NO CHILD LEFT BEHIND GRANT ABSTRACTS 2012-2013

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 2013. 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 **$67,345**
Craighead County
Project Title: Fostering Science Learning: Physical Science, Common Core, and Nature of Science
Contact Information: Dr. Julie Grady – jgrady@astate.edu

The goals for the institute are to improve teaching and raise student achievement in science grades 5, 6, and 7. Institute objectives include (a) a statistically significant increase in teachers' knowledge of physical science and nature of science; (b) an increase in teachers' use of scientific inquiry; and (c) a statistically significant increase in students' knowledge of physical science and nature of science. University partners include the College of Sciences 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 and Osceola School Districts, high-need LEA's, are the public school partners. The instructional support staff includes Dr. Kennon, Associate Professor of Science Methods at ASU; Dr. Grady, Associate Professor and Director of the ASU R-STEM-EC, Ms. Debby Rogers, Science Specialist (R-STEM-EC), and Mrs. Wallece Brewer, Mathematics Specialist (R-STEM-EC). The institute will be held for eight days during summer 2013, with two face-to-face sessions during the 2013-2014 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.

ARKANSAS STATE UNIVERSITY **$55,066**
Craighead County
Project Title: Fostering Science Learning: Physical Science, Common Core, and Nature of Science
Contact Information: Dr. Cynthia Miller – camiller@astate.edu

The Measure Up for Grades 7 & 8 (MU78) project will provide a 3 hr. graduate course for 20 targeted grade 7 & 8 science and mathematics teachers (that teach students from 5 prior Measure Up grant elem. schools) to be held in July, 2013 with 48 hours of contact (8 six hr. days), two Sat. TBA 6 hr. workshops during the school year, and two classroom visits by mentors to observe participants teaching MU78 lessons. The focus will be on developing rigorous integrated physical science/measurement lessons aligned to the Common Core State Standards and the Next Generation Science Standards. This project will improve participants' Physical Science and Measurement content knowledge and pedagogy; and their students' achievement in science/math. Teachers will receive tuition/fees, stipends of $600 for the two Sat. follow-up trainings and their 5E lesson plans, classroom books & materials valued at $200, and AR Curriculum Conference registration and luncheons. Participants will receive 15 hours of professional development credit for the 3 hr. graduate course and 12 PD hours for the follow-up trainings. MU78 will allow the 5 Measure Up elem. schools students to move up vertically with their grades 7 & 8 teachers in physical science & mathematics.

ARKANSAS TECH UNIVERSITY **$59,650**
Pope County
Project Title: Engaging in Deep Content and Pedagogical Knowledge in Mathematics – A P-18 Partnership
Contact Information: Dr. Tim Carter – tcarter@atu.edu

This grant proposes a systemic approach to connecting the Core Content State Standards (CCSS) math content with middle, junior and high school teachers and university faculty. Workshops, in-service and follow up activities will begin in the summer of 2013 through the summer of 2014. The Arkansas Tech University Colleges of Natural and Health Sciences and Education will provide the content and pedagogical knowledge for this partnership. In addition, the Graduate College Center for Leadership and Learning will work with Russellville School District leaders, instructional facilitators, curriculum administrators, principals, and district office leaders in learning more about the content and the processes to utilize for observing teachers in action as they do classroom walk-throughs and evaluations. The Graduate College will offer course credit for those who desire college credit.

The ultimate outcome of this partnership will result in a deeper understanding of the depth of content knowledge required for the implementation and assessment of Core Content State Standards math content and the leadership support necessary for moving implementation of the content to student learning and high performance.

SOUTHERN ARKANSAS UNIVERSITY **$59,021**
Columbia County
Project Title: SAU Math and Science Common Core Integration Project
Contact Information: Dr. Roger Guevara – rcguevara@saumag.edu

The Southern Arkansas University Math Science Common Core Integration Project will use an innovative, blended approach to integrate Physical Science with Algebra I. Three core ideas associated with physical science as delineated in the Next Generation of Science Standards including: PS1-Matter and Its Interactions; PS2-Motion and Stability: Forces, and Interactions; and PS3-Energy will be combined with crosscutting concepts to link with selected Common Core State Standards Algebra I components including: 1) Identify key characteristics of graphs of functions including intercepts, intervals over which a function is increasing or decreasing, symmetry, end behaviors, and periodicity; 2) Construct functions using a graph; 3) Fit a function to data including linear, quadratic, and exponential models; and 4) Use properties of exponents to rewrite exponential functions and expressions. These concepts were carefully selected based on a needs assessment to address teacher needs in incorporating Common Core across academic disciplines in general and to facilitate math and science integration in particular. A key tenet of the Common Core State Standards (CCSS) and the Next Generation Science Standards (NGSS) is that disciplines must be integrated and applied to real world practical situations. Several crosscutting concepts include similarity and diversity; cause and effect; scale, proportion and quantity; systems and system models; structure and function; and stability and change.

