Science and Design Merge in Shedd Partnership

Prepped for surgery at Shedd Aquarium's animal hospital, the blackbar soldier is a fish out of water.

Unable to breathe on its own in the open air, the fish is kept alive with a mixture of saltwater and anesthetic manually passed through its gills. The sedation allows veterinarian Bill Van Bonn to examine the animal safely, and carefully remove a blinding cataract.

Van Bonn, Shedd’s vice president of animal health, is responsible for preventative healthcare, regular animal checkups, and a wide variety of surgical procedures whenever these are necessary. With more than 25 years of clinical veterinary experience and some 1,500 aquatic species under his care, Van Bonn says the manual sedation method has always seemed a technique ripe for improvement.

About five years ago, Shedd presented the challenge of ameliorating the process to a seemingly unlikely group: Northwestern undergraduates.

One of the Northwestern-Shedd partnership’s greatest successes was designing a puzzle for the aquarium’s sea otters. Installed behind the scenes at Shedd, the maze fits within a window opening between the otters' pool and trainers’ area (see inset). That placement allows aquarium staff to insert a shrimp-filled ball and watch an otter move it through holes in plastic shelving until the treat can be retrieved.
“Our fish anesthesiology project expanded on design work already started by Shedd,” says Stacy Benjamin, director of Northwestern’s Segal Design Certificate program.

The project began with biomedical engineering students at the University before being taken up by peers at the Segal Design Institute.

“The device that students prototyped uses three tanks to allow the anesthesiologist to decide what concentration of medicine to deliver,” says Benjamin.

The upgraded machine is portable and allows staff to modify the anesthesia’s strength with the push of a button. It’s also more accurate and lets veterinarians quickly switch to water-only, a process that speeds an animal’s recovery.

The prototype is one of about 20 created by Northwestern students for consideration at Shedd during a partnership that has spanned more than a decade.

Each summer, Benjamin and other faculty meet with Shedd staff to hear about some of the aquarium’s latest challenges. The team then identifies projects that are suitable for first-year engineering students to solve, while more complex initiatives are directed to junior and senior students.

Student teams are currently working to improve how 1,500-pound beluga whales are x-rayed, enhance how quarantine habitats are cleaned, and more.

Senior Peter Haddad is one of three students developing a tool that might help Shedd clean animal environments better and more quickly. Today, scuba divers must enter the tanks about once a month to scrub algae and dirt off walls and floors by hand.

“We are the third group tasked with finding a solution that makes the diver’s job easier or that might allow staff to clean habitats from the outside,” says Haddad.

The team is pursuing several possible solutions, including an autonomous wall cleaning robot as well as the installation of pipes along habitat floors to use forced air or water to direct uneaten food and other debris toward filters.

One of the Northwestern-Shedd partnership’s greatest successes was creating a puzzle for the aquarium’s sea otters. The project gained local and national media attention.

“Not only did the vertical maze have to be able to endure corrosive saltwater, but it also had to be strong enough to withstand the otters themselves,” says Van Bonn. “We can’t buy otter toys at the local pet store and our expertise as veterinarians is obviously not in engineering. The students presented us with a creative way for our otters to exercise their natural curiosity.”

Installed behind the scenes at Shedd, the maze fits within a window opening between the otters’ pool and trainers’ area. That placement allows aquarium staff to insert a shrimp-filled ball and watch as an animal moves it through holes in plastic shelving until the treat can be retrieved.

“It’s nice to work with Shedd as a client because they understand the complexity of the design process and they’ve got a real research mindset about it,” says John Anderson, Segal Design Institute lecturer. “The aquarium is a large and diverse organization continually improving its processes, and Shedd experts are used to open-ended problem solving.”

First-year students in Design Thinking and Communication and their older counterparts in DSGN 384 Interdisciplinary Design are taught project management and design skills, as well as how to communicate with clients. Beyond Shedd, the multidisciplinary groups — which frequently include non-engineers majoring in theater, psychology, economics, and other fields — have also helped design solutions to overcome physical disabilities. Clients who have benefited from this undergraduate research include the Rehabilitation Institute of Chicago, Lamb’s Farm, and others.

“It’s really important for these students to learn how to get the best out of themselves and the best out of each other,” says Anderson. “These interdisciplinary teams are confronting problems that cannot be solved by one person. The result is a solution based on a true team effort.”
Research Note: Talent, Tools, and Collaboration Advance Northwestern Research Success

The most important ingredient in the success of a research university is talent.

