Dear Colleagues,

Last fall, ASU announced its official charter, codifying our commitment to excellence, access and impact in everything that we do. The charter emphasizes our role in advancing research and discovery of public value and in taking responsibility for the well-being of our communities.

Our faculty’s numerous innovations, awards, honors and publications illustrate our success in this endeavor. For example, ASU researchers have received seven National Science Foundation CAREER Awards in 2015, bringing our total number of active awards to 29. CAREER Awards recognize junior faculty who excel at integrating education and research within the context of their organizations’ missions.

This is just one example of our tremendously successful relationship with the NSF. According to the latest NSF HERD data, ASU ranks 28th in the nation for total NSF-funded research expenditures out of 874 institutions surveyed. In February, NSF director Dr. France Córdova visited ASU, meeting with several of our researchers and touring their facilities. She noted afterwards that ASU is the “epitome of a transdisciplinary campus,” and was impressed not only by the quality of our research but our success in bringing discoveries to the marketplace where they can benefit society.

Dr. Córdova was not the only agency leader to visit ASU this semester. The Honorable Ashton B. Carter, Secretary of Defense, and Jeh C. Johnson, Secretary of the U.S. Department of Homeland Security, also came to ASU and learned about some of our exciting defense and security-related projects.

I am pleased to announce that Dr. H. Russell Bernard, a renowned cultural anthropologist, has joined ASU as the new director of the Institute for Social Science Research. Dr. Bernard is a pioneer in developing social science research methods and is known for his work merging the sciences and humanities, an interdisciplinary approach that reflects ASU’s core values. I am looking forward to his contributions to our social sciences programs—already ranked 8th in the nation for research expenditures.

Many thanks for all your efforts that have resulted in another successful academic year. Have a wonderful summer!

Sincerely,

Sethuraman "Panch" Panchanathan
Senior Vice President of OKED
Advancing Research, Entrepreneurship & Economic Development
panch@asu.edu
HONORS AND RECOGNITION

Seven faculty members have received 2015 Faculty Early Career Development (CAREER) Awards from the National Science Foundation. The award supports junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research. Learn more

Dr. Pingbo Tang, assistant professor in the Del E. Webb School of Construction

Dr. Oliver Kosut, assistant professor in the School of Electrical, Computer and Energy Engineering

Dr. Srabanti Chowdhury, assistant professor in the School of Electrical, Computer and Energy Engineering

Dr. Liping Wang, assistant professor in the School for Engineering of Matter, Transport and Energy

Dr. Jagannathan Rajagopalan, assistant professor in the School for Engineering of Matter, Transport and Energy

Dr. Sarah Stabenfeldt, assistant professor in the School of Biological and Health Systems Engineering

Dr. Pavan Turaga, assistant professor in the School of Electrical, Computer and Energy Engineering and School for Arts, Media + Engineering
HONORS AND RECOGNITION

Dr. Maureen Daly Goggin, professor in the Department of English, has been awarded a 2015-2016 Fulbright U.S. Scholar grant. The grant will allow her to spend spring 2016 as a visiting professor at Karl Franzens University of Graz, Austria, where she will study the Graz Volkskundemuseum’s collection of needlework samplers. Learn more

Dr. Michelene (Micki) Chi, professor in the Mary Lou Fulton Teachers College, won the 2015 E.L. Thorndike Award for Lifetime Contribution in Research, the most prestigious Division 15 award from the American Psychological Association. The award recognizes her substantial career achievements in educational psychology. Learn more

Dr. Carole-Jean Wu, assistant professor in the School of Computing, Informatics, and Decision Systems Engineering, earned the Best of Computer Architecture Letters (CAL) award for her paper, “Architectural Thermal Energy Harvesting Opportunities for Sustainable Computing.” CAL is a semi-annual Institute of Electrical and Electronics Engineers (IEEE) forum for publication of technical papers about new, high-quality ideas in computer architecture. Wu will present her research, which opens up possibilities for reducing the power consumption of computer processors, at the 21st IEEE Symposium on High Performance Computer Architecture. Learn more

