College of Education and Human Ecology’s Reading Recovery Program lands $46 M Investing in Innovation grant

The Investing in Innovation (i3) program, part of the $10 billion investment in school reform in the American Recovery and Reinvestment Act (ARRA), is an effort to reward school districts, consortia of schools, and nonprofits with innovative proposals focused on improving teacher effectiveness, low-performing schools, standards and assessments, and data systems. While almost 60 Ohio-based organizations applied for the i3 grant, Ohio State was the only one to make it to the final round, and will be awarded $46 million from the U.S. Department of Education. A $9 million match (20% of the award total) was required and was raised from foundations and private donors. The impact of Reading Recovery, which began in New Zealand in the 1970s, has been documented for decades. The overarching goal of this project is to increase the achievement levels of students in persistently low-performing schools by targeting first-grade students experiencing difficulty learning to read and write. Teachers will provide almost immediate interventions to the students at this critical time in their educations with short term, 30-minute, one-on-one lessons in an effort to accelerate learning so that these students can catch up with their peers and close the achievement gap. Reading Recovery currently impacts about 90,000 children across the country in a given year. This award will allow Ohio State and its 14 partner institutions to train more than 3,000 new teachers, thereby doubling the number of students reached. The scaled-up Reading Recovery program will impact 1,500 schools across 40 states. Jerry D’Agostino, associate professor, School of Educational Policy and Leadership, is the study’s principal investigator. Co-investigators are Patricia Scharer, professor, School of Teaching and Learning, and Emily Rodgers, associate professor, School of Teaching and Learning.

Byrd Polar Research Center hosts international symposium on the earth’s disappearing ice

As part of Byrd Polar Research Center’s (BPRC) 50th anniversary celebration, Ohio State hosted the International Glaciological Society’s (IGS) International Symposium on Earth’s Disappearing Ice in August. One of the most visible indicators of climate change is the response of the earth’s ice cover. Scientists and researchers from around the world convened in Columbus to present their research on sea ice extent and thickness changes in the Arctic and Antarctic, tidewater glacier dynamics, ice shelf dynamics, ice streams and outlet glacier dynamics, alpine glaciers, and records of past glacier changes. Senior research scientists from Ohio State presenting at the conference included Ellen Mosley-Thompson, distinguished university scholar in geography and director of Byrd Polar Research Center; Lonnie Thompson, distinguished university professor in the School of Earth Sciences; C.K. Shum, professor in the School of Earth Sciences; and Jason Box, an associate professor of geography. Two additional international workshops, the Fifth Antarctic Meteorology Observation, Modeling, and Forecasting Workshop and the International Workshop on Antarctic Clouds, were held at BPRC in July.

Ohio State’s Buckeye Bullet chases down another international record: 307.7 mph

The Venturi Buckeye Bullet 2.5, a lithium ion battery powered vehicle, built by a team led by Ohio State engineering students, eclipsed the previous 245 mph world land speed record for battery electric vehicles set in 1999 in the Bonneville Salt Flats in Utah. Guided by professional driver Roger Schroer, the Bullet 2.5 reached an average two-way speed of 307.7 mph on August 24, 2010. The new record is pending certification by the Federation Internationale de l’Automobile, the governing body for worldwide motor sports. To be considered for the record, the Bullet 2.5 was required to make two speed runs, in opposite directions within 60 minutes. While the record is officially determined by averaging the speed of the two runs in the middle of the 12-mile course, the Bullet exited the flying mile at 320 mph. The Bullet 2.5 uses the same body and chassis of the hydrogen fuel cell powered Buckeye Bullet 2, and nearly the same electric traction system, but it is powered by a 600+ kW A123 Systems lithium-ion battery pack that was designed, tested, and assembled by the Bullet team and A123 Systems. The team is supported by French electric vehicle manufacturer Venturi Automobiles, which lends its 10-year expertise in electric vehicles and significant sponsorship funding to the students.
Attracting world-class talent: Research Scholars in carbon sequestration and bio-based emergent materials named

