

DREXEL UNIVERSITY COLLEGE OF ARTS AND SCIENCES



TWENTY-FIVE *faces/25* YEARS

2015

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25 Faces, 25 Years

FEATURE

In honor of Drexel University College of Arts and Sciences' 25th anniversary, we're sharing the stories of 25 unique members of our community — a mix of students, alumni, faculty and staff — who have made these years so memorable.

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SPORTSCASTER CHRIS MCKENDRY '90

In a university that is posed to celebrate its 125th anniversary, it appears surprising that the college that provides the foundational courses to all students would only be celebrating its 25th anniversary. But that is the case for the College of Arts and Sciences at Drexel University. Although our programs have existed for much of Drexel's history, it wasn't until 1990 that we came together under one roof.

The 25 individuals highlighted in this issue of *Ask* showcase the evolution of the College — from separate entities to one united force that successfully integrates a broad liberal arts foundation with hands-on career application. The impressive new buildings on campus, including the LEED Gold-certified Papadakis Integrated Sciences Building, are visible signs of this progress. But it's the new faculty, new

approaches to teaching, expanded partnerships with our community, and global initiatives that are the real indications of this momentum.

In the last two years, we have reorganized the College, growing from nine departments to 14, to reflect our commitment to the humanities and social sciences. With the hiring of five new department heads over



the last five years, we have infused new ideas while complementing the expertise of our current leadership, catalyzing invaluable curricular changes, including travel-integrated and community-based courses that place students in the immediate context of course material, and the Emerging Scholars Program, which allows undeclared students in the humanities and social sciences to incorporate both hands-on career experience (co-op) and global perspectives (travel courses) before they even choose a major.

The Drexel of today may not look like the Drexel some alumni remember, but it is the same forward-thinking University it always has been. As we enter into our 26th year as a comprehensive College and my 13th year as dean, we are positioned to be the model of a modern liberal arts college — a college that does not just change as the world needs it to change, but instead one that leads the evolution. I invite you to be an active participant in that journey.

Sincerely,

Donna M. Murasko, PhD, Dean
Drexel University College of Arts & Sciences

FROM THE EDITOR

I was at the gym one morning this summer when I noticed a man approaching in my periphery. He was loud, body-builder size, and too enthusiastic for the pre-dawn hours. Annoyed at the disruption, I feigned interest while he critiqued my curl form and ruminated on becoming a trainer. It wasn't until he mentioned he was retired that I stopped and looked him fully in the face for the first time: he was *young*, mid-30s at most.

"Wow," I said, finally offering more than a nod. "I'm jealous."

"You wouldn't be if you knew why," he replied.

He said he was an Army Ranger, two tours in Iraq, two Purple Hearts, shot in the leg during one tour and hit by an IED blast during the other. When he returned home, he grappled with what to do next. Having suffered a traumatic brain injury and struggling with post-traumatic stress, he feared he was only qualified to "jump out of planes and fight."

He decided to apply to the Police Academy, passed his tests with flying colors, and waited for a call to enroll. But then the recession hit, Academy classes were canceled, and he spent two years going back every six months to retake his tests, each time growing less hopeful. Along the way, he got in a fight. It was stupid, he said, a meaningless altercation with a stranger, but he was charged with aggravated assault and knew his chances of becoming an officer were diminished. Instead, he took a job as a carpenter. It went well for a while, the money was good, he said, but then his boss decided his PTSD made him a liability. Soon after, he received a letter from the Department of Veterans Affairs saying he was "unemployable."

As the man spoke, I stopped thinking about the meetings I had that day, about the annoyance I felt moments before. Instead, I felt that expanse of the mind that comes when we cease clinging to thoughts of what's to come and focus on what's right in front of us. With that shift, we open ourselves, and allow for the possibility of truly connecting with the people and the world around us.

