Croce named 2012 Distinguished University Professor

Carlo Croce, chair, Department of Molecular Virology, Immunology, and Medical Genetics; John W. Wolfe Chair in Human Cancer Genetics; and director, Human Cancer Genetics Program; has been named a 2012 Distinguished University Professor. Croce's research in cancer genetics has transformed the way cancers are diagnosed and treated, leading to better outcomes for patients. He has uncovered early genetic events that lead to leukemia, lymphoma, lung, nasopharyngeal, head and neck, esophageal, gastrointestinal, and breast cancers. Croce described the novel role of microRNAs in the genesis of various cancers – a discovery that could lead to breakthroughs in other genetically-based diseases such as Alzheimer’s, schizophrenia, immune system disorders, and cardiovascular disease. The Office of Academic Affairs and the Board of Trustees confer the permanent, honorific title of Distinguished University Professor to full professors who have exceptional records in research, scholarly work, teaching, and service. Croce is the 46th professor to receive the title since it was first awarded in 1987.

Strayhorn presents study findings on Capitol Hill

Terrell Strayhorn, associate professor of higher education, School of Educational Policy and Leadership, and Derrick Tillman-Kelly, graduate research associate in educational policy and leadership, represented Ohio State at the 2012 Coalition for National Science Funding (CNSF) Exhibition held on Capitol Hill in Washington, DC. The CNSF is an alliance of more than 120 organizations (professional, scientific and engineering societies, higher education associations, institutions of higher learning, independent research institutions, etc.) united by a concern for the future vitality of the national science, mathematics, and engineering enterprise. CNSF works to increase investment in the National Science Foundation’s research and education programs in response to the unprecedented scientific, technological, and economic opportunities facing the U.S. Strayhorn’s research focuses on broadening participation among women and/or ethnic minorities in science, technology, engineering, and math (STEM) fields. He studies “what works” in nurturing underrepresented students’ interest in STEM careers, encouraging their choice of STEM as a major, enabling their success in STEM academically, and promoting the number of women and minorities who graduate ready to enter the STEM workforce. Strayhorn’s research is supported by a National Science Foundation CAREER Award.

Chemist receives 2012 Camille Dreyfus Teacher-Scholar Award

Christopher Jaroniec, associate professor of chemistry, received a 2012 Camille and Henry Dreyfus Teacher-Scholar Award, sponsored by the Camille and Henry Dreyfus Foundation. The program was established to strengthen the teaching and research careers of young faculty in the chemical sciences. Recipients are selected based on individual research attainment and promise, along with evidence of excellence in teaching. Honorees receive a $75,000 research grant. Jaroniec’s research focuses on developing better ways to look at the structure and dynamics of large biological molecules that defy analysis by conventional tools of structural biology, X-ray crystallography, and solution-state nuclear magnetic resonance (NMR) spectroscopy. Jaroniec was one of the first researchers to examine at the structural level the protein that causes hereditary cerebral amyloid angiopathy – a disease thought to cause stroke and dementia. Jaroniec is also the recipient of a National Science Foundation CAREER Award, an Eli Lilly Young Investigator Award in Analytical Chemistry, and a New Investigator Research Grant Award from the Alzheimer’s Association.

EcoCAR 2 team finishes second in competition

The Ohio State student EcoCAR team brought home a second place finish in year one of EcoCAR 2: Plugging In to the Future, a three-year competition sponsored by the U.S. Department of Energy, General Motors, and 25 government and industry leaders. The competition challenges 15 universities across North America to reduce the environmental impact
Researchers examine impact of savings programs on child hunger

Food insecurity is a serious problem facing children in the U.S. The number of households who do not have physical and/or economic access at all times to sufficient, safe, nutritious food to maintain an active, healthy life has risen over 30% since 2007. Children in families where the food intake of one or more household members was reduced or eating patterns were disrupted are more likely to experience negative health, nutrition, and educational outcomes. Programs that encourage low-income families to save money for long-term goals could ultimately decrease childhood hunger. However, in the short-term, as families divert part of their income into such programs, children’s food insecurity could increase. The Center for Poverty Research at the University of Kentucky, with funding from the Food and Nutrition Service in the U.S. Department of Agriculture, awarded Ohio State a $250,000 competitive grant to conduct research to better understand hunger among children in the U.S. and the related policy implications. Caezilia Loibl, associate professor of consumer sciences and a researcher with the Ohio Agricultural Research and Development Center, and Tasha Snyder, associate professor of human development and family science and a member of the university’s Initiative in Population Research, will look at programs that encourage low-income families to save money for long-term goals to determine whether concerns about putting food on the table affect a family’s success in such programs.

