

MEMORANDUM

To: Board of Regents
From: Board Office
Subject: Eisenhower Professional Development Grant Awards
Date: January 31, 2000

Recommended Action:

Approve the allocation of \$441,949 of federal grant funds for the professional development of K-12 teachers in mathematics and science.

Executive Summary:

The Board of Regents, State of Iowa, was designated almost 20 years ago as the State Agency for Higher Education to administer the higher education portion of a federal program that has come to be called the Eisenhower Professional Development Program. The Iowa Department of Education administers the K-12 Eisenhower Grants. The funds available under this program are awarded on a competitive basis to the state's colleges and universities as well as non-profit organizations of demonstrated effectiveness in providing professional development to teachers in K-12 education, particularly mathematics and science.

The Board Office works in concert with the mathematics and science consultants of the Iowa Department of Education to provide a cohesive program within the state. A Board of Regents Eisenhower Advisory Committee assists in the establishment of program application criteria and in the review of all proposals considered for funding.

Of particular concern this year was ensuring that professional development in mathematics and science occurred for teachers of students in special education populations, especially teachers of students who are blind, deaf, or hard of hearing. The Iowa Braille and Sight Saving School and the Iowa School for the Deaf are participating in a recommended project submitted by Iowa State University.

The Board of Regents Eisenhower Advisory Committee recommends that six projects receive funding in the current competition. The requested Eisenhower funds total \$518,679; the amount available from all sources is \$441,949. To accommodate all the projects that the committee recommends funding, each project will need to reduce its requested Eisenhower budget approximately 14.5% to achieve the available dollar limit.

Background:

The Eisenhower Professional Development Program is a two-pronged program. The first and larger prong is entitlement funds that flow through the Iowa Department of Education to local school districts for use in professional development. The second and smaller prong is funds made available to higher education institutions and other institutions of demonstrated effectiveness in providing professional development to teachers in K-12 education. The higher education funds must be awarded through competitive grants.

The Board Office has worked with the Department of Education mathematics and science consultants to provide for a cohesive plan for use of these federal funds in Iowa. The cooperation shown by these two state agencies has been a model to other states in creating an effective system for professional development of K-12 teachers within the state. Currently, projects are using a professional development model in which training is provided to a cadre of teachers who return to their home districts and area education agencies to train other teachers in the use and implementation of the national content area standards.

The Board Office has enlisted the assistance of educators from each sector of the educational community in Iowa to review application procedures and grant applications. The committee consists of three representatives each of Regent universities, independent colleges and universities, community colleges, elementary and secondary education, and the mathematics and science consultants in the Department of Education.

The current competition set as a high priority the professional development of teachers who have students in special education populations, especially teachers of students who are blind or deaf and hard of hearing. The Iowa School for the Deaf and the Iowa Braille and Sight Saving Schools are partnering with Iowa State University to assist teachers from both schools to become leaders in mathematics and science reform in Iowa.

During the competition for FY 1999 funds, the Board of Regents has \$431,845 dollars in grant funds for FY 1999 and \$10,104 in unencumbered funds from FY 1998. The Board of Regents Eisenhower Advisory Committee is recommending that all funds be allocated to six projects as outlined below. Abstracts for each of the projects are included as an attachment.

Institution, Project Title, and Project Director	Total Budget	Requested Eisenhower Funding	Recommended Eisenhower Funding
University of Northern Iowa - Development of BIOMES and GEOMES - <i>Dr. Jody Stone, Project Director</i>	\$94,233	\$81,233	\$69,476
Iowa State University - Modeling Science and Mathematics Reform through Implementation of the National Standards (2000-2001) - <i>Dr. Thomas Andre, Project Director</i>	\$162,803	\$100,000	\$85,528
University of Iowa - Inclusion: Science and Special Education - <i>Dr. Edward Pizzini, Project Director</i>	\$136,937	\$98,459	\$84,209
Iowa Council of Teachers of English and Language Arts - Redefining Reading Language Arts, Math, and Science Assessment at the Middle School/Junior High Levels in Iowa Project - Assessment 2000 - <i>Dr. Donna Niday, Project Director</i>	\$47,009	\$37,073	\$31,706
University of Northern Iowa - Science and Mathematics Standards: Implementation and Leadership in Educational Standards - Phase III - <i>Dr. Cherin Lee, Project Director</i>	\$133,609	\$101,944	\$85,528
University of Northern Iowa - Teaming Effectively Develops Integration - <i>Dr. Carl Bollwinkel, Project Director</i>	\$162,082	\$99,970	\$85,502
Totals	\$736,673	\$518,679	\$441,949

The Board of Regents Eisenhower Advisory Committee recommends that the proposed portion of budget to be funded through the Eisenhower Program be reduced by approximately 14.5% in each grant. Since the Request for Proposals explicitly stated that the maximum award would be \$100,000, any grant request surpassing that limit was reduced to the \$100,000 level before the reduction was made.

