IN THE VANGUARD: WOMEN IN SCIENCE AT AU

Along with spring, science is blossoming at AU. Our researchers are recipients of new funding and grant renewals from NIH for their scientific research. In the College, we’re empowering science students to reach their goals and make an impact in the world—a key part of our mission.

The cover story in this issue of Connections focuses on women in science at AU. You will read about faculty members who are mentoring the next generation of women scientists, an alumna in the highest echelons of NIH leadership whose career was launched in an AU chem lab, and students who have found inspiration in their women faculty mentors and now are planning their own ambitious careers.

We also look at the capacity of technology to radically change how we teach, learn, and apply scientific knowledge. The effort is led by the Collaborative for Applied Perceptual Research and Innovation. CAPRI, as it’s known, brings together faculty from across AU to investigate how the interactive tools of today and tomorrow, such as CAPRI’s sound-controlled laser light shows, are changing the way students perceive their world.

In this issue we have a lot to celebrate: a generous gift from alumna Carolyn Alper, which will fund an initiative for DC art at the AU Museum; the graduation of our first cohort of AU public health scholars; and an impressive array of books published recently by members of our faculty. You’ll also read about alumnus Harjant Gill, an anthropologist and award-winning documentary filmmaker; and about economics professor Paul Winters, who never dreamed he’d study economics—until an inspirational encounter with a Nobel Laureate.

We hope you will enjoy this latest issue of Connections. To stay connected, please follow us on facebook.com/AUcollege or twitter.com/AUcollege.

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Dean, College of Arts and Sciences
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Gift Funds Home for DC Art at AU Museum | by Carolyn Supinka

THANKS TO a generous donation by Carolyn Alper, BA studio arts ’68, local art will soon have a home of its own at American University.

Alper’s gift to the American University Museum at the Katzen Arts Center will fund the Alper Initiative for Washington Art. It will support the creation of a space on the museum’s first floor for display of work by DC artists and for a digital archive of Washington art. The initiative will also sponsor lectures, films, and other events. Construction will begin in August 2015, and the space will open in January 2016.

Alper, a native Washingtonian, is committed to preserving the heritage of local art and to supporting artists working currently in the region.

An artist herself, she studied painting under Morris Louis and Gene Davis, both from DC. That formative artistic experience, she says, made her fall in love with Washington arts. In 1971, she and three fellow students cofounded the Foundry Gallery, a cooperative art space that is still showcasing the work of new and emerging artists.

She envisions the Alper Initiative for Washington Art as a meeting space for members of DC’s thriving arts community. “I hope it will encourage Washington artists and become a place where artists can convene and talk. Art talk is the most creative stuff in the world,” she says.

Jack Rasmussen, curator and director of the American University Museum, believes the Alper Initiative will bring some much needed attention to Washington art. “It will allow us to have tightly focused exhibitions,” he says. “We want it to be the place you go to when you want to learn about your city and its history and what came before you as an artist—a place to understand and reevaluate your heritage. We are working very hard on building a great collection of Washington art, and we are bringing in curators to put together exhibitions that will be of interest to artists in the community.”

Though Washington has no shortage of cultural institutions, Alper believes the AU Museum is the perfect location for her initiative. “I think it’s the only place,” she says. “Where else would be more appropriate?” Rasmussen agrees. “We are committed to our community, and I think that what’s what’s made us a success so far,” he says. “When you come to the museum, you’re greeted by a member of the community. Our volunteers are members of the community—and in our programming, we always include Washington artists. This is something that no other museum does.”

IF YOU ASK A FRIEND what they’ve been reading lately, you might also ask how they have been reading: print or online? According to Naomi Baron, linguistics professor and executive director of AU’s Center for Teaching, Research, and Learning, medium matters.

An expert on language and learning, Baron has written extensively about how reading online versus print differs. She’s published her findings in the New York Times, Washington Post, Huffington Post, Wall Street Journal, and the New Yorker, and she has discussed her work as a guest on Good
humanities

Morning America, ABC News 20/20, CNN, and NPR’s Diane Rehm Show and All Things Considered.

“The humanities are rooted in texts,” Baron says. “Whether we are talking about Milton’s Paradise Lost or Adam Smith’s The Wealth of Nations, there is logic to the whole. The works we tend to revere for their eloquence and their wisdom demand their reader’s focused and prolonged attention; the challenge of reading in a digital world is competition for our minds.”

Though Baron acknowledges the convenience and economic benefits of reading digitally, her research suggests that print helps readers to retain more information. It also discourages multitasking, like checking email or Facebook, which tends to distract online readers.

“College students in my studies were two or three times more likely to be multitasking when they read on digital devices as when they read in print,” Baron says. “Multitasking dramatically undermines concentration. When we interrupt one task to move even briefly to another, it takes time and effort to refocus on the original activity. The problem is particularly severe when the distractors are digital. It’s one thing to interrupt your reading to get a cup of coffee; it’s another to stop reading War and Peace to play Candy Crush.”