Dr. Francis (Frank) Timmes, professor in the School of Earth and Space Exploration and ASU’s director of advanced computing, was awarded the Simmons Fellowship in Theoretical Physics. The Fellowship will support his research on stars using advanced computing instruments and tools. Learn more

Dr. Srabanti Chowdhury is an assistant professor in the School of Electrical, Computer and Energy Engineering. Her award will support research on transistor scaling technology that allows high-speed electronics to operate at higher performance levels. Learn more

Two ASU engineers received the 2015 Air Force Office of Scientific Research Young Investigator Research Program (YIP) Award. The award supports the early career development of young scientists and engineers who show exceptional talent in conducting basic research.

Dr. Paulo Shakarian is an assistant professor in the School of Computing, Informatics, and Decision Systems Engineering. His award supports research on what makes a message on a social network go viral or die out. Learn more

Dr. Carole-Jean Wu

Dr. Michelene (Micki) Chi

Dr. Francis (Frank) Timmes

Dr. Srabanti Chowdhury

Dr. Paulo Shakarian

Dr. Maureen Daly Goggin

Dr. Carole-Jean Wu

Dr. Francis (Frank) Timmes

Dr. Srabanti Chowdhury

Dr. Paulo Shakarian
HONORS AND RECOGNITION

Dr. David William Foster, Regents’ Professor in the School of International Letters and Cultures, was the 2014 recipient of both the Premio Victoria Urbano de Reconocimiento Académico (Victoria Urbano Academic Achievement Award) and the Arizona Humanities Dan Shilling Public Humanities Scholar Award. Dr. Foster is the first man to receive the Urbano award from the Asociación Internacional de Literatura y Cultura Femenina Hispánic in the organization’s 30-year history. Learn more

Darlene Cavalier, professor of practice with ASU's Center for Engagement and Training in Science and Society, was elected to the inaugural board of the Citizen Science Association. The organization works to improve opportunities for everyday people to get involved in science. Cavalier will use her new position to raise awareness of citizen science and its far-reaching potential to empower the public and benefit research and policy. Learn more

Retha Hill, professor in the Walter Cronkite School of Journalism and Mass Communication, received the Louis R. Lautier Award for Career Achievement from Savannah State University for her achievements as an educator, journalist and media entrepreneur. Hill is director of Cronkite’s New Media Innovation and Entrepreneurship Lab, a digital hub that teams ASU students from different disciplines to create innovative new media products for professional organizations. Learn more

Dr. Corine Schleif, professor in the School of Art, is the first ASU faculty member to receive a Berlin Prize Fellowship by the American Academy in Berlin. The Berlin Prize is awarded to scholars, writers, and artists “who represent the highest standards of excellence in their fields,” and supports a semester in residence at the academy.

The ASU Alumni Association presented the 2015 Founders’ Day Faculty Achievement Research Award to Dr. James Elser, a Regents’ Professor in the School of Life Sciences. The award this year was given in honor of research that has provided significant advances to preserving the environment on a global scale. Learn more
Research Impact

A sampling of discovery and innovation from ASU faculty

Jawbone pushes back human origins
An ASU research team discovered a jawbone from the earliest known member of the genus Homo. The ASU team and co-authors introduced the partial lower jaw in two papers published online in the journal Science. Radiometrically dated to almost 2.8 million years ago, the bone pushes back human origins 400,000 years. With both primitive and modern traits, it serves as a bridge between our genus and its ancestors. The discovery was featured widely in popular media, including the New York Times, National Geographic, USA Today, the Washington Post, and many more. Learn more

Evolutionary views of cancer
Dr. Carlo Maley, a researcher in the Biodesign Institute’s Center for Evolution and Medicine and associate professor in the School of Life Sciences, has applied a paleontological view of species extinction to the challenge of driving cancer extinct. In collaboration with international colleagues, Maley’s findings were published in the journal Nature Reviews Clinical Oncology (Learn more). In another study, Maley and colleagues describe compulsive evolution and dramatic genetic diversity in cells belonging to one of the most treatment-resistant and lethal forms of blood cancer: acute myeloid leukemia. These findings appeared in the journal Science Translational Medicine (Learn more).

