and with institutions in other States, in conformance with FERPA.

Nebraska has incorporated the NDE Student ID into our Special Education Student Information System (SESIS) which allows some linking between information systems, however because of some FERPA limitations, we believe it is still problematic to link or share our state data with local information systems. The grant project can help by supporting the development of an electronic transcript project that can facilitate the transfer of student records from one local school district/system to another, from local schools to postsecondary institution(s), from postsecondary to postsecondary institutions and from postsecondary institutions to the state education agency. As part of this project, Nebraska will adopt a common format for the electronic transcript developed by the School Interoperability Framework Association (SIFA).

The most significant impact a state education agency and the United States Department of Education can have on the quality of the nation's longitudinal education records is to ensure that schools have the capacity to create and exchange correct, certified, and timely student records. (Within this context, "transcript" is used to represent the portion of a student's record that is exchanged between education institutions. The extent of the content of a transcript ranges dramatically across institutions and states.)

The (SEA) must address several significant needs impacting the quality and usefulness of our education data. Despite our recent accomplishments with building infrastructure for our student records, we have crucial needs associated with implementation from the school to the district to the state level.

1. Linking Individual Student Records Across Years: SEA (has/does not have) a statewide student identifier and (is/is not yet) collecting individual student records. We need to create the capacity to link those records across years and with annual assessment scores to facilitate meaningful longitudinal analysis and reporting.

2. Data Quality: Districts and (SEA) have cited issues related to the quality of the data reported by (SEA) about the schools. We need to tighten up the standards for our data, train districts in those standards, and improve the use of business rules to ensure the integrity of the data collected and reported.

3. Mobile Students: (State) receives many students from other states annually in addition to those who are mobile within the state and within districts. Documenting transfers who are not dropouts, ensuring that appropriate instructional and support services begin immediately upon enrollment, certifying the accuracy of education records sent from school to school, and maintaining the confidentiality of the contents of the student records are all crucial needs related to these students and their records.

4. Cycle Time: The cycle times to collect, analyze, and report the data is too long. We need more automation at the school and district levels to shorten this cycle time.

5. Elementary and Middle School Longitudinal Records: High schools understand the requirements for official transcripts, but elementary and middle schools operate more on an annual basis. The sending of complete educational records from elementary school to elementary school is inconsistent and impacts the timely delivery of services to new students. This effort to build and exchange electronic records will include the elementary and middle schools as well.

An effective strategy for addressing these issues is to work within the context of an activity that is essential to schools and districts. Local educators and information professionals need to see a clear link between our state efforts and their daily responsibilities. Student transcripts fit that criterion. In order to create and exchange student transcripts electronically, schools and districts must implement all of the standards, infrastructure, systems, and processes described or implied in the "Map of Core Elements for Establishing a Statewide Longitudinal Data System." This means simply that the creation and support of electronic transcript exchange systems by state education agencies will encourage and enable schools and districts to meet the goals targeted by the Statewide Longitudinal Data Systems Grants.

VII. Secure-access data marts, or comparable means for providing data, reports, and *ad hoc* analyses to inform decision-making of key stakeholders, including teachers, administrators, State and local officials, and possibly students and parents;

The Nebraska architecture has focused on defining, staging, collection and storing education data. While we believe this requirement to be very important, we have not been able to focus on developing data mart or comparable means for providing data, reports and *ad hoc* analysis to inform the decisions of key stakeholders. A critical need for Nebraska to truly develop a comprehensive longitudinal system is by acquiring or developing a functional decision support system. The National Forum on Education Statistics publication, *Forum Guide to Decision Support Systems: A Resource for Educators (2006)* describes decision support systems as follows:

> A decision support system is clearly not an application that simply manipulates data or supports decision-making. For example, an enhanced user interface that permits querying and analysis of a single database is not a decision support system; nor is a spreadsheet application with basic analysis and advanced "if/then" planning features. Even a database management system (DBMS) that permits a user to select and analyze data within a single database for reporting and analysis would not qualify, because it does not integrate multiple databases. Rather, a decision support system is intentionally and explicitly more comprehensive, and is designed specifically to enable users to support problem solving and decision making by compiling information from disparate sources of raw data robust definition of a decision support system should encompass: (1) users who understand what the data mean and how they can be accessed with a (2) technology system (hardware, software, and user interfaces) that manipulates (3) a data system (integrating data from multiple sources) explicitly for the purposes of (4) a decision making system (user-driven within an organization). While not a formal definition, this description was developed for this publication to stress multiple emphases on user skills, technology tools, data quality, information use, and organizational management encompassed by true decision support systems. Such a description incorporates technology tools for managing, analyzing, communicating, and using data; an understanding of data within the system and the implications of the use of those data; and an intention by decision makers to employ information for the purpose of planning and action within an organization.

This grant program can greatly assist Nebraska by supporting the acquisition of a decision support system to complement the other components of our longitudinal data system that have already been developed. The detailed plan for implementation of the decision support system is presented in the Budget Narrative portion of this application. Nebraska will also use the Forum's guide cited above to develop a plan for buying and implementing a decision support system.

VIII. Ability to support analyses and research to evaluate the effectiveness of education related programs and thereby to improve student learning and close achievement gaps;

We believe that the Nebraska Student and Staff Record System will greatly enhance our ability to support the analysis and research to evaluate the effectiveness of education-related programs. This ability will grow and mature as more longitudinal data becomes available.

Governance and Policy.

The elected State Board of Education, the Commissioner and staff comprise the Nebraska Department of Education (NDE). The Board approved the feasibility study and later the contract

for developing the Nebraska Student and Staff Record System. The NDE has established a widely representative steering committee for the Nebraska Student and Staff Record System. This committee has met frequently during the development of the system. Internally, the Commissioner and Deputy Commissioner have established an executive committee which oversees the day-to-day operations of the system. These groups will provide direction and oversight for the grant project.

The NDE has established a project website to inform stakeholders of the projects goals and activities at http://www.nde.state.ne.us/NSSRS/ The NDE uses statewide mailing lists to keep regional and local participants and stakeholders appraised of current requirements and topics. To date the information shared on the website and via emails have dealt primarily with the technical aspects of the project. As the project matures, we will share more information the project's impact on education management and student learning.

The NDE has not fully developed procedures for facilitating rigorous analyses and providing access to data for policy oriented research. Nebraska's *Data Access and Management Plan* cited earlier has procedures for releasing data to researchers; however procedures still need to be developed to provide better access for parties that want to pursue policy oriented research topics. We anticipate that other states that have already received NCES longitudinal grants can assist us in this effort.

A key part of Nebraska's implementation strategy is the partnership between the Nebraska Department of Education and Nebraska's Educational Service Units. This partnership is the basis for the program for ongoing training of all key users of the data system. The ESU Technology Advisory Group (TAG) have provided training to their member schools on assigning the NDE Student ID and incorporating the ID into their local student information system. The TAG has also provided training on submission of the eScholar templates into the NDE data warehouse. While this regional training model has served Nebraska well, it cannot provide all of the training that is needed in the future. We believe that this grant project can greatly enhance the delivery of training of key stakeholders by augmenting current ESU staff with full time trainers who train local and ESY staff on new and ongoing features of the longitudinal data system and on the Data Quality Curriculum that is also requested as part of this grant proposal.

Nebraska has not yet established and ongoing, formative and summative evaluation procedures for determining whether our system meets reporting and decision-support needs. In addition we need to examine the role of the system in interventions intended to improve student learning and close achievement gaps. Nebraska is committed to these types of evaluations and expects to learn and borrow form other states that have developed such evaluation procedures.

Nebraska will develop a long-term plan for sustaining the system over time, including allocation of the necessary staff, technical, and monetary resources, and training/technical assistance to key users. Nebraska supports the investment in our unique ID system and data warehouse through maintenance and support agreements with eScholar. We have also assigned staff to the implementation team for the project. Still lacking however is the training/technical assistance that is required for the support of all stakeholders.

Summary of Needs: While we understand that priority will be given to states that have the most limited ability to collect and report individual student achievement data, Nebraska needs to expand and upgrade our system and to add decision support capabilities to our existing system. With this in mind Nebraska asks the grant program to provide support in the following key areas:

Data System Requirement:	Proposed Project for Support:
An enterprise-wide data architecture	Incorporation of Special Education and Curriculum components
Automated reporting, with a calendar and reporting formats that ensure timely and accurate data to meet local, State, and Federal reporting requirements	Implementation of the Quality Data Curriculum
Capacity to exchange student data across institutions within the State and with institutions in other States, in conformance with FERPA	Creation of an electronic transcript facility
Secure-access data marts, or comparable means for providing data, reports, and *ad hoc* analyses to inform decision-making of key stakeholders	Installation of a decision support system
A program for ongoing training of all key users of the data system	Supplementing existing training with the addition of staff at the educational service units.

III Project Design

Nebraska is well on our way to developing our way to developing and implementing the statewide longitudinal data system. Our progress in this pursuit was described in the previous section; however there are several key components that will be addressed by this grant. The previous section placed our needs in the context of the statewide longitudinal data system requirements described in section four of the grant application document. Here are the five components that are addressed through this grant proposal:

- Incorporation of Special Education and Curriculum segments to create a more comprehensive system.
- Implementation of the Data Quality Curriculum
- Creation of an electronic transcript facility.
- Installation of a decision support system
- Supplementing existing training with the addition of staff at the educational service units.