Baron finds connections between her classroom experience at AU and her research. “I follow similar strategies when I am preparing to teach a course and when I initiate a new research project,” Baron says. “I begin by asking myself, What do I want to know? What do I want others to know?”

In her latest book, Words Onscreen: The Fate of Reading in a Digital World (Oxford University, 2015), Baron presents findings from her research—including the surprising statistic that 92 percent of university students prefer reading print. The book examines how new developments in technology have changed the definition of reading and analyzes what the future might bring.

As for Baron’s personal preferences about reading for pleasure? “My tool of choice is print,” she says. “I read all day on my computer, on my phone, when using public transport, or while sitting in waiting rooms. But print remains my choice at home.”

Pixels or Pages? The art of reading in the digital age by Carolyn Supinka

Jeff Watts
A Call to Action

Words of welcome to the Class of 2018

by Patty Housman
We need world changers.

That’s the message history professor Max Paul Friedman gave the Class of 2018 at American University’s fall convocation ceremony. “But before setting out to change the world, try letting the world change you.” Friedman, winner of the 2014 American University Scholar/Teacher of the Year Award, delivered a powerful opening speech that was greeted with enthusiasm by students in the audience. On social media, students called it the best speech they ever heard and said it confirmed that they had chosen the right university.

Friedman attributes his inspiration for the speech to different sources: history, current events—and his students. “We build our identities through a combination of our own backgrounds and decisions and how we are perceived by others,” he says. “First-year college students are often in transition between being someone’s child and becoming an adult, constructing their own personalities even as they are subject to the perceptions the wider world has of them.”

He drew on the events of 100 years ago, when college students were going off to war. “World War I can sometimes seem like a dusty photograph in sepia tones, a conflict as remote from us as the Peloponnesian War,” he says. “It was a conflict that brought the death of a generation of young Europeans. I wanted the students to realize that people who lived in the past were filled with the same kinds of hopes and anxieties and desires that they feel today—which makes the loss even greater and the need to avoid such tragedies more urgent.”

Friedman also wanted to pay tribute to the students at AU—and to those who came before them. “I have been impressed with their idealism and determination to find pragmatic ways to serve their community or the world,” he says. “When I started teaching in the early ’90s, many students were more careerist and materialistic. AU students today are understandably worried about finding jobs, but they want those jobs to be meaningful.”

Turning to history for insight, Friedman urged the Class of 2018 not to expect social change to come from the top. “Great men often cause tragedies in their search for greatness. There’s certainly a place for our heroes, as long as our heroes don’t make us ordinary people feel small. Ordinary people are huge. Together, they make history.”

Max Paul Friedman on . . .

. . . today’s students
“I know that AU students do want to change the world. The sixties activist Abbie Hoffman complained, before he died, that the nation’s universities had become hotbeds of rest. But our students have made this the most activist campus in the country. They’ve worked with youth groups in DC and Nairobi, helped farmworkers and adjuncts organize for better pay, got the sweatshops out of their sweats, and made their campus green.”

. . . social change
“Children learn that Lincoln freed the slaves. . . . Instead, the enslaved freed themselves by throwing down their tools and marching by the hundreds of thousands toward Union lines to volunteer, creating a new reality Lincoln had to accept. Change doesn’t happen because great men do great things: it happens when ordinary people do extraordinary things.”

. . . the past
“It’s not that people in the past were so different, but their circumstances were. Looking out at the class of 2018, I think back to Europe’s class of 1918. They, too, assembled with excitement on a warm August day a century ago, but with a very different four years ahead of them. When the guns of August started firing, they marched off to World War One with bands playing and flags flying, the French soldiers dressed in brilliant uniforms of red and blue. Kaiser Wilhelm told his troops: ‘You will be home before the leaves have fallen from the trees.’ But there would be no homecoming for 10 million young people.”

. . . idealism
“This isn’t an indictment of idealism. We need idealists. The problem was the notion that we alone know how to change the world—and we don’t have to listen to the people who live in the part we’re changing, whether it’s a faraway jungle, a desert, or downtown. We need world changers. But before setting out to change the world—try letting the world change you.”

. . . changing the world
“So let the world change you—but then please do change the world. We need your help. We need you to build an economy that values work as much as capital. We need you to fix Congress and get more women into it, which may be the same thing. We need you to find a better way to deal with America’s troubled neighbors than by deporting children. We need you to learn to produce things and move them around without using the same old Industrial Revolution-era fuels that are destroying the only planet we’ve got. Lincoln called America ‘the last best hope of Earth.’ Your generation may well be the Earth’s last best hope.”
AWARD-WINNING documentary filmmaker Harjant Gill is driven by three things: India, anthropology, and film.

Fortunately, when he was an undergrad he discovered the field of visual anthropology, which gives him the opportunity to pursue all of his passions at once. As an anthropologist, Gill studies people, communities, and cultures in India. As a director, he brings them to life through film.