Non-addicting painkillers
Dr. Petra Fromme, director of the Center for Applied Structural Discovery in the Biodesign Institute, collaborated with an international team using techniques of X-ray crystallography to study the structure of opioid receptors and synthetic drugs that bind to these sites. Their work paves the way for development of powerful new analgesics, capable of blocking pain without the risk of patient tolerance or dependency. Their research appeared in the journal Nature Structural and Molecular Biology. Learn more

New books from English faculty

From technology and animals to issues of love and death, faculty from the Department of English have published books on a wide range of topics in 2015.

**Fiction:**
- Matt Bell, assistant professor, “Scrapper” (Soho Press)
- Tara Ison, associate professor, “Ball: Stories” (Soft Skull Press)
- Dr. Jewel Parker Rhodes, professor, “Bayou Magic” (Hachette/Little, Brown)

**Poetry:**
- Norman Dubie, Regents’ Professor, “The Quotations of Bone” (Copper Canyon Press)
- Alberto Rios, Regents’ Professor, “A Small Story about the Sky” (Copper Canyon Press)

**Nonfiction:**
- Dr. Ron Broglio, associate professor, “Being Human: Between Animals and Technology” (Routledge)

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RESEARCH IMPACT

Improving battery performance
An ASU research team led by Dr. Dan Buttry, a professor and chair of ASU’s Department of Chemistry and Biochemistry, has explored a new energy storage technology that could give the battery an even longer life cycle. Their findings were published in the journal Nature Communications. The study is part of a larger effort in Buttry’s lab, funded by the Advanced Research Projects Agency - Energy (ARPA-E) and the Army Research Office. Learn more

Molecular manipulations
Dr. Ximin He, a researcher in the Biodesign Institute’s Center for Molecular Design and Biomimetics, and her colleagues discovered a new technique for molecule manipulation. The method mimics biological systems’ ability to efficiently sort, capture, transport and release molecules. It could be used in a variety of human and environmental health applications. The team’s research was published in the journal Nature Chemistry. Learn more

Depression’s effects on teaching
Dr. Carol Connor and doctoral student Leigh McLean of ASU’s Psychology Department discovered that third-grade students who began the year with weaker math skills achieved smaller mathematics gains in classrooms where teachers reported more depressive symptoms. The research and findings were published in the journal Child Development. Learn more

Stopping Ebola in its tracks
Researchers from ASU and Georgia State University are trying to better understand the epidemiology of the Ebola virus in order to alleviate suffering and prevent catastrophic future outbreaks. A study published in The Lancet Infectious Diseases examines the levels of detection and patient isolation required to shut down transmission of Ebola. It also reports on new efforts to model the impact of timely diagnostic testing on the spread of Ebola across populations. Dr. Karen Anderson, a professor in ASU’s School of Life Sciences and a researcher with the Biodesign Institute, and Dr. Carlos Castillo-Chavez, director of ASU’s Simon A. Levin Mathematical, Computational and Modeling Sciences Center, co-authored the study. Learn more

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RESEARCH IMPACT

Electrical charges on DNA
In a new study published in the journal Nature Chemistry, Drs. Limin Xiang, Julio Palma, Christopher Bruot and others at ASU's Biodesign Institute explore the ways electrical charges move along DNA bases attached to a pair of electrodes. Their work reveals a new mechanism of charge transport, and researchers predict that foundational work of this kind will have important implications in the design of new DNA-based electronic devices. Learn more

