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**Award Abstract #0831970**  
**Minority Student Pipeline MSP**

**NSF Org:** [DUE](#)  
[Division of Undergraduate Education](#)

**Initial Amendment Date:** September 19, 2008

**Latest Amendment Date:** August 11, 2011

**Award Number:** 0831970

**Award Instrument:** Continuing grant

**Program Manager:** Kathleen B. Bergin  
DUE Division of Undergraduate Education  
EHR Directorate for Education & Human Resources

**Start Date:** October 1, 2008

**Expires:** September 30, 2013 (Estimated)

**Awarded Amount to Date:** \$9803485

**Investigator(s):** Anisha Campbell [acampbell@bowiestate.edu](mailto:acampbell@bowiestate.edu) (Principal Investigator)  
Andrew Elby (Co-Principal Investigator)  
Nancy Shapiro (Co-Principal Investigator)  
Gladys Whitehead (Co-Principal Investigator)  
Christine Barrow (Co-Principal Investigator)  
Bruce Katz (Former Co-Principal Investigator)

**Sponsor:** University System of Maryland  
3300  
ADELPHI, MD 20783 301/445-2740

**NSF Program(s):** MSP-TARGETED AWARDS

**Field Application(s):** 0116000 Human Subjects

**Program Reference Code(s):** SMET, 9178, 9177

**Program Element Code(s):** 1792

**ABSTRACT**

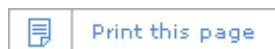
The Minority Student Pipeline Math Science Partnership (MSP)2 is led by Bowie State University (BSU) with the additional core partners of the Prince George's County Public Schools (PGCPS), the Prince George's Community College (PGCC), the University of Maryland College Park (UMCP), the University of Maryland Biotechnology Institute (UMBI), and the University System of Maryland (USM). (MSP)2 proposes to establish a strong

and the University System of Maryland (USM). (MSP)2 proposes to establish a strong, multifaceted partnership among the essential P-16 players in one of the largest minority-majority counties in the country, Prince George's County, Maryland, in order to expand the minority student pipeline in science, technology, engineering, and mathematics (STEM) fields in higher education. (MSP)2 will employ four strategies engaging STEM faculty, teachers, undergraduates, and high school students:

1. Working with approximately 750 teachers in grades 4-8 over five years, science faculty will develop two different types of professional development programs designed around principles of teaching and learning through inquiry science.
2. A total of 110 high school science teachers will engage in summer research experiences over five years with college and university STEM faculty.
3. At least 375 high school students over five years will be offered opportunities to take challenging science courses through an innovative early college/dual enrollment programs.
4. 100 undergraduate underrepresented minority college undergraduate students will be offered opportunities for teaching experiences (with 100 PGPCS science teachers to mentor them) and 50 undergraduate will be offered research experiences over 5 years.

(MSP)2 will explore four research strands through four implementation strategies: (1) In what ways do different inquiry-based professional development experiences and training for elementary and middle school teachers influence students' interest in science? Are different models more effective at achieving different outcomes? How do these possible effects compare for underrepresented minority students and teachers versus non-minority? (2) What characteristics of summer research opportunities for secondary science teachers, paired with intentional learning communities focused on the nature of scientific inquiry, lead to enhanced curriculum and greater success for students in science, particularly underrepresented minorities? (3) In what ways do opportunities for secondary students to take early-college and dual-enrollment courses affect the likelihood that students, particularly underrepresented minorities, will attend college and choose science majors? And (4) How do opportunities for undergraduate science majors to teach science lessons in elementary and secondary schools affect the likelihood that science majors will consider a career in teaching? How do early research experiences affect the likelihood that STEM majors will complete science degrees?