OARDc partners in $5.7 million grant to develop new biofuel

Chromatin Inc., a Chicago-based developer of energy-crop feedstock solutions, has been awarded a three-year, $5.7 million grant under the Plants Engineered to Replace Oil (PETRO) program of the U.S. Department of Energy’s Advanced Research Projects-Energy (ARPA-E). The project is focused on the extraction of hydrocarbon from two drought-tolerant plants – guayule, a woody shrub native to the southeastern U.S. and Mexico; and sweet sorghum, a crop similar to sugar cane that is grown in southern U.S. regions – and the conversion of hydrocarbon into renewable transportation fuel. The Ohio Agricultural Research and Development Center (OARDc) will receive a $1.2 million subcontract to engineer the crops at the genetic level to boost the production of farnesene, a natural plant oil that can be converted into a diesel-like fuel. Katrina Cornish, Endowed Chair in Bio-Based Emergent Materials, will genetically manipulate the guayule plant to divert more resin into farnesene. Researchers at Chromatin will develop new varieties of sweet sorghum to use as low cost feedstock for transportation fuels. Both crops have the potential to generate higher yields than conventional biodiesel crops (soybeans and canola) and produce more than twice the comparable energy yield of ethanol from corn. Additional partners on this project are San Diego-based Allylix, a renewable chemicals company, and Kansas State University.

Developing steel for next generation power plants

Ohio State is one of nine universities across the country to receive support from the U.S. Department of Energy for research on development of clean coal technologies. The investment, approximately $300,000, is designed to accelerate commercial deployment of clean coal technologies – particularly carbon capture and storage – and position the U.S. as a leader in the global energy race. This award will spur the next generation of trained scientists and engineers from universities across the nation to focus on development of high-temperature, high-pressure corrosion-resistant alloys, protective coatings, and structural materials for advanced coal-fired power plants and gas turbines. Research teams will develop new processes and computational design methods to develop these materials, improve efficiency, and reduce the costs of cleaner power generation systems. At Ohio State, Ji-Cheng Zhao, professor of materials science and engineering, will develop low-cost and computational design methods to develop these materials, improve efficiency, and reduce the costs of cleaner power generation systems. The investment, approximately $300,000, is designed to accelerate commercial deployment of clean coal technologies – particularly carbon capture and storage – and position the U.S. as a leader in the global energy race. This award will spur the next generation of trained scientists and engineers from universities across the nation to focus on development of high-temperature, high-pressure corrosion-resistant alloys, protective coatings, and structural materials for advanced coal-fired power plants and gas turbines. Research teams will develop new processes and computational design methods to develop these materials, improve efficiency, and reduce the costs of cleaner power generation systems. Zhao’s team will explore computer-based methods for creating and testing many different material compositions in an effort to formulate strong, heat resistant steel.

NIOSH grant funds study on occupation and disease

Allard Dembe, associate professor and chair of the Division of Health Services Management and Policy, College of Public Health, has been awarded a $409,000 grant from the National Institute for Occupational Safety and Health (NIOSH) to develop and test a generalizable process for measuring the relationship between long-term work in a particular occupation and the onset of chronic disease later in life. As an example, occupational exposure to isocyanates or other chemicals in the workplace has been linked to the development of asthma. According to Dembe, “The rising prevalence of chronic disease among people over 45 is perhaps the greatest health challenge facing America.” This study is unique because a new analytical technique will be used that can estimate the risks of contracting various chronic diseases among workers in hundreds of different job categories. NIOSH is the federal agency responsible for conducting research and making recommendations for the prevention of work-related injury and illness.