“Both anthropology and film provide a deeper understanding of human culture and behavior—why we do the things we do,” says Gill. “But film offers another layer of understanding. Viewers can see, hear, and fully explore another culture. Audiences can see for themselves exactly what life is like for other people.”

Gill, PhD anthropology ’12, is an assistant professor at Towson University. Born and raised in India before moving to California when he was 14, he says that his native country continually inspires his work.

Currently he is directing the third in a trilogy of documentaries exploring gender, masculinity, and migration in contemporary India.

The Roots of Love (2011), the first film in his trilogy, grew from his doctoral research at AU and examines generational conflicts over turbans and unshorn hair among Sikhs.

A review in American Anthropologist commented on the film: “Beautifully shot and crafted, Roots of Love succeeds both cinematographically and ethnographically as an engaging narrative sure to provoke discussion.”

Gill’s second film, Mardistan (2014)—Macholand in English—documents the experiences of four Punjabi men from different generations and backgrounds who defy traditional Indian stereotypes of masculinity.

Indian news source Firstpost calls the film “a thoughtful documentary that hopes for a brave, new Indian macho man.” It will air on Doordarshan (Indian national television) and appear at film festivals in India, Canada, France, and the United States.

The final film, Sent Away Boys, examines the collapse of agriculture in India’s Punjab region and the resulting exodus of young Punjabi men from
Our faculty in the Department of Literature publish prolifically and prestigiously. Their most recent books, listed below, represent a range of genres, from poetry collections to first novels to literary criticism and creative nonfiction. They also cover a breadth of issues, including the cultural implications of artificial intelligence, the impact of literary figures on twentieth-century thought, and new ways of grappling with loss and mortality.

**KYLE DARGAN:** *Honest Engine* (University of Georgia, 2015)

**ERIK DUSSERE:** *America Is Elsewhere: The Noir Tradition in the Age of Consumer Culture* (Oxford University, 2013)

**DESPINA KAKOUDAKI:** *Anatomy of a Robot: Literature, Cinema, and the Cultural Work of Artificial People* (Rutgers University, 2014)

**DAVID KEPLINGER:** *The Most Natural Thing* (New Issues, 2013)


**MARIANNE NOBLE,** Jedd Deppman, and Gary Lee Stonum: *Emily Dickinson and Philosophy* (Cambridge University, 2013)

**ROBERTA RUBENSTEIN:** *Literary Half-Lives: Doris Lessing, Clancy Sigal, and Roman à Clef* (Palgrave Macmillan, 2014)

**RICHARD C. SHA** and Joel Faflak: *Romanticism and the Emotions* (Cambridge University, 2014)

**RACHEL LOUISE SNYDER:** *What We’ve Lost Is Nothing* (Scribner, 2014)
It is an exciting time to be a woman starting a career in science at American University. There are more faculty role models and mentors than ever before, more paths to a science degree, and vast career and academic possibilities after graduation.

Among the STEM (science, technology, engineering, and mathematics) majors at the College, 69 percent of undergraduates and 61 percent of graduate students are women—notably higher than the national percentages. This is because there is a sustained push at AU to get women into STEM—and keep them there.

“Our programs are growing, and the university’s cutting-edge Don Myers Technology and Innovation Building will open to students in fall 2016,” says Catherine Schaeff, associate professor in the biology department. “Outstanding faculty role models across the sciences are producing groundbreaking research, and mentors are playing a critical role in developing the next generation of women scientists.”

Recruiting and Supporting Women

AU’s science departments work hard to recruit women, says Teresa Larkin, associate professor of physics and director of the College’s new dual-degree engineering program with Columbia University.

“Half of our physics department faculty are women, and nearly half of the students are too,” she says. “In a small department like ours, we really get to know all our students and support them in every way.”

Larkin’s teaching assistant, Sarah Bieniek; BS biology, BA physics ’15; says that the numerous role models and plentiful mentoring opportunities at AU, both formal and informal, have played a critical role in her development as a scientist.

“I feel bonded to both biology and physics, and I have mentors in both departments,” she says. “As a TA, I get an invaluable look at what it is like to be a professional in my field. I get to know the younger students, too, who come to me for academic help.”

Students also find support in the College’s active chapter of the Association for Women in Science (WIS), which advocates for women scientists of all ages.

“The Women in Science group is growing at AU, with strong student leadership,” says assistant professor of physics Jessica Uscinski, who co-leads the group with Larkin. “WIS gives students opportunities to network, find mentors, meet successful alumni—and talk informally about academics, challenges, and goals.”

Women on the Move

Science departments at the College are filled with female faculty who conduct award-winning research, often with the assistance of their students. The list begins with Katie DeCicco-Skinner, cancer biologist and associate professor of biology, whose skin cancer research is supported by more than $800,000 in grants from the National Institutes of Health.

DeCicco-Skinner says that women scientists in academia still face challenges. There are fewer female tenured professors, they are paid less than men, and they tend to do more service activities than men.

At the same time, she and the next generation of women scientists are bridging this gap: DeCicco-Skinner manages one of the largest labs in the biology department, and more than half of the graduate students working there are women.