The following is a description of the products that will be developed and how the products will be integrated into our existing state longitudinal data system.

1. Incorporation of Special Education and Curriculum components: The Nebraska Special Education Student Information System (SESIS) already collects data on individual special education students. While we have incorporated the NDE Student ID into SESIS, this data is not being incorporated into our data warehouse. With the assistance of this grant program we can make our state system more comprehensive by creating a special education template, which will streamline the collection of special education data and make the data more accessible and useful by having it in the data

warehouse with the other NDE data. The incorporation of curriculum data into our statewide system will accomplish several objectives:

- Update a very old taxonomy for describing courses by replacing it with the new NCES SCEDS standards.
- Enhance our ability to provide data on NCLB highly qualified teachers by installing a more comprehensive course descriptor system
- Create the framework for linking individual teacher and student data, should that become a future requirement.
- Create the structure for collecting data on student course taking patterns should that become a state requirement
- Create a better method for describing courses that are contained on a student transcript.

2. Implementation of the Data Quality Curriculum: The DQC is in the final stages of development by a special task force of the National Forum on Education Statistics. The Data Quality Curriculum will improve the overall quality of data in our statewide system by providing training to local personnel in the creation, collection and reporting of education data. It is important to understand that "quality data" is not something that just occurs when an office clerk hits the right number on a keyboard. It is a process. We need to pay attention to the process involved because the information derived from school data is vital. The intent of data entry and collection is to produce information that reflects reality — that lets us know what is actually happening in a school. It is important for all staff members to understand the issues involved in data collection and data entry and to recognize that those issues reflect the values of the organization. Based on an analysis of these processes, we can work toward developing a "Culture of Quality Data" that will result in good information.

3. Creation of an electronic transcript facility: The Nebraska Transcript Project seeks to lay the groundwork for Nebraska students to submit their high school transcripts to postsecondary institutions electronically through a secure, web-based private provider. In doing so, we expect to create a uniform data set allowing high schools, the state, legislators, postsecondary institutions and the public to assess where Nebraska high schools apply to college, where they are admitted, and where they actually attend. The system will also simplify the transfer of academic records between high schools when students move from school to school, and will allow postsecondary institutions to quickly update academic records for newly admitted students. In order to maximize this system's potential, we must first complete two key objectives:

- create a set of common course descriptors (see above), and
- create a common electronic transcript for all Nebraska schools' voluntary adoption.

The National Center for Education Statistics has published new standards for course descriptions. These standards are intended as guidelines for highs schools to identify courses in ways that providing meaning and context to other high schools and postsecondary institutions. Essentially, they are the first step in reaching an agreement about what it means to say a student has completed Pre-Calculus, for example. Developing common course descriptors for Nebraska high schools would allow postsecondary institutions to look at that Pre-Calculus class on a transcript and have a good idea of the scope of the coursework and the rigor of the class, regardless of which

Nebraska high school the student has attended. These descriptors would also allow aggregate data assessment about specific courses statewide. The ability to compile uniform data sets creates the potential for much more targeted analyses than we can currently make.

The other necessary step is to create a common electronic transcript for, potentially, all Nebraska schools. Within the Midwestern Higher Education Compact (MHEC), a regional coalition of eleven states that works to collectively to leverage cost benefits to its member states, several states are working toward providing electronic transcript services to their state's high school students. In fact, MHEC has chosen a provider for the service through a bidding process and is negotiating a preferred rate for MHEC states. Nebraska will adopt the common student record, which has been developed by the School Interoperability Framework Association. (SIFA)

4. Installation of a decision support system: A decision support in it's simplest form need the following components: (1) users who understand what the data mean and how they can be accessed with a (2) technology system (hardware, software, and user interfaces) that manipulates (3) a data system (integrating data from multiple sources) explicitly for the purposes of (4) a decision making system (user-driven within an organization.

"Data-driven decision-making" is critical to many organizations across the nation, including schools, school districts, and state education agencies. In an education setting, it means that pedagogical and operational choices are to be informed by accurate, relevant information available in time to influence decision making. To do this, however, raw data from disparate sources must be accessed, integrated, compiled, and distilled into useful information in a timely manner. This task may best be accomplished by a specific class of computer information systems called "decision support systems (DSS)." Many education organizations trying to get the right data into the hands of the right decision makers at the right time have concluded that investing in such a system might be the best solution for their information management needs. Investing in a decision support system promises numerous benefits, which in many circumstances may outweigh the costs, but it is nonetheless a major decision. Purchasing a decision support system represents a significant financial and operational commitment. Some of the costs are related to hardware and software, but there are other expenses as well—potentially including redesigning the organization's data architecture, changing data collection procedures, and upgrading system security. Initial and ongoing stakeholder training and support may also be necessary.

5 Supplementing existing training with the addition of staff at the educational service units: Many of the other components described here rely on the train the trainer model that Nebraska has adopted. Central to that model is our 17 Educational Service Units. As our statewide system expands and becomes more comprehensive so to must the ability of our ESU trainers. The grant program will support expansion of the ESU training for:

- Assignment and maintenance of the NDE Student ID
- Submission of data electronically to the data warehouse
- Implementation of the Data Quality Curriculum
- Stakeholder training

Nebraska has completed many of the core elements for establishing a statewide longitudinal data system. The following components are not part of our plan for this grant proposal:

In 2004, Nebraska completed many of the tasks required to analyze its business needs through a contract with ESP Solutions Group. Four focus groups were convened to examine the issues of data confidentiality, unique student identifiers, data dictionary resources, and the overall management of a new student data system. This effort led to the State Board of Education approving money for the development of NSSRS.

The design of our enterprise architecture is based on this *Business Needs Analysis*, which identifies and describes in detail the range of users (i.e., stakeholders) and uses (i.e., functions) of our data. "Users" of the statewide longitudinal data system include any individual or organization that submits, reports, collects, or uses data from the system as well as all staff responsible for maintaining the system. After stakeholder needs were documented, additional demands and constraints on the proposed system were assessed, including:

(1) the Nebraska Department of Education's existing capabilities, including hardware, software, policies, procedures, staff expertise, and financial resources
(2) planned/future collections, including schedules, respondents, data elements, and formats
(3) federal, state, and local regulations governing the system, including the Family Education Rights and Privacy Act (FERPA), ethical considerations, and reporting requirements

The data design process is closely linked to system architecture design. While both phases will inform the development of each another, we have identified data design as our initial priority in order to best incorporate the needs of our stakeholders into our data model. System architecture then reflects the data model foundation and exists to best support the data model and stakeholder information needs. Our data design activities include very specific steps for developing an up-to-date and accurate *Data Model*, *Data Dictionary*, and *Metadata*. As with data and system design, these components are complementary in nature and the development of each piece will inform the development of the other pieces.

Data Model. The goal of data modeling is to clearly characterize information needs in a data system, including data elements, definitions, attributes, data flow, vertical integration, and stakeholder relationships. Data modeling involves discovering data usage patterns within the system and then graphically representing them in an Entity Relationship Diagram with descriptive information being documented as entities, attributes, and relationships. The resultant model and descriptive information should be relatively stable over time, although it should also flexible enough to accommodate changing business requirements as they arise. A data model is usage driven, meaning that the content and structure are controlled by stakeholder relationships with the system independent of technical considerations.

Nebraska has purchased (licensed) the eScholar Complete Data Warehouse product. While more comprehensive than our current needs, this product's data model is largely based on NCES and EDEN standards. We envision the development of a comprehensive system that includes all data elements required for reporting under the Elementary and Secondary Education Act (ESEA). It is clear that we will be undertaking a philosophical and practical shift from process data to outcome data (supported by context data needed to enhance interpretation). Moreover, because we will generate all EDEN and NCLB reporting from our system, we expect to incorporate all data that comprise these submissions as detailed in the *Education Data Exchange Network (EDEN)*.

Data Dictionary. Nebraska is finalizing the detailed design of our data element dictionary, which includes both required and optional elements for districts/systems, schools, students, and staff. The primary sources for our data standards are products of the National Center for Education Statistics and the National Forum on Education Statistics. These sources include:

- ✓ *NCES Handbooks Online* for our data definitions and attributes (e.g., code sets and field lengths) for most education data elements
- ✓ *Financial Accounting for Local and State School Systems* for finance data elements
- ✓ *A Pilot Standard National Course Classification System for Secondary Education* (1995), for course codes until the NCES revision of this resource is completed in 2006.
- ✓ *Forum Guide to Education Indicators* (to be released later in 2005) for national standards for education indicator construction and use.

Some modifications to these national standards may be required to reflect state and local needs. The Data Dictionary will include formal data element names, coding nomenclature (i.e., shortened/abbreviated technical names), code lists (with option names, codes, and definitions), field lengths, terminology/definition sources, and metadata standards.