Each year, when we put this magazine together, we have the privilege of hearing and sharing the stories of our alumni, students, faculty and staff. As we listen, we absorb the lessons they have to impart, we see our own struggles reflected, and we change and evolve in the process. Each of the 25 individuals featured in this anniversary issue changed us somehow, by teaching or reminding us of lessons we ought not to forget: to embrace and not suppress our uniqueness (p. 48); to ask for what we want (p. 46 and 56); to see more of the world before we presume to understand it (p. 32); to be brave enough to step off a path that isn't working (p. 46 and 26) and brave enough to stick with one we know is right (p. 54); to be confident enough to inspire others to be better than ourselves (p. 43); to allow ourselves to be driven by curiosity and not just application (p. 34); and sometimes, to just jump on a plane and go build tree houses (p. 28).

It wasn't just the details of the Army veteran's story that stayed with me; most importantly, it was the reminder of how powerful it can be to connect with someone in such an unexpected moment, to quiet our internal judgment and just listen, especially when the pace of our lives makes it difficult to slow down.

When we finished talking that day, we shook hands and I thanked him for his service.

"Thank you," he said. "You're a good listener."

Sincerely,

Amy Weaver, Director of Marketing & Communications
Drexel University College of Arts & Sciences



2015

ART + SCIENCE = KNOWLEDGE

Ask magazine is published annually by the communications team in Drexel University's College of Arts and Sciences.

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DREXEL UNIVERSITY
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English and Philosophy
College of Arts and Sciences

CANDY CHANG

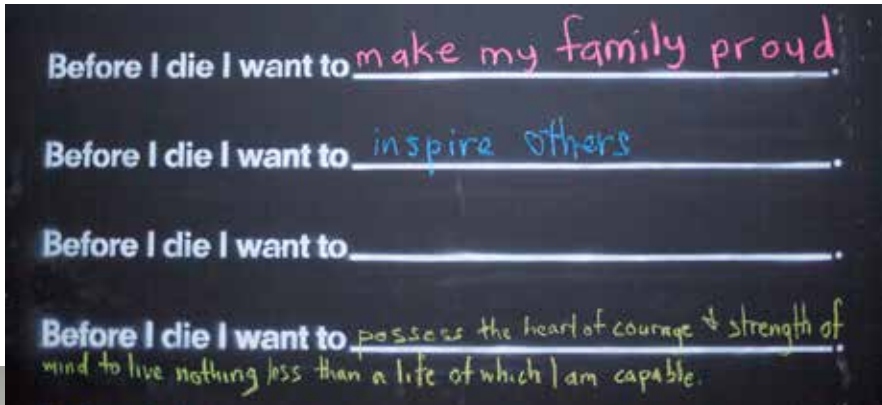
“Before I die, I want to _____.” Artist, designer and urban planner Candy Chang asks strangers all over the world to publically declare their personal aspirations through this simple chalkboard prompt. In 2014, Chang installed one of her famous “Before I Die” art installations on an 80-foot wall surrounding the construction site of the former University City High School in Powelton Village; passersby shared their dreams of writing novels, visiting Antarctica, and watching the Eagles win the Super Bowl. In April, Chang returned to Drexel as the fifth lecturer in the College’s annual Distinguished Lecture series where she explored the power of personal introspection in public space and what we can learn from our collective wisdom.

Previous lecturers in the series include author Sir Salman Rushdie, neuroscientist David Eagleman, media maven Arianna Huffington and religion scholar Reza Aslan.



Mark your calendar for the next CoAS Distinguished Lecture on May 5, 2016, featuring novelist **Zadie Smith**, whose book “White Teeth” was among *TIME* magazine’s “100 Best English-Language Novels Published Since 1923” (the year *TIME* was first published).