DeCicco-Skinner understands firsthand the importance of role models and mentors. When she was an undergraduate majoring in biochemistry, every faculty member in her department...
“AU has encouraged me to push the boundaries in my field. I started my research in neuroscience, and now I focus on multisensory perception and perception-driven computer graphics.”  
—Bei Xiao

was male. When she chose a graduate school, she made sure to choose one that offered her a strong female mentor.

Now, a decade later, DeCicco-Skinner is a mentor herself. “I am extremely invested in my students,” she says. “It is important for me to have students leave my laboratory well trained and confident in their scientific prowess, while getting whatever guidance and support they need along the way. Additionally, I hope to serve as a role model to the young women in the laboratory to let them know that it is possible to be successful in a career without having to sacrifice the desire to have a family.”

Her colleague Vikki Connaughton, an associate professor of biology, emphasizes that mentors do more than impart practical lab skills. “They teach students how to approach a research question, design experiments, analyze data, and communicate their data and conclusions,” she says. “They also instill solid, positive research ethics, and, in some cases, introduce students to other scientists and researchers in the field.”

Connaughton’s research focuses on visual neuroscience—how the eye works. She and her students use zebrafish, whose visual system resembles that of humans, as a model organism.

She also opens her laboratory to students doing independent research. “I typically have several students working in the lab,” she says. “They learn practical skills through their own experiments while also understanding how their project fits into the larger research focus.”

Working in a faculty laboratory also builds a sense of community, says Connaughton, because research projects often are communal or interdisciplinary. Students learn from each other, with the more senior students helping the newer ones. “This generates a strong sense of collaboration and camaraderie,” she says.

Pushing Boundaries
Bei Xiao, assistant professor of computer science, says that one of the things that attracted her to AU was its openness to exploring interdisciplinary and cutting-edge research. “AU has encouraged me to push the boundaries in my field. I started my research in neuroscience, and now I focus on multisensory perception and perception-driven computer graphics.”

Xiao says she sees more and more women in computer science—and more diversity in general. In her introductory class for majors and non-majors, she says, about 40 percent are women; in her advanced course, Introduction to Computer Vision, the percentage of women jumps to more than half.

“They are not all computer science majors,” she says. “It is a place where psychology, applied math, physics, and graphic design majors come together to learn about how computer algorithms can be applied to a variety of domains.”

Betty Malloy, associate professor of mathematics and statistics, says her discipline opens doors to a range of subjects. “So many fields need statistical help, and one of my great pleasures as a statistician is working with a lot of people.”

Malloy is known for lending her statistical expertise to many arenas, from health in DC public schools to nicotine addiction to workplace injuries. She prepares her students to do the same.

“They conduct lab work to collect data, and then they interpret and analyze this data,” she says. “As data analysts, they can do a wide variety of things after college: work for government organizations, nonprofits, large research consulting companies, or think tanks—or go on to graduate school.”

She says women are doing so well at the College that gender is hardly an issue. “We have a vibrant community of women here in the sciences at American University. It’s a critical mass—we have a lot going on.”

Moving Forward
“When I talk to women majoring in the sciences here at AU, they are empowered and confident,” says Nancy Zeller, coordinator of the College’s science teaching labs. “When they go out into the real world, they know they have the training and skills to compete. They also know the importance of having strong women mentors—and they seek them out.”

Senior Juana Cerna Sanchez, who is majoring in public health and minorining in physics and math, shares that view. “I have had the opportunity to be mentored by several amazing women professors at AU,” she says. “They are all very successful and inspiring, and they serve as a constant reminder that I am capable of achieving my goals and aspirations in life.”

While most faculty members at the College appreciate the rewards of mentoring, they are focused on making the sciences a place where gender does not matter.

In some ways, they’ve already achieved this goal. As DeCicco-Skinner says, “My students think it’s laughable to think that women can’t do what a man can do.”
IT NEVER OCCURRED to Irene Glowinski while growing up in Paramus, New Jersey, that science might be an inhospitable place for a woman. She simply loved organic chemistry—that complex study of the structure of life that has been known to bedevil even the most scientifically literate students. She was certain she would make a career of it.

“I was driven. I knew what I wanted to do,” she says. “A lot of that attitude comes from my time at American University in the chemistry department.”

Glowinski graduated from AU with a BS in chemistry in 1975 and went on to get her PhD in pharmacology from the University of Michigan. Today, she is second in command of the Division of Microbiology and Infectious Diseases at the National Institute of Allergy and Infectious Diseases.

NIAID, as it’s known, is the branch of the National Institutes of Health that takes the lead in times of pandemic, researching causes, diagnoses, treatments, and prevention of pathogenic diseases such as Ebola, HIV, influenza, tuberculosis, and malaria. Glowinski manages a $1.5 billion budget for research and clinical investigations involving more than a thousand projects and 200 staff members.

It all began in the AU chem lab.