Metadata. Metadata is often defined as "data about data." While true, this simple definition undervalues the importance of this powerful and essential tool. Metadata describe the meaning and context of a data element within a data system, and are necessary for the data element (and subsequently the data) to be properly interpreted. Nebraska has adopted the Deloitte Metadata Tool, which is a dynamic web-based product for cataloging data elements and mapping them to reporting templates. This public access website will be a single repository for all types of metadata. Likely components of the metadata template include: date collected, survey source, authoritative source (if different), data ownership, collection periodicity, linked elements (e.g., a first name is linked to a last name), calculation formulas (for aggregate statistics and indicators), applicable business rules (e.g., all dates are in the mmddyyyy format), related legislative standards (e.g., state definition of a graduate), decision rules for aggregation (e.g., completion counts include regular diploma recipients and certificate awardees but not GED recipients), applicable verification requirements (e.g., a request for transcript is required for a student to be assigned transfer status), applicable validation rules (e.g., upper and lower allowable limits for numeric values), applicable edit rules (e.g., consistency rules between values submitted in previous years), applicable privacy/security issues (e.g., cell suppression standards), and other attributes that are necessary to fully understand the meaning of a data element. Because metadata are critical to understanding data elements, all system users will have access to our metadata standards.

Metadata are important in all data systems, but especially so in a longitudinal data system because of the "records" they maintain about data elements/systems over time. For example, metadata that record the history of changes in definitions (e.g., code set revised in 1997) or other explanatory information (e.g., school districts were consolidated throughout the state in 2006) are critical if future users of the data in a longitudinal system are to correctly interpret meaning.

Privacy Concerns. In addition to strict adherence to FERPA, our data model will incorporate guidance from other national privacy standards, including:

- ✓ *Forum Guide to Protecting the Privacy of Student Information: State and Local Education Agencies* (2004) for confidentiality guidance regarding student information
- ✓ *Privacy Issues in Education Staff Records* (2000) for confidentiality guidance regarding

staff information

The content and architecture of our statewide longitudinal data system has been accomplished with the collaboration of our stakeholders. Through this collaboration we have also addressed the needs of those stakeholders. The development of our system has been guided by a widely representative steering committee, including local teachers, administrators, and representatives from state organization and representatives from postsecondary education. The impact on these stakeholders will be significant and will grow as the system grows. Training will be provided through our regular channels including training from the ESUs. The primary impact on our important local stakeholders will be through the implementation the Data Quality Curriculum which will enhance our reporting accuracy and timeliness, use of data analysis and research for decision-making, and understanding of educational issues.

IV Project Personnel:

This project will succeed because of the commitment guaranteed by the Nebraska Department of Education, the pooling of resources and expertise by the collaborating SEAs, the assistance of our stakeholder partners within our state, and the quality of the personnel assigned by the Nebraska Department of Education to manage and carry out these tasks. The personnel presented here bring experience in project and budget management, data analysis, IT, research, data collection, longitudinal studies, and subject area expertise to this initiative.

Project Director. Bob Beecham, Senior Administrator, Education Support Services, Nebraska Department of Education. Bob will act in the capacity of the project director, managing the technical and data staff, and having ultimate authority over the project's scope and timeline. Bob will lead the day-to-day operations of the project. Bob has a Masters degree, has been a senior administrator at the Department for 10 years, and has more than 30 years experience in education data. Bob has been involved with many US Department of Education projects concerning data standards, quality, and consolidation. Bob has led Nebraska into active member status in many national education organizations concerned with data standards, including the Education Information Management Advisory Consortium and NCES' National Forum on Education Statistics. Bob has served as chair and participated in many task forces and working groups with other states and federal offices. Bob has experience managing many other projects of this size for Nebraska. As a Director, Bob coordinated the development of Nebraska's local area network. As a Senior Administrator, he served as team leader in the development of the NDE "State of the Schools" report for communicating results of Nebraska's unique assessment system known as STARS. He is also the project director for Nebraska's new Student and Staff Records System. Bob will be devoting (b)(4) of his time to this project.

Database Administrator. Christopher Cassel is the Database Administrator and Lead Analyst for the Nebraska Department of Education. Chris will provide technical direction and coordination to the project. Technical management experience includes operational support, software systems development and deployment, system architecture and administration, and information systems management. Chris has directed the development of a data warehousing project, including methodology definition, architectural design, and management and ongoing support for warehouse components. Chris is experienced in establishing and utilizing formal methodologies and development frameworks for software development, including design, development, quality

assurance, configuration management, application deployment, change management, and follow-on support. Chris will be devoting [b)(4)] of his time to this project.

Lead Analyst. Pamela Tagart, Information Technology Application Lead Developer, Nebraska Department of Education. Pam will be responsible for the data content development and quality of the project. She also will be responsible for supporting research using the system's data and assisting stakeholders with their analysis. Pam has been with the NDE for over 25 years. She worked with an old mainframe system from 1980 until the development of the current Network environment with SQL queries and Crystal Reports. In her 25 years, Pam has assisting many of the NDE program offices with their data collections and usage needs, which had enabled her to develop a broad understanding of data systems and stakeholder needs in Nebraska. Currently Pam works directly with the database analyst on current data enterprise architecture. Pam is also an active member of national organizations and conferences. As the CCD and EDENI coordinator for Nebraska, she attends numerous meetings and conferences each year collaborating with other states and federal education staff. Pam will be devoting [b)(4)] of her time to this project.

Analyst. Kathy Heskett, Program Associate, Nebraska Department of Education. Kathy will support Pam in the data content development and data quality throughout the project. Kathy has been with the NDE for over 15 years working with different data collections. Kathy currently provides program support for the new Student and Staff Records System. She has direct experience assisting school district administrators and other district personnel in preparing and submitting data to the NDE. Kathy will spend [b)(4)] of her time on this project.

V Project Resources:

The Nebraska Department of Education will provide considerable resources to support this project. In addition to the personnel identified above, including rent and all other overhead costs. NDE will provide support staff for the project. There is no equipment requested as part of our proposal. This grant proposal is intended to supplement work that has been progressing for the past three years at NDE. The goal of this grant project is to expand and make more comprehensive the Nebraska Student and Staff Record System which includes the unique ID system, student, staff and assessment data.

Facilities and equipment that can support the work of this project in Nebraska include (refer to Appendix B for a complete list):
- ✓ Climate controlled, secure card access server room.
- ✓ NDE Servers: ProLiant DL380 G3 Intel Xeon Processor 3.06GHz/1MB and MSA30 SB Rack-mountable 14 drive enclosure/single bus, redundant power supplies
- ✓ UniqID Server: ProLiant DL360 G4 Intel Xeon Processor 3.00GHz/1MB
- ✓ Test/Training Server: ProLiant DL360 G4 Intel Xeon Processor 3.00GHz/1MB
- ✓ ReportNet/MetaData Server: ProLiant DL360 G4 Intel Xeon Processor 3.00GHz/1MB
- ✓ Test/Training DB Server: ProLiant DL380 G4 Intel Xeon Processor 3.20GHz/1MB
- ✓ Production DB Server: ProLiant DL360 G4 Intel Xeon Processor 3.00GHz/1MB
- ✓ ETL DB Server: ProLiant DL360 G4 Intel Xeon Processor 3.00GHz/1MB
- ✓ ETL Application Server: ProLiant DL580 G2 Intel XeonTM Processor MP at 3.0GHz/4MB, 2048MB (2P Model)
- ✓ Backup Server: ProLiant DL360 G4 Intel Xeon Processor 3.00GHz/1MB
- ✓ Compaq Rack 10636 (36U)

Nebraska has committed current systems and funding as resources for this project. The state funded STARS have been in operation for five years. Student performance data, assessment quality data, and AYP results are reported through Nebraska's "State of the Schools" report card every year. Our report card is primarily state funded (about $300,000 per year) with some NCLB funding to support AYP reporting. The same design is used to develop the special education reporting website. In support of the Nebraska Student and Staff Records System (NSSRS), we have also purchased the eScholar Complete Data Warehouse $500,000, the eScholar Unique ID System $458,000 and the Deloitte Metadata Tool $50,000. Grant money requested in this application would supplement these funds and permit full SEA engagement in the process of completing and implementing our system. State money will provide for system maintenance.

As evident from the staff and financial resources already invested in our vision, Nebraska is committed to developing, implementing, and sustaining a statewide longitudinal data system that incorporates individual student information. This request for grant support enables us to advance our efforts at a faster pace than would be possible without external funding. Any products developed with support of grant funds will be immediately transferable to our information management environment and, therefore, useful even if no further work is carried out under the auspices of the IES grant. Nebraska would then continue to work towards using those components to achieve our vision, albeit at a slower pace than with IES support.

VI Management Plan

At the highest level, the key elements of the proposed project will evolve in the following manner:

Milestones	Responsibilities	Timeline
Incorporation of Special Education and Curriculum segments to create a more comprehensive system	NDE and contractor	2008-2009 Special Ed 2010-2011 Curriculum
Implementation of the Data Quality Curriculum	NDE, ESU's	2007-2008 2008-2009 2009-2010
Creation of an electronic transcript facility.	NDE and Contractor	2007-2008
Installation of a decision support system	NDE and Contractor	2007-2008
Supplementing existing training with the addition of staff at the educational service units.	NDE and Contractors	2007-2010

Project Management Team. A project management team will be established to oversee system development efforts. Members of this team will need to possess a thorough understanding of all aspects of the Nebraska Department of Education and its existing data system, sufficient technical expertise, and project leadership skills. Likely candidates for the project management team include Marilyn Petersen, Federal Programs Director; Pat Roschewski, State Assessment

Director; John Moon, State NAEP Coordinator; Betty VanDeventer, Public Information Director; Kim Larsen, State English Language Arts Director; Deb Romanek, State Mathematics Director; Greg Gaden, Special Education Data Specialist; Dean Folker, Director of Vocational Education; and Greg Gray, Lead Analyst, University of Nebraska.