CERTIFICATE IN INTERFAITH STUDIES

As Philadelphia welcomed Pope Francis to the city this fall, the College launched a Certificate in Interfaith Studies, a three-term immersive religious journey. Created by support from the Borowsky Family Foundation, and offered in collaboration with Drexel University Online, the certificate is available in two formats: a 9-credit online option, and a 12-credit on-campus option that culminates in an optional 1-credit travel course to the Mediterranean. The Foundation will subsidize a portion of that trip for up to 10 students, who will be named Borowsky Scholars. The three courses required for the certificate include Comparative Religious Ethics; Judaism and Christianity: Two Religions or One; and Coexistence and Conflict: Jews, Christians and Muslims in the Early Mediterranean. The first course, Comparative Religious Ethics, was also made available to the public free-of-charge as a massive open online course (MOOC).

LEARN MORE AT: Drexel.edu/interfaith

New Leads for Understanding Down Syndrome

BY RACHEL EWING

New brain-imaging research led by psychology prof Nancy Raitano Lee, PhD, and published in the journal *Cerebral Cortex*, could unlock answers about intellectual development in youths with Down syndrome. It could also provide new insight into why individuals with this genetic neurodevelopmental disorder are more likely to develop early onset Alzheimer's disease than the general population.

The cerebral cortex is the outer layer of brain tissue, a folded region about 2–4 millimeters thick, which is involved in important brain functions including sensory and cognitive processes. Lee's study found that the cortex is thicker on average in youths with Down syndrome than in typically developing youths, even though the overall volume of the cortex is lower in those with Down syndrome.

Though the cause of the increased cortical thickness is still uncertain, one possibility is that

the brains of those with Down syndrome do not prune excess neural connections as effectively as in typical development, a process believed to occur during childhood and young adulthood as part of reaching cognitive maturity.

Lee's research also noted particularly pronounced differences in the cortex of youths with Down syndrome in several brain regions thought to belong to the Default Mode Network (DMN), the part of the brain that is active when a person is at rest. Because deterioration in the DMN has been associated with Alzheimer's disease, Lee says these differences could provide clues about the early neural underpinnings of Alzheimer's susceptibility in this group.

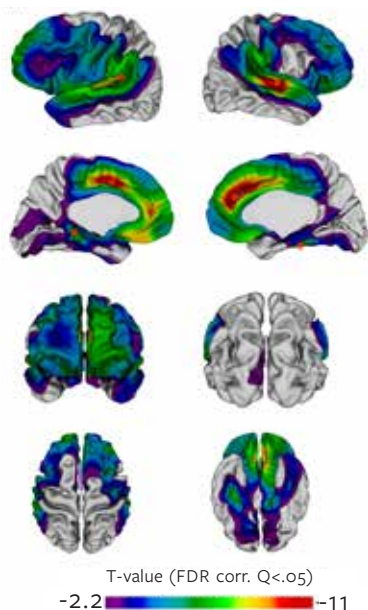
Surprisingly little is currently known about childhood brain development in those with Down syndrome. Lee hopes her finding will highlight the importance of the cortex for understanding developmental processes in this condition and spur further research. Such studies could more clearly illustrate how genetic abnormalities cause brain abnormalities — knowledge that could inform potential biomedical treatment approaches for intellectual disability.

SETTING THE STANDARD

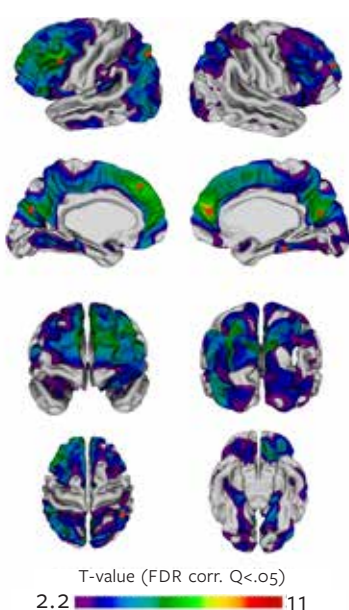
There's a good chance the whole milk you poured in your Starbucks coffee has the same nutritional content as the whole milk you had in your morning cereal — and there's a reason for that. The National Institute of Standards and Technology (NIST) has been setting industrial and scientific standards for generations: regularizing medicines, dictating commodity prices, and yes, even deciding the fat content in whole milk. Drexel historians Amy Slaton, PhD, Tiago Saraiva, PhD, Sharon Ku, PhD, and Scott Knowles, PhD, received a grant from the NIST to develop a series of teaching and research projects that focus on the social and regulatory functions of standards.