“When I was an undergraduate, the chemistry department at AU was very small,” Glowinski recalls. She was one of perhaps five or six students in the freshman class of 1971. She immediately found mentors among the faculty. “I had complete access to every professor,” Glowinski says. “I could do whatever I wanted—work in a lab or work at the FDA.”

The department chair at the time, the late Leo Schubert, encouraged her to get an advanced degree in pharmacology, the study of drugs for human disease.

After Michigan, Glowinski spent five years as a post-doc at the National Cancer Institute, where she studied chemical carcinogenesis at the lab bench. She then landed on Capitol Hill with a congressional fellowship and spent two years gaining valuable skills in how to integrate science and legislative policy. “I realized there are so many places in Washington, DC, for someone like me to make valuable contributions.”

Glowinski returned to NIH on the grant-giving side of the agency, where she started small: putting together review panels for training grants and managing a small portfolio of research grants in chemistry. “I never turned down an assignment. Each one helped me get the next job.”

Glowinski has advice for today’s young scientists: “Include cross-training in your education, in interdisciplinary fields like writing, public speaking, bioinformatics, and biostatistics.”

As for the prospects for women in science today, she says, “I hate the idea that we have to divide the world into men and women when speaking about careers. For someone like me, there is nothing to hold you back, if you are willing to work.”

From AU Chem Lab to NIH | by Helen Dodson

“I realized there are so many places in Washington, DC, for someone like me to make valuable contributions.”

—Irene Glowinski
A Day in the Life
Student teacher Avery Luck
by Caitlin Friess

In 2014 Avery Luck graduated magna cum laude from AU with a BA in elementary education and a minor in health promotion. Now she’s on the home stretch of her five-year BA/MA in AU’s graduate program in special education: learning disabilities. She’s getting hands-on classroom experience as an intern teaching students with learning disabilities at the Lab School of Washington. She also works as a graduate assistant in the Office of Teacher Education at the School of Education, Teaching, and Health (SETH).

6:00 a.m.
Waking up is difficult. Terrified I will oversleep, I set five or six alarms the night before. I’m already overwhelmed by all that lies ahead in my 15-hour day: teaching, work, and class.

6:45 a.m.
I head out carrying two overflowing bags. One is stuffed with lesson plans, homework handouts, and my favorite-colored Stabilo markers (a staple for any teacher). The other holds my computer and a large binder filled with required reading for my graduate class.

7:00 a.m.
I arrive at the Lab School’s upper campus and park my car. It’s a 15-minute walk to the lower campus—but hey, I was a health promotion minor.

7:15 a.m.
I check in with my team of teachers about my lesson plans, ask for feedback, and prepare homework assignments. We tailor lessons for each of our students. The kids are 9 and 10 years old with a range of learning differences, including dyslexia, auditory processing and working memory deficits, language disorders, and ADHD.

8:30 a.m.
The students arrive. We greet each other with what we call a “floppy-fish” greeting: Students pretend they are fishermen, each casting an imaginary pole to greet another student, who has to act like a fish out of water.

We move on to sharing time, when we ask questions to spark ideas. For example: “Would you rather eat breakfast in an igloo or eat dinner in a castle?”

I try to choose activities that encourage students to move and work together. One of their favorite activities is called Save Fred. (Fred is a gummy worm who has capsized his boat.) The students must use paperclips...
on the representational level, students draw pictures that represent multiplication and division; to work on the abstract level, they solve traditional numerical calculations.

11:00 a.m.
Time for Prediction Café, or CAFE—an interactive reading strategy that stands for Comprehension, Accuracy, Fluency, and Expanding Vocabulary. Students gather in the classroom’s reading nook and pretend they’re in a coffee shop. We give them a coffee cup with a quote from a book, and they have to guess or predict, based on evidence or knowledge, what the quote means. Then they open the book and read the quote in context to confirm or adjust their prediction. (The students are at different reading levels, so we still have to create individualized lesson plans.)

12:20 p.m.
I’m done with my morning internship at the Lab School and head over to the AU campus for my grad assistant job at SETH. Right now I’m analyzing student achievement data and updating a SETH Facebook page.

5:30 p.m.
Back at the Lab School, I have class for the next two and a half hours. I’m taking four graduate classes, all of which meet here. I’m getting a lot out of applying what I am learning in class to my internship, from conducting assessments to determining best practices that will meet each student’s learning needs.

10:00 p.m.
Long day—lights out.

AU’s inaugural class of public health scholars will graduate this spring, ready to confront the pressing health issues facing our world today.

Under the intensive Public Health Scholars Program, the cohort of 10 students attended class year-round to earn a BA or BS in just three years. Their immersive and interdisciplinary course of study covered a range of public health issues, from HIV to maternal and child health to health-care equity. The students also studied abroad for a semester and worked at such organizations as the Campaign for Tobacco-Free Kids and So Others Might Eat (SOME).

“If you are seeking a challenge, prepared for intense course work, and ready to join a network of enthusiastic students, the Public Health Scholars is the right program for you,” says senior Juana Cerna Sanchez. “It may seem intimidating, trying to complete a bachelor’s degree in three years, but before you realize it, graduation is around the corner.”

