NAISE Collaboration Fuels Rich Research Ecosystem

A human heart will beat 750 million times throughout the average lifespan of an artificial valve. During this 15- to 20-year period, the prosthetic's frame can become fatigued, crack, and fail, with potentially deadly consequences.

“Identifying a better, longer-lasting material for these devices — using a systems design approach — is the type of research the Center for Hierarchical Materials Design (CHiMaD) was created to support,” says Greg Olson, materials science and engineering and CHiMaD co-director.

CHiMaD is a Chicago-based consortium led by Northwestern with funding from the National Institute of Standards and Technology. It represents a major collaborative point for the Northwestern-Argonne Institute of Science and Engineering (NAISE).

“The ability to team with CHiMaD is essential as we further develop our novel shape memory alloy (SMA) design for heart valve frames,” says Dana Frankel, a fifth-year PhD student in Olson's research group. “We are trying to design a material for valve frames that contains less nickel (a semi-common allergen) and is more fatigue resistant so that it lasts longer in the body without failure.”

SMAs are a class of materials increasingly used in medicine because they can be reduced in size, allowing them to be inserted via catheter, before returning to their functional form when heated by the body's internal temperature.

continued…
Partners in Discovery

A pillar of the Northwestern strategic plan is to “Discover creative solutions.” It says “We will work together through research and innovation to create solutions to problems that will improve lives, communities, and the world.” Northwestern’s partnerships with Chicago’s world-class institutions have built alliances that will change the future by improving the city’s research infrastructure, creating new avenues of collaboration, and more. Throughout the coming year, the Research Newsletter will highlight the unique range of opportunities that Northwestern faculty, students, and staff have to collaborate in and learn from these affiliations.

“Partners in Discovery” by Peter Voorhees

“The type of research exemplifies the benefit of having Northwestern, Argonne, and the National Institute of Standards and Technology (NIST) coming together to support investigators,” says Peter Voorhees, materials science and engineering, CHiMaD co-director, and NAISE co-director. Pete Beckman, senior computer scientist at Argonne, is the other NAISE co-director. “For NAISE, the focus to date has been on building these joint research efforts.”

Following President Barack Obama’s Materials Genome Initiative, a policy meant to allow for faster discovery, design, and deployment of advanced materials at a fraction of current costs, NAISE helped create CHiMaD in 2014.

Today, the center is part of a larger network of collaborations between Northwestern and Argonne. (Read about the University’s work with the Advanced Proton Source in our September and January newsletters).

Since launching in 2011, NAISE has expanded opportunities for undergraduate and graduate students to perform research at Argonne under the joint direction of national lab researchers and Northwestern professors. It also enables Argonne’s top scientists and engineers to interact more easily with Northwestern faculty.

In less than three years, NAISE has been awarded grants totaling more than $25 million. The partnership has also led to 34 joint institute fellows and 20 joint-faculty appointments, at present.

“This free-flow exchange of ideas wasn’t something that was regularly occurring before NAISE,” Voorhees says. “We’ve advanced that process, allowing Argonne researchers to be included on Northwestern-led grant proposals and vice versa. The result is a greater likelihood that a project will be funded.”

Ideas aren’t the only thing making the 40-mile journey between Evanston and Argonne.

Yu (Marco) Nie, civil and environmental engineering, is spending a mini-sabbatical at the national lab this quarter, working at Argonne’s Division of Energy Systems on the optimization of incentive polices for plug-in electric vehicles. Nie is the fifth faculty member in the past two years to pursue a longer-term project at Argonne.

In 2014, Seda Ogreneci-Memik, electrical engineering and computer science, spent 12 weeks at the national lab exploring the thermal impacts of computation on modern computer designs.

“Argonne’s research culture in the computing field is highly compatible with an academic institution, meaning it was extremely easy to meet and interact with a wide variety of project groups,” Ogreneci-Memik says.

Her time at the lab resulted in a proposal that earned Department of Energy funding. Ogreneci-Memik is also part of group that will be in India later this month to present some of the team’s findings at the IEEE International Parallel and Distributed Processing Symposium.

