Astronomers receive top presidential award

Scott Gaudi, astronomy, and Christopher Hirata, astronomy and physics, are two of 96 researchers named by President Obama as recipients of the Presidential Early Career Award for Scientists and Engineers (PECASE) – the highest honor given by the U.S. government to science and engineering professionals in the early stages of their independent research careers. Awardees are selected for their pursuit of innovative research at the frontiers of science and technology and their commitment to community service as demonstrated through scientific leadership, public education, or community outreach. Gaudi has been directly involved in worldwide collaborations that have found five of the eight planets discovered using gravitational microlensing. He led a group that made the first-ever discovery of two planets at once using this method. Hirata will join the departments of astronomy and physics as a visiting professor in September, and will assume a regular faculty appointment in 2013. He studies dark energy and the accelerating universe, gravitational lensing, and the large scale structure of the universe. This is the third year in a row that researchers from arts and sciences have been selected for the PECASE. Ian Howat received the award in 2011 and Stephen Lower received the award in 2010. Both are faculty members in the School of Earth Sciences.

Buckeye Electric Motorcycle sets speed record

The Buckeye Electric Motorcycle Race Team set an East Coast Timing Association (ECTA) speed record for electric motorcycles at ECTA's Ohio Mile Track in Wilmington. The team holds the title of fastest collegiate electric motorcycle with a record speed of 144.35 mph – an increase of 30 mph over the 2011 record. Upgrades made to the motorcycle's battery pack with lithium cobalt batteries led to the increased speed. Jennifer Holt, a professional motorcycle driver and Ohio State graduate student, steered the team to victory as she did for the 2011 record. What's next for the team? Members will work to build a new motorcycle capable of surpassing the 150 mph mark – something only a few professional teams have been able to accomplish. In addition, the team plans to compete in the famous Isle of Man race (the Isle of Man is situated between England Scotland, Ireland, and Wales, in the Irish Sea). Launched in 2010, the Buckeye Electric Motorcycle Race Team is a student-led team based out of the Center for Automotive Research. The team’s vision is to enhance the development of clean, electric motorcycle technology.

Ohio State partners with GM to improve fuel economy

The U.S. Department of Energy is investing $2.67 million in a collaboration between Ohio State, General Motors (GM), and Meridian Lightweight Technologies to improve the manufacturing of automobile components. Jerald Brevick, associate professor of integrated systems engineering, and Glenn Daehn, professor of materials science and engineering and faculty liaison for the Ohio Manufacturing Institute, will work with GM and Meridian Lightweight Technologies to further develop the high pressure casting process for manufacturing automotive structural parts. The initial focus will be on car doors. The research will involve evaluation of new magnesium alloys, further development of the die casting process, and enhancement of computer methods for simulating metal flow, heat flow, and mechanical stresses in the casting. By substituting magnesium for the steel used in inner door panels, car doors could weigh 60% less, resulting in significant fuel economy improvements and carbon emission savings.

Ohio State receives $3 million from Third Frontier for PET/MRI

Ohio State, in collaboration with Philips Healthcare and Cardinal Health, will receive $3 million from the Ohio Third Frontier Innovation Platform Program (IPP) for its PET/MRI, a next-generation, multimodal molecular imaging technology. The Third Frontier defines an Innovation Platform as “an already existing capacity that incorporates unique technology capabilities
and strengths, talent, equipment, facilities, engaged industry partners, a track record of research commercialization and innovation, intellectual property, and other resources in a particular technology area that supports job creation and business opportunities within Ohio.” The goal of the Innovation Platform Program is to link the development of an already established Innovation Platform occurring at Ohio colleges, universities, or not-for-profit research institutions to specific late-stage development and innovation needs of Ohio companies. The Ohio State collaboration will focus on the development of new radiopharmaceuticals and imaging technology to improve detection and diagnosis of cancer, neurologic, and cardiovascular disease. Michael Knopp, professor of radiology and director of the Wright Center of Innovation in Biomedical Imaging, will lead this project for Ohio State.