Certainly we build great physical spaces, provide fantastic libraries, and equip state-of-the-art core facilities (think microscopes and computers). These components are vital to attract the talent that makes Northwestern superb. But it’s the quality of the people involved in the research enterprise that truly distinguishes our University. For most reading this message, that means you. It takes a village to conduct high-impact research. From the faculty member with the original vision for discovery, to the research staff, post-docs, and students who are engaged in the daily hands-on work, all are clearly members of the research team. Further, this team extends to the talented administrators who facilitate our research in major ways. Across Northwestern, teams of dedicated people support our scholars to help them achieve breakthrough success ethically, safely, and effectively, all while remaining in regulatory compliance. “Compliance” is important, but the word often carries connotations that can work against the full value that our administrators’ contributions bring to Northwestern. After all, “compliance officers” may be perceived as a prohibitive or bureaucratic force. I see things differently.

Our administrators are not looking for ways to impede progress. They are working to enable Northwestern research to flourish, while also adhering to federal and state regulations. I think of our administrative units as “helping us get to ‘yes,’” rather than saying “no.” Sometimes, getting to “yes” is easy; other times it requires changes and conversations that take time, energy, and a deep understanding of a situation’s nuances. Administrative staff, whether in departments, schools, or one of the university’s central units, is essential to achieving optimal outcomes and getting us to “yes.”

While numerous administrative units support Northwestern discovery and the tremendous growth in award funding for that discovery over the past decade, let me say a few words here about the Office for Sponsored Research (OSR). OSR at Northwestern is organized into two teams: one for the Chicago campus and one for Evanston, with significant sharing of vision, ideas, goals, and experience across those teams. OSR assists investigators in proposing and managing sponsored programs that help Northwestern excel in its teaching, research, and public service mission.

In FY2015, OSR set up 2,961 awards totaling $620 million. The corresponding volume of proposal activity during that year was a staggering $2.5 billion, from a total of 3,391 proposals. Each proposal that comes through OSR requires about 2 to 4 hours of staff time, while each award set up (following and distinct from award negotiation) takes up to 5 hours of staff time. Complex awards, which are increasingly common today, usually require significantly more time. Further, this past year, OSR executed a combined total of more than 3,500 contracts, including 500 outgoing subcontract agreements, and more than 1,000 material transfer agreements (MTAs). Managing these complex matters demands exceptional ability, a sustained commitment, a deep understanding of the laws, regulations, policies, and community expectations that surround proposals, grants, contracts, and MTAs. All sponsored research at Northwestern passes through OSR, so it is absolutely the case that OSR keeps the University’s research thriving.

In future editions of Research News, I will highlight the exemplary efforts of our other administrative units to provide a richer understanding of how Northwestern achieves its high-impact discovery.

Vice President for Research
The 1960s were a crucible for profound, often turbulent, social change in America. Issues of economic and racial justice played out in the halls of government — and in the streets of cities like Watts, Newark, Chicago, and Washington, DC. The backdrop for one of the decade’s deadliest episodes of urban unrest was Detroit, where in 1967 43 people died over the course of a five-day conflict sparked by an after-hours police raid of an unlicensed bar.

Kevin Boyle, history, grew up in Detroit in the midst of these social transformations, and the battleground where class, race, and politics intersect is home to his award-winning scholarship. Throughout four books and dozens of articles and reviews, he has produced important new insights on America’s labor and civil rights movements. Boyle’s The Arc of Justice, a deeply researched nonfiction account of a sensational murder trial in 1925 Detroit, highlights how racial violence played out in a seminal legal case. This project earned the 2004 National Book Award among many other honors.

Boyle’s work depicts history through the lives of everyday people. “To a huge extent, my career has been dedicated to learning about the horrific power of race, the origins of racial division, and how these played out for ordinary people,” he says.

At Northwestern, Boyle is the William Smith Mason Professor of American History, and teaches undergraduate courses on modern US history, social movements, and racial violence. He has held fellowships from the Rockefeller Foundation, the Fulbright Foundation, the American Council of Learned Societies, the National Endowment for the Humanities, and the John Simon Guggenheim Foundation. He is currently on a fellowship from the Carnegie Corporation and writing a new book, The Splendid Dead: An American Ordeal, which is about political extremism. Research News spoke with Professor Boyle about how his own history has shaped his academic pursuits.

