

Message from the Vice President



Ohio State's research community – faculty, staff and students – is one of the most comprehensive in the nation, and its breadth and excellence make it a leading force for change locally, nationally and globally. We draw on the breadth and depth of our capabilities and resources, and most importantly, our connections to transform lives across the globe. We continue to make connections that cross disciplines and colleges, institutions, regions, nations and the globe. We find novel sources to fuel our research endeavors, forge new links with industry and with our communities and find new ways to collaborate. Most importantly, we look to our bright and talented students to make connections that will lead us into the future. Here are just a few highlights from 2013-2014 that exemplify the power of our connections.

Caroline C. Whitacre
Vice President for Research

By the Numbers

11 National Academy of Sciences members

2 National Academy of Inventors fellows

13 National Academy of Engineering members

218 American Association for the Advancement of Science fellows

8 Institute of Medicine members

18 American Academy of Arts and Sciences members

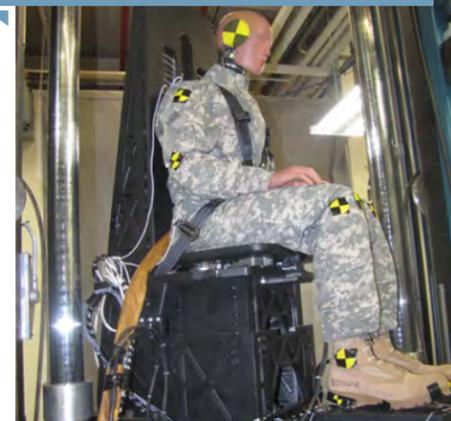
New Sponsored Research Awards

Awards by Sponsor: July 1, 2013, through June 30, 2014

Sponsor	Number of Awards	Award Amount
National Institutes of Health	939	\$171,282,561
National Science Foundation	252	\$56,718,633
Department of Education	65	\$35,265,776
Department of Defense	252	\$36,743,922
Department of Energy	121	\$17,186,078
Department of Labor	15	\$6,576,954
Department of Agriculture	126	\$16,399,374
National Aeronautics and Space Administration	89	\$5,764,957
Other Federal	227	\$57,359,241
Total Federal	2,086	\$403,297,496
Industry	2,230	\$42,601,048
State of Ohio	120	\$24,391,053
Private Agencies	460	\$23,912,119
Colleges and Universities	40	\$647,135
Other Non-Federal	38	\$2,059,789
Total Non-Federal	2,888	\$93,611,144
OHIO STATE TOTAL	4,974	\$496,908,640

Creating New Connections, Strengthening Existing Connections

Safer Vehicle Technologies



Warrior Injury Assessment Manikin

\$9 million award from the U.S. Department of Defense (\$1.7 million to Ohio State) led by John Bolte, anatomy and mechanical and aerospace engineering, and Amanda Agnew, anatomy

Building an improved military crash test dummy (Warrior Injury Assessment Manikin) to measure how the body reacts to underbody blasts, leading to the design of vehicle features and safety gear to better protect soldiers in military vehicles

Partner: Wright-Patterson Air Force Base

Crash Imminent Safety University Center



\$4.3 million grant from the U.S. Department of Transportation led by Umit Ozguner, electrical and computer engineering

Improving the ways humans interact with intelligent, autonomous and semi-autonomous vehicles to save lives and reduce the severity of auto accident injuries

Partner universities: Indiana University-Purdue University Indianapolis, North Carolina A&T State University, the University of Massachusetts-Amherst and the University of Wisconsin

“Ohio State is designated as an APLU Innovation and Economic Prosperity University”

Medical Breakthroughs



Ohio State/Nationwide Children's Hospital Center for Clinical and Translational Science (CCTS)

\$25.4 million competitive renewal grant from the National Institutes of Health led by Rebecca Jackson, internal medicine

Connecting hundreds of researchers across the state to accelerate basic science discoveries into new techniques and treatments for today's deadliest and costliest diseases

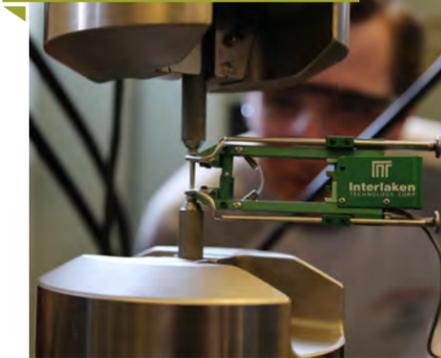
Center of Excellence in Regulatory Tobacco Science

\$18.7 million grant from the National Cancer Institute led by Mary Ellen Wewers, health behavior and health promotion, and Peter Shields, epidemiology

Putting science behind the Food and Drug Administration's role in tobacco regulation

Studying tobacco use patterns, industry marketing practices and public perceptions to reduce addiction and shed light on health problems among youths and adults in rural and urban settings