For the first year, students lived together, creating a close, supportive community. “Teamwork and collaboration are integral in the field of public health,” says Meg Carr, also a senior. “The program offered the opportunity to live and learn with other students who want to stay up until 2 a.m. discussing the ethics of vaccination policy or emerging infectious diseases.”

During their second year, students studied abroad in India, Africa, or England. Assistant director Blake Bennett says that the global perspective is a fundamental component of the program, adding that students return from their international experience with greater confidence and a more personal and global understanding of public health.

“With an ever increasing globalization of world economies, cultures, goods, and services, an action taken in one location could potentially impact someone anywhere in the world,” Bennett says. “It is no longer enough to assume that a domestic policy will be sufficient to ensure the health of its citizens. It is important for students entering a career in public health to have a global perspective.”

As the students prepare for graduation, they are finalizing their plans for the future—whether it’s a job in the public health field or a graduate degree or medical school. Bennett says he expects great things from the first class of public health scholars.

“I look forward to hearing about their achievements in the areas of epidemiology, HIV, maternal and child health, health care, and health equity. I also expect many of them will earn graduate degrees before going on to become the mentors that influence the next generation of public health scholars.”

Carolyn Supinka

AU’s Public Health Pioneers

AU's Inaugural Class of public health scholars will graduate this spring, ready to confront the pressing health issues facing our world today.
PAUL WINTERS never meant to become an economist—until an encounter with a Nobel Laureate changed everything.

As a non-Western studies major and math minor at the University of San Diego (USD), Winters was an idealist focused on community service and changing the world. He spent his free time volunteering at the Habitat for Humanity in Tijuana, Mexico, and at Los Niños, a Mexican nonprofit that provides services for needy children.

Then he attended a lecture by Muhammad Yunus, the Nobel Prize-winning economist from Bangladesh, on the subject of microeconomics and lending money to the people who need it most. Winters realized that economics could give him a unique opportunity to use both his aptitude for math—and his idealism.

“Professor Yunus explained the economics of how he provided loans to poor women in Bangladesh and how he used social collateral to ensure that credit was repaid,” he says. “I knew that if I really wanted to understand poverty and how poverty might be addressed, I needed to understand economics. I walked straight to my mother’s office (she was an assistant dean at USD) and told her I was going to get a PhD in economics.”

And he did. Winters went on to earn a doctorate in agricultural and resource economics at the University of California–Berkeley. After working as an economist at the Inter-American Development Bank, he returned to academia as an economics professor at American University.

Evaluating Programs, Improving Policy

Winters’s current research focuses on the evaluation of development projects, rural poverty, and cash transfer programs in developing countries. He recently received two grants in support of his work to evaluate government programs across the world.

Winters is using the first grant—$106,700 from the Food and Agriculture Organization (FAO) of the United Nations—to analyze data on cash-transfer programs in Africa. He is working with FAO, UNICEF, Save the Children, and other groups to determine the effectiveness of the transfers. Oxford University Press will publish the results of this research next year.
LAST SUMMER junior Valerie Rennoll, BS audio technology and physics ’16, had the opportunity to take a video game to the next level: training US Navy sonar operators.

Rennoll worked with Applied Research in Acoustics (ARiA), an acoustics research and development company, to create WaveQuest, an underwater acoustics video game for sonar operators. The game uses real-time simulations to encourage a physical understanding of underwater acoustics.

“Players are presented with a number of missions and become scientists in control of a research submarine,” says Rennoll. “They are able to explore the ocean environment and complete missions using sonar and other acoustical tools.”

Her task was to generate ambient ocean noise models—a symphony of sounds created by ship movements, rain, and wind—for incorporation into the WaveQuest software, and then to assist in testing the software.

Rennoll also helped maintain a fish distribution and behavior database at ARiA. In addition, she worked with the company’s chief scientist to form Sound Foundation, a nonprofit that provides STEM (science, technology, engineering, and mathematics) and business education to high school students through real-world acoustics projects.

“The environment at ARiA was very welcoming, and I learned a lot,” says Rennoll. “It was a great way to get outside the classroom and gain hands-on experience. It solidified my interest in acoustics, particularly underwater acoustics, and I am planning to pursue a graduate degree in this field. Afterwards, I would like to be involved with acoustics research at a national research facility or university.”

In spring 2014, Rennoll received the Outstanding Audio Technology Sophomore Award and the Sophomore Physics Award. The National Oceanic and Atmospheric Administration (NOAA) awarded her an Ernest F. Hollings Undergraduate Scholarship, which provides an annual stipend for her last two years at AU and financial support for a summer research internship.

Physics department chair Nate Harshman says that Rennoll well deserves the awards. “Valerie is a great student. She somehow balances being very detail oriented without losing sight of the big picture. That same trait has also made her a great teaching assistant for the physics department. It’s a pleasure to experience her curiosity for the subject.”