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**Award Abstract #0227303**

**Teachers Assisting Students to Excel in Learning Mathematics (TASEL-M)**

**NSF Org:** [DUE](#)  
[Division of Undergraduate Education](#)

**Initial Amendment Date:** September 30, 2002

**Latest Amendment Date:** September 3, 2009

**Award Number:** 0227303

**Award Instrument:** Standard Grant

**Program Manager:** Kathleen B. Bergin  
DUE Division of Undergraduate Education  
EHR Directorate for Education & Human Resources

**Start Date:** January 1, 2003

**Expires:** December 31, 2010 (Estimated)

**Awarded Amount to Date:** \$6781875

**Investigator(s):** David Pagni dpagni@fullerton.edu (Principal Investigator)  
Dianne DeMille (Co-Principal Investigator)  
David Cash (Co-Principal Investigator)  
Patricia Howell (Former Co-Principal Investigator)

**Sponsor:** California State University-Fullerton Foundation  
2600 E. Nutwood Ave.  
Fullerton, CA 92831 714/278-2106

**NSF Program(s):** MSP-TARGETED AWARDS

**Field Application(s):** 0000099 Other Applications NEC,  
0116000 Human Subjects

**Program Reference Code(s):** SMET, 9177

**Program Element Code(s):** 1792

**ABSTRACT**

Teachers Assisting Students to Excel in Learning Mathematics (TASEL-M) has been developed by a partnership that includes California State University-Fullerton, the Orange County Department of Education, Orange Unified School District, Fullerton Joint Union High School District, and Garden Grove Unified School District. TASEL-M is a standards-based, data-driven program designed to improve students' academic performance in mathematics by giving their teachers the knowledge and tools to accurately diagnose students'

by giving their teachers the knowledge and tools to accurately diagnose students' deficiencies, assess their progress, adjust the curriculum and pedagogy, and transform the departmental culture to maximize student learning in mathematics.

The partnership seeks to improve the mathematics performance of 14,000 students (approximately 70% of these students are from underrepresented minority groups) at four low-performing high schools and seven feeder middle schools. TASEL-M focuses on these students' ninety mathematics teachers, roughly one-third of whom have emergency or supplemental credentials and neither majored or minored in mathematics. Strategies employed to raise student achievement include: using data to get results; improving classroom assessment; teacher coaching and mentoring; and increasing pedagogical content knowledge. The nature and form of the comprehensive professional development activities are expected to change administrative practice in the school and in the classroom, effecting a cultural change that creates a sustainable climate of improvement and achievement.

## **PUBLICATIONS PRODUCED AS A RESULT OF THIS RESEARCH**

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Bonsangue, M. and Drew, D. "Effecting systemic change in the university: Five-Year results from the NSF Houston-Louis Stokes alliance for minority participation," *Proceedings of the Hawaii International Conference for Statistics, Mathematics, and Related Fields. Honolulu, HI*, 2005, p. 427.

Bonsangue, M., Bryson, J., DeMille, D., and Pagni, D.. "Effecting systemic change in the secondary mathematics classroom: First year results from an NSF science and mathematics," *Proceedings of the Hawaii International Conference for Statistics, Mathematics, and Related Fields. Honolulu, HI*, 353-368., 2005, p. 353.

Contreras, J and Martinez-Cruz, A. "Representing, modeling and solving problems in interactive geometry environments," *Understanding Geometry for a Changing World, 71st Yearbook*, v.71, 2009, p. 233.

Ellis, M, Contreras, J and Martinez-Cruz, A. "The Mathematical Preparation of Prospective Elementary Teachers: Reflections from an Interesting Problem," *Issues in the Undergraduate Mathematics Preparation of School Teachers: The Journal 2 (Pedagogy)*, v.2, 2009, p. 1.

Martinez-Cruz, A and Contreras, J. "Inventing a new theorem," *Understanding Geometry for a Changing World, 71st Yearbook*, v.71, 2009, p. 253.

Pagni, D. "Using hands-on activities to develop a basic understanding of combination and permutations," *Mathematics in School*, v.39, 2010, p. 15.

Pagni, D. "The Coat Check Problem: A Stimulating Lesson," *Mathematics Teaching in the Middle School*, v.13 No., 2007, p. 182.


Pagni, D. "Column Predicting: Patterns and Formulas," *Mathematics In School*, v.36 No., 2007, p. 2.