The successful exchange of researchers between Argonne, NIST, and Northwestern created the need for recently renovated facilities in Hogan to accommodate visiting investigators at the University.

“Students, postdoctoral fellows, and faculty now can move back and forth more easily between these institutions, creating greater potential for enriched collaborative efforts,” Voorhees says. “For our students, these connections help provide an experience of what life is like in a federal national lab (NIST), Department of Energy national lab (Argonne), and the academic environment.”

Seda Ogreneci-Memik, electrical engineering and computer science, and PhD student Dawei Li discuss a computer board to gain insights on how to model the air-cooling mechanisms used for the on-board chips. Hsing-Peng Chang, Argonne, and Chong Guan, University of Kentucky, discuss the equipment for the project.

Photo by Roger Anderson
Research Note

With this edition of the Newsletter, we introduce "Research Note." This monthly feature will provide perspective and insight from Jay Walsh, vice president for research at Northwestern.

Breakthroughs happen when great minds work together. And big ideas need room to flourish.

To that end, Northwestern continues to expand the physical ecosystem in which our pathbreaking inquiries occur. These new research spaces are integral to the University’s strategic priorities and enrich the learning experience for our entire community.

Some of these projects are already completed: For example, the Music and Communications Building opened earlier this year, providing 155,000 square feet of classrooms, teaching labs, performance studios, and other student and faculty spaces. The building is a stunning part of the University’s new Arts Green.

At the Technological Institute, construction on the J Wing Infill is nearly finished. This 50,000 square-foot, six-story addition will contain research labs and will support programing for three centers: IIN, SQI, and ISEN. Meanwhile, the new Kellogg building remains on target for completion in 2016. It will house the full-time MBA program and the Department of Economics, both currently in the Jacobs Center. The excellent Jacobs facilities, then, will become available for Northwestern’s social sciences researchers. Later this summer, the University’s new entrepreneurial space — The Garage — opens. It will advance our students’ interdisciplinary explorations with workspaces, workshops, and programs.

On our Chicago campus, we are thrilled to start building the Simpson Querrey Biomedical Research Center (see page 6). Construction will begin this summer to create a 600,000 square-foot, nine-story research facility. The building is designed to accommodate 23 research teams per floor and includes an additional two below-grade floors of research support space.

Such groundbreaking physical additions to Northwestern’s research landscape are a testament to the strength of the University, the generosity of our supporters, and the vision that so many share to ensure that we continue to create knowledge with wide-ranging global impact.

Vice President for Research

Prasad Named Guggenheim Fellow

Monica Prasad, sociology has been named a 2015 Guggenheim Fellow.

Awarded by the John Simon Guggenheim Memorial Foundation, the 175 fellowships are appointed to scholars in the United States and Canada on the basis of career achievement and exceptional future promise. The fellowship program is meant to provide Fellows with blocks of time in which they can work with as much creative freedom as possible.


“The idea is that the US has fallen into this low-tax regime where politics is always about cutting taxes, and the Reagan tax cut was really the start of that,” Prasad says.

‘Groundbreaking’ Biomedical Research

Exactly 90 years after Northwestern broke ground on its first Chicago campus building, community members gathered on May 8 to celebrate its newest expansion, the Louis A. Simpson and Kimberly K. Querrey Biomedical Research Center. Leaders from Northwestern, the Ann & Robert H. Lurie Children’s Hospital of Chicago, Northwestern Medicine, and the city of Chicago took part in a groundbreaking ceremony for the 600,000-square foot, 12-story building, which will be connected to the Robert H. Lurie Medical Research Center. It will house nine laboratory floors dedicated to biomedical research.

