Explore the possibilities
Dear Colleagues,

I am delighted to share our various accomplishments with you through this bulletin.

ASU reached an important milestone in 2014. Twenty years ago, the university received its “Research I” designation from the Carnegie Foundation for the Advancement of Teaching. To celebrate this anniversary, we have created an interactive timeline that shares many of our discoveries over the last 20 years. If you would like to suggest additions to this timeline, please email dianeb@asu.edu.

Our research efforts continue to grow and flourish. The NSF has just released the FY2013 Higher Education Research and Development (HERD) survey. ASU now ranks 53rd in the nation for total research expenditures and 12th among institutions without a medical school. We also rank 10th for HHS (including NIH) funding among institutions without a medical school, 17th for humanities expenditures (among all institutions) and 8th for social science expenditures.

These rankings reflect our faculty’s prolific, high-quality research. For example, Dr. Sarah Stabenfeldt in the School of Biological and Health Systems Engineering has contributed to potentially groundbreaking research, published in Nature Materials, on a synthetic material to aid the blood clotting process and the emergency treatment of traumatic injuries. Dr. Stabenfeldt was also recently awarded the National Institutes of Health Director’s Innovator Award, which granted $2.3 million to support her work developing diagnostic tools to detect brain injury at the molecular and cellular levels.

ASU was awarded $400,000 from the Mellon Foundation, in collaboration with the Modern Language Association, for an initiative on the future of the humanities doctorate. The project will prepare doctoral students to use their humanistic training in a broader range of occupations than doctoral programs have typically acknowledged and honored. It will be led by Drs. George Justice, Eric Wertheimer, Joe Cutter, and Mark Lussier.

We have been increasingly successful at bringing our innovations to market. In FY14, ASU faculty working with Arizona Technology Enterprises (AzTE) set record highs for invention disclosures (261), start-up companies (12), U.S. patents (56), and major licensing and option agreements (90). Our success has garnered us top 10 rankings in innovation metrics collected by the Association of University Technology Managers (AUTM) for the third year in a row.

As ASU grows in size and impact, OKED is working hard to help faculty researchers exceed their goals. To learn more about how OKED can help you in your research and entrepreneurial endeavors, we have created a brochure that outlines all of our services. I hope you will download it and take advantage of the many options available to you.

Sincerely,

Sethuraman “Panch” Panchanathan
Senior Vice President for Knowledge Enterprise Development
panch@asu.edu
RESEARCH IMPACT

A sampling of discovery and innovation from ASU researchers

Many women in poverty blame motherhood, bad relationships

Having had children – particularly early in life – and a dysfunctional romantic relationship are the two most frequently cited reasons when low-income mothers are asked about why they find themselves in poverty. These are the findings of a study led by Dr. Kristin Mickelson, a professor in the New College of Interdisciplinary Arts and Sciences, and Dr. Emily Hazlett of Kent State University and the Northeast Ohio Medical University, in a new article published in the journal Sex Roles.

Learn more

Nano-movies of biomolecules

An international research team has caught a light-sensitive biomolecule at work using an X-ray laser. The new study, published in Science, proves that high-speed X-ray lasers can capture the fast dynamics of biomolecules in ultra slow-motion, revealing subtle processes with unprecedented clarity. The team involved four ASU faculty and their research teams: Drs. John Spence, Uwe Weierstall, Petra Fromme and Raimund Fromme, all members of the new Center for Applied Structural Discovery at the Biodesign Institute. The study also involved researchers from the University of Wisconsin-Milwaukee and Germany’s Deutsches Elektronen-Synchrotron.

Learn more

Lunar volcanoes

A new discovery from geologists in the School of Earth and Space Exploration (SESE) shows that the moon has seen small but widespread eruptions of basaltic lava during the last 50 million years, a geologically recent period. The discovery was published online in Nature Geoscience. Sarah Braden, a recent SESE graduate, is the lead author. The others are Drs. Julie Stopar, Samuel Lawrence and Mark Robinson of SESE; and Drs. Carolyn van der Bogert and Harald Hiesinger of the Westfälische Wilhelms-Universität Münster in Germany.

Learn more

Campaign donations linked to lower tax rates

Many politicians will tell you that donating to their campaigns does not affect the way they vote or design laws. However, a new study from the W. P. Carey School of Business suggests regular ongoing contributions help provide access to influential lawmakers, and that companies making campaign contributions specifically to tax-writing members of Congress wind up paying lower tax rates over time. The study was authored by ASU assistant professor Dr. Jennifer Brown and two recent doctoral graduates, Drs. Laura Wellman and Katharine Drake. It was published online by the Journal of the American Taxation Association.