Pagni, D. "The Flanks of a Triangle: A Geometry Investigation," *Mathematics In School*, v.36 No., 2007, p. 34.

Pagni, D and Kidd, M. "Investigating Absolute Value: A Real World Application," *Australian Senior Mathematics Journal*, v.23, 2009, p. 20.

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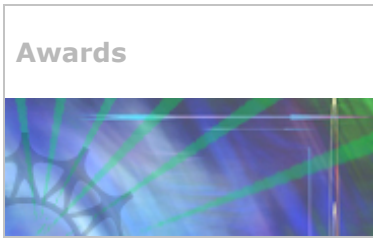
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**Award Abstract #0962778**

**Mathematical ACES: Algebraic Concepts for Elementary Students**

**NSF Org:** [DUE](#)  
[Division of Undergraduate Education](#)

**Initial Amendment Date:** May 18, 2010

**Latest Amendment Date:** September 23, 2011

**Award Number:** 0962778

**Award Instrument:** Continuing grant

**Program Manager:** Joan T Prival  
DUE Division of Undergraduate Education  
EHR Directorate for Education & Human Resources

**Start Date:** June 1, 2010

**Expires:** May 31, 2015 (Estimated)

**Awarded Amount to Date:** \$4488487

**Investigator(s):** Davida Fischman fischman@csusb.edu (Principal Investigator)  
Joseph Jesunathadas (Co-Principal Investigator)  
Carol Cronk (Co-Principal Investigator)  
Karla Wells (Co-Principal Investigator)  
Giovanna Lloset (Former Co-Principal Investigator)

**Sponsor:** California State University-San Bernardino Foundation  
5500 University Parkway  
San Bernardino, CA 92407 909/537-5929

**NSF Program(s):** MSP-TARGETED AWARDS

**Field Application(s):**

**Program Reference Code(s):** 9178

**Program Element Code(s):** 1792

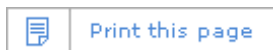
**ABSTRACT**

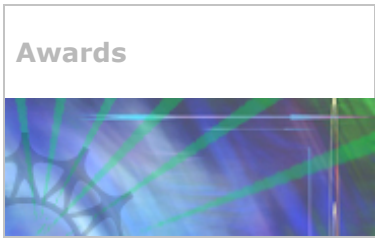
Mathematical ACES: Algebraic Concepts for Elementary Students (ACES), is a partnership between California State University, San Bernardino (CSUSB) and Ontario Montclair Elementary School District (OMSD). Supporting partners include the CSUSB Center for the Enhancement of Mathematics Education and THINK Together, a non-profit provider of after-school programs. To improve student success in 8th grade algebra, ACES is targeting the critical juncture in the mathematics education continuum as students move from

the critical juncture in the mathematics education curriculum as students move from elementary concepts to algebra. The vision is to create and sustain professional learning communities (PLCs) who work collaboratively to provide high quality instruction and continuously improve mathematics instruction. Teachers develop a view of math as exciting and interesting and gain a broad and deep understanding of the curriculum within and across grade levels.

ACES is developing a distributed, classroom-based, cadre of 60 grade-level teacher leaders who adopt math as their area of expertise and provide math leadership to colleagues. Project goals include: 1) increase the mathematics understanding and achievement of (grades 4-8) students; 2) increase teachers' mathematical conceptual content knowledge, pedagogical content knowledge, and effective application of pedagogical skills; 3) cultivate replicable cultural and systemic changes that result in continuous improvement of mathematics instruction; and 4) conduct empirical research to increase evidence-based contributions to the teaching and learning knowledge base. Program components include: 1) intensive summer institutes; 2) monthly workshops; 3) PLCs focused on use of lesson study; and 4) teacher collaboration time. Innovative features include creating a new model for classroom-based capacity building in which a cadre of grade-level mathematics lead teachers gradually increase their mathematics knowledge, earn mathematics certification, and become lesson study facilitators. Instead of removing teachers from the classroom to assume coaching type assignments, the program creates a new model for distributed grade-level leadership involving a widespread network of teacher leaders who remain in the classroom, whose professionalism is highly respected by their colleagues and administration, who guide their peers in enhancing their teaching, and whose leadership is a natural outcome of this professionalism rather than a district-appointed position. At the university, lesson study is being introduced into the pre-service teacher education program by math faculty engaging in lesson study for teaching math courses to pre-service elementary teachers, and education faculty utilizing a lesson study model for math and science methods courses in the credential program. The research focuses on the degree to which teacher variables of mathematics content and pedagogical knowledge, goal structure for students, approach to instruction and to improving instruction, self-efficacy to teach mathematics, and classroom teaching performance predict student mathematics achievement, self-efficacy to do mathematics, goals orientation, and perceptions of goal structure.