Driving the Economy



American Lightweight Materials Manufacturing Innovation Institute

\$148 million advanced manufacturing research institute, with \$70 million in funding from the U.S. Department of Defense

Public-private consortium of universities, companies and non-profits co-founded by EWI, the University of Michigan and Ohio State, to rebuild the nation's manufacturing sector and create more than 10,000 jobs in the Midwest region

Developing advanced lightweight and modern metal manufacturing technologies for transfer to the industrial sector

Neurotechnology Innovations Translator



\$21 million award from the Ohio Third Frontier Technology Commercialization Center program led by Ali Rezai, neuroscience

Establishing a pipeline of innovative and compelling solutions to treat neurological disorders

Moving technologies rapidly from concept to clinic, supporting new company formation to bring new technologies to the marketplace and creating high-tech jobs in Ohio

Accelerated Data Sharing

Licensing Cutting-Edge Technologies

Exclusive world-wide agreement with Signet Accel LLC to license a portfolio of Ohio State-developed software technologies for health care data sharing and analysis, enabling rapid and efficient data analysis to make expeditious treatment decisions

Largest up-front licensing fee for Ohio State technology (\$275,000)

Company to locate near the Ohio State campus to take advantage of the highly-skilled biomedical and computational workforce

Phillip Payne and Peter Embi, biomedical informatics, are the company co-founders

Global Connections



One Health Initiative

Engages all seven health sciences colleges

Addresses the linkage between animal health, human health and the environment in Ethiopia

Ohio State/Brazil Exchange of Researchers



\$1.4 million partnership between Ohio State and the São Paulo Research Foundation (FAPESP) to build on existing collaborations and support future innovation

Funding Ohio State/Brazil joint research collaborations in a wide range of disciplines

Connecting through Innovation, Connecting to the future

2013 Innovators of the Year



“Creating an environment that facilitates and rewards research creativity and entrepreneurship”

The Innovator of the Year awards recognize Ohio State researchers – faculty, staff and students – working actively to promote commercialization of university intellectual property through invention disclosures filed, patents applied for and/or received, technologies licensed or spin-off companies.

Innovator of the Year: Hesham El Gamal, electrical and computer engineering

- Co-founder and CEO of inmoby
- Using the predictability of human behavior to design novel mobile networks

Early Career Innovator of the Year: M. Monica Giusti, food science and technology

- Chief scientist for AnthoScyantific LLC
- Adopting natural pigments as alternatives to synthetics

Student Innovator of the Year: Kinshuk Mitra, biomedical engineering

- Chief technology officer and lead inventor for OncoFilter Inc.
- Isolating circular tumor cells in human blood for earlier cancer diagnosis

Engaging Students in Research



Denman Undergraduate Research Forum

Showcases undergraduate research and scholarly work before a group of faculty and corporate judges and the entire university community

More than 625 students presented projects ranging from the examination of nutrient intake patterns of patients with chronic venous leg ulcers to assessing water quality in Peru relative to glacial recession

Louis Stokes Alliances for Minority Participation

Ohio State led alliance of four-year and community colleges to increase underrepresented student success in STEM

Provides comprehensive, integrative and sustainable strategies for strengthening the nation's STEM talent pool

\$3.5 million grant from the National Science Foundation led by Barbara Fink, optometry

Student Competitions



EcoCAR 2

Reducing the environmental impacts of a 2013 Chevrolet Malibu and educating the next generation of automotive engineers

1st place finish for the team of 15 graduate and 30 undergraduate students, representing a wide range of majors

Awards in every individual event category

Sponsored by the U.S. Department of Energy, General Motors and 30 other government and industry leaders

Capital One Modeling Competition

Statistics students won 1st place in national data analytics competition

Teams developed an analytic tool to uncover insights about individuals' spending patterns, predicted how those individuals would spend at certain merchants and developed a strategy for those merchants to assign discounts to customers who used Capital One cards at their places of business



Buckeye Current

Enhancing the development of clean, electric powered motorcycle technology

3rd place finish in the Isle of Man Tourist Trophy Zero race for the second year in a row

Only U.S. collegiate team to compete among a field of professional competitors

New collegiate record – average speed of 93.531 mph

KAir Battery

Winner of the \$100,000 U.S. Department of Energy's Clean Energy Prize from the Rice Business Plan Competition

Developing potassium air batteries, a patented revolutionary battery that could change how the world stores and uses energy

Batteries are cost effective, 98 percent energy efficient, simple to manufacture and produce non-toxic byproducts at the end of their lifetime

Accolades

11 Udall Scholars

49 Goldwater Scholars

1 Luce Scholarship (1st for Ohio State)

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OFFICE OF RESEARCH
TRANSCEND
2013-2014 HIGHLIGHTS

The Power of
Connections