Project Advisory Team. A project advisory team will be created with representatives from the stakeholder groups identified in Phase 1 including, but not limited to: senior SEA management, SEA technical staff, SEA program staff, SEA MIS staff, LEA partners (e.g., policy making, technical, data, and program staff), school partners, a university researcher, and a parent and other community members. While it is imperative that the full range of user groups be represented on the project advisory team, the size of the team will be limited to 12 people to maintain reasonable management scope. The project management team will solicit input from, and share progress reports with, the project advisory team on a bimonthly basis throughout the development, implementation, and ongoing use of the statewide longitudinal data system.

Work Plan. Once business needs have been identified and prioritized and our funding is in place, the project management team, with the cooperation of the project advisory team, will finalize a work plan for this project. This includes assigning roles and responsibilities to SEA staff and contractors as well as "volunteer" support provided by the project advisory team and other school and LEA partners. The work plan will correspond with the management plan presented in this application but include a more detailed description of project tasks, staff/contractor assignments, resource requirements (including budgets), timelines and milestones, user training mechanisms, and evaluation criteria. Due to the scale of this initiative, project management software will be utilized by the project director.

Communications Plan. Because communication with SEA staff, LEA staff, school staff, funders, consultants, other stakeholders, and our collaborators in Iowa, Kansas, and Missouri is vitally important to successful development and implementation (as well as user buy-in), we will develop a formal communications plan for the project. This plan will map out opportunities to communicate with interested parties both within and beyond Nebraska, including weekly meeting of the project management team, bi-monthly meetings of the project advisory team, opportunities to discuss project progress with in-state stakeholders at state conferences (e.g., the Annual Administrators Days Conference), meetings and conference calls with our SEA collaborators, meetings with our SEA partners in the Midwest Education Information Consortium (MEIC), presentations at national meetings (e.g., the NCES Summer Data Conference, the NCES MIS Conference, AERA), and development of the project website. Another component of the communications plan will be the identification of specific stakeholder groups with whom formal "partnerships" can be established specifically for the purpose of exchanging perspectives on the development and implementation of the system. Formal reports will also be shared with the State Superintendent, the State School Board, our State Legislature, and the Institute of Education Sciences and National Center for Education Statistics.

Project Status Website. The collaborating states plan on implementing a project website for all four states to record their current project status at any given time. This website will be publicly accessible so those parties interested in the progression of the project can see its status. Also, completed deliverables will be posted so that outside parties can adapt them for their own data

collection systems. Specifically the website will contain:
- ✓ project timeline with tasks, discussion (e.g., issues that arose), timelines, and costs
- ✓ templates for establishing data models, data dictionaries, metadata, etc—note that because four SEAs will post these resources, it is more likely that non-collaborating SEAs will be able to find a "peer match" than if only one SEA were posting.
- ✓ risk planning documents
- ✓ data model/map of core elements
- ✓ data dictionaries
- ✓ history/lessons learned
- ✓ hardware, software, and vendor issues/bugs
- ✓ decision trees
- ✓ data cube advice
- ✓ security concerns and solutions
- ✓ policies and procedures for correcting files and amending reports
- ✓ training plans and curriculum
- ✓ other tools that naturally come out of the project—see Figure 4 for examples

Process for Continuous Improvement. Our communication plan establishes a system for feedback and continuous improvement throughout the years of the grant award. However, there are more definitive steps we plan to take to solicit feedback from our stakeholders:
- ✓ Focus groups will be convened throughout the development and implementation process. For example, school and district staff, program staff, and researchers will share input on user interfaces, collection techniques, content areas, data items, options, and definitions that will comprise this system as well as data dictionary and metadata standards.
- ✓ States will attend local, regional, and national conferences and meetings to present current status of the project and receive feedback. In addition to state and local conferences, our national and regional presence will include meetings such as the NCES MIS and Summer Data Conferences, AERA, and MEIC.
- ✓ Data reporters (e.g., school districts) will be able to "practice" submitting their files as often as they like in preparation of the real submission, which allows them to focus their energy on getting the data right rather than spending time on getting the submission right.
- ✓ Data mart user tools will also be available for testing and comment prior to completion, which will help us to confirm the usability of all stakeholder tools developed.

Training and Technical Assistance. Installing a data system and using it effectively are two different things. The first requires that planners must *learn from* their stakeholders about how they use data. The second requires that planners *teach* their stakeholders how to operate and use the new system. This includes teaching stakeholders to access the data in a format that meets their needs. But it also includes training staff to operate and maintain the system—this type of training results in capacity building within the organization and contributes substantially to the sustainability of the system. There are a number of issues and audiences that demand training for this project to be a success, such as:
- ✓ security standards training for school districts—conduct workshops on best practices, including privacy issues, based on National Forum on Education Statistics guidance
- ✓ data collection software for all data collectors/reporters
- ✓ data quality training for school districts—conduct workshops on best practices based on

Forum guidance as well as U.S. Department of Education data quality standards
- ✓ program offices—show program staff what data is collected, why, and how to get and use the data (so staff don't burden districts by asking them for data the state already has)
- ✓ data usage trainings—conduct workshops for data users such as researchers, university staff, and district and school staff about how to access and use data

Sustainability. We recognize that sustainability is a critical part of any development initiative, not only from the funders perspective, but also from our perspective given that we will be anchoring our entire data collection, reporting, and usage system to this initiative. To this end, we are planning to take the following steps to ensure the sustainability of this system after the conclusion of grant support:
- ✓ establish a core SEA program/data/technology team to oversee maintenance (Year 2)
- ✓ establish an advisory committee that consists of stakeholders, including SEA administrators, researchers, district administrators, school boards, school administrators, teachers, parents, students, and the general public (April 2006)
- ✓ develop and refine administrative support processes (July 2006)
- ✓ formally assess data quality procedures (Annually)
- ✓ formally assess reporting effectiveness (Annually)
- ✓ formally assess security and confidentiality practices (Annually)
- ✓ develop staffing plans to ensure continued support (April 2006)
- ✓ modify budgets to ensure continued support (September 2006)
- ✓ focus legislative efforts to ensure continued support (July 2006)
- ✓ invest in upgraded hardware, software, and research/data expertise as necessary to ensure continued support (as necessary)
- ✓ conduct ongoing evaluations to ensure that the system continues to meet the needs of its stakeholders; modify the system as appropriate to ensure as much (Annually)
- ✓ establish a data user group to refine data access methodologies and share expertise with other stakeholders via an SEA sponsored website (Annually)
- ✓ train stakeholders to use the system as their privileges/responsibilities permit (Annually)
- ✓ assess effectiveness of ongoing training (Annually)

Resumes of Key Personnel:

Robert M. Beecham: Project Director
Nebraska Department of Education
Lincoln, NE 68522

Professional Experience:

1995-Present: Nebraska Department of Education
Senior Administrator
- Administrator of NDE programs including: Child Nutrition Services, School Transportation, School Finance, State Aid to Education, Network Services, Applications Development and Program Support Services.
- Directed the development of major systems at NDE including the transition to a new State Aid to Education, Teacher Certification, and Child Nutrition systems and the upgrade of the NDE local area network.
- State coordinator for Proof of Concept pilot project for the *Integrated Performance Benchmarking System,* the precursor to PBDMI and EDEN.
- Team leader for the development of the NDE State of the Schools Report for reporting results of Nebraska's unique assessment system known as STARS.
- Project leader for the development of Nebraska's new Student and Staff Records System.
- Member of the NDE Leadership Council.

1981-1994: Nebraska Department of Education
Administrator/Director
- Provided staff support for the *Governors Task Force on Excellence in Education*.
- Coordination of the initial development of the NDE local area network.
- Co-founder of the Midwest Education Information Consortium.

1978-1980: National Center for Education Statistics, US Department of Education
Assistant Director of the *Federal Education Data Acquisition Council*
- Reviewed numerous Federal education data collection activities and regulations.
- Developed procedures and management controls for FEDAC.
- Conducted negotiations among federal program officers on data collection needs, advised sponsors on methodology and standard terminology.

Professional Activities:
- Member of the National Forum on Education Statistics, Committee chair, presenter at numerous meetings.
- Member of the CCSSO Education Information Management Advisory Consortium (EIMAC). Past Chair.
- Presenter at numerous NCES MIS and Data Conference presentations.
- Presenter at Midwest Legislative Forum on Student Data Systems, July 2004

Education:

1972   BA, Nebraska Wesleyan University, Nebraska

1975   Masters, Community and Regional Planning, University of Nebraska, Lincoln

Christopher S. Cassel: Database Administrator
Nebraska Department of Education
Lincoln, NE 68522

Professional Experience:
2004-Present: Nebraska Department of Education
Database Administrator

- Administration of multiple Microsoft SQL Servers.
- Assist analysts with data modeling and queries.
- Member of Nebraska Staff and Student Record System implementation team.

2003-2004: Strategic Business Solutions, Lincoln, NE
President

- Assist organizations develop internet strategies, applications and supporting plans.