UNIVERSITY OF ARKANSAS, FAYETTEVILLE **$49,978**
Washington County
Project Title: Algebra 1
Contact Information: Ms. Lynne Hehr – lhehr@uark.edu

Geometry and Measurement for grades 5-8 Teachers consists of two parts

Part 1: Summer Institute

Standards-based and content-driven, this institute will provide teachers of Geometry and Measurement with content, lesson strategies, and technology integration in accordance with the Geometry and Measurement needs of teachers from the partnering schools in mind. The conceptual categories covered during the institute will concentrate on Geometry and Measurement Standards, as they relate to the understanding of geometry for the Common Core Standards. The emphasis will be on the progression of the mathematical ideas through the grades, emphasizing the Common Core's Standards for Mathematical Practice. The eight day summer institute will also be offered for three hours of mathematics graduate level credit with 48 hours conducted during the summer institute and 12 hours of follow up conducted during the Fall2013 session.

Part II: Follow Up As a continuum of Part I, 12 hours of full and/or half-day workshops will be offered during Fall2013 (and Spring 2014, if needed) focusing on Geometry and Measurement content and technology determined by participants involved in the summer institute.

UNIVERSITY OF ARKANSAS, FAYETTEVILLE **$71,374**
Washington County
Project Title: K-8 Science and Engineering Principles and Practices
Contact Information: Ms. Lynne Hehr – lhehr@uark.edu

K-8 Science and Engineering Principles and Practices (SEPP) consists of two parts:

Part 1: Summer Institute

Content-driven and NGSS framework-based, the institute will provide K-8th grade teachers with in-depth engineering practices seamlessly integrated into life, earth, physical and engineering/technology and applications of science content as set forth in A *Framework/or K-12 Science Education.* This two week institute will focus on problem-based science lessons that blend engineering, 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 three hours science graduate credit with 48 hours to be conducted during the summer two week institute followed by 12 hours of two one-day workshops during the fall. Implementation of the strategies covered during the summer will consist of on-campus professional development, classroom visits, and dissemination of information learned at school, district, and state events.

Part II: Follow Up

Two six hour workshops and several half-day workshops will be offered during fall 2013 and spring 2014 focusing on science content requested by participants involved with the summer institutes.

UNIVERSITY OF ARKANSAS AT LITTLE ROCK $53,585
Pulaski County
Project Title: Arkansas STRIVE 2013: Next Generation 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 (7^{th}-12^{th}) 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 FORT SMITH $56,838
Sebastian County
Project Title: TEACH NGSS: Teach, Engage, Assess, Collaborate, and Hands-On Teaching Practices with the Next Generation Science Standards
Contact Information: Ms. Darlynn Cast - darlynn.cast@uafs.edu

This grant is a professional development program designed to equip teachers for implementing the Next Generation Science Standards (NGSS) into their teaching practice. The NGSS framework proposes integrating its three dimensions, science and engineering practices, crosscutting concepts and disciplinary core ideas, into teaching to develop a students' deeper understanding of science. This will result in increasing student motivation to learn science and inspiring them to pursue a career in science. This program will provide teachers an opportunity to develop a conceptual understanding of the NGSS framework, align learning experiences with the framework and standards, design/develop lesson plans and assessments that integrate scientific knowledge and practices and connects student learning to real-world experiences. Teachers will enhance their content knowledge and increase their ability to use multiple kinds of technologies in their classrooms. Teachers will use hands- on lab investigations and audio/video demonstration tools to reinforce oral and written arguments supported by empirical evidence to support or refute an argument. The program will be offered in the 2013 summer for two weeks and to provide further teacher support, follow-up sessions and classroom observations will be conducted in the Spring and Fall.

UNIVERSITY OF CENTRAL ARKANSAS **$55,361**
Faulkner County
Project Title: Algebra and Geometry in Vertical Teams
Contact Information: Dr. Jean McGehee – jean@uca.edu

The University of Central Arkansas in conjunction with the Arch Ford Cooperative and school districts will provide an opportunity for middle school and high school teachers in Algebra and Geometry to study the vertical development of important mathematical ideas. The project goals establish professional learning teams in various districts to encourage communication between these teachers. The teams will build on past participants in Algebra and Geometry grants so that the teams can integrate past material and grow with new ideas. A focus will be to study the Common Core Standards concepts, improve teachers' content knowledge, and model "best practices" pedagogy that will include appropriate manipulatives and instructional technology.
The grant would provide a two 4-day week summer institute and two follow-up fall sessions. The mathematical focus will be related to these major mathematical ideas: Variables & Functions, Geometric Construction, Transformations, Reasoning and Proof. The project will serve 25 teachers and take place at the UCA Department of Mathematics.

UNIVERSITY OF CENTRAL ARKANSAS **$67,100**
Faulkner County
Project Title: STEM Core Team II
Contact Information: Dr. Uma Garimella – ugarimel@uca.edu

UCA STEM Institute will extend the STEM related level appropriate resources and professional development activities for thirty 3-6 grade teachers for the 2013-2014 academic year. The participants will engage in a two-week summer institute (48 hours), two follow-up sessions (12hours) during the academic year and earn 60 professional development credit hours. The STEM Core Team II project is a continuation of 2012-2013 project that focuses on integrating STEM areas with literacy in the elementary grades 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 incorporate Next Generation Science Standards; 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 2013, 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.