Promoting colorectal screening in underserved populations

Usha Menon, vice dean and professor, College of Nursing at Ohio State, and Linda Larkey, professor, Arizona State University College of Nursing and Health Innovation, are co-principal investigators on a four-year, $3 million grant from the National Cancer Institute (NCI) to promote colorectal cancer (CRC) screening among underserved populations. According to the Centers for Disease Control and Prevention, of cancers that affect both men and women, colorectal cancer is the second leading cancer cause of death in the U.S. CRC almost always develops from precancerous polyps, or abnormal growths, in the colon or rectum that can be detected through screening and removed before becoming cancerous. Researchers will focus on the need for regular screenings in underserved populations to facilitate early diagnosis and reduce morbidity and mortality rates. The effectiveness of a two-phase intervention will be tested using “community-to-clinic navigators” to guide individuals from hard-to-reach, multicultural, and underserved populations into primary care clinics. The effects of intervention (screenings completed in a clinic) will then be tracked. This study will advance several national health priorities, including the emphasis of NCI on reducing cancer-related disparities and the continued need to increase cost-effective CRC screenings to realize the full benefits of early detection.

Ohio State receives first Mellon Foundation Sawyer grant

Eight College of Arts and Sciences faculty members received a $175,000 grant from the Andrew W. Mellon Foundation to organize a John E. Sawyer Seminar on the Comparative Study of Cultures. The Sawyer Seminar program brings together faculty, foreign visitors, postdoctoral fellows, and graduate students from a variety of fields and provides support for comparative research on the historical and cultural sources of contemporary developments. The proposal submission process is by invitation only. This was Ohio State’s first invitation to submit. The researchers will organize a year-long series of events focusing on the intersection of language, politics, and human expression in two critical geopolitical regions – the Balkans and South Asia. The series will draw on Ohio State’s historically strong program in Balkan studies and a rising program in South Asian studies. The juxtaposition of the Balkans and South Asia will offer academics and policymakers a transnational perspective on the relationships between culture and politics. The program will culminate in a conference in autumn 2014. The investigators include Theodora Dragostinova, Scott Levi, and Mytheli Sreenivas, history; Yana Hashamova, Jessie Labov, and Andrea Sims, Slavic and East European languages and cultures; Pranav Jani, English; and Brian Joseph, linguistics.

Chemist receives $2 million NIH instrumentation grant

To help NIH-supported investigators remain at the forefront of modern biology and medicine, the NIH High-End Instrumentation Program supports the purchase of major research equipment such as structural and functional imaging machines, macromolecular NMR spectrometers, high-resolution mass spectrometers, electron microscopes, and supercomputers. Ohio State will receive $2 million to purchase a high-field, wide-bore, solid-state nuclear magnetic resonance (NMR) spectrometer – the first instrument of its kind in Ohio and one of only a few nationwide. With the spectrometer, researchers will be able to analyze three-dimensional structures and dynamics of large peptide and protein assemblies that cannot be studied using conventional tools such as X-ray crystallography and solution NMR spectroscopy. Christopher Jaronie, associate professor of chemistry, will lead researchers from Ohio State and Case Western.

Grant to develop and strengthen health-related disability programs

The Nisonger Center and the Ohio Department of Health received a $900,000 grant from the Centers for Disease Control and Prevention to promote health, prevent chronic disease, and increase the quality of life among people with disabilities. The Ohio Disability and Health Program (ODHP) is a partnership between the Ohio Department of Health and two Ohio Centers of Excellence in Developmental Disabilities – the Nisonger Center and the University of Cincinnati. Susan Havercamp, director of health promotion and health care parity at the Nisonger Center, is principal investigator. ODHP will establish and work with a Disability Community Planning Group consisting of state and community disability agencies, individuals with disabilities, and family members. The group will guide, advise, and assist in program activities, ensuring that the voice of the disability community is represented throughout ODHP projects. The CDC funds 18 state-based programs. This is the first time Ohio was among the states to receive funding.