Rennoll already has an internship lined up for next summer: She’ll be working at NOAA’s Office of Coast Survey, where she will create maps of the ocean floor using data collected with sonar—including data she’ll help to gather in the Arctic aboard a hydrographic research ship. “This opportunity will enable me to extend my learning beyond the classroom,” she says, “while also being part of an exciting research experience.”

With the second grant—$321,600 from the Commonwealth Agricultural Bureau International (CABI), obtained in collaboration with the American Institute for Research—Winters will evaluate an innovative program in Kenya called Plantwise. The program sets up plant clinics where farmers can bring ailing plants for diagnosis.

The clinics also monitor geographic data about outbreaks of plant disease. “They are like the CDC. The plant doctors record and report the number of diseases that occur,” Winters says. “Now we know if there’s a new outbreak of a plant disease, and the government can respond.”

Winters says that using data to evaluate the efficacy of these programs can make a real difference in terms of policy decisions. “Countries spend a lot of time and money on economic development, but they don’t always know if it worked,” he says. “Even if programs are effective, they can always work better. Policies can always be improved.”

Real Data in the Classroom

Winters likes to bring his real-world data into the classroom. “My teaching is strongly linked to the research I’m doing,” he says. “I believe in teaching students all of the necessary empirical skills, but I am also very practical. I am interested in research that is relevant, and I’ve found that is true of my students here as well.”

He says that he connects with students at AU in other ways as well. “I am pleased with the type of students I teach here. They understand that data is power, and they have a zeal for community service and politics—just like me.”

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**CAPRI: Pushing the Limits of Technology**

**by Patty Housman**

Technology is changing how we communicate, research, teach, learn—and even the way our brains work.

And because technology itself is expected to grow exponentially in the coming years, the College of Arts and Sciences has established the Collaborative for Applied Perceptual Research and Innovation (CAPRI) to take advantage of that growth.

CAPRI brings together faculty from across American University to investigate how new technology can revolutionize the way students learn and experience the world.

“The goal of CAPRI is to push the technological envelope and build a culture of cutting-edge technological innovation across departments and disciplines,” says Arthur Shapiro, psychology professor and director of CAPRI. “We want CAPRI to become an axis for perceptual research, science, innovation, and application.”

**A Rapidly Changing World**

Developments in interactive technology over the next 30 years will change the world as much as the Internet has shaped the last 30 years, says Shapiro. Fueling the change is the fact that technology is becoming accessible to more and more people. “You no longer have to be an engineer to use interactive technology; faculty and students in all disciplines can use it.”

Shapiro believes that one of the biggest questions for twenty-first-century academics is this: are we going to organize ourselves by content or by methodology?

He believes it will be the latter. “The new technologies cut across disciplines in ways that could not have been imagined 50 years ago,” he says, pointing to the work of Michael Bader, assistant sociology professor, who is using Geographic Information System (GIS) technology to create interactive maps about the civil rights movement and neighborhood demographics. Users can manipulate the maps to see how their own neighborhoods have changed over time.

Interactive technology like this offers engaging new ways to communicate ideas and can be used by scholars in other disciplines. “Once we see tools working in one field, we can adapt them for our own fields,” says Shapiro.

**Focus on Perceptual Research**

CAPRI’s unique strength is perceptual research, says William Brent, assistant professor of performing arts. “This is research on how people understand what they see, hear, and feel—how basic information from the senses is interpreted by the brain, leading to higher-level understanding of our surroundings.”

Shapiro says faculty and students are already conducting perceptual research, blending scientific research, art, and experimental technology.

In recent demonstrations, Shapiro presented interactive visual illusions. Brent’s *Aural Maze* challenged participants to navigate a space using only music to guide them. And physicist Jonathan Newport produced laser light shows that are controlled by the sound of visitors’ voices.

**The Future: Innovation in a New Home**

But this is just the beginning. Ultimately CAPRI will become an incubator for cutting-edge software and interface development for digital musical instrument design, medical testing, improved training procedures, and educational tools.

All of this will take place in the university’s state-of-the-art Don Myers Technology and Innovation Building, which opens in fall 2016. The building will house CAPRI; the departments of computer science, physics, and mathematics and statistics; and the new program in game design, offered jointly with the School of Communication.

“CAPRI will become an open collaborative laboratory hosting students and faculty from departments across the AU campus, as well as visiting researchers from around the world,” says Brent. Its work will be public and visible, offering “a space for interactive demonstrations and installations that the general public can freely explore. CAPRI’s exhibits will illustrate both what we know of and are still exploring about human perception.”
Grants & Research

ZOË CHARLTON (art) received a 2014 Rubys Artist Project Grant from the Greater Baltimore Cultural Alliance to support the making of Cultural Currency: Tourists, Trophies, and Tokens—a series of large-scale figure drawings.

DOUGLAS FOX (chemistry) was awarded $299,690 by the National Institute of Standards and Technology for the project “Durable Flame-Retardant Coatings Derived from Natural Materials.”