All projects will begin activities in the spring and have a concentrated training period during the summer. Teachers participating in the summer institutes receive follow-up assistance during the 2000-2001 academic year to aid them in their classrooms and in sharing with other teachers within their local schools, districts, and area education agencies.

Richard P. Tiegs

Approved: _____
Frank J. Stork

H:\aa\docket\2000\feb\GD12

Project: Development of BIOMES and GEOMES

Institution: University of Northern Iowa

Project Director: Dr. Jody Stone, Associate Professor, Department of Teaching

There is a great need in Iowa and across the nation for more active student involvement in high school science classes. Emphasis on the new *Science Education Standards and Benchmarks* stress the development of inquiry and problem solving skills while including current science-related societal issues. In addition, efforts must be made to increase the enrollment in high school science classes. The traditional textbook approach is not sufficient in addressing all these needs. In short, there is a great need for innovative curricular materials for use in high school science classes and for teachers specifically trained to teach, using strategies compatible with the *Science Education Standards and Benchmarks*.

Exemplary curricular materials developed at the University of Northern Iowa have addressed these needs in the fields of chemistry and physics through the CRISTAL and PRISMS materials. Both these programs have become widely used throughout the United States, while having their beginnings with Eisenhower funding here in Iowa. This proposal is for the development of similar programs for high school earth science and biology.

BIOMES (Biology Instructional Opportunities for Motivating Every Student) and GEOMES (Geoscience Education for Motivating Every Student) are proposed high school curriculum materials designed to increase the number of quality laboratory experiences and real-life connections carried out and studied in high school biology and earth science classrooms. These programs will provide learning activities designed to stimulate the development of reasoning/problem-solving skills while incorporating content and skills consistent with the *Science Education Standards and Benchmarks*. The intended audience is high school earth science and biology teachers and the students enrolled in their classes.

This grant would provide funding for the development of the BIOMES and GEOMES curricular materials. This includes initial development and field testing of the curriculum materials. The materials would be developed by teams of outstanding Iowa biology and earth science teachers working with university biology and earth science professors. Each team member would serve as a pilot school for the field testing of BIOMES and GEOMES materials and would incorporate the materials and accompanying teaching strategies into their classrooms.

Project: Modeling Science and Mathematics Reform through Implementation of the National Standards (2000-2001)

Institution: Iowa State University

Project Director: Dr. Thomas Andre, Professor of Curriculum and Instruction

The purpose of this project is to train teams of teachers to become knowledgeable of the National Council of Teachers of Mathematics Standards and the National Science Education Standards and to become leaders in the implementation of the standards in the areas of curricular development and change, instructional strategies, assessment methods, equity issues, and the issue of technology in math and science. Leadership teams will be trained during the summer workshop. These teams will organize two events in their local districts or AEAs during the academic year to promote understanding and implementation of the standards.

In addition, attention will be given to the learning of math and science by special needs students. Specifically, institutional strategies for children with learning problems, visual and learning impairment, will be addressed.

Project: Inclusion: Science and Special Education

Institution: University of Iowa

Project Director: Dr. Edward Pizzini, Professor, Science Education

Project I-SSE (Inclusion: Science and Special Education) is a collaborative effort involving Grant Wood AEA and the Alburnett/Central City, Cedar Rapids, and Iowa City Community School Districts with The University of Iowa and the NCREL/MSU. Utilizing a "trainer of trainers" model for professional development, the purpose of this project is: 1) to inform education and special education teachers of the benefits to students and teachers of "inclusion" through collaboration; 2) to re-frame the standards in science, mathematics; and language arts (i.e., standards-based reforms as effective classroom practice) that can benefit ALL students; 3) to in-service large numbers of general education and special education teachers in appropriate ways for teaching/learning of students with disabilities; 4) to provide teachers with the opportunity to take a leadership role in the development/revision/implementation of curricula and instructional strategies for ALL students; and, 5) to provide time for discussion, planning, development, and reflection to promote "best" practices for students with disabilities.