Over the summer, the group piloted a two-week institute in which graduate students from Drexel and across the country were invited to learn about the social, political and technological features of standards. The Drexel team is also developing graduate and undergraduate curricula on standards aimed at humanities, social science and STEM students; creating online historical resources on the subject of standards and society; and building a community of practitioners across academic, industrial, governmental and public-interest audiences. An undergraduate co-op position will assist in these efforts.

SURFACE AREA ▼ IN DOWN SYNDROME



THICKNESS ▲ IN DOWN SYNDROME





From Research to Royalty

Unless you're born into royalty — or you're Kate Middleton — your chances of donning a real-life crown are pretty slim. Drexel's Katy Gonder defies the odds. In addition to her students here in Philadelphia, the biology professor now presides over 42 chiefdoms and 55,000 people as Maya, or Queen Mother, of the Cameroonian subdivision Nwa (located in the country's Northwest Region).

Gonder's unlikely tale began in 1997 when she was studying chimpanzees in Cameroon for her PhD. While at the country's Wildlife Conservation Society office, she began working with Fon (King) Kassingang, who was a project assistant and French translator at the time. Over the years, Gonder and Kassingang embarked on numerous misadventures together in the field — including getting lost for days in the forests of Banyang-Mbo Wildlife Sanctuary — and the two have remained close for decades.

ABOVE:
Gonder and her young namesake, Mary Katherine Kassingang, daughter of the Nwa king.

When Kassingang was enthroned Fon of Nwa in 2015, he requested that Gonder be appointed their Maya. While the Maya is typically appointed from the sisters who live in the Nwa palace, the Kassingang family loved and respected Gonder as a mother and sister (so much so that they named their daughter after her) and the sisters of the royal family graciously approved the request.

So what exactly does the title of Queen entail? For starters, Gonder says, it means having many, many sisters. She also serves as the intermediary between the women of Nwa and as an adviser to the Fon, and, in 2016, she'll oversee their cultural festival.

As for her newfound royal status? "It's a little disconcerting having people bow to me," Gonder says.

Fortunately, with a lifelong appointment ahead, she'll have time to adjust.

The \$150 Billion Problem

BY TIM HYLAND

The obesity crisis in the United States is one of the largest, most complicated and most deeply entrenched public health issues facing the nation today.

According to the Centers for Disease Control and Prevention, approximately 78.6 million Americans — a staggering 34.9 percent of the total population — are obese, and as a result, the rates of heart disease, stroke, Type 2 diabetes and cancer are all on the rise. It is estimated that this ever-worsening endemic costs the nation nearly \$150 billion each year.

It is, in short, a massive health care crisis. But according to Meghan Butryn, PhD, it's also a relatively *new* crisis — which means solving it is particularly complicated.

“The problem of weight gain in the United States is a fairly new one, and the research being done to try and understand what causes obesity and how to best address it is all quite new, too,” says Butryn, an associate research professor in Drexel’s Department of Psychology. “Our understanding of obesity really is still in its infancy.”

Butryn, who earned her bachelor’s degree in human development from Cornell, and her master’s and PhD in clinical psychology from Drexel, is developing ways to help people not only lose weight when they first undertake a new diet or health plan, but also to help them keep that weight off in the long run. This focus is key, she says, because it’s that second part of the equation — keeping the weight off — that has most flummoxed the health professionals battling obesity thus far.

“The reality is, there’s almost nothing that works for prevention at this point,” Butryn says. “Our treatments are good in the short term, but they are disappointing



in the long term. We know how to help people make some changes in eating habits and exercise over the course of maybe six months or a year, and we can help them attain some weight loss, but weight re-gain seems inevitable for more participants than not.”