MARY HANSEN (economics) was awarded $39,444 by the Annie E. Casey Foundation for the project “Costs and Benefits of Interventions that Reduce Group and Institutional Care.”

SIBEL KUSIMBA (anthropology) received a $27,335 grant from the University of California–Irvine for the project “Mobile Money and Coming of Age in Western Kenya.”

MARK LAUBACH (biology) received a $132,693 National Science Foundation grant for the project “Neural Circuits for the Executive Control of Action in Rodents.” The Klarman Family Foundation awarded him $392,704 to research “Functional connetcotms of cortico-striatal-hypothalamic circuits and the motivation control of feeding.”

MICHAEL ROBINSON (mathematics and statistics) won a $40,000 award from the University of Pennsylvania (funding source: DARPA) for the project “Sheat-based Layered Track Management (SLTM).”

DAVID KEPLINGER (literature) is the 2014–15 Washington Performing Arts humanities scholar. He also won the C. P. Cavay Poetry Prize from Poetry International for “The Life of Simone Weil.”

CHAP KUSIMBA (anthropology) was invited by the British Institute in Eastern Africa to deliver the Nairobi Annual Lecture in January.

MARK LAUBACH (biology) was named to the editorial board of the Journal of Neuroscience.

RICHARD MCCANN (literature) is serving his third term as vice president of the PEN/ Faulkner Foundation.

MARTYN OLIVER (philosophy and religion) gave the Martin Luther King Day keynote address, titled “Muhammad Ali, Islam, and Civil Rights in Multi-Religious America,” at Emory and Henry College.

COLIN SALDANHA (biology) presented “Neuroinflammation: Causes and Effects” at the Society for Neuroscience. He discussed his research on neural estradiol as an anti-inflammatory associated with brain damage.

MARTHA STARR (economics) was named senior economic advisor to the deputy commissioner for policy, planning, and legislation at the US Food and Drug Administration.

Appointments & Honors

STEFANO COSTANZI (chemistry) received the national habilitation for full professorship in Italy. He was one of 12 scholars awarded this academic qualification in the field of pharmaceutical chemistry.

BETTE DICKERSON (sociology) was elected as member-at-large to the executive council of the Association of Black Sociologists for 2014–16.

MATTHEW HARTINGS (chemistry) and ARTHUR SHAPIRO (psychology) were named among the USA Science and Engineering Festival’s Nifty Fifty speakers—200 noted science and engineering professionals who speak at schools around the DC area to reinvigorate students’ interest in the sciences.

LAURA JULIANO and ANTHONY AHRENS (psychology) made the careersinpsychology.org list of 10 must-take psychology professors in DC.

Publications, Productions, & Exhibitions

ALIDA ANDERSON (SETH) published Arts Integration and Special Education: An Inclusive Theory of Action for Student Engagement (Routledge, 2014).

NAOMI BARON (WLC) published Words Onscreen: The Fate of Reading in a Digital World (Oxford University, 2015).


RICHARD BREITMAN (history) was a coeditor of To the Gates of Jerusalem: The Diaries and Papers of James G. McDonald, 1945–1947 (Indiana University, 2014).

ZOË CHARLTON’S (art) work is featured in State of the Art: Discovering American Art Now, an exhibition at the Crystal Bridges Museum of American Art in Bentonville, Arkansas. She was invited to serve on a panel, “Personal Stories: Inspiration to Creation,” at the museum’s State of the Art Summit.


ALICIA KOPFSTEIN-PENK (performing arts) published Leonard Bernstein and His Young People’s Concerts (Rowman and Littlefield, 2015).

PETER KUZNICK (history) and Oliver Stone published The Concise Untold History of the United States (Simon and Schuster, 2014), a book based on their Showtime documentary. The first volume of the young readers edition (Atheneum, 2014) was featured in an article in the New York Times Sunday Book Review.

ERIC LOHR (history) published Empire and Nationalism at War: The Russian Empire in WWI (Slavica, 2014).

ANNE L’ECUYER (performing arts) is the lead planner and fundraiser for Art Lives Here, a regional visibility campaign for the Gateway Arts District in Prince George’s County, Maryland. The National Endowment for the Arts showcased the initiative in Exploring Our Town, a new national resource for creative place making.

DANIELLE MYSLIWISE (art) had a solo exhibition, Harbinger, at New York City’s NOVELLA gallery.

MEGHAN RAHAM (performing arts) designed the set for the world premiere of the play Life Sucks (or the Present Ridiculous) at DC’s Theater J.

DANIEL SAYERS (anthropology) published A Desolate Place for a Defiant People: The Archaeology of Maroons, Indigenous Americans, and Enslaved Laborers in the Great Dismal Swamp (University Press of Florida and Society for Historical Archaeology, 2014).


NAOKO WOOGUSU’S (art) exhibition Assignment: Happy Birthday at DC’s Hamiltonian Gallery was reviewed in the Washington Post and Washington City Paper.

VIVIAN VASQUEZ’S (SETH) refereed article “Podcasting as Transformative Work” was published in Theory into Practice.