You were born in 1960 and so were a child during a time when America was undergoing massive social change. How did these experiences impact you?

The racial divisions were so deep in Detroit, but I certainly didn’t have any active participation in the 1960s social movements, which is one way that a lot of historians came to that topic. I was more influenced by the fallout after the 1960s — the wrenching economic changes that swept through Detroit, which led to my interest in the labor movement.

In many ways, American society underwent this profound social transformation in the 1970s, when the post-war order collapsed. This was a formative experience for me and for my scholarship.

Was anyone around you directly involved in protest movements?

No, I wasn’t surrounded by activists. I was surrounded by ordinary people, and I don’t mean that in a pejorative sense. These people were grappling with huge changes that they couldn’t control. This context really influenced how I approach history. One way you can do social movement history is by valorizing activism. This can streamline matters. But another way, which I tend to favor, is to complicate things. In my work, I emphasize the multiple ways in which people experience social change — sometimes in really honorable ways, sometimes in less-than-honorable ways. I want to get down to the most basic experience of people struggling with profound change.

In depicting that struggle, invariably you are going to encounter those who are on...
the “wrong side of history.”
Yet, your work doesn’t consign these people to mere caricatures.

That’s right. Even in those cases, we want to understand these people. Not always to excuse what they do, but to understand them. Just as you don’t want to turn everyone in a social movement into a hero, you also don’t want to demonize everyone who opposes a movement. You want to make all of them human. Yet, what often happens in historical research is we tend to reduce people to social categories. They become stand-ins for “women” or “workers.” I want to make our history more complicated than that by telling the stories of real people, not allegorical figures.

Today’s headlines suggest that America has a way to go to ameliorate economic and racial injustice. How do you see things?

While working on The Arc of Justice, I knew, intellectually, the depth of violence that African Americans faced in the early 20th century. I had read books on lynching. Yet, I wasn’t prepared to face the immediacy of it that my research brought forward. We were a society that was extraordinarily violent toward African Americans, a society where racism of the most blatant kind was perfectly acceptable and something that you proudly embraced! Lynchings were horrific spectacles fueled by sadistic violence — ritualistic bloodlust, there’s no other way to describe it. I can’t emphasize enough how far we’ve come from those times. We’re not that society anymore. Our progress happened because a lot of ordinary people did some extraordinarily brave things to demand that things get better.

The problem is, many white Americans say that because we’ve made strides, everything has been solved. To them, the problems of race in America are residual. That’s not the situation in the United States. We remain a profoundly segregated society, and that’s not to deny the progress we’ve made.

On the economic front, I’m not optimistic at all. Over the last 30 years, America has become such a profoundly unequal society. There’s a level of economic inequality that is truly staggering.

As a historian, you’ve reflected on the choices, challenges, and circumstances of others. How has this helped you gain insight into your own history?

My career has helped me contextualize my family’s experience in a broader framework. You realize that you’re not anomalous. Your family’s experience is part of huge trends in our society. My parents were Irish immigrants and so my scholarship has helped me understand better the dynamics that drove immigration and policies — the factors that made me an American.

Is there a piece of that personal history that stands out for you today?

My scholarship deals with complex relationships between individual action and large institutional structures. One thing that personally illustrates this dynamic is the experience of my family, my community, undergoing “white flight” in the 1970s — moving out of the city into homogenous communities. This was linked to issues of race and economics in the real estate market. Most of the adults in my neighborhood were not racists; by and large, they were good, honest people who suddenly felt like they had to act on racist ideas because these were tied up with other forces. This was my home, a tight-knit community. All of a sudden, the horrible problem of race comes along and, within a year, shattered that entire structure. African Americans had nothing to do with this white flight. We did it to ourselves.

When you’re 17, on the cusp of adulthood and looking to the future, what you want to do is leave your world; you don’t want your world to leave you. But that world of mine, which had grounded me for so many years, was gone. And it was gone because of what we as a nation did — and do — to ourselves.

Woodruff Named Center for Reproductive Science Director

Northwestern has named Teresa Woodruff, obstetrics and gynecology, director of the Center for Reproductive Science, effective October 1.

The Center started nearly 30 years ago as a multicampus, multidisciplinary research hub for all aspects of reproductive research. Since 2003, Woodruff has served as associate director of the Center alongside outgoing director Kelly Mayo, molecular biosciences. Under Mayo’s leadership, the Center has increased faculty membership, expanded learning and training for students and faculty, and established the Illinois Symposium in Reproductive Sciences.