2000-2003: University of Nebraska, Lincoln, NE
Data Warehousing Analyst

- Support and development of University-wide data warehouse and internet-based user interface.
- Developed SAP extracts for data warehouse source data.
- Led migration effort from Microsoft SQL Server 6.5 to 2000 and implementation of Data Transformation Services.

2000: Lucent Technologies, Omaha, NE
Senior Member Technical Staff

- Support and development of manufacturing execution system utilizing Visual Basic 6.0, Microsoft Transaction Server, Oracle, Microsoft SQL Server and SAP interfaces.

1990–2000: Electronic Data Systems, Omaha, NE
Senior Information Specialist

- Designed and constructed several browser-based data maintenance and reporting applications, as well as multiple enterprise client-server applications with users throughout the United States utilizing Microsoft Visual Basic, Office and SQL Server.
- EDS liaison for Operations Division of Enron Transportation & Storage; responsible for technical direction, IT budget and customer relationship management.
- Leader of software development and production support teams; responsible for work direction, financial outlooks and staff development.
- Enhanced Vendor Managed Inventory application for Del Monte Foods.
- Developed mainframe "Fax Utility" for General Motors.
- Project Leadership:
  - CA7-to-Control M conversion for US West.
  - Weekly MRP Vendor Schedules for General Motors.

Technical Experience:

Programming
- Expertise with SQL, HTML, ASP, VBS, DTS and ODBC.
- Proficient with VB, VB.NET, C#.NET, JavaScript, COBOL, Clipper and FoxPro.
- Experience with MTS and Java.

Database
- Expertise with Microsoft SQL Server (6.5, 7.0, and 2000) and Access.
- Experience with Oracle and Sybase.

Education:

1986-1990: University of Nebraska, Lincoln, NE
B.S., Business Administration, Management major, emphasis in Management
Information Systems and Speech Communication.

Pam Tagart: Lead Analyst
Nebraska Department of Education
Lincoln, NE 68522

Professional Experience:
1980 – 2005: Nebraska Department of Education
Information Technology Application Lead Developer

- Assign and monitor project status and progress for six application developers.
- Gather and document initial specifications for projects.
- Review data reports produced for accuracy and completeness.
- Work closely with the Database analyst on data base design, data elements dictionary, etc.
- Produce federal reports for Special Education to review and submit.
- Create business rules and reports for quality check on data collected by NDE.
- Member of the Nebraska Department of Education School, Personnel and Curriculum Steering Committee.
- Common Core of Data (CCD) Non-fiscal Coordinator.
- Alternate for Nebraska on the National Forum on Education Statistics.
- Performance Based Data Management Initiative Coordinator for Nebraska.
- Participant in Nebraska Student and Staff Reporting System (NSSRS) Steering Committee.

Certifications/Awards Received:

- Nebraska Department of Education Employee of the Year - 1989
- National Center for Education Statistics Fellows Program, November 1994
- Certificate of Completion University of Nebraska College of Business Administration Advanced Management Program, 1995
- Quality Advisor Training August 1997
- Certificate of Completion Project Management -The Lewis Institute, September 2000
- Miscellaneous Seminars and Training regarding Management Issues and Data Quality, software (such as Access, Lotus Notes, Lotus Notes Application Development, etc)

Volunteer Activities:

- Room Mother at North American Martyrs School
- Miscellaneous Committees at North American Martyrs Church
- NDE Paint-a-thon participant for several years.

Education:
1975 – 1976 College of Saint Mary, Recreation Therapy, Omaha, NE

Application: R372A070002

Kathy Heskett: Analyst
Nebraska Department of Education
Lincoln, NE 68522

Professional Experience:
6/2002 – Current: Nebraska Department of Education
Program Associate IV

- Perform program support
- Collect and summarize data
- Review and process program documents
- Direct / supervise staff in regard to data collections
- Member of the new Nebraska Staff and Student Record System Committee (NSSRS)
- Member of the School, Personnel, Curriculum Committee

4/2001 – 6/2002: Nebraska Department of Education
Data/Technology Assistant I

- Assist school district administrators and their staff in reporting quality data.
- Direct and manage the design, implementation and analysis of data collections and applications
- Collect, review, input and verity data
- Audit output data
- Identify and resolve data issues

11/1997-4/2001: Nebraska Department of Education
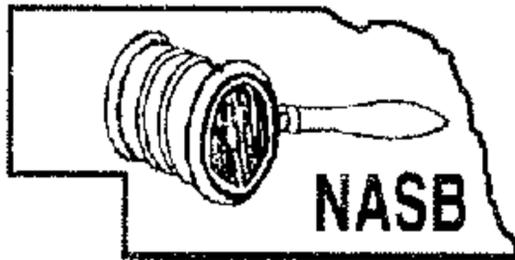**Staff Assistant II**

- Process Data Collections
- Review forms and manuals
- Coordinate mailings of data collections
- Maintain logs
- Follow up on late submissions
- Create and make changes to data entry programs
- Error resolution
- Assist school districts with data collections
- Coordinate work flow for data entry staff
- Audit data collection forms

9/1991 – 11/1997: Nebraska Department of Education
Data Entry Coordinator

- Process Data Collections
- Review forms and manuals
- Coordinate mailings of data collections
- Maintain logs
- Follow up on late submissions
- Create and make changes to data entry programs

4/1988 – 9/1991: Nebraska Department of Education
Data Entry Leader

- Process Data Collections
- Coordinate with NDE staff the timelines for data collections
- Create and make changes to data entry programs
- Verify data entry

Project Time Line

Activity:	Year 1	Year 2	Year 3
Incorporation of Special Education and Curriculum components ▪ Special Education ▪ Curriculum	 x	 x x	 x x
Implementation of the Data Quality Curriculum	x	x	x
Creation of an electronic transcript facility. ▪ Appoint Advisory committee ▪ Pilot System ▪ Provide Training ▪ Full Implementation	 x x 	 x x	 x x
Installation of a decision support system ▪ Needs Assessment ▪ Design ▪ Training ▪ Implementation	 x x 	 x 	 x
Supplementing existing training with the addition of staff at the educational service units.	x	x	x

March 1, 2007

Dr. Douglas Christensen,
Commissioner of Education
Nebraska Department of Education
301 Centennial Mall South
Lincoln, Nebraska 68509

Dear Dr. Christensen:

This letter is in support of your application for the "Statewide Longitudinal Data Systems Grant" offered by the Institute of Education Sciences. The Nebraska Association of School Boards (NASB) realizes the importance and value in having good data in the hands of school board members to use in the decision making process to do the best possible job in governing the public schools of our state.

Over the past few years the Nebraska Department of Education has made great strides in the design and development of the "Nebraska Student and Staff Records System." School board members have found it contains many of the components they desired in a state longitudinal data system. We appreciate how this system has eliminated the duplication of collecting the same information for different reasons over and over again. However, NASB sees the need to add components that will make our system truly comprehensive. Some of the areas we would like to see added would allow for decision-support capabilities within the existing system. We are all about data driven decision making to enhance the operation of public schools on limited budgets.

NASB sees the need for a standardized, automated facility for securely exchanging student data, including transcripts, between school districts; between school districts and postsecondary institutions; between postsecondary institutions; and between all public education providers preK – 16 and the NDE. An important component of these new or expanded capabilities should be a training program that provides more

capabilities for Educational Service Units (ESUs), a data quality curriculum to improve data stewardship at the local level, on going training capabilities for the students and staff in a user friendly record system, and a decision support system that would provide data mart or comparable means for providing data, reports, and ad hoc analysis to inform the decisions of key stakeholders including educators, policy makers, parents, students, and others.

There is an immediate need for NDE to keep moving ahead on what you have started in providing quality data to the field. From my perspective governing public schools continues to become more demanding and complex, school board members need the proper tools to make the best decisions for the students in Nebraska's public schools. NASB is excited to support this opportunity and pledges to help in any way we can if our state is fortunate enough to be selected for a grant.

Respectfully,
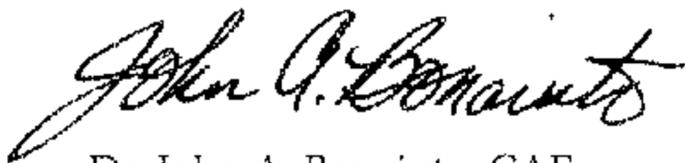
Dr. John A. Bonaiuto, CAE
Executive Director

March 12, 2007

Dr. Douglas D Christensen
Commissioner of Education
Nebraska Department of Education
P.O. Box 94987
Lincoln, NE 68509

Re: Statewide Longitudinal Data System Grant
     CFDA #84.372

Dear Commissioner Christensen:

I am writing in support of the grant application of the Nebraska Department of Education for the Statewide Longitudinal Data System Grant.

Nebraska has worked very hard over the past three years to design and develop our Nebraska Student and Staff Records System. This new system consolidates several "stovepipe" data systems and incorporates data that will meet state and federal data requirements including the new NGA graduation rate calculation. This grant program will help the Nebraska Department of Education to make our system truly comprehensive by incorporating components that were not included in our original design.