Pictured, from left: Brendan Reilly, 42nd Ward alderman; Patrick M. Magoon, president and CEO of the Ann & Robert H. Lurie Children’s Hospital of Chicago; Eric G. Neilson, MD, vice president for medical affairs and Lewis Landsberg Dean at the Feinberg School of Medicine; Louis A. Simpson, Northwestern donor and trustee; Kimberly K. Querrey, Northwestern donor; Morton Schapiro, Northwestern president; Rahm Emanuel, Chicago mayor; and Carol L. Bernick, chair of Northwestern Memorial HealthCare Board of Directors.
Northwestern Students Awarded NSF Graduate Research Fellowships

Thirty-four Northwestern graduate students have been awarded National Science Foundation Graduate Research Fellowships (GRF). The GRF Program recognizes and supports outstanding graduate students who are pursuing research-based master’s and doctoral degrees at accredited US institutions.

GRF fellows receive three years of support and an annual $34,000 stipend.

“These fellowships are indicative of the number of outstanding students we have in our graduate student population, and more broadly, the quality of research occurring at Northwestern,” says Dwight A. McBride, dean of The Graduate School and associate provost for Graduate Education. “I’m pleased that so many of our students were awarded NSF Graduate Research Fellowships and my colleagues and I look forward to continue to further their education.”

Northwestern fellows and their research disciplines are:

Jacob Alexander Lewis, engineering — biomedical
Melissa Barona, engineering — chemical engineering
Matthew M. Beamer, engineering — civil engineering
Megan E. Beck, engineering — materials
Erica Binelli, life sciences — neurosciences
Stacey Megan Chin, chemistry — chemistry of life processes
Kevin Chiu, engineering — materials
Taylor Brianne Dolberg, engineering — chemical engineering
Peter Francis Doubleday, chemistry — chemistry of life processes
Aya Eid, Engineering — biomedical
Lydia Fiske Emery, psychology — social
Emma Rose Vander Ende, chemistry — chemical synthesis
Joshua Fixelle, physics and astronomy — astronomy and astrophysics

Xavier Eduardo Garcia, mathematical sciences — probability
William Andres Gaviria Rojas, engineering — electrical and electronic
Kazi Yasin Helal, engineering — chemical engineering
Orion Landauer Kafka, engineering — mechanical
Stephanie Kwang—Yu Ger, mathematical sciences — applied mathematics
Alane Tarianna Ocampo Lim, materials research — chemistry of materials
Paul Erich Ohno, chemistry — environmental chemical systems
Christine Laramy, engineering — chemical engineering
Alexander Scott LaTourrette, psychology — cognitive
Jenna Leigh Logsdon, chemistry — chemical structure, dynamics, and mechanism
Nathan Seigo Matsuda, comp/IS/Eng — robotics and computer vision
Jamie Marie McFarlin, geosciences — paleoclimate
Nishant Nangia, mathematical sciences — applied mathematics
Christopher K. Price, chemistry — chemical synthesis
Ryan Dave Reynolds, chemistry — chemical theory, models and computational methods
Jessica C. Stark, engineering — chemical engineering
Shay Goff Wallace, materials research — electronic materials
Henry Oliver Tenadooh Wane, engineering — mechanical
James Arthur Winkelmann, engineering — biomedical
Sarah Witkowski, psychology — cognitive
James Zachary Woodruff, engineering — mechanical

Faculty Members Receive Prestigious Chemistry Awards

Four Northwestern scholars — Omar Farha, Mercouri Kanatzidis, Chad Mirkin and Richard Van Duyne — have received honors from the Royal Society of Chemistry in the UK

The Royal Society of Chemistry is the leading organization in Europe for advancing the chemical sciences. Forty-seven previous winners of the Royal Society of Chemistry’s awards have gone on to win the Nobel Prize for their pioneering work.

Farha, chemistry, received the Royal Society of Chemistry Environment, Sustainability and Energy Division Early Career Award. The prize recognizes outstanding contributions to the chemical sciences in the areas of environment, sustainability, and energy.

Kanatzidis, chemistry, is the recipient of the Royal Society of Chemistry De Gennes Prize. The prize recognizes outstanding and exceptional work in materials chemistry.

Mirkin, chemistry and director of Northwestern’s International Institute for Nanotechnology, has received the Royal Society of Chemistry Centenary Prize. This honor recognizes outstanding overseas chemists who are exceptional communicators; honorees are invited to deliver lectures in the UK.