Attractive apps
A new study from Dr. Raghu Santanam and doctoral student Gun Woong Lee of the W. P. Carey School of Business breaks down the formula for a winning app. The research shows that free app offers, high debut ranks, expanding into less popular categories, continuous quality updates and high user-review scores all have positive impacts on an app’s attractiveness to consumers. The study was published in the Journal of Management Information Systems. Learn more

Frog inspires de-icing technique
An ASU research team led by Dr. Konrad Rykaczewski, an assistant professor in the School for Engineering of Matter, Transport and Energy, has developed a system to prevent ice build-up on planes while in flight. Their method includes a superhydrophobic coating, like the kind naturally found on poison dart frogs, and a backup system that secretes antifreeze. The research was published in the journal Advanced Materials Interface. Learn more

Biomarkers for ovarian cancer
Drs. Josh LaBaer and Karen Anderson of ASU’s Biodesign Institute discovered three autoantibodies that are promising biomarkers for ovarian cancer. The research is the first demonstration of NAPPA (Nucleic Acid Protein Programmable Array) technology. Their findings were published in the Journal of Proteome Research. Learn more

Wealth brings reproductive success
An international research team, including scientists at ASU, discovered a dramatic decline in genetic diversity in male lineages 4,000 to 8,000 years ago. The scientists believe this was the result of an accumulation of material wealth, which may have limited reproductive success to a subset of “socially fit” males. Melissa Wilson Sayres of ASU’s School of Life Sciences was a leading author on the study, which was published in the journal Genome Research. Learn more
ECONOMIC DEVELOPMENT

New SkySong building approaching full occupancy
SkySong 3, the newest building at the ASU Scottsdale Innovation Center, opened in January. The 145,000 square-foot building at the mixed-use development is already at 90 percent occupancy. Tenants include new company arrivals Theranos, Pyxl, Hivewyre, Safari Books, Holualoa Companies and Solugenix, as well as expansion space for Workiva and EdPlus@ASU.

Join us at the Southwest Pathways Conference
May 28-29, ASU SkySong
1475 N. Scottsdale Rd., Scottsdale, AZ 85257

The Global Pathways Institute (GPI), based at ASU SkySong, is hosting its first Southwest Pathways conference. The conference will explore solutions to the challenge of equipping all young adults in the Southwest, especially Hispanic and Native American youth, with the skills they need to achieve economic success. Co-hosted by GPI and Innovate+Educate, this event will bring together business, education, government and philanthropic leaders from the key Southwestern states to forge a strong “Call to Action.

ENTREPRENEURSHIP

Join the Faculty and Graduate Startup Boot Camp
Starting in June 2015, ASU’s Office of Entrepreneurship and Innovation will host an entrepreneurship bootcamp for faculty and graduate students. The program will admit 20 researchers and graduate students from any public or private Arizona research institution on a first-come, first-served basis. Email wiley.larsen@asu.edu for more information.

ASU alum featured in Entrepreneur Magazine
A chance campus encounter with a skateboarder who had Christmas lights duct-taped on the underside of a skateboard spurred ASU alum Greg Rudolph to launch his LED underglow lighting business Board Blazers. Entrepreneur Magazine recently profiled Rudolph and the story behind his venture.

8,800… and counting
The inaugural series of ASU Launch Days across the four campuses reached more than 8,800 students, educating them on entrepreneurship programs at ASU. Programs included presentations in classes with the help of faculty, one-on-one mentoring opportunities between E+I staff and ASU students, and Open Pitch events through which 134 student teams presented their ideas for a chance to win seed funding.