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**Award Abstract #0412413**  
**Math and Science Partnership in New York City (MSPinNYC)**

**NSF Org:** [DUE](#)  
[Division of Undergraduate Education](#)

**Initial Amendment Date:** September 21, 2004

**Latest Amendment Date:** September 15, 2008

**Award Number:** 0412413

**Award Instrument:** Cooperative Agreement

**Program Manager:** James E. Hamos  
DUE Division of Undergraduate Education  
EHR Directorate for Education & Human Resources

**Start Date:** September 15, 2004

**Expires:** August 31, 2011 (Estimated)

**Awarded Amount to Date:** \$13099989

**Investigator(s):** Pamela Mills pmills@hunter.cuny.edu (Principal Investigator)  
William Sweeney (Co-Principal Investigator)  
Francis Gardella (Co-Principal Investigator)  
Annette Digby (Co-Principal Investigator)  
Linda Curtis-Bey (Co-Principal Investigator)  
Vrunda Prabhu (Former Co-Principal Investigator)

**Sponsor:** CUNY City University of New York  
535 E 80th Street  
New York, NY 10021 212/794-5414

**NSF Program(s):** Teaching & Mstr Tchng Fellows,  
MSP-TARGETED AWARDS

**Field Application(s):** 0116000 Human Subjects

**Program Reference Code(s):** SMET, 9178, 9177, 1792

**Program Element Code(s):** 7908, 1792

**ABSTRACT**

Mathematics and science secondary education in the NYC school system is confronted with a number of serious problems: (1) shortages of mathematics and science teachers, especially experienced teachers in schools characterized by poverty and by students historically underrepresented in mathematics and science; (2) extremely low retention rates among teachers; (3) high failure rates among students who take the 8th grade

rates among teachers; (3) high failure rates among students who take the end-of-grade mathematics exam and required-for-graduation state mathematics and science Regents examinations; (4) lack of preparedness of high school graduates for college level work; and (5) schisms and poor communication between schools, between (some) university campuses, and between science, mathematics and education faculties. To address these problems, the MSPinNYC will use the strategy of a Micro/Macro approach for reform at both the local level and system wide. At the local level, twelve hub schools will be created. Each hub school will be a clinical site for teacher training, and an exemplar for excellence in mathematics and science education. The hub schools will be developed by teams of college faculty and secondary teachers working closely together in a novel model for professional development to create cultures within the schools invested in teaching as a collaborative enterprise and research-driven classroom practices. Collaborative teaching teams of faculty and teachers will work during the summer with high school students who have failed a Regents exam. These teams will continue through the school year with collaborative lesson development and collaborative research on classroom learning. Schools of Education will be changed to include more collaborative teaching practice and a greater reliance on the scholarship of teaching. New pipelines for recruiting talented mathematics and science undergraduates into a career of teaching will be created. To create reform system wide, the MSPinNYC Macro approach will include an Advisory Board of statewide policy makers, a Council of eminent scholars in mathematics and science education, and a 'jobs-alike' structure to bring together the leadership at the public school and college levels. Important questions of policy will be raised and addressed, informed by both the scholarly and the local perspectives. The MSPinNYC Micro/Macro strategy provides a new model to approach systemic reform in large and complex systems.

