

NO CHILD LEFT BEHIND GRANT ABSTRACTS 2011-2012

Following is a list of sub-grants funded by the Arkansas Department of Higher Education through the federally funded No Child Left Behind grant program. The purpose of the grant funds is to improve the quality of teaching in Arkansas. The grant notifications were distributed in March 2012. For more information and to receive a registration form, contact the project director of the funded project using the email provided below.

ARKANSAS STATE UNIVERSITY

\$59,011

Craighead County

Project Title: Weaving Together Science and Common Core Mathematics and Literacy Through Problem Solving

Contact Information: Dr. Julie Grady – jgrady@astate.edu

The goals of Weaving Together Science and Common Core Mathematics and Literacy Through Problem-Based Learning are to (1) strengthen grades 5, 6, and 7 teacher science content knowledge; 2) increase teachers' classroom use of problem-based learning; and (3) strengthen grades 5, 6, and 7 student science content knowledge. The content emphasizes motion and forces and objects in the universe. University partners include the College of Science and Mathematics at Arkansas State University (ASU), the Rural STEM Education Center (R-STEM-EC) at ASU (College of Education), and the Educational Renewal Zone at ASU (College of Education). Blytheville School District, a high-need local education agency, is the public school partner. The instructors and instructional support staff include Dr. Kennon, Associate Professor of Science Methods at ASU; Dr. Grady, Associate Professor and Director of the ASU R-STEM-EC, and Ms. Rogers, Science Specialist assigned to the R-STEM-EC. The institute will be held for eight days during summer 2012, with two follow-up face-to-face sessions during the 2012-2013 school year. Instructors will schedule several sessions for school-based mentoring of science teacher teams. The institute will be held in laboratory space provided by the Department of Chemistry and Physics at ASU.

HENDERSON STATE UNIVERSITY

\$42,964

Clark County

Project Title: Geometry Transformed

Contact Information: Ms. Betty Ramsey – ramseyb@hsu.edu

Geometry Transformed—Teaching with the New Common Core Standards will place emphasis on teaching the new Common Core Geometry Standards through real-world, relevant situations. The main focus of the summer institute will be on the standards involving the use of trigonometric ratios in solving problems involving right triangles, the use of transformations in geometry, and proving theorems. All lessons will have at their center the eight mathematical practices which are the backbone of the Common Core Mathematical Standards. Along with increased content knowledge in these areas, participating teachers will also receive instruction in strategies and skills to increase their students' proficiencies in solving geometric problems. Emphasis will be placed on the need for conceptual understanding along with learning the processes of geometry.

Applying geometric practices to real-world situations such as construction, sustainable designs, and architecture will be the focus of lessons. An example of this is teaching trigonometric ratios involving right triangles through an investigation with solar panels. The participating teachers will solve problems related to the angle at which a solar panel would receive the optimal amount of sunlight. Giving students these types of real-world problems will help them realize how geometry, science, and environmental issues are integrated.

UNIVERSITY OF ARKANSAS, FAYETTEVILLE

\$46,770

Washington County

Project Title: Algebra 1

Contact Information: Ms. Lynne Hehr – lhehr@uark.edu

Algebra 1 consists of two major parts.

Part I: Summer Institute

Standards-based and content-driven, this institute will provide Algebra I Arkansas teachers with Algebra I content, lesson strategies, and technology integration through modules designed with other math faculty and specialists from around the state and in accordance with state Algebra I teacher needs in mind. Content will focus on the conceptual categories, domains, and clusters from the Common Core State standards that build connections to and expand the current Arkansas Algebra I Framework. The conceptual categories covered during the institute will concentrate on *Number and Quantity*, *Algebra*, *Functions*, *Geometry*, and *Statistics and Probability*. The institute can be offered as a three hour math graduate level course with 48 hours conducted during the summer institute.

Part II: Summer Institute Follow-up

As a continuum of Part I, 12 hours of full and/or half-day workshops will be offered during fall '11 focusing on Algebra I content and technology requested, and needed, by participants involved in the summer institute.

UNIVERSITY OF ARKANSAS, FAYETTEVILLE

\$48,450

Washington County

Project Title: Physical and Earth Science Process Skills and Inquiry-Based Learning

Contact Information: Ms. Lynne Hehr – lhehr@uark.edu

Physical and Earth Science Process Skills and Inquiry-Based Learning consists of 2 parts:

Part I: Summer Institute

Content-driven and framework-based, the institute provides 6th-8th grade teachers with in-depth physical and earth science content that will be integrated with the nature of science standards. Science Process Skills will be explicitly used throughout this institute at the request of partner schools. This 2 week institute will focus on inquiry-based science lessons that seamlessly blend math, literacy and science as part of everyday learning in order to provide relevance and rigor. High yield instructional learning strategies will also be incorporated throughout this institute.