“It is with great enthusiasm that I take over the reigns of the Center for Reproductive Science,” says Woodruff, a reproductive endocrinologist and leading advocate for sex equity in medical research and drug development. “We are challenged to work on some of the most intractable reproductive health problems of our day to improve the lives of men and women.”
...continued from cover

Continuing the University’s exploration of human health, the newest research center will provide insight into the development and experiences of those in the sexual and gender minority (SGM) community.

Led by Brian Mustanski, medical social sciences, the Institute for Sexual and Gender Minority Health and Wellbeing (ISGMH) will advance research that benefits SGM people while enhancing broader understanding of this community’s unique qualities.

“Recent progressive developments have created extraordinary opportunities to conduct innovative research on vital health concerns and needs of SGM populations,” says Mustanski. “We also have the chance to train scientists and clinicians in the best practices to meet those needs, and reduce and ultimately eliminate barriers to services and inequities in health and wellbeing.”

While the struggle for SGM equality and health research is not new, he adds, recent increased attention to SGM health has laid a “promising foundation for groundbreaking research, education, and service.”

The Institute will foster collaborations across research domains and provide opportunities for high-level multidisciplinary scholarship and training for the next generation of SGM scholars. It will also use innovative methods to disseminate knowledge to the SGM community, the public, scholars, service providers, educators, and policymakers.

“While there are other institutes focused on sexual health or broader sexuality studies from a social science and humanities perspective, our effort marks one of the first university-wide initiatives dedicated to sexual and gender minority health and wellbeing,” says Mustanski. The focus on wellbeing is critical, he notes: SGM people experience disparities in many domains of health and social status, but they also demonstrate remarkable resiliency and cultural vibrancy. “There is much that can be learned from this community to better society.”

To remain inclusive, the Institute will use “Sexual and Gender Minority” as an umbrella term intended to reflect the diversity of lesbian, gay, bisexual, and transgender (LGBT) people, as well as those whose sexual orientation and/or gender identity varies, those who may not self-identify as LGBT, or those who have a specific medical condition affecting reproductive development who sometimes identify as intersex.

The Institute is supported by the Office of the Provost; the Office for Research; and Feinberg School of Medicine.

**Forced Migration**

Another newly expanded University research center aims to address policies surrounding forced migration and the impact of refugees on local economies.

Within the Center for Forced Migration Studies (CFMS), its refugee resettlement research program is breaking new ground. It is the first such effort in the United States and will help inform the country’s reconsideration of relevant policy strategies while highlighting long-term benefits of resettlement programs. Projects led by Northwestern investigators will shape innovations that better integrate refugee and asylum policy within America’s broader immigration framework.

The goal of CFMS, which is part of the Buffett Institute for Global Studies, is to help better understand refugee movements through research, documentation, education, and outreach. The new University research center engages an international and interdisciplinary group of researchers, students, practitioners, refugee legal aid organizations, policymakers, community based organizations, writers, and artists to re-conceptualize refugee protection.

Founded by Galya Ruffer, political science, in 2011, CFMS also works with Northwestern graduate and undergraduate students interested in refugee and forced migration studies. Over the past several years, students have had the opportunity to engage in refugee research and education as fellows, research assistants, and interns.

“There’s a real opportunity for Northwestern to lead the way in researching these problems and helping to develop sustainable answers,” says Ruffer. “In our resettlement research program, for example, we are expanding our knowledge of the long-term impacts of resettlement and working collaboratively with programs such as Northwestern’s Design for America to offer solutions. I see the CFMS as a leader in reengineering refugee policies and producing new approaches to how we address refugee crises.”

Panel Discussion December 3

The Center for Forced Migration Studies is hosting a panel discussion from 6-9 p.m. on December 3 in the Segal Visitors Center. The symposium will reflect on the United States refugee resettlement program, a global model for successful humanitarian response to today’s refugee crises. The event is open to the public and will be followed by a reception to celebrate the launch of the new Center for Forced Migration Studies Refugee Resettlement Research Program. Register here.
Coburn, Spillane Awarded Research Prize

Cynthia Coburn and James Spillane, both School of Education and Social Policy, have received a William T. Grant Research Award.