### **PUBLICATIONS PRODUCED AS A RESULT OF THIS RESEARCH**

Bonner, S. M.. "Teacher interpretation and use of practice tests for formative purposes,," *Journal of MultiDisciplinary Evaluation*, v.6, 2009, p. 125.

Emdin, C, and Lehner, E.. "Situating Cogenerative Dialogue in a Cosmopolitan Ethic," *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research (on-line journal): <http://www.qualitative-research.net/fqs-texte/2-06/06-2-39-e.htm>* ), v.7(2), 2006, p. art. 39.

Gerena, L. & Keiler, L.. "Using peer tutors with at risk high school English Language Learners: A case study of the effectiveness of Personal Assisted Learning (PAL) in a special MSPinNYC summer course,," *Proceedings of the International Conference of Education, Research and Innovation. Madrid, Spain., 2009.*

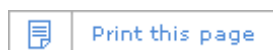
Gerena, L. & Keiler, L.. "Peer tutoring and academic success; The Personal Assistance Learning (PAL) classroom in MSPinNYC,," *Proceedings of the International Conference on Education and New Learning Technologies of The International Association for Technology, Education and Development (IATED). Barcelona, Spain., 2009.*

Mills, P., Sweeney, W.. "Bond Breaking Misconception," *Journal of College Science Teaching*, v.37, 2007, p. 11.

Mills, Pamela, Sweeney, William, Bonner, Sarah M.. "Using the First Exam for Student Placement in Beginning Chemistry Courses," *Journal of Chemical Education*, v.86, 2009, p. 738.

Stith, I., Scantlebury, K., LaVan, S., Emdin, C., Lehner, E. & Kim, M. "The Ethics of Cogenerative Dialogue: A Cogenerative Dialogue," *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research [On-line Journal]Art. 44. Available at: <http://www.qualitative-research.net/fqs-texte/2-06/06-2-44-e.htm>*, v.7(2), 2006, p. Art. 44.

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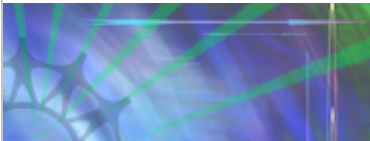


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**Award Abstract #0227105**

**Alliance for Improvement of Mathematics Skills PreK-16**

**NSF Org:** [DUE](#)  
[Division of Undergraduate Education](#)

**Initial Amendment Date:** September 30, 2002

**Latest Amendment Date:** May 17, 2007

**Award Number:** 0227105

**Award Instrument:** Standard Grant

**Program Manager:** Kathleen B. Bergin  
DUE Division of Undergraduate Education  
EHR Directorate for Education & Human Resources

**Start Date:** October 1, 2002

**Expires:** September 30, 2009 (Estimated)

**Awarded Amount to Date:** \$4179784

**Investigator(s):** Lee Sloan Isloan@delmar.edu (Principal Investigator)  
Melana Silva (Co-Principal Investigator)  
Evanita Ramos (Co-Principal Investigator)  
Walter Clore (Co-Principal Investigator)  
Mike Daniel (Co-Principal Investigator)  
Freddie Litton (Former Co-Principal Investigator)

**Sponsor:** Texas Engineering Experiment Station  
TEES State Headquarters Bldg.  
College Station, TX 77845 979/458-7617

**NSF Program(s):** MSP-TARGETED AWARDS

**Field Application(s):** 0000099 Other Applications NEC,  
0116000 Human Subjects

**Program Reference Code(s):** SMET, 9177

**Program Element Code(s):** 1792

**ABSTRACT**

The Alliance for Improvement of Mathematics Skills PreK-16 (AIMS PK-16) is a partnership of nine independent school districts in South Texas and two Hispanic-serving institutions of higher education, Del Mar (Community) College and Texas A&M University, Kingsville. The partner school districts serve roughly 30,000 students, of whom 61% are minority students and 50% are economically disadvantaged students. The overarching goal of AIMS

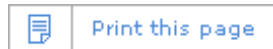
students and 30% are economically disadvantaged students. The overarching goal of AIMS PK-16 is to prepare all students in the partner districts for success in college-level mathematics courses by the time that they graduate from high school. This will require the partnership to close significant achievement gaps among student groups, especially raising the achievement of a sizeable Hispanic student population.