With the support of two grants from the National Institute of Diabetes and Digestive and Kidney Diseases, Butryn is trying to find a way for patients to overcome this daunting hurdle.

With the first \$2.5 million grant, Butryn and Drexel co-researchers Evan Forman, PhD, Stella Volpe, PhD, and Eugene Hong, MD, are working with 150 participants to determine whether a long-term focus on either exercise or diet is more important for keeping weight off after initial weight loss. And with a second grant of \$2 million, Butryn, Forman and Michael Lowe, PhD, will use a similar approach to study how the “food environment” influences participants’ ability to keep weight off.

The goal is to find a way to help people develop the kind of lifestyle habits and mental framework that will allow them to live the lives they’ve dreamed of — free of the extra weight, and free, too, of the many health problems that weight can bring.

Butryn knows it’s no small challenge, but she’s committed to putting in the work, alongside her Drexel colleagues, to find an answer.

“Drexel has provided a fantastic environment to do this research,” she says. “In terms of resources, we’ve been well-supported by the University, and I have really terrific colleagues. I couldn’t be doing the work I do without them — and the work we all do is made all the better because we collaborate so well.”



Ciao!

Countless inventions have debuted at the World’s Fair since its start in 1851: the telephone, Ferris wheel, touchscreens — even the ice cream cone. Over a century and a half later, international area studies junior Rebecca Olsho was one of 120 U.S. student ambassadors to be part of the historical event in its 2015 iteration — Expo Milano in Italy — where she presented at the USA Pavilion, “American Food 2.0: United to Feed the Planet,” as part of her Drexel co-op.

FINDING THE RIGHT MAJOR WITH ESP

Drexel’s new Emerging Scholars Program (ESP) is a two-year journey designed for undeclared students in the humanities and social sciences. The program takes a holistic approach to the first years of college, allowing students to explore the liberal arts, while

taking advantage of the unique hands-on opportunities that set Drexel apart from traditional liberal arts colleges. Highlights of the program include community-based courses in which students learn side-by-side with community members, a co-op position with

a nonprofit organization, and travel-integrated classes that complement course material with an international trip. Students receive close mentorship along the way, preparing them to declare the best-fit major by the end of the program.

LEARN MORE AT: Drexel.edu/coas/emergingscholars

[QUAD]

TOOLS OF THE TRADE

From the purely practical to the sorta sentimental, these are some of the must-have research tools of our faculty.



1 Microphone and Sound Recorder

JASON D. WECKSTEIN, PhD
ORNITHOLOGIST

"I study the biology of birds, focusing on both avian evolutionary biology and diversity, and the interactions of birds with their parasites and pathogens — arthropod parasites such as lice; protozoan parasites such as *Plasmodium*, which causes malaria; and bacterial pathogens such as *Borellia burgdorferi*, which causes Lyme disease. I conduct traditional biodiversity surveys of birds and their parasites in remote and unknown regions of our planet. Every morning when I'm in the field and walk into the forest to survey birds, I almost always have my sound recorder and shotgun microphone with me. These devices allow me to record and play vocalizations back to birds, which helps us to document, identify and characterize the birds in a given area."

2 Nikon D700

BRENT LUVAAAS, PhD
ANTHROPOLOGIST

"I work with independent musicians, outsider fashion labels, bloggers, photographers, and other 'do-it-yourself' creative laborers who make use of new digital technologies to produce and circulate their work. I am interested in the impact of digital technologies on creative laborers and how they are shaping the cultural industries within which they work. Since my work is largely about visual aesthetics, my camera has become a critical research tool and a way to capture those intangible elements that field notes can't quite reproduce. I have used a number of cameras over the last decade, but my favorite is my Nikon D700, a real workhorse that takes amazing images no matter the lighting conditions." (Note: Camera pictured is a different model.)