Sincerely,

Dave Heineman
Governor

EDUCATIONAL SERVICE UNIT No. 11

412 W. 14th Ave. • P.O. Box 858
Holdrege, NE 68949-0858
Telephone (308) 995-6585
Fax (308) 995-6587

Dr. Douglas Christensen
Commissioner of Education
Nebraska Department of Education
301 Centennial Mall South
Lincoln NE 68509

Dear Dr. Christensen:

This letter is in support of the application for a Statewide Longitudinal Data System Grant, CFDA No: 84.372, from the Institute of Education Sciences. For Nebraska Educational Service Unit #11, one of the expectations of this past year has been the training of personnel from our schools in the requirements and needs of the NSSRS data system. We are pleased to work in this capacity with our schools, but we are finding the task complicated by the amount of knowledge needed by our trainers and our schools.

One of the actions that would be provided should this grant be funded, is employment of additional personnel to specialize and specifically assist schools in their critical need to export and format data from their various student information systems.   Our training staffs have found becoming experts in the wide variety of SIS systems statewide, in addition to the other curriculum integration and training needs, to be a difficult task. New personnel who could specialize in this area would certainly be a welcome asset in the process of data collection and submission by our schools.   The results would almost certainly improve the accuracy and timeliness of the schools' data submissions, and increase their utilization of the data collected.   Assistance and followup disaggregation of the data to the classroom level will have the ability to improve instruction and learning, our ultimate goal.

Please forward my support to the evaluating agency and know that we are in support of this grant application.

Sincerely,

Robert Hays

Nebraska P-16 Initiative
Nebraska's Coalition for Student Success

February 28, 2007

Douglas D. Christensen, Ph.D.
Commissioner of Education
Nebraska Department of Education
P.O. Box 94987
Lincoln, NE 68509-4987

Dear Commissioner Christensen:

This is a letter of support for a grant application being submitted to the Institute of Education Sciences, intended to improve the existing Nebraska Student and Staff Records System. The specific title of the grant is the "Statewide Longitudinal Data System Grant." Its CFDA Number is 84.372.

The Nebraska P-16 Initiative has supported development and implementation of the Nebraska Student and Staff Records System since the inception of the concept. It has made possible more effective collection and reporting of individual student achievement data, which is essential to the process of improving Nebraska's education system.

It is clear, however, that the system needs to be made more comprehensive, efficient, and helpful to educators. This grant would help accomplish this by incorporating special education students into the student information system, more clearly describing courses and curricula for both students and teachers, creating a standardized and automated system for secure exchange of student data and transcripts, and developing enhanced training programs for those using the system.

If Nebraska is to significantly increase student success rates at every level of education, comprehensive and effective data systems are essential. Improvements and enhancements resulting from this grant will be most beneficial in helping to implement such systems.

Sincerely,
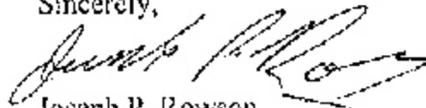
Joseph P. Rowson
Senior Fellow
Nebraska P-16 Initiative

(b)(6)

Nebraska Council of School Administrators

Jerry L. Sellentin, Ph.D.
Executive Director
jerry@ncsa.org

Web Site:
http://www.ncsa.org

Larry Ramaekers, Ph.D.
Chairperson
lramaeker@esu9.org

Michael S. Dulaney, J.D
Associate Executive Director
mike@ncsa.org

Lee Frye, MA Ed.
Vice Chairperson
lfrye@epsna.org

March 5, 2007

Dr. Douglas Christensen, Commissioner of Education
Nebraska Department of Education
PO Box 94987
Lincoln, NE 68509

Dear Commissioner Christensen:

The Nebraska Council of School Administrators (NCSA) appreciates the opportunity to support the Statewide Longitudinal Data System Grant.

Under the leadership of the Nebraska State Board of Education, yourself and staff, to include Bob Beecham, Nebraska has a good student and staff records system. Being good is not acceptable with today's technology capabilities. Obtaining the Statewide Longitudinal Data System will raise the bar, which will be beneficial to school districts but more important for student learning. The capabilities of the provisions of the grant will truly make Nebraska's system more comprehensive.

The NCSA with over 1,700 members is available in any way we can help you in addition to this letter in obtaining the Statewide Longitudinal Data System Grant.

Best regards,

Jerry L. Sellentin, Ph.D.
Executive Director

The mission of the Nebraska Council of School Administrators (NCSA) is to be an effective leader for quality education and to enhance the professionalism of its members.

Nebraska's
Coordinating Commission
for
Postsecondary Education
CCPE

P.O. Box 95005, Lincoln, NE 68509-5005 ■ 140 N. 8th St., Suite 300, Lincoln, NE 68508
Telephone: 402/471-2847 ● Fax: 402/471-2886 ● www.ccpe.state.ne.us
Marshall A. Hill, Ph.D., Executive Director

*Promoting high quality, ready access, and efficient use of resources
in Nebraska higher education.*

March 1, 2007

Dr. Douglas Christensen
Commissioner of Education
Nebraska Department of Education
301 Centennial Mall So
Lincoln, NE 68509

Dear Dr. Christensen:

I understand that the Nebraska Department of Education is applying for a Statewide
Longitudinal Data System Grant (CFDA 84.372) from the Institute of Education Sciences. As
Executive Director of Nebraska's Coordinating Commission for Postsecondary Education, I am
writing to support the Department's application.

I have watched over recent years as the Nebraska Department of Education planned and
implemented an enhanced student data system and have applauded your efforts. I realize,
however, that there is much work yet to be done in expanding the system to better meet the
needs of Nebraska's K-12 students, teachers, and administrators.

As we in Nebraska move toward a more fully integrated P-16 system, your data system will
have an impact on a broader range of the educational spectrum. At the Coordinating
Commission we are relying increasingly on the Department of Education to provide data for
portions of our research and policy development. For example, the *Nebraska Higher Education
Progress Report* produced by our office is intricately tied to data from the K-12 sector. When the
legislative task force mandated the study and report, they identified three priorities, one of which
is to increase the number of students who enter postsecondary education in Nebraska.
Obviously, a key component in this study is the number of students who graduate from high
school and the degree to which they are prepared to succeed in college. The Department of
Education played a significant role in providing this information.

I am pleased to work in a state with a strong P-16 effort and whole-heartedly offer my support of
this grant application.

Cordially,

Marshall A. Hill

Budget Narrative

The budget narrative for this grant request follows the needs identified earlier. We have identified five major projects that will be detailed in this budget narrative:

Data System Requirement:	Proposed Project for Support:
An enterprise-wide data architecture,	Incorporation of Special Education and Curriculum Segments,
Automated reporting, with a calendar and reporting formats that ensure timely and accurate data to meet local, State, and Federal reporting requirements,	Implementation of the Quality Data Curriculum,
Capacity to exchange student data across institutions within the State and with institutions in other States, in conformance with FERPA,	Creation of an electronic transcript facility,
Secure-access data marts, or comparable means for providing data, reports, and *ad hoc* analyses to inform decision-making of key stakeholders,	Installation of a decision support system,
A program for ongoing training of all key users of the data system.	Supplementing existing training with the addition of staff at the educational service units.

Incorporation of Special Education and Curriculum Segments

In order to give the Nebraska system a truly comprehensive architecture, we are asking for support to add the components of Special Education and Curriculum. These components were left out of the original design to keep the original project cost down.

Special Education: Nebraska created the Special Education Student Information System (SESIS) several years ago. School districts have several years of experience submitting data via this web-based system. With support from this grant program, Nebraska will convert the SESIS to the secure eScholar templates beginning in 2008-09. This will add an important component to the NDE data warehouse.

Curriculum: A critical capability of a state data base is the ability to describe in a fairly standard way what teachers are teaching and what students are studying. Standardized course codes are essential to tracking student performance and improving instruction in the long run. In addition, they are extremely useful for standardizing information in student transcripts. Nebraska has a very old state coding system. Even with this standard, many districts have a different set of codes they use for courses. Without standard course codes it is difficult to interpret the rigor and content of the courses taken by a student. The National Center for Education Statistics has developed a new course coding structure for secondary courses.

This structure, called the School Codes for the Exchange of Data (SCED), provides a comprehensive listing of courses and meaningful codes. This new coding system offers an

excellent way to standardize the codes for a majority of courses offered in Nebraska and US schools. In order to replace our outdated system, Nebraska intends to adopt the SCEDS tracking student transcripts and for describing what teachers are teaching to determine whether the teacher is "highly qualified". Should our State Board decided to begin charting student course taking patterns, we will use SCED to collect this type of data. Postsecondary institutions are anxious to use such a coding system, as it will make it easier for them to interpret the courses taken by applicants.

With the assistance of a contractor and with state-hired staff, we propose to facilitate the cross walking of our codes to SCED, using technology that have been used for similar purposes. A structure will be created into which the state or local codes can be loaded and automatically cross walked to the SCED codes. If there are non-matches, these will be identified for individual evaluation and decision-making.

To support the incorporation of Special Education and Curriculum components into our statewide longitudinal system, we propose to contract with one full time professional project coordinator and one support staff on a half time basis for the term of the grant. In addition, we propose to hire ESP (contractor) to assist with the cross walking of the SCEDS. The professional staff person will coordinate the work to add special education and curriculum to our current system. The grant will be used to support operations and travel for the project coordinator and half time support.