With its emphasis on mathematics education, AIMS PK-16 partners will engage preK-16 administrators, teachers, guidance counselors and higher education faculty in action research, case studies and analysis of student work. As a basis for establishing a challenging curriculum for all students that emphasizes the development of mathematical skills necessary for the college classroom, partner school districts teachers and administrators will work with higher education faculty to vertically align mathematical content in preK-12 courses as they relate to college expectations. TEXTEAMS professional development for teachers, then, will be directed at offering a mathematics curriculum that matches these expectations, and in understanding and implementing the Texas Essential Knowledge and Skills (TEKS) and TEKS-based assessments. To enhance teaching and learning, AIMS PK-16 will support the appropriate use of technology to support richer mathematics and problem-solving experiences for students. AIMS PK-16 school districts and university partners are committed to serving as a laboratory for research about the effectiveness of intervention strategies designed to increase mathematics achievement of all students and closing various achievement gaps.

### **PUBLICATIONS PRODUCED AS A RESULT OF THIS RESEARCH**

MaryAnn Gaines. "Using Professional Development to Increase Teachers' Content Knowledge of Mathematics," *Studies in International Relations*, v.26, 2005, p. 169.

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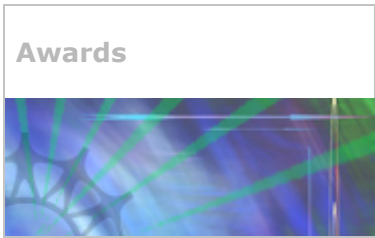


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**Award Abstract #0831921**

**Mississippi Academy for Science Teaching-- Project MAST**

<b>NSF Org:</b>	<a href="#">DUE</a> <a href="#">Division of Undergraduate Education</a>
<b>Initial Amendment Date:</b>	September 23, 2008
<b>Latest Amendment Date:</b>	November 7, 2011
<b>Award Number:</b>	0831921
<b>Award Instrument:</b>	Continuing grant
<b>Program Manager:</b>	Elizabeth VanderPutten DUE Division of Undergraduate Education EHR Directorate for Education & Human Resources
<b>Start Date:</b>	October 1, 2008
<b>Expires:</b>	September 30, 2013 (Estimated)
<b>Awarded Amount to Date:</b>	\$8715926
<b>Investigator(s):</b>	Mehri Fadavi mfadavi@jsums.edu (Principal Investigator) Shelia Smith (Co-Principal Investigator)
<b>Sponsor:</b>	Jackson State University 1400 J R LYNCH ST. Jackson, MS 39217 601/979-2931
<b>NSF Program(s):</b>	EXP PROG TO STIM COMP RES, MSP-TARGETED AWARDS
<b>Field Application(s):</b>	0116000 Human Subjects
<b>Program Reference Code(s):</b>	SMET, 9177, 1792
<b>Program Element Code(s):</b>	9150, 1792

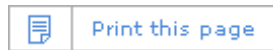
**ABSTRACT**

This project is a novel alliance among the state school system, Jackson State University (JSU), Jackson Public Schools and other public schools in Mississippi. The project also partners with the Ironwood Observatory and Education Center in Hawaii, the James Cook University Center for Astronomy in Australia and the NASA Stennis Space Center in Mississippi. The focus of the partnership is on high school physics, chemistry and earth science. The project anticipates enabling 45 preservice teachers to obtain teaching licenses in high school science. Courses will be designed and taught by the College of Education and Human Development and the College of Science, Engineering and Technology. The project will provide 200 inservice teachers with 160 hours of professional development

Project will provide 200 inservice teachers with 100 hours of professional development. The goal is to enable teachers to implement National Science Education Standards and the Mississippi Science Curriculum Frameworks for high school (9-12) education. The long term goal is to improve student achievement in science and to significantly reduce achievement gaps in the science performance within the diverse student population.