Participants will have the option of receiving 3 hours of science graduate credit with 48 hours to be conducted during the summer 2 week institute followed by 12 hours of 2 one-day workshops during the fall. Hours may be obtained as teachers implement the strategies covered during the summer through on-campus professional development, classroom visits, and dissemination of information learned at school, district, and state events.

Part II: Follow-up. Two 6 hour workshops and several half-day workshops will be offered during fall 2012 and spring 2013 focusing on science content requested by participants involved with the summer institutes.

UNIVERSITY OF ARKANSAS AT LITTLE ROCK

\$47,040

Pulaski County

Project Title: Improving Teacher Quality in Geometry

Contact Information: Dr. Jim Fulmer – jrfulmer@ualr.edu

This project, **Improving Teacher Quality in Geometry**, will consist of two workshops for 25 geometry in-service teachers. Each workshop is designed for 45 content, immersion contact hours and 15 follow-up implementation hours in learning communities-face-to-face, for a total of 60 hours. Eligible participants shall include geometry teachers who teach in Arkansas public schools and private schools. The project is geared to the strategy that improving student achievement through improved quality of teaching requires improved teacher professional development opportunities. The workshop will emphasize both mathematics content and mathematics teaching methods to improve teacher quality and student achievement. Teacher-participants will be involved in research, reading, writing, oral communication, participation, and reflection. The project involves the Department of Mathematics at the University of Arkansas at Little Rock (UALR), College of Education at UALR, Little Rock School District, and Pulaski County Special School District. Each participant will receive a stipend based on a rate of \$40 per three-hours of attendance, 60 hour workshop, total possible stipend is \$800. The workshop will be five days during Summer 2012 and an additional five days during the academic year.

UNIVERSITY OF ARKANSAS AT LITTLE ROCK

\$47,040

Pulaski County

Project Title: Teaching Algebra 1 in the 21st Century

Contact Information: Dr. Jim Fulmer – jrfulmer@ualr.edu

This project, **Improving Teacher Quality in Algebra 1**, will consist of two workshops for 25 9th grade Algebra I inservice teachers. Each workshop is designed for 45 content, immersion contact hours and 15 follow-up implementation hours in learning communities-face-to-face, for a total of 60 hours. Eligible participants shall include 9th Algebra 1 teachers who teach in Arkansas public schools and private schools. The project is geared to the strategy that improving student achievement through improved quality of teaching requires improved teacher professional development opportunities. The workshop will emphasize both mathematics content and mathematics teaching methods to improve teacher quality and student achievement. Teacher-participants will be involved in research, reading, writing, oral communication, participation, and

reflection. The project involves the Department of Mathematics at the University of Arkansas at Little Rock (UALR), College of Education at UALR, Little Rock School District, and Pulaski County Special School District. Implications of the new CCSS (Common Core State Standards) will be a focus. Each participant will receive a stipend based on a rate of \$40 per three-hours of attendance, 60 hour workshop, total possible stipend is \$800. The workshop will be five days during Summer 2012 and an additional five days during the academic year.

UNIVERSITY OF ARKANSAS AT LITTLE ROCK

\$53,585

Pulaski County

Project Title: Arkansas STRIVE 2012: Teaching Inquiry and Problem Solving

Contact Information: Dr. Jim Winter – jdwinter@ualr.edu

Dr. Janet Lanza - jxlanza@ualr.edu

Arkansas STRIVE places math, science, and computer teachers from middle, junior high, and senior high schools (7th-12th) into summer research positions or on projects in industry, government agencies, universities, research facilities, and nonprofit organizations. Teachers work with professionals in the field for eight weeks and learn how professionals solve problems facing their organizations. We support about 24 teachers per summer in our program with a variety of private and public funding sources. We request matching monies from the No Child Left Behind Program (NCLB) for seventeen teachers to work on research projects in the ADHE-supported Centers for Science, Technology, Engineering, and Mathematics (STEM Centers) at Arkansas universities and at other nonprofit organizations. We also present workshops to the teachers on inquiry-based and problem-based teaching, and on using computers for data analysis. In addition, we help the teachers develop inquiry-based or problem-based lessons using the new skills and experiences that the teachers acquired during the summer. The main expected outcomes are that teachers will experience real-world research and problem solving, learn methods of inquiry and problem-based teaching, and develop two inquiry-based and problem-based lessons that they will use in their classrooms. We place the STRIVE teachers' lessons on computer CDs and give a CD to each teacher so that they have a library of good inquiry and problem-based lessons.

