External funding totals rise for FY 2011

Ohio State researchers finished FY 2011 on a very strong note: new grant and contract awards topped a half-billion dollars for the second year in a row. Total awards for FY 2011 exceeded $630.5 million, compared to $501.4 million last year, representing a 25% increase. The increase was bolstered by two large awards – the U.S. Department of Education grant for the Reading Recovery Program and the Health Resources and Services Administration award for the radiation oncology facility.

Six years later: OBIC continues to spur innovation and commercialization

Worldwide demand for bio-based polymers and chemicals is projected to increase by 50 percent over the next 50 years, making bio-based polymers essential for the state’s economic future. To spur research and commercialization of bio-based specialty chemicals, polymers, and advanced materials, the Ohio Third Frontier invested $11.5 million in 2005 to create the Ohio BioProducts Innovation Center (OBIC). Since its launch, OBIC has successfully brought together agriculture and polymers – Ohio’s two largest industries that contribute nearly $2 billion annually to the state’s economy. OBIC’s goal is to help Ohio become a national leader in the rapidly expanding bio-economy by accelerating research and commercialization of new industrial materials made from Ohio-grown biomass and other renewable sources. OBIC has been a force behind the creation of new companies, partnerships, products, and jobs. OBIC worked with Ohio Agricultural Research and Development Center (OARDC) scientists, OARDC’s BioHio Research Park, and Cleveland-based quasar energy group to develop a biogas industry in Ohio. Four anaerobic digesters have been built, and nine new projects are scheduled for construction across the state. Working with Maumee, Ohio-based The Andersons, Inc., OBIC helped develop a granular material that eliminates spray drift and more effectively contains, transports, and delivers fertilizer and pesticides for use on crops. This project created 23 new jobs and $29.5 million in sales. OBIC facilitated the development of a new industry supply chain based on technology developed by Columbus-based startup Natural Fiber Composites Corporation, which manufactures natural fiber-reinforced bio-composites for automotive, construction, and other industrial products. The company’s Wooster, Ohio, pilot plant produces six million pounds of composite materials annually, has created or retained 10 jobs, and expects to create 12 jobs and $3 million in revenue by the end of 2012. OBIC also supported the work of OARDC scientists who developed and patented a way to turn crude glycerin and crop residue into polyurethane foam for applications in the construction, automotive, and appliance industries. Commercialized by Poly-Green Technologies in Mansfield, Ohio, this technology is expected to create a new industry in Ohio and up to 30 jobs within two years.

Ohio State to offer training programs in medicine and biological sciences

Two new federally-supported training programs will be offered at Ohio State – one that will provide medical students with an integrated curriculum and rigorous training in both biomedical research and clinical medicine and one that will prepare top-tier graduate students for life science careers in academia, government, or industry. The National Institute of General Medical Sciences awarded the College of Medicine the highly-coveted Medical Scientist Training Program (MSTP), a designation given only to combined MD-PhD programs receiving support from the National Institutes of Health (NIH). The MSTP will offer a flexible, customized graduate curriculum centered on the goals and interests of the individual student, stipends and tuition waivers, and research and mentoring opportunities with Ohio State physician scientists. MSTP funding will be used to launch the Summer Undergraduate Course Creating Excellence in Scientific Study (SUCCESS) in 2012, a summer undergraduate research program that will focus on diverse student populations. Dr. Larry Schlesinger, chair of the Department of Microbial Infection and Immunity and director of the Center for Microbial Interface Biology, will lead the MSTP. Nationally, there are 44 NIH-funded MSTPs. The College of Arts and Sciences will receive an NIH grant to establish
the Cellular, Molecular, and Biochemical Sciences Program (CMBP) that will advance research in areas related to human health, physiology, and disease. Ohio State joins an elite group of universities nationwide able to offer broad access to research opportunities across disciplinary and departmental lines. Thirty-five faculty members from five related molecular life sciences graduate programs (biophysics; microbiology; molecular, cellular and developmental biology; molecular genetics; and the Ohio State Biochemistry Program) will participate in the CMBP. Karin Musier-Forsyth, Ohio Eminent Scholar and professor of chemistry and biochemistry, and Michael Ibba, professor of microbiology, will co-direct the program.

