

Contact: Diana Gonzalez

REPORT ON TITLE II GRANT PROGRAM

Action Requested: Receive the report on the Title II Grant Program.

Executive Summary: The Board Office and the Iowa Department of Education jointly administer the Iowa grant programs authorized by Title IIA (Improving Teacher Quality) and Title IIB (Mathematics and Science Partnerships) of the federal No Child Left Behind (NCLB) Act of 2001. Each year, this joint program distributes Title IIA and Title IIB federal funds to Iowa colleges, universities, school districts, and area education agencies to develop and provide professional development opportunities for K-12 teachers with a focus on enhancing student achievement in mathematics and science.

In February 2010, the Title II Advisory Panel awarded first-year funding to five new multi-year projects in an amount totaling \$742,239.¹ The grants were awarded for the period ending June 15, 2011, on the basis of a competitive review process. Grant funds totaling \$929,162 will also support ongoing second- and third-year projects approved in prior year competitions.²

Background:

The Board Office has been designated by the U. S. Department of Education as the state agency for higher education to administer the Title IIA grant program in Iowa. The Board Office and the Iowa Department of Education have jointly conducted a mathematics and science education grants program for more than a decade. Since the passage of NCLB, the respective agencies have conducted a single annual competition which combines the funds from the separate Title IIA and Title IIB federal programs. The two state agencies divide responsibilities for ongoing grants accounting and administration by project. Grants are made for single- and multi-year projects of up to three years in duration.³

Grant projects are designed to develop and provide professional development opportunities for K-12 teachers with an objective of enhancing student achievement in mathematics and science. Grants are made to interinstitutional partnerships which must include the following:

- 📖 College or department of education of an accredited institution of higher education in Iowa;
- 📖 College or department within the content area of the project (mathematics or science) of an accredited institution of higher education in Iowa;
- 📖 High-need Iowa school district, as defined by federal statute and modified for Iowa;
- 📖 Representatives from the area education agencies served by the project; and
- 📖 Any other eligible contributing partners.

The Title II Advisory Panel includes representatives from the Board Office, Regent universities, Iowa independent colleges and universities, community colleges, K-12 school districts, area education agencies, and Iowa Department of Education. The Committee approved the grant awardees listed on the following pages at its February 12, 2010, meeting.

¹ Eight proposals were submitted.

² There are seven continuing projects for the coming year.

³ It is likely that the reauthorization of the Elementary and Secondary Act will eliminate the Title II Program.

TITLE IIA/IIB GRANT RECIPIENTS FOR THE PERIOD ENDING JUNE 15, 2011

Project: **Making Sense of Mathematics and Teaching**

Applicant Institution: University of Northern Iowa

Project Director: Vicki Oleson, Director – Center for Teaching and Learning Mathematics

Proposed Project Period: Three years

Total Funding Awarded: \$424,379 (First year award = \$149,482)

Partners: University of Northern Iowa, Mormon Trails Community School District*, Central Decatur Community School District*, Clarinda Community School District*, Clarinda Lutheran School, St. Malachy School, Essex Community School District, Shenandoah Community School District, Clarke Community School District, Red Oak Community School District, East Union Community School District, Lamoni Community School District, AEA 13, AEA 14

Making Sense of Mathematics and Teaching (MSMT) is designed to deepen elementary teachers' understanding of mathematics concepts and support implementation of research-based teaching strategies aligned with the Iowa Core Curriculum (ICC) and Every Student Counts (ESC). The program will provide leadership training to principals to ensure support of teachers as they change mathematics instruction in their classrooms. Six professional development courses will focus on mathematics content (number, operations, geometry, measurement, data, and algebraic thinking) and instructional strategies aligned with ICC and ESC (teaching for understanding, problem-centered instruction, meaningful distributed instruction, multiple representation, and assessment for learning).

Participating teachers will receive face-to-face instruction and on-line sessions designed to support implementation of strategies aligned to the ICC and ESC. Classroom visits by AEA consultants will provide individualized support to participating teachers as they move through the change process. The MSMT objectives are consistent with recommendations of national and state mathematics education initiatives, mathematics education research, and current research on professional development. The objectives of the MSMT project will assist the state to meet the need for elementary teachers who are competent in teaching mathematics and capable of implementing the ICC with fidelity.

*Indicates a high need district.

Project: Integration of STEM (Science, Technology, Engineering, Mathematics) Through Problem-Based Learning

Applicant Institution: Des Moines Independent Community School District

Project Director: Crista Carlile, Des Moines Public Schools Curriculum Coordinator

Proposed Project Period: Three years

Total Funding Awarded: \$450,000 (First year award = \$150,000)

Partners: Des Moines Independent Community School District*, Iowa State University (Departments of Curriculum and Instruction, Science, and Engineering), National Science Foundation Engineering Research Center for Biorenewable Chemicals (CBiRC), Heartland AEA, Science Center of Iowa

Major outcomes of the program include increased STEM content knowledge through collaboration with ISU faculty and staff; skills in inquiry and problem-based learning; skills in designing authentic assessments; skills in utilizing instructional technology as a tool for learning; implementation of the Iowa Core Curriculum; and student engagement and learning in secondary science classrooms.