3 Rock Pick

LOÏC VANDERKLUYSEN, PhD
GEOLOGIST

"I study volcanic eruptions, both modern and ancient. For ancient eruptions, I focus on very large-scale volcanic events and their impact on their environment. For modern eruptions, I aim to develop new monitoring tools in the hope of improving our capacity for hazard mitigation. I am most attached to my rock pick. Every geologist loves their hammer; it's usually the first tool they buy and they can keep it their whole career. There are many like it, but this one is mine."

4 iPhone

ALI KENNER, PhD
SCIENCE, TECHNOLOGY &
SOCIETY SCHOLAR

"I investigate how environmental conditions impact health from the perspective and experience of patients, caregivers and communities, and how people engage their surroundings to improve health conditions. My research focuses on asthma and air quality, a longstanding public health problem. I always bring my iPhone into the field — it gets me to, from, and around sites. I use it to take pictures, videos, and record interviews. Its note-taking feature allows me to easily tag, organize and share data with my team. In fact, I was recently invited to speak at a national conference about mobile apps as research tools."

5 Nail Polish

FELICE ELEFANT, PhD
BIOLOGIST

"My research is focused on a protein called Tip60 that is found in the brain and promotes memory formation. Remarkably, we find that if we increase this protein in the brain in a *Drosophila* (fruit fly) model for Alzheimer's disease, we can rescue the learning and memory defects in this neurodegenerative disorder. We use nail polish to mount the brains of the *Drosophila*, which are about the size of the head of a pin. We put the brains on a slide, put a cover slide over them, and seal the edges with nail polish. This is the best way to make a strong seal to preserve the brain. Lab members color-coordinate the slides with different shades of nail polish."

IMPRESSIONS

MEDIA HIGHLIGHTS

“They are the most abundant animal, both in number and biomass. If you put them on the scale and stack them up against any other animal that lives on land, ants would win.”

— **JACOB RUSSELL, PhD**, associate professor of biology, on the mind-boggling number of ants in the world, *WHYY’s “The Pulse”* and *Newsworks.org*

“As excited as I was to see ... women with very different styles, ages and sexualities celebrating their presence in STEM fields, they’re still a tiny, tiny proportion of the people who are educated, employed and promoted in these fields.”

— **AMY SLATON, PhD**, professor of history, on the #ILookLikeAnEngineer social media campaign highlighting women in STEM fields, *KYW-Newsradio* and *CBSPhilly.com*

“We’ll have to see how people defend their views on climate when they go up against the Pope.”

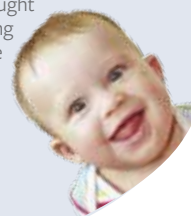
— **ROBERT BRULLE, PhD**, professor of sociology, on climate change deniers and the potential impact of Pope Francis’ appeal to protect the environment, *Buzzfeed News*

“If you jump in too soon, that can undermine your child’s independence because he’ll always be looking to others for answers.”

— **MYRNA SHURE, PhD**, professor emeritus of psychology, on parents wanting to help their child complete a task, *Yahoo! Parenting*

“Never follow a dog act or a baby.”

— **ANTHONY GLASCOCK, PhD**, professor of anthropology, after his competitor Naoko Kurahashi Neilson, PhD, brought her daughter on stage during the 2015 CoAS Raft Debate (a friendly battle of the disciplines)



“Studying insight poses challenges. I’d love to stuff someone in a brain scanner and wait for them to have an insight. But that’s not practical.”

— **JOHN KOUNIOS, PhD**, professor of psychology, on studying how “aha” moments form in the brain, *Washington Post*



ANTS: HENRIK L/THINKSTOCK; BABY: VOLODINA/THINKSTOCK; HEAD: KITTISAK TARAKAS/THINKSTOCK



SUMMER WAS MADE FOR ADVENTURE

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Applications due by April 22, 2016.