Van Duyne, chemistry, is the recipient of the Royal Society of Chemistry Theophilus Redwood Award. The honor, named for a 19th-century Welsh chemist, is bestowed upon a leading analytical scientist.

Click here to read more.
Two elected to AAAS

Christopher Abani, English, and Timothy Feddersen, managerial economics and decision sciences, have been elected to the American Academy of Arts and Sciences. The academy is one of the nation’s oldest and most prestigious honorary societies.

Abani and Feddersen are among 197 new fellows. Members of the 2015 class include winners of the Nobel Prize and the Pulitzer Prize; MacArthur and Guggenheim Fellowships; and Grammy, Emmy, Oscar, and Tony Awards.

"Election to the AAAS is a tremendous honor and I am reminded that scholarship is not simply the product of individuals working in isolation, but of a community of scholars who enjoy tremendous support from spouses, colleagues, and institutions like Northwestern," says Feddersen. "I am very grateful for the recognition of my work and for the support that made it possible."

The new class will be inducted at a ceremony on October 10 in Cambridge, Massachusetts. The event includes signing the American Academy of Arts and Sciences Book of Members, a tradition dating back to 1780.

Click here to read more.

New Institute Aims to Deliver Big on Cellular Technology’s Promise

Northwestern scholars are re-envisioning an ecosystem that turns engineering advances into healthcare innovation.

The newly launched Institute for Cellular Engineering Technologies (iCET) harnesses the combined strengths of faculty, postdoctoral fellows, and students from the McCormick School of Engineering, Feinberg School of Medicine, Weinberg College of Arts and Sciences, and Kellogg School of Management. Northwestern Memorial Hospital is also included in the partnership.

"Addressing the current limitations in cellular technologies requires a truly interdisciplinary approach, one that this institute will provide,” says Horacio D. Espinosa, mechanical engineering and iCET director.

Research taking place at iCET will include advanced approaches in engineering design, manufacturing, robotics, computational system analysis, and stem cell biology.

"The ability to study human disease and to develop patient-specific diagnostics has been revolutionized by advances in stem cell biology. Skin or blood cells from any patient can be reprogrammed back into an embryonic-like pluripotent state,” says Jack Kessler, neurology and iCET co-director. “These induced pluripotent stem cells, or iPSCs, can provide unlimited numbers of any human cell type for diagnostic or therapeutic purposes.”

For example, skin cells from patients with Alzheimer’s disease can be turned into human neurons both to define the causes of the disease and to screen for therapeutics.

"Developing revolutionary technologies on a scale that will enable patient-specific diagnostics and therapeutics will require a broad range of experts — in fields from cell biology to engineering, and medicine to nanotechnology,” says Kessler.

This diverse set of researchers will help sustain the institute’s long-term mission and continue to produce breakthroughs in stem cell-based precision medicine. iCET’s guiding vision is for students, postdocs, and faculty to work side by side in the lab, designing platforms and systems that possess the architecture, chemical interfaces, and temporal sensing capabilities to achieve controlled cellular manipulations and analyses.

"Our analysis will be based on the most advanced statistical theories and computational algorithms capable of analyzing large, complex data to address a broad range of applications — from personalized therapeutics to synthetic biology,” says Espinosa. “By educating tomorrow’s innovators and entrepreneurs, advancing fundamental knowledge in cell biology, and developing technologies that when translated to industry will revolutionize health care, we will make a major impact.”
NSF Funds Interdisciplinary Graduate Program

Dozens of Northwestern graduate students will benefit from a new multifaceted education program, thanks to a $3 million National Science Foundation (NSF) Research Traineeship grant.

Awarded to the Center for Interdisciplinary Exploration and Research in Astrophysics (CIERA), the funding will provide 35 graduate fellowships to students from several PhD programs at the University. Faculty from Weinberg, McCormick and the School of Education and Social Policy were part of the proposal that was one of just eight funded with the new award.

Vicky Kalogera, physics and astronomy and CIERA director, points out that numerous national reports have emphasized the need for university’s to move beyond a graduate-research program that focuses solely on producing top academics.

