

# Research and Sponsored Programs *Update*



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

## Space Science professor, students study supermassive black holes

Dr. Thomas Pannuti, associate professor of space science, was recently awarded \$10,719 from Kentucky NASA EPSCoR (Experimental Program to Stimulate Competitive Research) to facilitate the observation of emissions from gamma-ray bright BL Lacertae objects (also known as Blazars).

The research study is part of a partnership between Western Kentucky University (WKU) and NASA's Fermi Gamma-ray Space Telescope (GLAST).

According to Pannuti, Blazars are the "active nuclei" of galaxies, and emit a jet of material. These nuclei are composed of a supermassive black hole at the galaxy's center, and are powered by the surrounding gas, dust and occasional stars around them.

As the matter spirals inward, Pannuti said, a hot accretion disk is formed that generates tremendous amounts of energy. This energy can be measured by telescopes of varying wavelengths, such as MSU's 21-meter radiotelescope, WKU's optical telescope and NASA's orbiting gamma-ray telescope.

"Blazars are extremely luminous objects," said Pannuti. "When we detect them, we are in fact detecting very distant galaxies. Therefore, we learn about what galaxies were like, as well as what the universe was like at that epoch as well."

Pannuti said the Kentucky NASA EPSCoR funding will help pay for undergraduate research assistants who will assist in the observation and measuring of Blazars. Pannuti and his research assistants will also attend national meetings to disseminate their findings.

"Is the universe going to keep expanding forever?" Pannuti said. "Is it going to expand, stop and collapse upon itself again? In order to understand these questions, you need to know about the properties of galaxies."

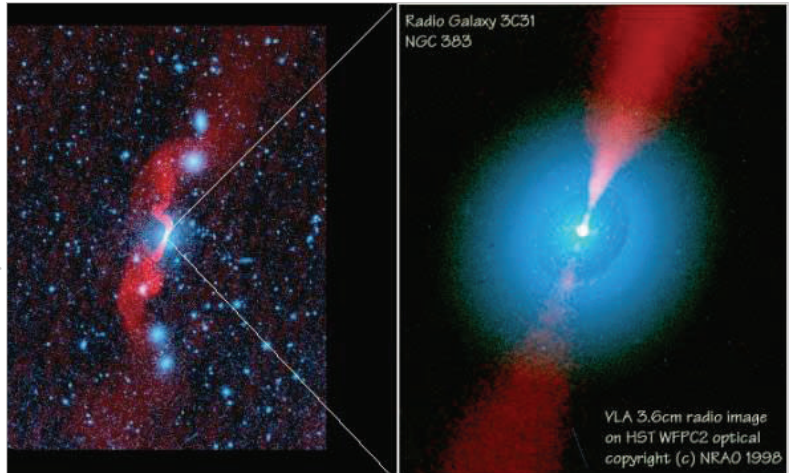


Image courtesy of NRAO/AUI

The observation of Blazars (like the one pictured above) helps researchers better understand how galaxies behave. In turn, the behavior of galaxies can provide information on how the entire universe will evolve over time.

## Spring 2009 ORSP workshop schedule released

The Spring 2009 ORSP workshops schedule is as follows:

- ORSP Orientation
  - February 10, 1:30 to 3:30 p.m.
  - or February 11, 9:15 to 11:15 a.m.
  - ORSP Conference Room, 901 Ginger Hall
- Sponsored Programs Information Network (SPIN)
  - \*A searchable database of funding opportunities
  - February 17, 9:15 to 11:15 a.m.
  - or February 18, 10 a.m. to 12 p.m.
  - Ginger Hall 405
- Development of Budget
  - March 3, 9:15 to 11:15 a.m.
  - or March 4, 1:30 to 3:30 p.m.
  - ORSP Conference Room, 901 Ginger Hall
- Proposal Development
  - March 24, 9:15 to 11:15 a.m.
  - or March 25, 1:30 to 3:30 p.m.
  - ORSP Conference Room, 901 Ginger Hall
- Post-Award Administration
  - February 26, 9 to 11 a.m.
  - or March 26, 1 to 3 p.m.
  - ADUC 312

For more information about ORSP workshops, please contact the ORSP office at (606) 783-2010.



## NEH grant award funds library's preservation needs assessment



*H*ow do you protect 3,200 linear feet of books, photographs, recordings and other irreplaceable archival material?

This is an important question that will be answered when MSU's Camden-Carroll Library undergoes a preservation needs assessment thanks to a \$6,000 grant from the National Endowment for the Humanities (NEH).

Donna Baker, project director and Head of Special Collections and Archives at the library, said the funding will be used to hire a preservation service librarian from the Southeastern Library Network, of which Camden-Carroll Library is a member.

"The analysis will tell us what preservation measures we can take to protect our collection," Baker said.

According to Baker, storage methods, light exposure and environmental factors can all affect how books, photographs and other materials deteriorate. The consultant's job will be to focus upon measures to improve the current condition of the collections and their environs, while also generating recommendations for long-term improvements, Baker said.

While the entire collection will be assessed, the focus of the preservation needs assessment will be the Special Collections and Archives area, which includes the James Still Room, the Jesse Stuart Collection and the Adron and Mignon Doran collection, among others.

"The regional and literary value of these items makes it crucial to have an assessment to plan for the improvement and maintenance of the materials in Special Collections and Archives," Baker said. "If these items were to deteriorate, understanding the cultural heritage of this region, as well as evaluating the legacy of Appalachian writers, would be severely undermined."

Baker said she expects the assessment to be complete by October 2009.

## New math and science partnership aims to engage middle schools

A \$129,630 grant award from Kentucky's Improving Educator Quality State Grant Program (via US Department of Education) will help fund a new project designed to increase the science, technology, engineering and mathematics (STEM) achievement of middle school students.

The project, which was developed collaboratively with county school districts and Pikeville College, includes the counties of: Bath, Floyd, Magoffin, Menifee, Morgan, Johnson and Owsley.

The project team will recruit 40 middle school mathematics, science and special education teachers in a professional development delivery system that consists of onsite data assessment meetings in each school, a 5-day summer institute, and ongoing mentoring sessions with college faculty paired with a classroom teacher.

According to Cathy Gunn, project director and dean of MSU's College of Education, the delivery system is modeled after the Kentucky Reading Project, and incorporates scientifically researched instructional strategies that have been found effective in math and science achievement.

Other project team members include 21st Century Education Enterprise Director Krista Barton, 21st Century Education Enterprise

Professional Development Associate Rebecca Roach, and Robert Boram, professor of physical sciences.

To prepare middle school students for college and STEM-related fields, the project team will host an "EXPLORE Your Future" fair on campus, where students will meet faculty and service providers to

discuss prerequisites for both high school and postsecondary education.

"Focusing on middle school students allows the project team to promote science and technology related fields at a

time when they still have time to make career decisions," said Gunn.

One component that Gunn is particularly excited about is the establishment of an online learning community. The community will host learning modules developed by project participants, discussion areas for organized and informal discussions, a document room, online assessments, and more.

Teaming with the Kentucky Dataseam Initiative, ([www.kydataseam.com](http://www.kydataseam.com)), the project team plans to create a digital repository for teachers and students involved in the project. Furthermore, communication can take place through wikis, blogs and iChat, said Gunn.

The project ends with a culminating showcase and a rigorous evaluation in May 2010.

“Focusing on middle school students allows the project team to promote science and technology related fields at a time when they still have time to make career decisions.”

— Cathy Gunn, dean, College of Education