The primary objective is to make standards-based science, mathematics, and language arts education accessible to disabled students and thus increase their knowledge, interest, and attitude in these disciplines. The foci are: 1) curriculum restructuring; 2) appropriate multi-model instructional strategies promoting "best" practices for inclusion; 3) staff development using a "trainer of trainers" approach; and, 4) inclusion of special education students in regular education classes through collaboration.

Three new District Collaboration Leadership Teams and one new Teachers Facilitators Team will be selected to serve as participants. The Teacher

Facilitators will serve as "trainer of trainers," along with their LEA supervisors/coordinators and the AEA consultants, providing a cadre of professionals (general education and special education teachers) who will in-service peers beyond the funding of the project. Through the continued partnership with NCREL/MSA the Staff Development Model for Mentoring Teachers will continue to be utilized. The intensive Summer Institute will emphasize theory, practice, and feedback while implementation of the standards across the curricula (science, mathematics, and language arts) is carried out. Curricular re-structuring, instructional "best" practices, staff development, and assessment will be themes on which participants can build for implementation during the fall semester. The goal will be to develop curriculum modules with appropriate multi-model instructional strategies that promote "true" collaboration between the general education and special education teachers. In the spring, emphasis will be on providing in-service to twenty-five peers within each school district. ICN demonstrations/sessions, on-site sessions, mentoring, focus groups, etc., along with the use of the Web CT will provide a network of support and a forum for sharing "what works." A handbook detailing the outcomes of the project will be available statewide to promote "best" practices with disabled students. The project will directly impact 110 teachers long-term in continuous in-service within the three participating LEAs and hundreds in awareness activities across the state via the ICN and Web CT.

Project: Redefining Reading/Language Arts, Math, and Science Assessment at the Middle School/Junior High Levels in Iowa Project — Assessment 2000

Institution: Iowa Council of Teachers of English and Language Arts

Project Director: Dr. Donna Niday, Board Member

As school districts are being asked to be more accountable for student learning, it is time to provide professional development for educators focusing on assessing student achievement. More importantly, reading/language arts achievement along with achievement in math and science are highlighted in HF 2272 which was passed in the spring of 1998. HF 2272 is considered the school accountability law, which holds schools and districts accountable for student achievement in reading/language arts, math, and science.

The following grant proposal focuses on assessment of reading/language arts, math, and science at the middle school/junior high levels. State-wide initiatives such as the Nebraska-Iowa Primary Program: Growing and Learning in the Heartland, as well as the Iowa Department of Education's "Every Child Reads," have focused on early learners (kindergarten through grade three). Other state-wide initiatives such as School-to-Work, Tech Prep, and Vocational Education have focused primarily on secondary education. Although each of these initiatives has been intended to be systematically applied K-12, it is more likely that most districts have remained at their original focus level. It is apparent that

there has been a limited focus on middle school/junior high levels in state-wide initiatives.

This grant will begin in January 2000 and end in June 2001. The objectives and intended outcomes of this grant are listed below:

Objective #1: To assist local school teams in the implementation of the reading/language arts, math, and science standards.

Intended Outcome #1: *Local school teams will implement the reading/language arts, math and science standards in their district.*

Objective #2: To provide local school teams with the leadership skills for planning, organizing, and training other teachers in their school districts in partnership with their area education agency and/or local council leaders.

Intended Outcome #2: *Local school teams will provide for a trainer-of-trainers model, focusing on the assessment of reading/language arts, math, and science in their local district and area education agency service area.*

Objective #3: To provide local school teams with access to resources (print, technology, and training) to successfully implement assessment strategies in reading/language arts, math, and science.

Intended Outcome #3: *Each local school team will compile a notebook identifying resources that have been proven successful in assessing reading/language arts, math, and science achievement that can be duplicated and used in training local district colleagues, as well as others in their area education agency service area.*

Objective #4: To develop capacity in local school teams to collect data related to student achievement in reading/language arts, math, and science to make instructional decisions.

Intended Outcome #4: *Each local team will compile baseline assessment data (aggregated and disaggregated) in reading/language arts, math, and science, and use that baseline data to measure growth in student achievement each year, and to use those results to make instructional decisions.*

Decisions about reading/language arts, math, and science learning and instruction are important. This grant is designed to assist a cadre of middle school/junior high local school teams to use assessment in reading/language arts, math, and science to refine learning and instruction.