Category	Project Year 1	Project Year 2	Project Year 3	Total
Project Coordinator	$61,181	$69,262	$70,361	$200,804
Support Staff	$21,529	$21,816	$22,111	$65,456
Operations	$24,539	$15,208	$15,208	$54,955
Contractor	$75,000			$75,000
Total	$182,249	$106,286	$107,680	$396,215

Implementation of the Data Quality Curriculum

In their 2004 publication, *Forum Guide to Building a Culture of Quality Data: A School & District Resource* the National Forum on education Statistics described the need for quality data:

> Data often enter electronic systems from a school or school district office, which may not be an optimal setting for paying careful attention to numbers. Office staff members are expected to perform many tasks, from greeting parents to answering the phone, sorting the mail, producing memos, and bandaging wounded knees. While all these things are going on, often simultaneously, staff members are expected to fill out forms and enter data into computers. During conference periods in classrooms when teachers are trying to enter attendance information or grades into computers, the situation can be just as busy.

> We want trained data entry personnel who work in an environment that assists, not hinders, data entry. When people are doing important work, we want them to concentrate on the task. We do not expect, for example, the person preparing our tax returns to be

eating lunch or talking on the phone with clients while entering our itemized deductions into a computer. However, those may be the conditions of a school secretary's life. And remember, bad data about a student or school can cause bigger problems than a lost tax refund. It is important to understand that "quality data" is not something that just occurs when an office clerk hits the right number on a keyboard. It is a process. We need to pay attention to the process involved because the information derived from school data is crucial. The intent of data entry and collection is to produce information that reflects reality — that lets us know what is actually happening in a school. It is important for all staff members to understand the issues involved in data collection and data entry and to recognize that those issues reflect the values of the organization. Based on an analysis of these processes, we can work toward developing a "Culture of Quality Data" that will result in good information.

As a follow-up to the *Forum Guide*, a special task force was formed to create a Quality Data Curriculum. The Curriculum will be released this summer and will provide lesson plans, instructional handouts and resource material that will support PK-12 district and school staff in how to deal with issues pertaining to the production of high-quality data.

The Quality Data Curriculum will be provided to the state free of charge. Support for training and implementing the curriculum locally will be supported by the training portion of this grant request. In addition to the training support we are requesting support for an annual "Data Quality Conference" that will bring together local staff that are striving to improve the quality of data locally. The conference will provide information on local, state and national best practices and will recognize the efforts of local staff. This state-wide conference has been very successful in other states. The cost of the conference is based on the experience in Iowa.

Category	Project Yr 1	Project Yr 1	Project Yr 1	Total
Support for the statewide Data Quality Conference	$35,000	$35,000	$35,000	$105,000

Creation of an Electronic Transcript Facility

Nebraska wants to redirect the tremendous effort now going to producing and sending paper transcripts, and keying in the data on paper transcripts received, into effort devoted to the quality of the data in a student's record and the capacity of schools and districts to link those records across years.

We believe we can build the capacity of our districts to submit electronic records for state funding formulas, federal programs, grants, and research by supporting their capacity to create and exchange electronic student transcripts. The Texas Education Agency published a study that estimated a 92.3% reduction in costs to exchange electronic transcripts compared to paper transcripts. We believe this could save hundreds of thousands of dollars in Nebraska. Beyond the dollars, our interest is in reducing the time required for a new school to receive records and to begin delivery of appropriate educational services.

Building the capacity to exchange transcripts across states provides the opportunity to improve the continuity of services to mobile students and the standardization of the information within transcripts. These advantages would be achieved differentially by individual states, but all will contribute to the sharing of best practices across states.

1. NCES' course classification systems (prior and recent) can be used for crosswalks among individual state course numbering systems.
2. SIF's expansion into local school and district information systems can be leveraged to make the technology links across districts and states.
3. EDEN reporting standards can be mapped from individual student records to school, district, and state aggregate statistics.
4. Researchers can access (as authorized by students, parents, and schools) transcripts for valid, reliable, and consistent data about academic preparation.
5. Students can also send transcripts to postsecondary institutions they may want to attend.

In Nebraska, we believe this project and the implementation of the NCES course classification system are closely linked. Our Postsecondary institutions are excited about the possibility of a standardized system for exchanging course data with high schools. The electronic transcript portion of our overall request for support will benefit local school districts in exchanging data with each other and will benefit high school students as they send transcripts to colleges and other organizations they may attend after graduation.

This request needs to implement an electronic transcript facility in Nebraska. There are several national companies that are available to help states in doing this. The primary criteria in selecting a contractor will be the ability to exchange transcript data between PK-12 schools/districts and between PK-12 schools and postsecondary institutions. We are also requesting funding to make the facility free of charge for PK-12 schools and postsecondary institutions for the three year grant cycle. At the end of the grant period the costs would be passed on to the users of the system. Based on information provided by these vendors, we are requesting the following funding:

Category	Project Year 1	Project Year 2	Project Year 3	Total
Annualized cost for the electronic transcript system	$376,000	$376,000	$376,000	$1,128,000

Installation of a Decision Support System

Decision-making The DSS focuses on those data and supporting analytics needed by end-users. The Nebraska Department of Education envisions a reporting structure by which stakeholder group representatives examine guiding questions, provide direct feedback on format and form development, and test Beta versions of each NSSRS-DSS. Graphical User Interface (GUI) provides an expedient method to develop ad hoc queries within specified parameters.

Dropdown menus provide an interactive interface for entering variables needed to execute the query. All the parameters required for the both limited and advanced ad hoc reports would be stored as relational tables. Because the data for the DW will be housed in a Relational Database Management System (RDBMS) accessible through ODBC or native drivers, commercially available tools can be used to extract and report data in a cost-effective manner. GUI will be manipulated as necessary to address end-user needs, while ensuring prohibitive activities exceeding funding are eliminated. This development and deployment approach focuses on end-user utility and support necessary to maximize consumer demand and satisfaction. Further, support materials, training/professional development, and other resources located in each NSSRS-DSS library environment will be tailored to end-users.

The NSSRS-DSS library environment will comprise of four major areas: the virtual library, training center, data depot, and new/links. These areas are specifically tailored to the unique needs of each end-user group and will provide information most relevant to its members. Advisory groups, facilitated by NDE staff, will assist in examining the content and processes used to build the data decision capacities of group members, while providing feedback about consumer satisfaction rates. Unlike traditional DSS approaches by which comprehensive business intelligence/DSS tools are purchased to support data mining and ad hoc report creation without regard to end-user skills, the NDE is attempting to engage consumers in using the DW for decision-making by placing them in an environment relevant to their needs. The virtual library provides reference materials while the training center uses a distance learning paradigm to assist in educating the end-user. The new/links affords the NDE another communication tool to *germinate* the NSSRS-DSS library and use of longitudinal data. Finally, the data depot allows report development and extraction along with data downloads across a complexity continuum. As the consumer uses the NSSRS-DSS library concurrently with more information being available in the DW, the advisory group and NDE will make modifications as a continuous process variable to improve the NSSRS-DSS library's utility. It should be noted that the NSSRS-DSS library will be available to NDE staff throughout the agency; however, internal accessibility for key program staff will be necessary for daily operations.
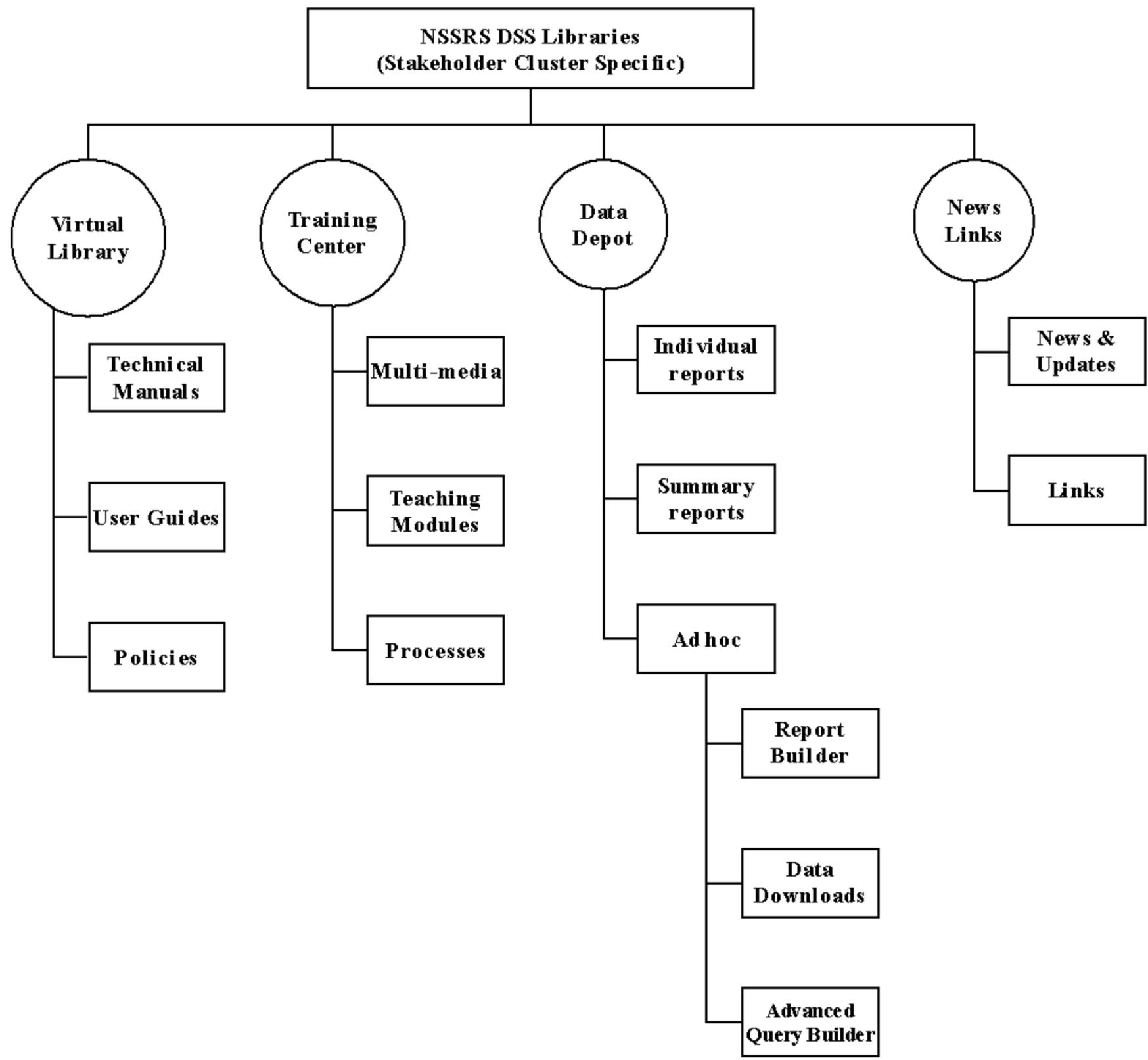
NSSRS-DSS library   The NSSRS-DSS library system envisions several end-user groups: (a) parents and students, (b) teachers and principals, (c) district administrators, (d) university and independent research entities, (e) business and professional organizations, (f) community and general public, and (g) federal and state officials. Each group is conceived to have differing demands and will be engage the DSS at multiple levels. The NDE recognizes the issue of multiple membership (*i.e.,* the university professor is also a member of the community and may be a parent) by allowing end-users to enter any of the available NSSRS-DSS libraries. To assist the consumer in deciding where their needs are best served, a set of guiding questions will be placed in the opening web-pages. Within each NSSRS-DSS library a set of guiding questions, analytics, and reports will highlight the DSS environment. The following outlined provide an example to be used in the initial design.