“Our goal is to also prepare graduate students for a wide range of STEM career paths outside of academia,” says Kalogera, principal investigator of the grant. “The National Science Foundation introduced the NRT program to address exactly this need and to encourage new interdisciplinary graduate programs that also provide innovative training activities focused on professional development.”

Northwestern Creates Fourth Nemmers Prize

Northwestern will honor a groundbreaking physician-scientist next year — and every year after — with the $200,000 Mechthild Esser Nemmers Prize in Medical Science.

Candidacy for the inaugural prize is open to physician-scientists whose body of research exhibits outstanding achievement in their disciplines as demonstrated by works of lasting significance.

The 2016 recipient will deliver a public lecture and participate in other scholarly activities at Northwestern.

“‘Innovations in the medical field in recent years truly are astounding, and we greatly look forward to awarding the first Nemmers Prize in Medical Science,” says Provost Daniel Linzer.

The award in medical sciences is the fourth Nemmers Prize established by the University. The new award complements the Erwin Plein Nemmers Prize in Economics, the Frederic Esser Nemmers Prize in Mathematics, and the Michael Ludwig Nemmers Prize in Music Composition.

The Nemmers prizes are made possible through bequests from the late Erwin Esser Nemmers, a former member of the Northwestern faculty, and his brother, the late Frederic E. Nemmers, both of Milwaukee. The prizes are awarded annually.

Click here to read more.

Exploring the Yucatan

Continuing a long tradition of field-based immersive learning, Patricia Beddows and Maggie Osburn, both Earth and planetary sciences, along with Matt Rossi, environmental sciences, led a group of undergraduate and graduate students to the expansive carbonate platform of the Yucatan Peninsula of Mexico. The 10-day trip exposed students to a range of topics and field methods. An escape from the tropical sun was found in Rio Secreto (photo), part of more than 600 miles of underground rivers in the region.

‘Sparks’ Fly in Spring CenterPiece

The latest CenterPiece magazine is now online.

In this issue, we explore some of the many advances in Northwestern medical science, including the discovery of an impressive light show when sperm meets egg (on cover).

Also featured in this issue: the Center for Innovation in Global Health Technologies and its efforts to bring students and healthcare advances to Africa; the development of better bionic legs at the Rehabilitation Institute of Chicago; and how researchers are exploring dynamic new models of human development at the Institute for Policy Research.

Whether it’s precision medicine’s potential to exploit genomic information to effect customized cures, or biomedical engineering breakthroughs that deliver more effective diagnostic tests to those who need them most, Northwestern scholars are continually combining their expertise to improve people’s lives.

Learn more by accessing your electronic copy here.
Northwestern Spinout Companies Net $500K

Two Northwestern spinout companies recently won Emerging Growth Awards for their work on capturing kinetic energy and storing, separating, and transporting gas.

The awards granted to AMPY and NuMat Technologies came from the Illinois Clean Energy Fund, a $4.6 million program started by the Clean Energy Trust and the Illinois State Department of Commerce and Economic Opportunity. Another Northwestern clean-tech spinout, SiNode Systems, was awarded $300,000 from the Illinois Clean Energy Fund in 2014.

AMPY, which won $200,000, has created a device to capture and store kinetic energy, which can be used to power smartphones and other mobile devices. NuMat, awarded $300,000, is a materials company focused on gas storage.

The success of Northwestern clean-tech startups highlights a strong entrepreneurial ecosystem at the University, the cornerstone of which is NUvention: Energy, an interdisciplinary course in clean tech innovation. The course is offered by the Farley Center for Entrepreneurship and Innovation in partnership with the Institute for Sustainability and Energy at Northwestern. A number of companies, including Ampy and SiNode Systems, have evolved, or spun out from NUvention: Energy.

Click here to read more.

August Deadline for Hazardous Waste Removal

The Office for Research Safety (ORS) is continuing to collect “historical” hazardous waste through August 1. After that date, the cost of removing legacy waste will become the responsibility of individual investigators, departments, and schools. ORS will continue to provide — at no cost to investigators — routine waste disposal.