UNIVERSITY OF ARKANSAS AT PINE BLUFF

\$77,507

Jefferson County

Project Title: Nanoscience Experiments and Robotics for 6th-9th Grade Teachers

Contact Information: Dr. Shelton Fitzpatrick – fitzpatrick@uapb.edu

This project will facilitate activities which are aligned with Arkansas Curriculum Frameworks and state science standards. The project will consist of an institute, whereby teachers are trained to perform nanoscience experiments in the classroom. The experiments can be readily conducted by middle to high school students, demonstrate fundamental concepts about chemistry, physics, biology, and engineering. They highlight the primary concept of nanoscience that larger materials, when made very small, can have very different properties. Nanotechnology integrates scientific and technology concepts from both the physical and life sciences and is easily related to curricula across STEM fields. This cross disciplinary approach to science is emblematic of the transformation in modern science in general. Eight six-hour sessions will be offered on Saturdays, starting June 11, 2012 and ending September 28, 2012. Teachers will be trained with

regard to best practices and proven effective teaching strategies for teaching effectiveness with low income, minority, and academically challenged 6th-9th grade students. No Child Left Behind will be the unifying theme as teachers are taught how to better understand nanoscience content areas tied to Arkansas standards. The use of technology in the classroom will also be stressed.

UNIVERSITY OF CENTRAL ARKANSAS

\$49,561

Faulkner County

Project Title: Geometry and Implementation of Common Core State Standards

Contact Information: Dr. Jean McGehee – jean@uca.edu

The University of Central Arkansas in conjunction with the Arch Ford Educational Cooperative and many school districts seeks to provide a Geometry summer institute and workshops for high school teachers in Arkansas. The project goals are to acquaint teachers with the Geometry Common Core State Standards concepts, improve teachers' geometry content knowledge, and model geometry "best practices" pedagogy that will include appropriate manipulatives and instructional technology. The institute topics will focus on selected topics that are outlined in the six units of the high school geometry course for CCSS. They include transformations, trigonometry, conic sections, proof with congruence and similarity, circles, and geometric probability problems. Activities will be aligned to the AR CCSS Curriculum Frameworks for Geometry and will also relate to the Arkansas Frameworks in this year of transition. The project, if funded, will serve 25 teachers. The summer institute will be offered in eight days; there will be two follow-up days in the fall. The location will be the UCA Department of Mathematics.

UNIVERSITY OF CENTRAL ARKANSAS

\$59,204

Faulkner County

Project Title: STEM Core Team

Contact Information: Dr. Uma Garimella – ugarimel@uca.edu

UCA STEM Institute will offer STEM related level appropriate resources and professional development activities for twenty five 3-5 grade teachers. The STEM Core Team will earn 60 professional development credit hours. The program will include two week summer institute (48 hours) with an additional two one-day follow-up sessions (12hours) during the academic year. The STEM Core Team project focuses on integrating STEM areas with literacy in elementary schools so as to increase the probability of academic success for all students. Design elements will include the incorporation of multiple learning approaches (auditory, visual, and kinesthetic components) and the use of a progressive lesson format. The topics for the course will be selected on the needs assessment data and request from the teacher after the first day meeting. STEM Core team will: a) conduct STEM content specific activities that are tied to Arkansas Frameworks, common core literacy and mathematics standards and involve developing 21st century skills; b) develop tailored integrated science lessons using 5-E model; and c) connect the content to STEM careers. A sustainable professional development will be offered through continuous support by UCA instructors during the year to develop and implement STEM related activities in their classrooms.

WILLIAMS BAPTIST COLLEGE

\$53,320

Lawrence County

Project Title: Algebra 1 CCSS Institute

Contact Information: Dr. Brad Baine – bbaine@wbcoll.edu

The main thrust of this project is based on the difference between Algebra 1 as it is taught now and as it will have to be taught once the Common Core State Standards (CCSS) are in place. Professional development is needed to close the gap between Algebra 1 now and under the CCSS.

This institute is designed to close the gap between Algebra I today and the higher level content knowledge that will be included under CCSS for Algebra I teachers in a four county area: Randolph, Lawrence, Greene and Clay. During two weeks of June 2012, participants will attend eight days of the institute for six hours a day. In addition, participants will attend a 3 hour session once a month, starting in August and ending in December.

The instructional goal for this training is to give the teachers a conceptual base for CCSS knowledge, thus enabling exploration and investigation by their students while building on prior knowledge to comprehend the concepts rather than learning rote algorithms.