Peterson receives Edwin H. Sutherland Award

Ruth Peterson, Distinguished Professor of Social and Behavioral Sciences and director of the Criminal Justice Research Center (CJRC), won the 2011 Edwin H. Sutherland Award, the American Society of Criminology's most prestigious honor. The award is given to scholars who make outstanding contributions to theory or research in criminology on the etiology of criminal and deviant behavior, the criminal justice system, corrections, law, or justice. Peterson's research focuses on community conditions and crime, racial and ethnic inequality in patterns of crime, and the consequences of criminal justice policies for racially and ethnically distinct communities. She is the co-organizer of the Racial Democracy, Crime, and Justice Network's “Crime and Summer Justice Research Institute: Broadening Perspectives and Participation.” The Institute, funded by the National Science Foundation and Ohio State, is designed to promote successful research projects and careers among faculty from underrepresented groups working in the areas of crime and criminal justice.

Breaking down pharmaceuticals in drinking water using ultrasound

According to a 2008 study, as many as 41 million Americans may be drinking water containing trace amounts of pharmaceuticals and personal care products (PPCPs). Trace amounts of PPCPs, measurable in parts per million and billion, wash into rivers and streams because water treatment plants do not have the technology to completely remove them. While the long-term effects of exposure to PPCPs on humans is not known, scientists are beginning to see harmful effects in aquatic organisms. Dr. Linda Weavers, professor of civil and environmental engineering and geodetic science as well as an Ohio Sea Grant researcher, is investigating ultrasound as a way to break down these compounds in the water supply. She is using an ultrasound probe in the water to generate sound waves that pull water molecules apart so quickly that tiny micron-size bubbles form. The wave pushes the water back together and violently collapses the bubbles. The collapsing bubbles generate intense pressure and heat which breaks apart the PPCPs in the bubbles. According to Weavers, ultrasound cleans water better than other methods that require a lot of energy and material. Information obtained from Weavers' research will help engineers design a model for higher scale testing. In an effort to make the technology affordable for municipalities, Weavers plans to test a less expensive method of creating bubbles. Ohio State's Sea Grant Program is part of the National Oceanic and Atmospheric Administration's (NOAA) Sea Grant Program, a nation-wide network of 32 university-based programs that work with coastal communities. Environmental stewardship; responsible use of America's coastal, ocean, and Great Lakes resources; and long-term economic development are at the core of the Sea Grant's mission.

Lester receives NCCN Young Investigator Award

The National Comprehensive Cancer Network (NCCN) awarded grants to five young investigators from NCCN member institutions as part of its first Young Investigators Awards Program aimed at nurturing the next generation of cancer researchers. The awards, which focus on improving cancer care outcomes, provide grants of $150,000 over a two-year period. Joanne Lester, clinical associate professor in the College of Nursing and research scientist and oncology nurse practitioner at The Ohio State University Comprehensive Cancer Center (OSUCCC) - James Cancer Hospital and Solove Research Institute, received the award for her research titled “Effect of survivorship care planning on distress: A randomized control trial with leukemia and breast cancer survivors.” Lester will conduct a two-phase study of cancer survivors to examine the level and nature of self-reported distress in early survivorship, measure the immediate effect of the physician's office visit on distress levels, and gauge the effect of the survivorship care planning visit on distress levels over time as compared with standard post-treatment care. Lester’s co-investigator and mentor is Barbara Andersen, professor in psychology and member of the Cancer Prevention and Control Program in the OSUCCC. The NCCN, a not-for-profit alliance of 21 of the world’s leading cancer centers, is dedicated to improving the quality and effectiveness of care to cancer patients.

Center for Aviation Studies takes flight

Ohio State entered into a new partnership with NetJets Inc., the leader in worldwide private aviation. The College of Engineering launched the Center for Aviation Studies to enhance aviation-related research, education, and scholarship. Through a four-year, $2 million funding commitment from NetJets, the new Center will enhance Ohio State’s undergraduate aviation program, currently offered through the Colleges of Engineering, Business, and Arts and Sciences. The center will provide seed funding for research projects, scholarships, and fellowships; conduct economic and public policy studies and technical projects; and improve educational resources for students, faculty, and staff. Students will have an opportunity to work with industry through course projects and internships. Ohio State will join the National Center of Excellence for Aviation Operations Research Consortium, an alliance of research institutes dedicated to advancing new ideas, training professionals, and increasing knowledge in the field of aviation operations. Ohio State expects to lead a study on the impact of aviation (commercial, business and cargo) on business. Seth Young, associate professor of aviation, is the center’s director.