"Over the past three years, we have had dramatic success in removing unused, unwanted, and accumulated hazardous chemical waste from our laboratories," says Michael Blayneyn, executive director of ORS. "Everyone's participation in this initiative has made the University a safer place — a major element in raising our laboratory health and safety standards."

ORS is urging every lab, department, and school to ensure that all legacy waste is collected for disposal as soon as possible.

Since fiscal year 2012, ORS has collected more than 320 tons of hazardous chemical waste at Northwestern. Information on hazardous waste can be found in the "Purple Guide" on ORS.com.

Safety System Name Change

The University’s research and laboratory safety system is being rebranded as the Northwestern Safety Information System, or NSIS. Previously referred to as the Integrated Safety Information System, NSIS will continue to be the University’s online safety data management tool, which principal investigators will use to submit applications and registrations for review.

Useful Beauty

Indium-tin-oxide (ITO) is a ubiquitous part of our world. Because of its transparency and conductivity, the versatile material is used in cell phones, flat-panel displays, solar cells, and more. In the photo above, graduate student Peijun Guo created a family of ITO structures that are 1,000 times thinner than a human hair. The designs are similar to those achieved as part of the research Guo helps conduct in the lab of Robert P. H. Chang, materials science and engineering. By controlling the oxygen flow rate and the tin concentration during growth, researchers can create nanostructures with a variety of looks and distinct electrical and optical properties. Guo was awarded first place in Northwestern's Atomic and Nanoscale Characterization Experimental Center's spring image contest. The image was captured using the FEI Quanta ESEM microscope in the Electron Probe Instrumentation Center. Contest entries can be viewed on the first floor of Cook Hall as well as online.
Exhibit, Symposium Explore Research of Art and Science

A University Library exhibit is showcasing the many intersections of how humans engage with and understand the world. The exhibit, “Art and Science: Traversing the Creative Spectrum,” opened on Monday and will run through September 4.

In conjunction with the display, a symposium will take place from 2 to 4 p.m. on May 26 at the University Library Forum Room.

Scheduled presentations include:

“Mary Cassatt’s Lamp” — S. Hollis Clayson, art history

“The Graphic Works of Paul Gauguin: Unraveling the Mystery of His Studio Practices” — Harriet Stratis, senior research conservator, Art Institute of Chicago

“The Needle in the Haystack: Preserving Research Library Collections with a Focus on Unique Items” — Susan Russick, special collections conservator

“Surface-Shape Studies of Gauguin’s Monotypes, Prints, and Drawings” — Marc Walton, materials science and engineering and senior scientist at the Northwestern University/Art Institute of Chicago Center for Scientific Studies in the Arts, and Olliver Cossairt, electrical engineering and computer science

A town hall discussion moderated by Tania Munz, lecturer in the Science in Human Culture Program, will follow the presentations.

For more information, click here.

Genetic Research Topic of Next IRB Brown Bag

The Institutional Review Board (IRB) Office maintains a robust training and outreach program that includes brown bag sessions and other educational opportunities addressing various human research-related topics. At the next brown bag meeting, Sharon Aufox, Center for Genetic Medicine, will discuss the complexities of storing biological samples for future genetic use.

“My hope is to create a checklist of sorts that people can use to make sure that all of the issues surrounding the storage and usage of these samples are addressed in both the protocol and consent forms,” Aufox says. “Part of what I will talk about is how important it is for researchers, coordinators, and IRB members and staff to understand the issues surrounding genetic biobanks to ensure that adequate protections of human subjects are in place, and ensure that participants comprehend how their donated samples and information might be used.”

The event begins at noon on May 28 in Rubloff 750 on the Chicago campus. RSVP to irbtraining@northwestern.edu or via the IRB website events page.

If you missed April’s presentation by compliance analysts Olga Jonas and Piper Hawkins-Green, you can view their slides here.

The Center for Genetic Medicine is featured in Spring CenterPiece magazine available here.
**Moyano Named Senior Director of ORIS**

Steve Moyano has been promoted to the new position of senior director of Research Information Technology Strategy and Operations in the Office for Research.

