Research and Sponsored Programs *Update*

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For information about the Office of Research and Sponsored Programs, please call (606) 783-2010.

Math and Science Partnership project to enhance science education in area high schools

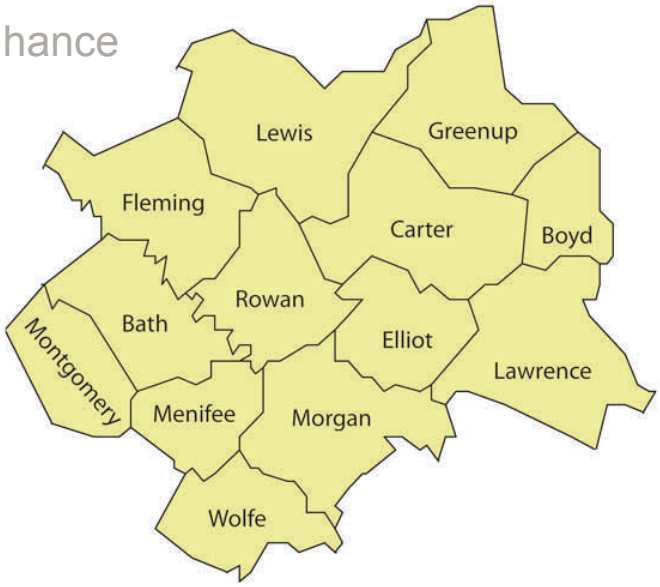
Faculty from MSU's College of Science and Technology and the College of Education were awarded a two year, $200,000 grant from the National Science Foundation's (NSF) Math and Science Partnership–Start Program.

MSU's plan is to develop a collaborative strategy for the enhancement of the educational infrastructure in the 13 counties in Kentucky that are within an hours drive of the University (see figure 1).

The core project team includes Dr. Douglas Dennis, Biological and Environmental Sciences Chair; Dr. Carol Wymer, Associate Professor of Biology; Jennifer O'Keefe, Assistant Professor of Physics; and Dr. Lesia Lennex, Associate Professor of Education.

Additionally, representatives from the Ashland, Big Sandy and Maysville branches of the Kentucky Community and Technical College System will also serve on the project team.

The project, titled "Enhancing Science Education in Northeastern Kentucky," is a planning grant that builds upon efforts achieved in the Appalachian Math and Science Partnership (AMSP), a project spearheaded by the University of Kentucky (of which MSU was a substantive participant).



(Figure 1). The 13 Counties involved in the project are: Bath, Boyd, Carter, Elliot, Fleming, Greenup, Lawrence, Lewis, Menifee, Montgomery, Morgan, Rowan and Wolfe. Additional partners include the Ashland, Big Sandy and Maysville Community and Technical Colleges.

MSU's goal is to improve science education in grades 5-8 in the 13 partner Counties. The team will conduct a needs assessment, evaluate the middle school teacher education curriculum, develop curricular modules that address any needs, and deliver these modules to teachers through Summer Teaching Institutes at MSU.

The project team will also identify "teacher-leaders" at each school system who can provide additional assistance to their colleagues.

An advisory committee comprised of members of the communities and educational experts from within and outside the region will be formed to help guide the planning. Additionally, the grant funding will provide for an external evaluator to help assess the project's success.

MSU awarded GEAR UP grant from US Department of Education

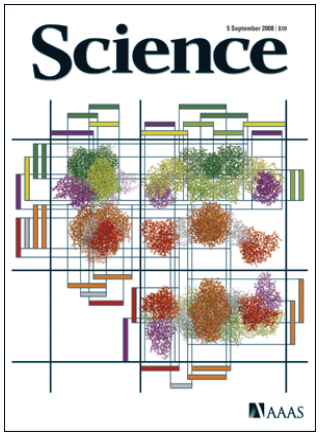
Morehead State University's Institute for Regional Analysis and Public Policy has been awarded a Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) grant from the U.S. Department of Education.