The $500,000 grant will support their study of the Common Core State Standards (CCSS) for math and language arts. CCSS considerations are challenging school districts to make decisions about new instructional materials, student assessments, and ways to support teachers in learning new approaches.

Coburn and Spillane’s project — “Fostering Research Use in School Districts Through External Partnerships: The Role of District Capacity”— will investigate school districts’ integration of research findings. The Northwestern scholars will also examine how new information affect districts’ collective knowledge, policies, and practices.

Science in Society

Science Club, an afterschool, mentor-based program for middle school youth developed by Science in Society in partnership with the Boys & Girls Club of Chicago and Chicago Public Schools, continues to make a striking difference in the science skills and engagement of its 60 youth members.

Science in Society

Having promoted impactful science education, communication, and community engagement for nearly a decade, Science in Society (SiS) is now one of Northwestern’s newest University research centers. Created in 2007, SiS houses 13 initiatives that train and connect University researchers to the Evanston and Chicago communities.

“Whether we’re supporting underserved K-12 students, their hard-working teachers, or early career scientists, Science in Society provides opportunities for key skills development backed by rigorous evaluation,” says Michael Kennedy, SiS director. “Becoming a University research center helps us to expand our commitment to high-quality, community-responsive STEM education programs.”

The center’s hallmark Science Club program engages underserved middle-school students using a long-term mentorship model. The program is based at a Boys & Girls Club site in Chicago’s Uptown neighborhood, with club staff and Chicago Public Schools teachers forming an integral part of the Science Club leadership team.

Since launching in 2008, Science Club has garnered wide praise and a $1.4 million National Institutes of Health (NIH) Science Education Partnerships Award. It also earned the inaugural 2013 STEM Impact Award from the Afterschool Alliance.

In early 2016, SiS will expand again, opening a second Science Club site in Chicago’s Little Village neighborhood. A new $1.2 million NIH grant will help establish Science Club Summer Camp: a dual-pronged initiative comprised of a two-year STEM professional development program for elementary school teachers and a summer program for Chicago youth at the Boys & Girls Clubs of Chicago.
Postdocs Win Beauty of Science Contest

In depicting their efforts to help cancer survivors conceive children, a pair of postdoctoral fellows has won this year’s Science in Society image contest.

Monica Laronda and Adam Jakus, fellows in obstetrics and gynecology and materials science and engineering, respectively, are the first cross-disciplinary team to take top honors in the Beauty of Science’s six-year history.

“Our expertise complements each other very well,” says Jakus. “My team and I can create materials and devices with the desired properties and Monica and her group can apply those materials to specific problems and analyze the results.”

Jakus conducts materials design research in the lab of Ramille Shah, an expert in 3-D printable objects, while Laronda works with reproductive endocrinologist Teresa Woodruff.

The duo’s winning entry shows a mouse ovarian follicle (in purple, above), which is composed of a developing egg and its surrounding cells. Normally, follicles develop within healthy ovaries, but they are sometimes damaged by harsh cancer therapies. Physicians can remove healthy follicles before a patient undergoes treatment, but afterward these saved follicles fail to grow into healthy eggs.

To combat this issue, Laronda and Jakus created a novel paper-like biomaterial made of ovarian proteins (in green). The material is designed to support removed follicles as they develop into mature eggs. The image shows a healthy follicle flourishing in the new environment. Researchers hope that a supportive biomaterial like this could one day help cancer survivors conceive.

“We are currently collecting and interpreting the biological data using different techniques that are indicative of how each lab works,” says Laronda, emphasizing the interdisciplinary benefits of the collaboration. “These research findings would never have come about if we only sought answers from within our own departments.”

The winning image was one of a dozen finalists on display during a gallery launch November 10 at Evanston Township High School. The collection will continue to be displayed throughout the fall and winter at various Chicago-area institutions including the Museum of Science and Industry and the Harold Washington Library.

Northwestern Honored for Renewable Energy Use

The Environmental Protection Agency (EPA) has recognized Northwestern for its efforts in advancing sustainable energy, bestowing the 2015 Green Power Leadership Award upon the University. The award recognizes the country’s leading renewable energy users for their contribution to helping develop the nation’s voluntary green power market.

Northwestern was one of only 11 EPA Green Power Partners to receive a Leadership Award for its green power purchase and commitment to clean energy. The University has supported such efforts through the purchase of renewable energy certificates for nearly 10 years.