Moyano joined the Office for Research Information Systems (ORIS) in 1995 and most recently served as a senior project manager. In his new position, he will be responsible for overseeing ORIS as well as developing and implementing strategic IT priorities for the Office for Research.

Moyano will report directly to Ann K. Adams, associate vice president for research.

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**Honors**

Zdeněk P. Bažant, civil and environmental engineering, is one of 10 foreign members and 47 fellows elected this year to the Royal Society of London from a pool of approximately 700 candidates. The existing fellows elect Royal Society fellows through a peer review process. Among the 10 new foreign members, Bažant is the only engineer. There are seven biologists, one physicist, and one chemist. Eight are from the United States.

Kevin Boyle, history, is among the inaugural class of 32 Andrew Carnegie Fellows. The fellowship includes up to $200,000 per recipient to support a research sabbatical for scholarship that advances the social sciences and humanities. Boyle is a historian of 20th-century America, with a particular interest in modern American social movements.

The Buffett Institute’s service learning study abroad program, the Global Engagement Studies Institute (GESI), has received the Excellence in Diversifying International Education award for outstanding contributions to access, diversity, and inclusion in international education and exchange. The award is given annually by the Diversity Abroad Network, the leading professional consortium of higher education institutions, government agencies, for-profit, and nonprofit organizations dedicated to advancing diversity and equity in international education.

Aaron Geller, a postdoctoral fellow at the Center for Interdisciplinary Exploration and Research in Astrophysics, won first place in the proposals division of the 2015 Northwestern Data Visualization Challenge. Geller’s work will allow students and other astronomy enthusiasts to investigate changes in stars over time. When finished — in about eight months — the visualization will provide an interface to explore data from state-of-the-art stellar evolution models and will be used within inquiry-based classroom lessons.

Northwestern is honoring four faculty members with 2015 University Teaching Awards for their outstanding dedication to undergraduate education. Walter B. Herbst, Product Design and Development Program, will receive the Charles Deering McCormick Distinguished Clinical Professor Award. Deborah Cohen, history; David N. Rapp, learning sciences; and Karen Smilowitz, industrial engineering and management sciences, each will receive a Charles Deering McCormick Professor of Teaching Excellence Award. They will be recognized at a ceremony from 4 to 5:30 p.m., Thursday, May 21, in the Guild Lounge, Scott Hall, on the Evanston campus.

Mike Jewett, chemical and biological engineering, has been awarded a Camille Dreyfus Teacher-Scholar Award. The Dreyfus Program supports the research and teaching careers of talented young faculty in the chemical sciences and provides an unrestricted research grant of $75,000.

Sinan Keten, mechanical engineering and civil engineering, received a 2015 Young Investigator Award from the Office of Naval Research. The Young Investigator Program is one of the oldest and most selective research advancement programs in the country.

Eric Perreault, biomedical engineering and physical medicine and rehabilitation, has been named chair of the Department of Biomedical Engineering. Perreault, who succeeds John Troy, will become chair effective September 1.

Ali Shilatifard, chair of biochemistry and molecular genetics, has been appointed to the senior editorial board of the journal Science, published by the American Association for Advancement in Science.
**Spotlight: Research in the News**

*The Daily Mail* featured the research of John Csernansky, psychiatry and behavioral sciences, indicating how marijuana users may develop "false memories."

Alice Dreger, Medical Humanities and Bioethics Program, was quoted in a *New York Times* article about children born intersex, a term for several conditions in which an infant's reproductive anatomy does not conform to standard definitions of male or female.

Research on age and mood by Claudia Haase, School of Education and Social Policy, was featured in *TIME* magazine. The findings showed that people aren't getting older and crankier — they're getting older and more trusting.

WBEZ highlighted research by Namratha Kandula, medicine: general medicine, that shows immigrants gain better health results from workouts that are culturally sensitive.

Research by Jungwha Lee, preventive medicine: biostatistics, appeared in the *New York Times*. Lee's work showed that individuals with arthritis functioned better and had less disability when they increased their physical activity.