The inservice component consists of two compressed 3 credit hours graduate courses. Each course will be taught in 10 days (20 days total), two weeks in summer and 10 Saturdays during the academic year. The emphasis will be on conceptual development for each major topic and will include coursework, inquiry-based laboratory work, demonstrations, hands-on activities, and problem solving with special emphasis on using technology as tools of instruction. Project team members will complete at least three follow-up visits to the classrooms of the participants.

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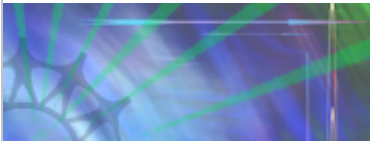


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**Award Abstract #1102997**

**The NanoBio Science Partnership for Alabama Black Belt Region**

**NSF Org:** [DUE](#)  
[Division of Undergraduate Education](#)

**Initial Amendment Date:** September 6, 2011

**Latest Amendment Date:** September 6, 2011

**Award Number:** 1102997

**Award Instrument:** Continuing grant

**Program Manager:** Elizabeth VanderPutten  
DUE Division of Undergraduate Education  
EHR Directorate for Education & Human Resources

**Start Date:** September 1, 2011

**Expires:** August 31, 2016 (Estimated)

**Awarded Amount to Date:** \$3866139

**Investigator(s):** Shaik Jeelani jeelanis@mytu.tuskegee.edu (Principal Investigator)  
Daniel Boyd (Co-Principal Investigator)  
Mahesh Hosur (Co-Principal Investigator)  
Mohammed Qazi (Co-Principal Investigator)  
Carolyn Wallace (Co-Principal Investigator)

**Sponsor:** Tuskegee University  
58 Tuskegee University  
Tuskegee Institute, AL 36088 334/727-8501

**NSF Program(s):** MSP-TARGETED AWARDS

**Field Application(s):**

**Program Reference Code(s):** 9178, 1792

**Program Element Code(s):** 1792

**ABSTRACT**

The NanoBio Science Partnership is led by Tuskegee University and includes partner universities (Auburn University, Alabama State University, Tuskegee University, The University of Alabama at Birmingham, and The University of Alabama); community colleges (Central Alabama Community College, Enterprise State Community College, Shelton State Community College, Wallace State Community College, Hanceville, and Wallace State Community College, Selma) and school districts (Barbour, Bullock, Dallas,

Wade State Community College, Selma) and school districts (Barbour, Bullock, Calhoun, Lee, Lowndes, Macon, Montgomery, Perry and Selma). The partnership also includes supporting partners from the Alabama Math Science and Technology Initiative (AMSTI), the McWane Science Center, Cornell and Wisconsin Materials Research Science and Engineering Centers, the Southeastern Consortium for Minorities in Engineering (SECME), and local industry.

The NanoBio Science Partnership addresses critical needs in middle grade (6th-8th) science education in the Black Belt region, an area that has long been characterized as socioeconomically and educationally disadvantaged. The partnership provides professional development to 6th to 8th grade science teachers in order to shift their instruction from conventional teaching strategies to the use of an inquiry-centered approach in conjunction with the infusion of NanoBio science principles and 3-D simulations of concepts from their science curricula. Curriculum modules that support inquiry are being developed for use by the teachers and are tied to the middle grade science curricular objectives. The project also is recruiting and training prospective science teachers through the partnering universities' teacher preparation programs to provide them with an appropriately challenging and contemporary science curricula and teacher education foundation. Data on student and teacher performance are collected and analyzed through quantitative and qualitative methods. Ultimately, the project will directly impact approximately 80 teachers and 10,000 students over five years. The partnership seeks to make a lasting positive influence on education in the Black Belt region and its economy. Findings in connection with research questions being studied in the project and in regards to the overall project evaluation are being synthesized in order to be disseminated broadly.

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