Learn more
A team of scientists led by Dr. David Williams of the School of Earth and Space Exploration has completed the first global geologic and tectonic map of the asteroid Vesta. The researchers used images from NASA’s Dawn spacecraft, which orbited Vesta between June 2011 and September 2012. The maps capture Vesta’s surface features in detail that has never been seen before and reveal that large impact events have been a significant part of its history. The results were published in the journal Icarus.

A group of scientists based mostly at ASU has shown that a mineral previously called lonsdaleite, which is associated with impacts by meteorites and asteroids, is in fact a structurally disordered form of ordinary diamond. The findings were published in Nature Communications. Drs. Laurence Garvie, Toshihiro Aoki and Peter Buseck from ASU were among the authors.

Dr. Natasha Behl, assistant professor in the New College of Interdisciplinary Arts and Sciences, conducted dozens of face-to-face interviews with male and female members of the Sikh faith in India’s Punjab state. In an article published in the journal Politics, Groups, and Identities, Behl suggests that Indian democracy is at risk because of the gendered nature of citizenship. She documents a disconnect between property and inheritance rights for women, which in theory are legally protected, and the reality in the community. She also found that fear about safety significantly undermines women’s ability to move freely and participate in public life.

Despite being raised on the war stories of his relatives, Dr. Manuel Avilés-Santiago never saw Puerto Rican soldiers telling the stories of World War II, Korea or Vietnam in movies or documentaries. Dr. Avilés-Santiago, an assistant professor in the College of Letters and Sciences, has documented the stories, images and songs of Puerto Rican soldiers by following their narratives on social media. He shares this collection in a new book, “Puerto Rican Soldiers and Second-Class Citizenship” (Palgrave Macmillan 2014).
Dr. Nancy Rodriguez, professor in the School of Criminology and Criminal Justice, was appointed by President Barack Obama to be the next director of the Department of Justice’s National Institute of Justice.

Learn more

Drs. Panagiotis Artemiadis, Spring Berman and Yang Jiao have received Young Faculty Awards from the Defense Advanced Research Projects Agency (DARPA). DARPA selected 33 researchers from universities across the country to receive these research grants in 2014. ASU garnered the second highest number of grants for faculty members of any of the universities. The three recipients are assistant professors in the School for Engineering of Matter, Transport and Energy.

Learn more

Drs. Stuart Lindsay and Michael Kozicki have been named fellows of the National Academy of Inventors (NAI). The fellowship recognizes academic inventors who have demonstrated a prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on quality of life, economic development and the welfare of society. Dr. Lindsay is a Regents’ Professor in the Department of Physics and the Department of Chemistry and Biochemistry, and director of the Center for Single Molecule Biophysics at the Biodesign Institute. Dr. Kozicki is director of the Center for Applied Nanoionics and a professor in ASU’s School of Electrical, Computer and Energy Engineering.

Learn more
Dr. Neal Lester, founding director of Project Humanities and Foundation Professor of English, has been presented the 2014 Francis Andrew March Award by the Modern Language Association of Vancouver, Canada. The award honors those who have committed exceptional service to the profession of English.

Learn more

Dr. Lawrence Krauss, Foundation Professor in the School of Earth and Space Exploration, was named the 2015 Humanist of the Year by the American Humanists Association. The award honors a person who has made significant contributions to the human condition.

Learn more

Dr. Bianca Bernstein, professor of counseling and counseling psychology, was named a fellow of the American Association for the Advancement of Science. In 2006, Bernstein founded the CareerWISE program at ASU, which helps to advance women in science, technology, engineering and math (STEM) programs.

Learn more

Dr. Ross Maciejewski, assistant professor in the School of Computing, Informatics and Decision Systems Engineering, has received a National Science Foundation Faculty Career Development (CAREER) award, which provides $450,000 for his research and outreach efforts in data analysis and visualization.

Learn more

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Learn more
Any full-time ASU student has access to a complimentary membership to TechShop, Chandler, an open-access prototyping facility with over $1 million worth of state-of-the-art tools. Faculty can use TechShop at the ASU Chander Innovation Center to host events and classes. Faculty may also apply for a complimentary membership by emailing entrepreneurship@asu.edu.

ASU’s TechShop partnership was recently highlighted in Popular Mechanics, along with a video featuring Dr. Mitzi Montoya, vice president and university dean for Entrepreneurship & Innovation. Watch the video.

### TechShop benefits for faculty members

- Showcasing the existing and potential startup opportunities offered in the Valley of the Sun
- Providing education, inspiration and connections within the entrepreneurial community
- Motivating and cultivating new ideas to encourage continuing innovation within the Greater Phoenix area

### Remind your students to apply to Edson

Applications are being accepted for the Edson Student Entrepreneur Initiative now through April 19, 2015. Faculty are encouraged to invite students with big ideas to submit applications and join the next cohort of student entrepreneurs at ASU.