Libraries as engines of economic development
The upcoming Forum 2015 in mid-June will bring the most creative minds in academics, library science and economic development together to brainstorm ideas for helping libraries promote local economic development. The event is an initiative of the ASU Entrepreneurship Outreach Network, a membership-based network of libraries that aims to make ASU’s entrepreneurship training readily accessible to entrepreneurs and business owners across the country.
RESEARCH TOOLS AND TRAINING

Funding opportunities and proposal assistance
The funding.asu.edu website provides a plethora of tools to assist in the search for and success of funding. The site shares funding opportunities including limited submission and philanthropic opportunities as well as internal grants, like the ASU-Mayo Seed Grant, which is currently accepting submissions.

OKED also provides proposal and project management, editing, document coordination and competitive intelligence for large-scale, high-dollar or strategic proposals. Opportunities to connect with sponsors and an internal grant to help fund the trip to meet with them are also available through OKED’s Research Development office.

Research forums are an integral part of ASU’s commitment to encourage transdisciplinary research, foster collaboration among all researchers, and create opportunities for great ideas to take shape and flourish. Topics range from internal reviews to connecting with team members to knowing the difference between types of proposals. Watch previous forums online and check back for upcoming fall forums to help advance your proposal process at funding.asu.edu/research-forums

For more information or to sign up for a weekly email, contact Research.Development@asu.edu

NSF Smart and Connected Health (SCH) Aspiring Investigator Workshop
June 29, 2015
Arlington, VA
Travel funding (up to $1,500) provided for invited participants
Application deadline: May 15

This one-day workshop is designed for researchers who aspire to participate in NSF’s Smart and Connected Health (SCH) program. The workshop is for people with research interests in SCH who are not currently funded by NSF. Learn more and apply at: nsfsch.wordpress.com

Download our brochure to learn more about OKED’s services for faculty.
RECENT GRANTS AND CONTRACTS

A sampling of the latest research grants

Dr. John Shumaker, in the Center for Advanced Studies in Global Education and the University Design Initiative, and Dr. Sayfe Kiaei, in the School of Electrical, Computer and Energy Engineering, were awarded $18 million from the United States Agency for International Development for PCASE, a partnership with two Pakistani universities to develop the Center for Advanced Studies in Energy, the nation’s first such comprehensive center for applied research and graduate education in energy engineering.

Dr. Steven Desch, in the School of Earth and Space Exploration, was awarded over $6 million from the NASA Goddard Space Flight Center to study the detectability of life on exoplanets—planets that orbit stars outside our solar system.

Dr. David Tinapple, in the School of Arts, Media + Engineering, was awarded $2 million from the National Science Foundation for his project, “Improving Undergraduate STEM Education," focused on student web-based peer-review systems.

Dr. Daniel Bliss, in the School of Electrical, Computer and Energy Engineering, was awarded $2 million from Google for the project Radio Revolution (R2), which will enable greater functionality and flexibility in wireless communication technology.

Dr. Lalitha Sankar, in the School of Electrical, Computer and Energy Engineering, was awarded $1.4 million from the National Science Foundation to develop security measures for cyber attacks against electrical power systems.

Dr. Jacqueline Wernimont, in the Department of English, together with partner FemTechNet, was awarded $1.2 million from the Humanities, Arts, Science, and Technology Alliance and Collaboratory, which is supported by the MacArthur Foundation, to develop tools for combating anti-feminist violence online.

Dr. Marc Mignolet, in the School of Engineering of Matter, Transport and Energy, was awarded over $1 million from the Department of Defense – Air Force as part of a Multi University Research Initiative team. The team will develop a framework to manage multiple information sources in the design and optimization under uncertainty of multi-physics systems.

Dr. Francis Pierce-McManamon, in the School of Human Evolution and Social Change, was awarded $1 million from the Andrew W. Mellon Foundation to explore sustainability for digital antiquity through the Digital Archaeology Record (tDAR).

Dr. Victoria Ames, in the Sandra Day O’Connor College of Law, was awarded $386,000 from the Department of Justice for the DNA Advocacy Program, which will evaluate potential cases of wrongful conviction in Arizona where DNA testing might show actual innocence.