“Green power is an important part of our overall approach to energy,” says Rob Whittier, director of Northwestern’s Office of Sustainability. “First we reduce energy use though smart design, energy conservation projects, and occupant engagement and then offset the impact of the energy that we do use by sourcing cleaner energy like solar and wind.”

Already a leader in green power use, Northwestern took a major step forward this year by purchasing renewable energy certificates equivalent to 50 percent of its annual electricity usage — up from 38 percent a year ago. A renewable energy certificate is a tradable energy commodity that represents proof that one megawatt-hour of electricity was generated from an eligible renewable energy resource.

Earlier this year, the EPA ranked Northwestern No. 4 on its list of the largest green power users among colleges and universities.

View the full gallery of winning images.
Scientists Take Aim at Cancer in Collaborative Project

A new $17.4 million grant from the National Cancer Institute (NCI) will enable Northwestern to join forces with two other Chicago universities. The goal? To collaborate with the city’s underserved communities to advance cancer research, education, training, and outreach.

One of the project’s aims is to help remedy health inequities.

“Despite the existence of five academic medical centers and millions spent on cancer research and treatment of Chicago residents, we are still only in our infancy in responding to cancer health disparities,” says co-leader of the project Melissa Simon, obstetrics and gynecology. The collaborative effort currently includes more than 20 researchers and educators from diverse backgrounds and academic disciplines.

The Illinois Department of Public Health reports that low-income or predominantly African American or Latino communities in Chicago face cancer death rates up to double the national average.

The five-year grant will support the creation of the Chicago Cancer Health Equity Collaborative (ChicagoCHEC), led by researchers from the Robert H. Lurie Comprehensive Cancer Center of Northwestern University, the University of Illinois at Chicago, and Northeastern Illinois University.

“We have worked on setting the ground work and assembling this grant over the last five years,” says Simon. “This is a way to move forward and foster the wonderful efforts of communities and organizations already working towards improving cancer equity.”

Read more.

Scientists Receive Prestigious Honor for Young Faculty

Geologist Yarrow Axford and chemist Danna Freedman have received the prestigious Faculty Early Career Development (CAREER) Award from the National Science Foundation (NSF). Axford and Freedman will receive $600,000 over five years from NSF’s Division of Polar Programs and Division of Chemistry, respectively.

“It’s an honor to receive this award, and I’m thrilled to be able to continue working in Greenland,” says Axford, Earth and planetary sciences. “I really believe it’s a critical area of the world for climate research.”

The award will support her research reconstructing the climate history of Southern Greenland 5,000 to 9,000 years ago to better understand climate change today.

Freedman will use the grant to focus on creating and implementing design principles to synthesize better qubits, the smallest unit of a quantum computer. Creating computers with quantum objects would enable scientists to understand electron transfer in a new way, paving the way for new generations of materials for renewable energy. Read more.

Fulbright Scholars Bring Diverse Leadership to the World

From tutoring North Korean defectors to researching solar energy and hazardous medical waste, Northwestern Fulbright scholars are pursuing their dreams and making a global impact.

Northwestern is among the nation’s top producers of Fulbright scholars, with 26 students and alumni accepting grants to teach, conduct research, study, or participate in service organizations for the 2015-16 academic year.

The newest Fulbright winners have academic backgrounds ranging from mechanical engineering to art history. They will be bringing their disciplinary expertise to help solve critical challenges in more than a dozen countries, including South Africa, Germany, South Korea, Russia, Morocco, Peru, Vietnam, and Jordan.

The Fulbright is among the world’s most widely recognized and respected international exchange programs. Sponsored by the US Department of State, the grants foster leadership and build understanding between scholars and researchers in the United States and around the world.

NORTHWESTERN’S 2015-16 FULBRIGHT SCHOLARS AND THEIR LOCATION OF STUDY ARE:

Michael Aleman — Indonesia
Evelyn Atwater — Germany
Izora Baltys — South Africa
Eleanor Burgess — England
Elizabeth Harrington Derderian — UAE
Yuri Doolan — South Korea
Phyllis Dugan — England
Blair Dunbar — Russia
Abigail Gary — Peru
Panagiota Tania Karas — Greece
Vivian Kelly — South Korea
Iga Kozlowska — Poland
Lena Krause — Morocco
Todor Kukushliev — Germany
Sophia Lazare — Brazil
Brenna Ledvora — Germany
Kingsley Leung — South Korea
Rabeya Mallick — France
Monica Mehta — South Korea
Catherine Olien — Germany
Julia Oswald — Germany
Andrew Rowberg — Germany
Terry Spinelli — Germany
Rory Sykes — Jordan
Maeve Wall — South Korea
Karen Wilber — Vietnam
Renowned Economist Jeffrey Sachs to Join Global Health Symposium

Poverty, hunger, and disease are borderless scourges.