### Join ASU at Startup Week Phoenix

Save the date for Startup Week Phoenix hosted across the Valley from February 23-27. Startup Week Phoenix aims to build awareness and elevate the startup community as one that fosters and cultivates an innovative and inspirational environment for entrepreneurs by:

- Showcasing the existing and potential startup opportunities offered in the Valley of the Sun
- Providing education, inspiration and connections within the entrepreneurial community
- Motivating and cultivating new ideas to encourage continuing innovation within the Greater Phoenix area

Learn more.

### Mentor a student startup

The ASU Office of Entrepreneurship + Innovation invites faculty to join the ASU Mentor Network. The network of experts supports student, faculty and community-led startups that are participants in an ASU accelerator program. The mission of the program is to catalyze the entrepreneurial success of startups supported by ASU.

Apply.
Uniform Guidance updates

Noteworthy changes due to the 12/26/14 implementation of Uniform Guidance by federal agencies include limiting fixed-amount subawards to $150K and requiring sponsor pre-approval, heightened expectations for subaward oversight with increased subaward audit focus, and more stringent adherence to 90-day post-award closeout requirements for technical report submissions and funds requests. OKED’s Research Operations Teams are partnering with stakeholders and Research Advancement staff to ensure a seamless transition. For additional information, please visit OMB Uniform Guidance.

NSF has released an updated Proposal and Award Policies and Procedures Guide to be compliant with Uniform Guidance. The PAPPG offers a summary of significant changes which include required sections of proposals, budget justification page limits and other important information.

OKED NEWS

Dr. Elizabeth (Betsy) Cantwell has been appointed deputy vice president of Knowledge Enterprise Development. She brings to ASU more than two decades of experience in leading large research projects and business development. Dr. Cantwell joins ASU from the Lawrence Livermore National Laboratory in Livermore, California, where she served as director of the Office of Economic Development. At ASU, she will help strategize large project conceptualization, pursuit, acquisition and execution. She will also be responsible for developing and enhancing strong strategic relationships with various funding agencies.

Learn more

ASU has launched a new Global Security Initiative (GSI), to be led by Nadya Bliss, as director of GSI and professor of practice in the School of Computing, Informatics, and Decision Systems Engineering. The new initiative will serve as a university-wide interdisciplinary hub for global security research, and is the evolution of ASU’s Security & Defense Systems Initiative (SDSI). The initiative was developed with a focus on openness, inclusiveness and connections to the global defense, development and diplomacy communities. It will address the types of challenges characterized by complex interdependencies and conflicting objectives, where there may not be obvious solutions.

Learn more
The following are a sampling of recent research grants

**Dr. Pamela Joy Harris**, in the Mary Lou Fulton Teachers College, was awarded $11.5 million from the U.S. Department of Education to integrate STEM literacy and language into all education curriculums for teachers who will teach English language learners.

**Dr. Jeanne Wilcox**, in the Mary Lou Fulton Teachers College, was awarded $4 million from the U.S. Department of Education to increase equity, excellence and affordability at ASU.

**Dan O’Neill**, in the Julie Ann Wrigley Global Institute of Sustainability, was awarded $2 million from the City of Phoenix for the project “Resource Innovation and Solutions Network.”

**Dr. Janet Neisewander**, in the School of Life Sciences, was awarded $1.7 million from the National Institute on Drug Abuse to continue exploring new treatments for cocaine addiction.

**Dr. Xiao Wang**, of the School of Biological and Health Systems Engineering, was awarded $1.5 million from the National Institute of General Medical Sciences to increase our understanding of how gene networks function.

**Dr. Charles Katz**, in the School of Criminology and Criminal Justice, was awarded $1.5 million from the Centers for Disease Control and Prevention to conduct a study that will collect data on violent deaths in Arizona.

**Drs. Dominique Roe-Sepowitz and Judy Krysk** in the School of Social Work, were awarded $1.24 million from the Department of Health and Human Services Administration for Children, Youth and Families to better identify child victims of sex trafficking in Arizona and provide training to child welfare professionals to improve outcomes.

**Dr. Beatrix Rendon**, of Educational Outreach and Student Services, was awarded $1 million from the Administration for Children and Families for the project “ASU Education Individual Development Account Program.”

**Dr. Joshua LaBaer**, of the Biodesign Institute, was awarded $1 million from the ASU Foundation for the establishment of a high-throughput protein production center to empower translational research in Arizona.

**Dr. Francis Pierce-McManamon**, in the School of Human Evolution and Social Change, was awarded $1 million from the Mellon Foundation to ensure sustainability for digital antiquity and the Digital Archaeological Record.

**Dr. Edwin Gonzalez-Santin**, in the School of Social Work, was awarded $473,246 from the Health Resources and Services Administration for a study that will use Native perspectives to integrate behavioral health in a primary care setting.