Maria Lombard, Northwestern University in Qatar Liberal Arts Program, wrote an opinion piece for *CNN* about self-portraits and whether travel "selfies" are narcissistic.

A team of researchers led by Neelesh Patankar, mechanical engineering, was featured in numerous national and international publications, including the *Los Angeles Times* and *Washington Post*, for their work showing how 22 diverse ocean creatures ended up using the same swim stroke.

Peter Slevin, Medill, was featured in the *Chicago Tribune* and elsewhere for his new biography of First Lady Michelle Obama.

The development of an invisible ink intended to be especially difficult for counterfeiters to duplicate was featured by numerous national and international publications, including the *Wall Street Journal* and *Chicago Tribune*. Fraser Stoddart, chemistry, led the research.

Martha Vitaterna, Center for Sleep and Circadian Biology, was quoted in *TIME* regarding the work being done by Northwestern researchers during NASA's "Year in Space" mission.

**Research Around Campus**

Oliver Cossairt, electrical engineering and computer science, improved upon current technology to produce a faster, higher-quality three-dimensional camera that can be used in more environments and produce better images. Read more...

Kimberly Gray, civil and environmental engineering, has identified two invasive species — the quagga mussel and round goby — that could allow a group of toxic chemicals to reenter the Lake Michigan food cycle. Read more...

Genetic testing of Iñupiat people currently living in Alaska's North Slope is helping Northwestern scientists, led by M. Geoffrey Hayes, anthropology, produce new insights about the migration patterns and ancestral pool of those who populated the North American Arctic over the last 5,000 years. The team discovered the first evidence that genetically links all of the Iñupiat and Inuit populations from Alaska, Canada, and Greenland back to the Alaskan North Slope. Read more...

A distinct pattern in the changing length of blood telomeres — the protective structures at the end of human DNA strands — can predict cancer many years before actual diagnosis, according to a new study by Lifang Hou, preventive medicine. Read more...

Northwestern scientists, led by Carole LaBonne, molecular biosciences, have proposed a new model for how neural crest cells, and thus vertebrates, arose more than 500 million years ago. Neural crest cells are a group of embryonic cells that "migrate" to various locations in the body, contributing to the development of different structures. Read more...

Justin D. Martin, journalism at Northwestern University in Qatar, and others have released an updated survey that reveals the perceptions about media held by people living in the Middle East. The study found that this demographic is increasingly trusting of local media when compared to national or regional alternatives. More than a third of survey respondents also said they worry about the government monitoring their online activity. Read more...

Most psychiatric disorders — including depression — do not predict future violent behavior, according to a new longitudinal study of delinquent youth by Linda Teplin, psychiatry and behavioral sciences and medicine: infectious disease. The only exception to the findings is substance abuse and dependence. Read more...

Online sites that offer secure access to one's medical record, often referred to as patient portals, are increasingly important for doctor and patient communication and for permitting routine access to health care information. But patient portals could widen the gap in health disparities among the most vulnerable patients, according to a new study by Michael Wolf, medicine, and others. Read more...
Proposal and Award Report: through March

The total amount of award funding that Northwestern received this fiscal year, through March 2015, is $222.3 million, a 13 percent decrease ($32.6 million) compared with March 2014. The number of awards to date (1,286) is 3 percent higher than last year.

The dollar volume of awards from federal agencies declined 14 percent ($22.9 million). Awards from industrial sponsors are down by 23 percent ($13.9 million). Foundation funding has decreased 6 percent ($0.8 million), while voluntary health organization funding is up 19 percent ($1.2 million).

The dollar volume of proposals submitted through March is $1.553 billion, an increase of 8 percent compared to last year. The number of proposals submitted (2,071) is up 6 percent.

The dollar volume of proposals submitted to federal agencies is up 10 percent ($121.7 million), while proposals to industrial sponsors is down 10 percent ($6.3 million). Proposal activity to voluntary health organizations is up 16 percent ($6.2 million).

Click here to access the full report using your University Net ID and password.