“That’s what makes these interdisciplinary conversations so important,” says Juliet Sorensen, law, one of the organizers of Northwestern’s Global Health Interdisciplinary Symposium taking place November 20-21 on the Chicago campus.

Once considered a purely medical pursuit, global health research has enjoyed phenomenal gains over the past 25 years, due in large part to the understanding that good governance, effective economic infrastructures, and functional legal systems are critical to solving a varied set of problems.

The symposium will feature moderated panel discussions on public health, social justice, and the impact of epidemics. Celebrated economist Jeffrey D. Sachs will deliver a keynote presentation. Sachs is the Quetelet Professor of Sustainable Development and Health Policy and Management, director of The Earth Institute at Columbia University, and senior United Nations advisor. Twice named one of Time magazine’s most influential world leaders, he is also a leader in sustainable development, bestselling author, and syndicated columnist whose monthly articles appear in more than 100 countries.

“A trained economist who has become the leading figure on global health and development, Jeffrey Sachs embodies the interdisciplinary nature of the field,” says Sorensen. “This symposium marks an opportunity to bring together exemplary scholars, policy experts, and other practitioners to increase dialogue and, ultimately, elicit action.”

The symposium is free, but registration is required. Read more.

Russakoff to Discuss New Book December 1

Journalist and author Dale Russakoff is coming to campus to discuss her new book, The Prize: Who’s in Charge of America’s Schools?

In The Prize, Russakoff details how a mayor, a school superintendent, and a governor set out with $100 million from a social media billionaire — and the best of intentions — to transform Newark, New Jersey’s beleaguered public school system into a model of educational excellence.

Russakoff’s talk will take place from 4 to 5:30 p.m. on December 1 at the McCormick Foundation Center Forum in Evanston. The event is co-sponsored by the Institute for Policy Research, the School of Education and Social Policy, and the Medill School of Journalism, Media, Integrated Marketing Communication. A reception will follow.

Registration is required by November 27.

Discoveries

Research by Fabián Bustamante, electrical engineering and computer science, has found that Cuba’s Internet connection to the rest of the world is perhaps even worse than expected. Read more.

Boys, especially African American boys, are falling behind — both behaviorally and educationally — according to new research by David Figlio and Krzysztof Karbownik, both Institute for Policy Research. Read more.

Matthew Grayson, electrical engineering and computer science, has created a new mathematical method to make semiconductor characterization more efficient, more precise, and simpler. Read more.

Treating out-of-control blood pressure with antihypertensive medication can greatly reduce the risk for heart attack, stroke, and heart failure, but the current approach to treatment cannot undo all of the previous damage or restore cardiovascular disease risk to ideal levels, according to a new study by Donald Lloyd-Jones, preventive medicine. Read more.

In a recent study, Dileep Varma, cell and molecular biology, helped explain how key proteins are sequentially degraded during a specific phase of the cell cycle and why these events could be pivotal for the normal progression of cells. Read more.

Researchers have long known that adults can flexibly find new ways to communicate; for example, by using smoke signals or Morse code. However, new findings from the lab of Sandra Waxman, psychiatry, are the first to reveal that this same communicative flexibility is evident in children as young as six months old.

Jane Wu, neurology, has shown for the first time that the Myosin 9b gene is correlated with lung cancer tumor formation and metastasis. Worldwide, lung cancer causes more deaths than any other cancer. Most frequently, mortality is the result of metastasis — when the disease spreads to other parts of the body, such as the brain, bones, or liver. Read more.
Honors

David Besanko, strategy, has been awarded the Aspen Institute Business and Society Program’s 2015 Faculty Pioneer Award for his coursework that examines the role of business in society.

Serdar Bulun, obstetrics and gynecology, has been elected to the National Academy of Medicine (NAM), formerly known as the Institute of Medicine. NAM was established in 1970 by the National Academy of Sciences to honor professional achievement and commitment to volunteer service, and serves as a national resource for expertise on issues concerning health, medicine, biomedical science, and related policy.

