Yasuko Rikihisa, Yebo Li, and Christopher Jaworski named 2011 Innovators of the Year

As Ohio State continues to expand its role in the commercialization of research, it is important to create an environment that facilitates and rewards research creativity and entrepreneurship. To support and stimulate entrepreneurial activity among our researchers, three university-wide awards were presented this month to Ohio State's 2011 Innovator of the Year, Early Career Innovator of the Year, and Student Innovator of the Year.

Dr. Yasuko Rikihisa, professor in the Department of Veterinary Biosciences in the College of Veterinary Medicine, received the 2011 Innovator of the Year award. Her research career has focused on the diagnosis of zoonotic tick-borne diseases that infect food and fiber-producing animals, companion animals, and humans. In collaboration with the Centers for Disease Control and Prevention, she cultivated canine ehrlichiosis, or E. canis, and cloned and sequenced the immunodominant major outer membrane proteins. In 2000, her outer membrane protein patent portfolio was licensed worldwide. The resulting commercial serum test for E. canis is now included in the animal health-screening panel for all dogs. Revenues from licenses of Dr. Rikihisa's intellectual property and assets portfolio have made the College of Veterinary Medicine a leading entrepreneurial college at Ohio State for the past five years.

Dr. Yebo Li, assistant professor in the Department of Food, Agricultural, and Biological Engineering at the Ohio Agricultural Research and Development Center (OARDC), received the 2011 Early Career Innovator of the Year award. He has developed a successful research program in bioproducts and bioenergy. Dr. Li developed a novel renewable source of polyurethane foam made from crude glycerin, a byproduct of biodiesel production that has little commercial value. It is comparable to petroleum-based foam in quality; however, his product is renewable and less expensive to produce than petroleum-based foams. Dr. Li's technology has been licensed to Poly-Green Technologies, a start-up company, for commercial production.

Christopher Jaworski, a doctoral student in the Department of Mechanical and Aerospace Engineering in the College of Engineering, received the 2011 Student Innovator of the Year award. His work focuses on thermoelectricity and the study of thermally “pumped” spin polarization in semiconductors. He works closely with ZT Plus, a high-technology start-up company in California, to commercialize new bulk thermoelectric materials for use in automotive air conditioning and waste heat recovery systems. A substantial portion of ZT Plus’ intellectual property portfolio is based on disclosures that he has been an inventor on.

The awards were presented at the annual “State of Research at The Ohio State University” address. Additional information about the 2011 Innovators of the Year can be found at: http://research.osu.edu/2011/11/yasuko-rikihisa-yebo-li-and-christopher-jaworski-named-2011-innovators-of-the-year/.

Statistics professor shares in NSF/US census grant

Noel Cressie, statistics professor and director of the Spatial Statistics and Environmental Statistics (SSES) program, will partner with the University of Missouri on a five-year, $2.85 million grant from the National Science Foundation (NSF) to
Ohio State receives $1.3 million to study role of brain cells during stroke

Neuroscience researchers from the College of Medicine are using a $1.3 million award from the National Institute of Neurological Disorders and Stroke to better understand the role that a specific type of brain cell plays in the pathology of strokes. Strokes, which occur when the blood flow to the brain is blocked, affect 750,000 Americans each year and are the third leading cause of death worldwide. Min Zhou, assistant professor of neuroscience in the School of Biomedical Science in the College of Medicine, and colleagues focus on determining what compounds regulate potassium channel function, which in turn regulates the tone of cerebral blood vessels during stroke. The researchers are examining astrocytes during the pathology of ischemia to determine why these brain cells survive while neurons die. According to Zhou, the research is important for identifying new opportunities to examine astrocytes and potassium channel expression that helps astrocytes, as well as neurons, survive stroke.

National Endowment for the Humanities funds development of game about Newark Earthworks

A grant from the National Endowment for the Humanities (NEH) will fund the development of a Flash-based game for children to help them learn about the Native American Mounds in Newark, Ohio. Christine Ballengee-Morris, professor of art education, will team up with the Advanced Computing Center for the Arts and Design (ACCAD), the Newark Earthworks Center, a Shawnee group, and Michelle Aubrecht, a former Ohio State student and researcher in game development. The researchers will develop a fun, user-friendly game for fourth grade students to learn about Ohio history that is not found in their textbooks. The computerized, interactive game will help students explore the mounds, find clues, and answer questions such as, “How were the mounds built?” and “Why were they built?” Ballengee-Morris thinks that it will take a year to refine the idea and develop content for the game. She expects to have a prototype in design by the end of summer 2012. Newark’s 2,000-year-old Octagon Earthworks consist of a 50-acre octagon, connected to a 20-acre circle by two parallel walls. A rectangular Observatory Mound stands along the outer rim of the circle. These earthworks are a testament to the architectural and engineering skill of the American Indian cultures of that time.

Researchers awarded chemical defense grant to fight nerve agents

A $7.5 million grant from the National Institutes of Health aims to counteract nerve agents that might be used in terrorist attacks. The nerve agents attack the nervous system, causing paralysis and seizures, and ultimately lead to death through asphyxiation. Enzymes are present in human blood that can deactivate the agents. Researchers must engineer the enzymes to be more efficient. The research could one day lead to new types of antidotes for exposure to pesticides and other poisons. The grant will establish a new Center of Excellence at Ohio State where chemists will collaborate with the U.S. Army Medical Research Institute of Chemical Defense at Aberdeen Proving Ground, MD, the lead on the grant, and the Weizmann Institute of Science in Israel. Thomas Magliery, assistant professor of chemistry and biochemistry, and Christopher Hadad, professor of chemistry and associate dean of the Division of Natural and Mathematical Sciences in Arts and Sciences, are co-leaders of the new center.

EHE mobilizes talent for hard-to-staff schools with $10 million grant

Children at high-need, hard-to-staff school districts in 12 states, Washington, D.C., and Puerto Rico, will benefit from a new $10.3 million federal grant from the U.S. Department of Education awarded to the College of Education and Human Ecology. The five-year project will work to overcome shortages of highly-qualified teachers by recruiting, preparing, and retaining 1,111 recent college graduates, mid-career professionals, and paraprofessionals. These individuals will commit to teaching for at least three years in high-need schools. A consortium has been established to help the researchers achieve their goals. The consortium includes eight state departments of education, nine universities, 62 local education agencies, and five nonprofit educational organizations and foundations. Belinda Gimbert, associate professor in the School of Educational Policy and Leadership, is the director for the grant. This project builds on the success of Project KNOTtT (Kansas, Nevada, Ohio Texas Transition to Teaching), a five-state effort led by Gimbert that has prepared 417 teachers for its 35 participating local education associations.