

was also an author on the paper about the research.

A muon is an elementary particle similar to the electron with the same negative electric charge, a spin of half but more rest mass. For technical reasons, the positive muon (antiparticle) decay was actually measured, Giovanetti says.

The experiment allowed researchers to determine the muon lifetime, which is directly related to the strength of the weak force and therefore determines the weak coupling or weak charge to an unprecedented accuracy of 0.6 parts per million. Giovanetti says, "This weak coupling constant, the Fermi constant, is a fundamental natural constant, similar to the electric charge for electrical forces. It is needed for exact calculations of processes in the world of elementary particles."

The JMU team built and tested several electrical components used in the experiment, which originated at the University of Illinois and Boston University. A host of other universities in the United States and abroad joined in over the years.

"The people involved were hard-working and dedicated to doing a high-quality measurement. They were also eager to explore and share ideas with a very open and friendly attitude. We had many top-notch students, postdoctoral researchers and professors working on this project. So my students and I were able to learn a great deal in a very supportive environment," continues Giovanetti. "Core physics knowledge coupled with research experience is the goal of our curriculum. Our students learn as well as contribute." ❧

'Core physics knowledge coupled with research experience is the goal of our curriculum. Our students learn as well as contribute.'

— KEVIN GIOVANETTI

[SCHEV Awards]

Kolvoord and Rosser named outstanding

The State Council of Higher Education for Virginia and Dominion Resources honored

JMU professors Robert A. Kolvoord and J. Barkley Rosser Jr. with the 2011 Outstanding Faculty Award.

Kolvoord is a professor of integrated science and technology, and Rosser is an economics professor. They join 12 recipients who were selected from a pool of 106 applicants nominated by their institutions for excellence in teaching, research, knowledge integration and public service.

Kolvoord joined the JMU faculty in 1995 as an early member of the integrated science and technology program. He serves as the interim director of the School of Engineering

and a co-director of the JMU Center for Science, Technology, Engineering and Math Education, and Outreach.

Rosser has been a professor at JMU since 1977, and holds the Kirby L. Cramer Jr. Chair of Business Administration. He is best known for applying ideas from complex nonlinear dynamics to various sub-fields

of economics. Rosser founded the Society for Nonlinear Economic Dynamics and co-founded the United States Society for Ecological Economics. He has served for

nearly a decade as editor of the influential *Journal of Economic Behavior and Organization*. ❧



SCHEV Outstanding Faculty Awardees Barkley Rosser and Robert Kolvoord.

[Outstanding Outcomes]

Social work program works

The Council for Higher Education Accreditation recognized JMU's social

work program with a 2011 Award for Outstanding Institutional Practice in Student Learning Outcomes.

JMU's program was one of four selected from 32 applications for the 2011 award. CHEA cited it for consistent success in developing, applying and maintaining evidence of student-learning outcomes as a part of ongoing efforts to evaluate and improve the program of study. The program's senior assessment is competency-based and includes a written comprehensive exam, a comprehensive oral exam and a field practicum/internship evaluation.

"Excellence in assessment is an ongoing process positively impacting the curriculum as well as teaching and learning strategies," says R. Ann Myers, professor and head of the JMU Department of Social Work.

Senior social work major Sarah Pike says, "By attending department meetings through my position on the Student Advisory Committee, I witness firsthand the effort each and every staff member puts into making the program the best it can be based on feedback received from students." ❧

[Thermal Fluids Lab]

Researchers able to tackle heart, water, aerodynamics

Researchers at JMU have a new lab with cutting-edge technology in their arsenal to study heart conditions, aerodynamics, water flows and even applications not yet considered.

A \$500,000 grant from the National Science Foundation was used to equip the state-of-the-art advanced thermal-fluids laboratory. Located in the Health and Human Services building, the lab is outfitted with a stereo particle image velocimetry system, a flow visualization water tunnel, a subsonic wind tunnel and a heart simulator system.

(Right): Professors discuss JMU's new thermal fluids lab, which is helping JMU collaborate with local hospitals.

JMU engineering professor Olga Pierrakos and integrated science and technology professor Karim Altafi secured the grant for the equipment. The lab is also open for use by professors and students from other disciplines at JMU, as well as researchers from neighboring colleges and universities, area companies, and area schools.

Pierrakos has already used the heart simulator in collaboration with doctors from Rockingham Memorial Hospital and the University of Virginia Medical Center. ❧

