LIGO Mirror on Loan for Gravitational-Wave Studies

Physics students are getting a rare opportunity to use a piece of high-tech equipment to learn more about, and detect, gravitational-waves. Joshua Smith, CSUF assistant professor of physics, currently has a LIGO mirror in his lab, on loan from the LIGO Lab at the California Institute of Technology.

The mirror, Smith explained, will be used to measure gravitational waves using laser interferometer in the Laser Interferometer Gravitational-Wave Observatory (LIGO) detectors. “We’re measuring scattered light from its coated surfaces in order to determine whether it is within acceptable limits, and to characterize the optical coatings.”

The work of Smith, his students and colleagues, is part of a LIGO global research effort to detect gravitational waves – as a new way to explore the universe. LIGO, funded by the National Science Foundation, is a project led by Caltech and the Massachusetts Institute of Technology.

Online Graduate Degree Programs Top-Rated

The College of Engineering and Computer Science’s online software engineering program, along with online graduate degree programs in business and education, earned top ratings in U.S. News & World Report’s 2014 Best Online Programs rankings released Jan. 8.

For the 2014 rankings, engineering programs ranked No. 16; education programs ranked No. 22; and the business program in information technology ranked No. 23. This year’s rankings included evaluations of nearly 1,000 distance-education programs in the country. Only degree programs that are 100 percent online were included in the rankings.

The M.S. in environmental engineering stands out because its content is rooted solidly in civil engineering with focal points on water quality, air quality, regulatory issues and sustainable development.

The College of Education’s online graduate programs include the M.S. in instructional design and technology, offered since the fall of 2002, and the master of science in education degree program with concentrations in educational technology, elementary curriculum and instruction, reading and secondary education – all launched in fall 2010.

Mihaylo College of Business and Economics has offered the online master’s degree program in information technology since 2005.

Students Develop Mind-Controlled Robotic Arm

Imagine if a person loses mobility of an arm following an accident or stroke, and to regain use, is able to use a robotic arm to assist with movement – solely with the power of one’s thoughts.

This science fiction-like technology is what College of Engineering and Computer Science students are imagining with their Brain-Computer Interface Robotic Arm for Rehabilitation project, under the direction of Kiran George, associate professor of computer engineering.

The project allows individuals to control – with facial expressions – a mechanical arm attachment using commercially available brain-computer interface technology, explained mechanical engineering major Adrian Iniguez. “Electrical signals from the brain are measured and decoded into digital output,” Iniguez said. “The digital output is then analyzed and translated to physical movements.”

The mechanical arm brace is designed to help individuals recover faster from the loss of mobility, added senior computer science major Hayden Donze.

A Western Digital Foundation grant is helping underwrite the research. Funding from two National Science Foundation grants awarded to George also support the robotic arm project.

What’s exciting is that both student-led projects are creating an opportunity to collaborate with mentor engineers from Western Digital, George said. “The Western Digital engineers present a valuable learning experience for students,” George said. “They provide students with varied opportunities to learn about the latest technology trends, and expose them to how technology ideas are conceived, realized and marketed in industry.”
History Honor Society Is Recognized

For the 32nd year in a row, Cal State Fullerton's Theta-Pi Chapter of Phi Alpha Theta, the history honor society, has received the organization's "Best Chapter Award" for accomplishments in promoting the mission of the honor society on the local level. Because of its long-standing accomplishments in this area, the chapter also received the Nels A. Cleven Award, which honors regional chapters recognized five or more times as best chapters.

The honor was presented to the chapter in January during the society's national biennial convention in Albuquerque, N.M. “This recognition is evidence of the commitment of our students and their faculty mentors to excellence in historical scholarship,” said Jochen Burgtorf, chair and professor of history.

$1.5 Million Grant Will Prepare Teachers

The California State University Foundation has been awarded a $1.5 million James Irvine Foundation grant to prepare educators who are proficient in Linked Learning and provide seamless Linked Learning pathways to bachelor’s degrees in high-demand fields, such as engineering and health sciences.

“The funding from this grant will be instrumental in the development of new educational leaders who are versed in the Linked Learning approach,” said Ephraim P. Smith, CSU executive vice chancellor and chief academic officer for the 23-campus system. “This new wave of educators, along with the programs being established, will lead to new levels of engagement, persistence and success for California’s students.”

Did You Know?

- The Mihaylo College of Business and Economics is among only 4.3 percent of business schools worldwide that hold dual accreditations in business and accounting from AACSB, the Association to Advance Collegiate Schools of Business.
- The College of Engineering and Computer Science is home to STEM (science, technology, engineering and mathematics) recruitment and retention programs, including Engineering Innovation – a pre-college summer program partnership with Johns Hopkins University.
- The College of Education offers five online master’s degree programs. The programs were rated 24th overall of 204 programs by U.S. News & World Report.
- Fifteen percent of CSUF's tenure-track faculty members are involved in sustainability-related research.