1. Parents and Students
1.1.1 Guiding Questions
1.1.1.1 How has my child's performance changed on the STARS?
1.1.1.2 What types of programs are available for my child?
1.1.1.3 How has my child's school improved in the past years?
1.1.2 Analytics
1.1.2.1 Tier I – Descriptive, Non-Technical Displays
1.1.3. Reporting
1.1.3.1 Confidential
1.1.3.2 Pre-Defined Summary
1.1.3.3 Limited Ad Hoc

1.2 Teachers and Principals
1.2.3 Guiding Questions
1.2.3.1 How have my students performance changed on the STARS?
1.2.3.2 How have students participating in supplemental services performed in the past two years?
1.2.3.3 What have been the dropout patterns at my school?
1.2.4 Analytics
1.2.4.1 Tier I – Descriptive, Frequency Distributions
1.2.4.2 Tier II – Descriptive, Chi Square, Time Series Charting
1.2.5 Reporting
1.2.5.1 Confidential
1.2.5.2 Pre-Defined Summary
1.2.5.3 Ad Hoc

1.3 District Administrators
1.3.1 Guiding Questions
1.3.1.1 What has been the subgroup performance pattern across the district?
1.3.1.2 How have additional fiscal resources improved targeted subgroups of students across differing school types?
1.3.1.3 What is the projected enrollment forecasted within the district?
1.3.2 Analytics
1.3.2.1 Tier I – Descriptive, Frequency Distributions
1.3.2.2 Tier II – Descriptive, Linear/Log Linear Regression, 2 x 3 Crosstabulation
1.3.3 Reporting
1.3.3.1 Confidential
1.3.3.2 Pre-Defined Summary
1.3.3.3 Advanced Ad Hoc

1.4 University and Independent Research Entities (IRE)
1.4.1 Guiding Questions
1.4.1.1 What has been the subgroup performance pattern, controlling for exogenous factors across the state?
1.4.1.2 Are teachers graduating from state run IHE remaining in the education service sector?

Application: R372A070002

1.4.1.3   Are alternate accountability designs using differing value added models (VAMs) identifying similar at-need schools?
1.4.2   Analytics
1.4.2.1   Tier I - Descriptive, Cross tabulations, T-Testing, ANOVA, Chi Square
1.4.2.2   Tier II – Linear/Log Linear Regression, 2 x 3 Crosstabulation
1.4.2.3   Tier III – General/Hierarchical Linear Modeling, VAMs, Discriminate and Time Series, Data Mining Tools
1.4.3   Reporting
1.4.3.1   Data Extractions (confidential by permission)
1.4.3.2   Advanced Ad Hoc

1.5 Business and Professional Organizations
1.5.1   Guiding Questions
1.5.1.1   What is the return on investment across districts offering supplemental educational services?
1.5.1.2   How are per pupil federal expenditures distribution across districts and schools within districts?
1.5.1.3   How has first year teacher assignment and school accountability status distributions changed in the past years?
1.5.2   Analytics
1.5.2.1   Tier I - Descriptive, Bivariant Correlations, Time Series
1.5.2.2   Tier II – Linear/Log Linear Regression, Discriminate and Factor Analysis
1.5.3   Reporting
1.5.3.1   Pre-Defined Summary
1.5.3.2   Advanced Ad Hoc

1.6 Community and General Public
1.6.1   Guiding Questions
1.6.1.1   Is violence on school campuses declining?
1.6.1.2   How good is our school system?
1.6.1.3   What types of programs are available for American Indian children?
1.6.2   Analytics
1.6.2.1   Tier I - Descriptive
1.6.3   Reporting
1.6.3.1   Pre-Defined Summary
1.6.3.2   Limited Ad Hoc

1.7 State and Federal Officials
1.7.1   Guiding Questions
1.7.1.1   What are the upper tolerances allowable within targeted accountability data elements?
1.7.1.2   Where is federal money making the biggest impact?
1.7.1.3   How are migrant enrollment patterns impacting STARS, federal accountability, and enrollment data used in public reporting?
1.7.2   Analytics
1.7.2.1   Tier I – Descriptive, Control Charting, Cross tabulations

1.7.2.2 Tier II – Linear/Log Linear Regression, Two-Step Clusters

1.7.2.3 Tier III – General/Hierarchical Linear Modeling, VAMs, Discriminate and Time Series, Data Mining Tools

1.7.3 Reporting

1.7.3.1 Confidential (limited accessibility)

1.7.3.2 Pre-Defined Summary

1.7.3.3 Automated Reports

1.7.3.4 Limited Ad Hoc

Customization The DSS will provide maximum flexibility to the end-users in adapting the software necessary to address the NSSRS-DSS libraries decision support mission. The NDE must be able to add user-defined fields and screens, modify reports from a generalized report writer, define files for extraction and importing, and update changes within the DW data elements and relations. It is anticipated the DW will provide those data necessary to conduct program evaluation using advanced analytics, such as data mining and hierarchical linear modeling. Although a native data mining capability is incorporated with SQL Server 2000, the system must have the flexibility to incorporate needed add-on products.

Projected Costs: The Nebraska Department of Education anticipates working with a contractor to develop the NSSRS-DSS. Based on estimates obtained form vendors we are currently working with, we anticipate beginning the development of the DSS in year two of the project and ending in year three. We anticipate the total cost of developing this component to be $700,000.

Category	Project Year 1	Project Year 2	Project Year 3	Total
Planning and Implementation of the Nebraska DSS		$350,000	$350,000	$700,000

Application: R372A070002

Supplement Existing Training with Staff
at the Educational Service Units

The Nebraska Department of Education has a contract with our Educational Service Units to provide training on the NDE Student ID and on the process of submitting data to the Nebraska Student and Staff Record System. The ESU's Technology Affiliate Group (TAG) provides training to local public and non-public schools. Having to provide this training has placed a tremendous strain on the TAG members. With the additional expectation of providing expanded training for the Data Quality Curriculum, it is clear that NDE needs to provide more resources to our ESU's. Training expectations include:

- Ongoing training for assignment and maintenance of the NDE Student ID (unique ID) for public and non-public school districts/systems
- Ongoing training for the preparation and submission of student, staff and assessment data to the NDE data warehouse
- High level training for the various student information system packages that are used in Nebraska
- Training support for the Data Quality Curriculum
- Provide training for the incorporation of the Special Education and Curriculum templates

In order to support our ESU partners, NDE would use funding from this grant program to support four full time positions to work with and train TAG members in our 17 Educational Service Units. To adequately support our population distribution, there would be one trainer housed in the western part of the state, one in the middle and two in the east. These trainers would be part of the statewide longitudinal system executive team and meet regularly with the TAG members.

Category	Project Year 1	Project Year 2	Project Year 3	Total
Personnel	272,724	$277,048	$281,444	$831,216
Operations	$68,952	$51,187	$51,187	$171,326
Total	$341,676	$328,235	$332,631	$1,002,542

Project Travel

This is the required budget for two project staff to attend one meeting each year in Washington DC.

Category	Project Year 1	Project Year 2	Project Year 3	Total
Project travel and per diem	$1700.00	$1700.00	$1700.00	$5100.00