The professional development program will consist of a ten-day summer institute each year serving 129 middle and high school teachers. Professional learning strategies will include monthly professional learning communities, instructional rounds, and on-line collaboration consistent with the Iowa Professional Development Model in providing ongoing follow-up, coaching, collegial dialogue, and support. The purpose of this professional development is increased student achievement and closing gaps in achievement for low-income and minority students.

*Indicates a high need district.

Project: **River Quest Institutes**

Applicant Institution: Clarke College

Project Director: Andrea Bixler, Associate Professor of Biology

Proposed Project Period: Three years

Total Funding Awarded: \$436,642 (First year award = \$144,032)

Partners: Clarke College, Dubuque Community School District*, Archdiocese of Dubuque, Keystone AEA, National Mississippi River Museum and Aquarium

The project goal is to build a network of K-5 teachers who will have an impact on increasing student achievement levels in science. There are three program objectives – (1) Teachers increase their content knowledge in science, pedagogy, learning theory, and technology to facilitate experiences that advance student learning, creativity, and innovation in both face-to-face and virtual environments; (2) Teachers design, develop, and evaluate authentic learning experiences and assessments incorporating contemporary tools and resources to maximize content learning in context and to develop the knowledge, skills, and attitudes identified in the Iowa Core Curriculum as well as in district and national standards; and (3) Teachers are empowered to exhibit knowledge, skills, and work processes representative of an innovative professional in a global and digital society.

The program will include a seven-day institute that focuses on science content and pedagogy related to kits used in the partner school districts by K-5 teachers. Teachers will work together to develop inquiry-based, interdisciplinary lessons with differentiation appropriate for their own students. Field work by participants' students at the River Museum will be included. Face-to-face and on-line follow-up sessions will facilitate teacher sharing of lesson plans. Partner teachers will observe one another's classes to provide feedback on pedagogical practices. Formative and summative assessments will be emphasized. Teachers will develop pre- and post-assessments for their students, which will also be used to evaluate effectiveness of the program, along with ITBS scores and teacher surveys of knowledge and practice.

*Indicates high-need district.

Project: The EARTH (Environmental Activities and Resources for Teachers enHancement)

Applicant Institution: Eastern Iowa Community College District

Project Director: Kimberly Gassaway, Davenport Community School District Science Curriculum and Instruction Specialist

Proposed Project Period: Three years

Total Funding Awarded: \$447,617 (First year award = \$149,261)

Partners: Eastern Iowa Community College District, Davenport Community School District*, Advanced Technology Environmental and Energy Center, Mississippi Bend AEA, University of Iowa Science Education Center

The goal of the project is to address the low performance and improve science education of 4th – 7th grade students in the Davenport Community School District (DCSD) through teacher professional development that uses the environment as a teaching and inquiry-based theme and incorporating differentiated instruction and writing assessment strategies. The project goal addresses the U.S. Department of Education's report which states "The most direct route to improving mathematics and science achievement for all students is better mathematics and science teaching." The project goal and objectives are aligned with the National Science Education Standards through the focus on inquiry and problem-based learning and technology integration.

The professional development for 56 science teachers in grades 4-7 will include a summer institute/curriculum planning workshop focusing on inquiry-based teaching, differentiated instruction and writing assessment strategies around environmental themes and curriculum planning to incorporate new science content into classes; and academic year support seminars/onsite lesson implementation assistance which will be held throughout the school year to provide ongoing teacher support and assistance.

*Indicates high-need district.

Project: Improving Students' Critical Thinking and Representational Abilities Using an Argument Based Inquiry Approach

Applicant Institution: University of Iowa

Project Director: Brian Hand, University of Iowa Professor of Science Education

Proposed Project Period: Three years

Total Funding Awarded: \$416,501 (First year award = \$149,464)

Partners: University of Iowa, Wartburg College, Waterloo Community School District*, AEA 267

The project will extend research and professional development activities associated with the Science Writing Heuristic (SWH) approach by combining it with emerging research dealing with Multimodal Representations (MMR). The SWH approach is an argument-based inquiry approach emphasizing links between reading, writing, critical thinking, and negotiation in developing scientific literacy. MMR focuses on developing students' science understanding by combining different modes of representation (charts, diagrams, mathematical equations, pictures) with text to communicate effectively understanding of science concepts. The project will explore the integration of these two areas to improve student reading, writing, science argumentation, and critical thinking.

Forty-five middle and high school science teachers will receive progressive professional development opportunities to help implement teaching practices based on combining the SWH approach and MMR in their classrooms. Student performance on standardized science tests, critical thinking tests, teacher developed evaluations, and writing tasks used in the classrooms will be analyzed to explore the benefit of combining the two significant areas in building understanding of science concepts. Evaluation will focus on highlighting the critical components of professional development that increase teacher implementation of these approaches.

*Indicates high-need district.