The School of Earth Sciences has named David R. Cole the Ohio Research Scholar in Subsurface Extraction and Carbon Sequestration Sciences. Before coming to Ohio State, Cole served as a distinguished staff scientist at Oak Ridge National Laboratory. Cole will become the scientific spokesperson for geologic carbon sequestration in Ohio as well as other related environmental issues nationally and internationally. He will also contribute to the development, teaching, and enhancement of the undergraduate and graduate programs in energy and the environment. Katrina Cornish, an internationally recognized expert on alternative natural rubber, has been named the Endowed Chair in Bio-based Emergent Materials in the College of Food, Agricultural, and Environmental Sciences. Cornish, who will be based at the Ohio Agricultural Research and Development Center (OARDC) in Wooster, will lead a multidisciplinary team in the creation of innovative industrial materials from plant-based sources and associated biological, chemical, and physical processes. She will also train new scientists and engineers for the emerging global bio-based economy. Before joining Ohio State, Cornish served as senior vice president of research and development for Yulex, a company that commercializes rubber and industrial products from guayule, a plant native to the southwestern U.S. These two hires exemplify Ohio State’s commitment to energy and materials research and education. The Ohio Research Scholars Program, a program funded jointly by the Ohio Department of Development and the Ohio Board of Regents, provides funds to attract eminent researchers in targeted high-tech research sectors to Ohio’s universities. Ohio State is also working to recruit additional endowed scholars in emergent materials, biomedical imaging, power and propulsion, and layered sensing. These researchers will create clusters of university and industry partners to enhance discovery and create new technologies for Ohio’s economy.

$9.1 million grant focuses on how genes affect adverse drug reactions

The National Institute of General Medical Sciences has awarded a $9.1 million, five-year grant to Ohio State for a study to reduce the number of adverse drug reactions among patients taking medication. It is estimated that 30-70% of patients taking medication do not respond favorably to their medication or have an adverse drug reaction to the medication. Lead researcher on the study, Dr. Wolfgang Sadee, director of Ohio State’s Program in Pharmacogenomics, chair and professor of pharmacology, and professor of pharmacy, internal medicine, psychiatry, and public health, is studying the genetic factors that determine the activity of drug receptors and metabolizing enzymes – both critical elements in a patient’s response to drugs. Sadee’s research group will use a novel approach to identify critical genetic differences among patients in order to predict which drugs will offer the best treatment for individual patients. Researchers will be able to study the entire human genome using the latest DNA sequencing technologies by testing patients enrolled in clinical trials. In particular, the study will target genes important for major diseases such as central nervous system disorders, cardiovascular disease, and cancer. With this funding, Ohio State becomes a member of a nationwide Pharmacogenomics Research Network, which connects 14 major centers across the United States with diverse specializations, all working jointly to understand how genes affect a person’s response to medications.

Third annual conference draws materials-allied researchers to campus

The Institute for Materials Research (IMR) and the Center for Emergent Materials (CEM) hosted the third annual Materials Week conference at Ohio State September 13-15, 2010. This exciting event showcased the most recent discoveries and applications in materials research at Ohio State and brought together over 330 attendees representing more than a dozen universities from across the U.S., more than ten industry collaborators, and several government laboratories. Conference attendees heard three plenary speakers, participated in technical and cross-cutting sessions, viewed poster presentations, and toured Ohio State’s materials research facilities across campus. The cross-cutting session topics included materials science and energy storage; materials, entrepreneurship, and the innovation cycle; and bio-materials and bio-based products. The technical sessions focused on spintronics and graphene; next generation photovoltaics, advanced characterization, and ultra-fast phenomena; computational materials design, epitaxial control of novel materials, and benchtop innovation to the pipeline. The IMR’s educational and outreach programs are helping propel Ohio State to the international forefront of materials-allied research and scholarship.

$6 million federal grant will help shape early childhood education in Ohio

Ohio State has been awarded $6 million from the U.S. Department of Education to determine if professional development for preschool teachers in Ohio translates into better-prepared kindergarten students. Shayne Piasta, assistant director of Ohio State’s Children’s Learning Research Collaborative, will lead project APPLE: Ohio (Assessing Preschool Professionals’ Learning Experiences). Over the next four years, researchers in the College of Education and Human Ecology will study 900 early childhood teachers statewide who complete professional development courses developed by the Ohio Department of Education and the Early Childhood Quality Network (ecQ-net), a program housed at Ohio State that focuses on academics, early literacy, and school readiness. In parallel, 4,800 of these teacher’s students will be monitored during preschool and again in kindergarten to see if teacher training leads to improvements in reading skills. In Ohio, like most other states, there are no uniform requirements or standards for early childhood teachers. But Ohio is one of the few states that offer a variety of professional development activities for teachers. If this project demonstrates that teacher development activities do lead to successful outcomes for students, Ohio can be a model for other states to follow.