The project will receive an initial award of $1,684,000 to help disadvantaged middle and high school students better prepare for college in Floyd, Johnson, Magoffin, Martin, Morgan and Pike Counties.

The GEAR UP grant is anticipated to be for a six year period, bringing the total expected amount of the award to $10,104,000, making this the largest competitive grant award in MSU's history. The grant will be matched dollar for dollar by the various partners involved in the project, bringing the total expected amount of funding for the project to $20,208,000.

The major focus will be mathematics and science. Beginning in the seventh grade, GEAR UP students participate in such activities as tutoring, mentoring, financial aid, college preparation workshops, college visits, career exploration and summer enrichment programs. The goals and objectives are based on a high need for both family and academic support mechanisms and will focus on student development, teacher/curriculum development, and parent development clusters with a special emphasis on parental awareness and involvement.

Mathematics professor's research highlighted in *Science*



Associate professor of Mathematics, Dr. Doug Chatham, had his research profiled in the Sept. 5, 2008 edition of *Science* Magazine.

Science is the world's leading journal of original scientific research, global news and commentary, according to the publication's Web site.

The research explored a variation on the classic N-queens problem, based on an 1850 article by Max Bezzel. The problem asks for an arrangement of N chess queens on an N x N chessboard so that no two queens attack (two queens cannot be in the same row, column or diagonal).

The researchers examined what happens when pawns, which interrupt the queens' lines of attack, are allowed on the board. The group proved that each additional pawn permits an extra queen, provided the board is large enough. For example, with two pawns, it is possible to get 10 queens on a standard 8 x 8 board.

The project, funded by a Kentucky NASA-EPSCoR (Experimental Program to Stimulate Competitive Research) grant, involved Dr. Gerd Fricke, MSU professor of mathematics; Dr. Duane Skaggs, MSU assistant professor of mathematics; and MSU graduate Jon Reitmann. Additionally, the research group also includes Dr. Maureen Doyle of Northern Kentucky University and Matthew Wolff, an MSU graduate who currently works at Pyramid Controls in Cincinnati.

IT Director receives USDA grant

Brent Jones, Director of Information Technology at Morehead State University, was recently awarded a $72,000 Distance Learning and Telemedicine (DLT) grant from the United States Department of Agriculture (USDA).

According to the USDA, the DLT Program is specifically designed to meet the educational and health care needs of rural America through the use of advanced telecommunications technologies.

Jones' project will implement real-time, online distance learning education pods in three rural end user sites located at the West Liberty, Jackson, and Prestonsburg regional campuses.

Each pod will consist of ten microcomputer workstations equipped with a web camera, microphone, and collaborative online learning software.

Classes will be developed and delivered from Morehead State University's main campus by regular MSU faculty, and broadcast to students in the regional centers via an existing high-speed network.

Students will participate at each end-user site, providing them with a learning environment similar to what they could expect to experience in a face-to-face classroom at the main University campus location.

The goal is to replicate the classroom learning experience in a cost efficient manner to students place-bound in rural locations, and to provide a mechanism for real-time, online advising and consulting services for rural students.

The grant award will allow for the purchase of the hardware and software necessary to implement the project.

RSP conducts faculty workshops

Once each semester, Research and Sponsored Programs (RSP) staff conduct a series of workshops designed to help faculty and staff understand the various processes involved with applying for, receiving and managing external funds. The workshops offered by RSP include:

Shannon Harr, Director of Research Integrity and Compliance, speaks to MSU faculty and staff during a post-award administration workshop.

- Introduction to Pre-Award — Details the services offered by RSP's Pre-Award staff, such as funding source location, narrative development, budget development and agency guideline interpretation.
- Proposal Development — A in-depth look at the proposal writing process, with tips to help faculty and staff improve their project and proposal development skills.
- Post-Award Administration — What happens once I receive a grant? This workshop explains how to manage post-award activities such as setting up accounts, IRB and IACUC protocols, procedures and purchasing project-related supplies.

Additional workshops on budget development are also being planned. For more information about RSP workshops, please contact the RSP office at (606) 783-2010.