The Norwegian Ministry of Culture has awarded an International Ibsen Scholarship to Aaron Todd Douglas, theatre. The scholarships recognize innovative projects in the field of drama and performing arts that foster critical discourse around existential and social issues present in the works of Henrik Ibsen, a 19th century Norwegian playwright and poet. Douglas was one of three winners selected from a highly competitive pool of applicants representing 45 countries.

Elizabeth Gerber, mechanical engineering and a member of the Institute for Policy Research, has received the Elizabeth Hurlock Beckman Award from the Wells Fargo Foundation. The award honors professors who inspire former students to make a difference in their communities.

The American Physical Society has honored Mercouri Kanatzidis, chemistry, with the 2016 James C. McGroddy Prize for New Materials. The award recognizes outstanding achievement in the science and application of new materials.

Viorica Marian, communication sciences and disorders, has been named a University of Alaska Anchorage Alumni of Distinction award winner. Marian’s research focuses on bilingualism and the brain’s ability to process multiple languages at the same time.

Analytical Scientist has named Chad Mirkin, chemistry, to its “Power List.” The annual list highlights the top 100 most influential people in the analytical science field.

Wesley G. Skogan, political science and a member of the Institute for Policy Research, has received the 2015 Distinguished Achievement Award in Evidence-Based Crime Policy from the Center for Evidence-Based Crime Policy. The award is the center’s highest honor and recognizes those who have made a significant contribution and commitment to advance the integration of science with criminal justice practice.

The School of Education and Social Policy’s Center for Talent Development (CTD) has been awarded a prestigious $1.2 million Javits Gifted and Talented Education Program grant from the US Department of Education. The grant will help the center identify gifted and academically advanced students from economically disadvantaged families.

The School of Law’s Center on Wrongful Convictions has received the Jerold S. Solovy Freedom Award from the Anti-Defamation League for its commitment to identify and rectify wrongful convictions and other serious miscarriages of justice. The award is given to an individual or organization that has made significant and lasting contributions to the advancement of American freedoms.

Spotlight: Research in the News

Science Focus recently featured the research of David Figlio, Institute for Policy Research. Figlio studied pairs of sisters and found that girls with more feminine names, like Isabella or Emma, are less likely than girls with more masculine names to study math or physics, fields traditionally dominated by men. These findings occurred even among twins.

Washington Post featured research by Eli Finkel, management and organizations, that called into question the effectiveness of matching algorithms on dating websites.

New York Times quoted Philip Greenland, director of the Institute for Public Health and Medicine, about the use of statins — a class of cholesterol-lowering drugs — in people with elevated cholesterol.

Only about 10 percent of siblings of children with food allergies also have such allergies, according to a new study by Ruchi Gupta, pediatrics. The research was recently featured in US News and World Report.

“Fox News Chicago” interviewed Jonathan Guryan, human development and social policy, about a high-intensity math-tutoring program that he is evaluating.

Benjamin Jones, strategy, was interviewed on National Public Radio regarding the recent growth in startups serving tech-savvy Muslims.

In a recent US News and World Report story, Elizabeth McNally, medical: cardiology, shared her insights about the future of disease research.

The Chicago Reader featured Mary Pattillo, sociology, about her research on charter schools and school choice in Chicago.

Ellen Wartella, human development and social policy, discussed the digital disparities facing lower-income teenagers with New York Times.
Proposal and Award Report: Through September 2016

The total amount of award funding that Northwestern received this fiscal year, through September, is $25.4 million, a 1 percent decrease ($0.1 million) compared with September 2015. The number of awards to date (126) is an 18 percent decrease compared with last year.

The dollar volume of awards from federal agencies reflected an increase of 5 percent ($1 million). Awards from industrial sponsors are down about 16 percent ($0.4). Foundation funding has increased 29 percent ($0.4 million), while voluntary health organization funding is down 30 percent ($0.1 million).

The dollar volume of proposals submitted through September is $100.5 million, a decrease of 37 percent compared to last year. The number of proposals submitted (215) is down 7 percent.

The dollar volume of proposals submitted to federal agencies decreased 37 percent ($53 million), while proposals to industrial sponsors is down 34 percent ($1.6 million). Proposal activity to voluntary health organizations is down 79 percent, while foundation proposals increased 24 percent.

Click here to access the full report.