Project: Science and Mathematics: Implementation and Leadership in Educational Standards - Phase III

Institution: University of Northern Iowa

Project Director: Dr. Cherin Lee, Assistant Professor, Biology

Science and Mathematics Leadership in Education Standards (SMILES) - Phase III will improve the teaching of mathematics and science in one urban and eight rural Iowa school districts by supporting the professional development of School Leadership Teams who will, in turn, facilitate implementation of district mathematics and science standards, benchmarks and alternative assessments in their respective schools districts. The following goals support the efforts of the Iowa Department of Education and the Iowa Legislature in establishing district Local School Improvement Plans and HF 2272. The objectives of the program are to:

- Increase district-level knowledge of the National Council of Teachers of Mathematics (NCTM) Standards, the National Research Council (NRC) National Science Education Standards, and the New Standards Program, and the State Collaborative on Assessment and Student Standards;
- Facilitate the implementation of exemplary practices in curricula, pedagogy, assessment, and educational technology;
- Assist in the development of district-level professional development;
- Provide personal professional development and skills in school leadership; and
- Create a collaborative interschool network to assist School Leadership Teams in professional development work within their districts.

SMILES III will accomplish its objective through a one-week Continuing Leadership Institute for the eight Continuing School Leadership Teams and a three-week Summer Learning Institute for four new teams as well as an Academic Year support program for all participants during 2000-2001. The Summer Institute will provide returning teams with additional skills in professional development plus increased familiarity with educational technology and alternative assessments and the new teams with knowledge and experience in mathematics and science standards, pedagogy, inquiry and problem-solving-oriented curricula, and appropriate educational technology. Background in equity issues pertinent to underrepresented and underserved students will also be provided. School Leadership Teams will utilize this knowledge and experience in planning district-wide Academic Year professional development plans.

The program model is based on research supporting the restructuring of teacher beliefs on learning and teaching, developing a comfort level with innovation and change, and the recommendations of the NCTM and NRC standards. SMILES-III will provide relevant experience, modeling, and the development of mentoring skills leading to collaborative and reflective practice. It will also continue the support system initiated in previous SMILES programs for district professional

development for teachers in science and mathematics as well as participants' personal professional development. Both formative and summative assessment and evaluation of the program and the participants will inform and guide project work.

The program utilizes the expertise of K-12 teachers, LEA and AEA staff, and university science and mathematics educators to model exemplary practice and standards implementation in participant classrooms. This will, in turn, develop exemplary practice in the leadership teams with the extension to changing practice throughout school district mathematics and science classrooms.

Project: Teaming Effectively Develops Integration

Institution: University of Northern Iowa

Project Director: Dr. Carl Bollwinkel, Professor of Teaching and Science Education

The instructional delivery of integrated mathematics, science, and language arts is more effective when teaming is developed. This proposal, TEDI, supports the development of teams and integrates the three disciplines.

TEDI develops teams of teachers/leaders skilled in the integration of language arts, mathematics, and science. It provides specialized training in meeting the needs of handicapped students, especially blind and deaf. The materials and techniques developed will reflect standards, classroom applications, and alternative assessments.

Building a unit around an environmental theme, which is an issue, has provided an ideal opportunity for the integration of disciplines and teaming across curriculum, grade levels, and special services. The theme for this program will be "Species Loss in a Changing Climate."

The study of an environmental issue requires a solid foundation in science content and the analysis of an issue provides an ideal opportunity to broadly integrate mathematics and language arts skills.

An environmental theme offers a vehicle for standards integration that is applicable to K-12. It allows for optimum use of various resource materials, varied pedagogical approaches, skills of instructors, and varied learning styles of students.

The Environmental Issues Instruction (EII) staff (Bollwinkel, Bonnett, and Cochran) will train a network of 16 teachers/leaders in a spring and summer program. The teachers/leaders will conduct in-depth training for approximately 60 additional teachers under the direction of the EII staff and will also be available for other leadership activities in their AEAs and LEAs.

This network of teachers/leaders will include teachers of elementary through high school and will link eight AEAs in a cooperative network. These teams support the AEA compliance with the Iowa School Improvement Network.

In conjunction with the in-depth training, teachers will be expected to apply in their own teaching what they have experienced and developed. During application, teachers will be supported by the EII directors, teachers/leaders and AEA coordinators. Directors and teachers/leaders will have a home website (www.uni.edu/ceee/eii) and e-mail communication.

Student achievement and instructional strategies will be assessed in light of recently established national standards (NCTM, NSES, and NCTE).