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PERSPECTIVES

ONE ISSUE, MULTIPLE VIEWS



ANADOLU AGENCY/GETTY IMAGES

This year, incidents and accusations of the overuse of force by police have been a major topic in our culture and media, from Freddie Gray in Baltimore, to Sandra Bland in Texas. We asked four Drexel professors to tell us, in 200 words or less, how their field can help address or shed light on the current state of police-citizen relationships.

DAVID DeMATTEO, JD, PhD, ABPP (Forensic)
Associate Professor of Psychology & Law

The vast majority of police officers perform their jobs with professionalism and integrity. However, given the nature of police work, it is inevitable that police and citizens will occasionally clash, which can lead to troubling outcomes. Fortunately, the field of psychology is making significant contributions to improving police-citizen relationships. Psychologists have



documented that police encounters with certain populations of people — notably individuals with mental illness — are more likely to lead to negative outcomes. As such, psychologists have helped develop and evaluate a range of options to improve police interactions with people who are mentally ill.

One option that is gaining traction in many jurisdictions is crisis intervention training (CIT), which involves training police officers on the nature of mental illness, the availability of community behavioral health services, and crisis intervention techniques. CIT training seeks to decrease response times to crisis situations, provide better care to individuals experiencing psychiatric crises, and enhance police safety. CIT training is empirically supported, and research suggests that it improves the ability of police to handle calls involving individuals with mental illness, reduces the use of physical force, and diverts individuals with mental illness from traditional criminal justice processing into specialized treatment programs.

MARY EBELING, PhD
Director of Women's & Gender Studies

W.E.B. DuBois, one of the founders of American sociology, predicted at the beginning of the 20th century that slavery's legacy of racialized expropriation and structural inequalities, reinforced by



state-sanctioned violence, would define the United States' subsequent 100 years. We are 15 years into the next century and it seems little has changed in regards to structural violence, especially

the deadly force used by law enforcement, often against people of color.

Sociologists tend to be concerned with the structure of power in societies, and the current state of police-citizen relations directly results from the criminalization of behaviors that were once not illegal, as well as from the overly punitive policing of poor communities, mandatory sentencing, and mass incarceration since the "tough on crime" policies of the 1980s. Sociologists use tools to expose and delineate, as well as change, these structures. Participatory action research is a method that collects, documents and determines a plan of action for change in direct collaboration with communities most impacted by police brutality. It recognizes that communities traumatized by police violence are the experts of their own experiences, as well as powerful agents to advocate for change. A movement like Black Lives Matter crystallizes the strength of strategic, systematic social research and activism to change the structures of power.

ROBERT J. KANE, PhD
Department Head of Criminology & Justice Studies

They say sunlight is the best disinfectant. In that spirit, criminology and criminal justice scholars employ myriad methodologies to shed light on the root causes of police-citizen conflict. Some work is qualitative,



with researchers immersing themselves in communities to observe daily police-public interactions; other work is highly quantitative, requiring researchers to collect and analyze

organizational, neighborhood-level, and transactional police data to test hypotheses about the nature and dynamics of the police-citizen relationship. Each finding represents a piece of the overall puzzle, adding clarity to an otherwise muddled phenomenon.

My discipline has shown that people — particularly those residing in the most socially and economically vulnerable communities — want to be treated fairly and with respect by authority figures. When the police are seen as being part of an institution that generally helps to level the playing field, there is no conflict. If, however, the behaviors of police officers appear to increase the inequalities that exist between groups (e.g., through overly aggressive arrest practices, excessive use of force, etc.), conflict will characterize the relationship between the police and its marginalized public.

Criminology and criminal justice have produced the sunlight. Will policy-makers and the public at large provide the disinfectant?

ALDEN YOUNG, PhD
Director of Africana Studies

As a historian of Africa and the Middle East, and the director of Africana Studies at Drexel, I have a very particular take on this question, a question which I am sure from the multidisciplinary



nature of Africana has a number of answers. However, I would argue that the fundamental goal of Africana Studies is to study regimes of inequality throughout time and space. The

starting point of Africana at Drexel is the peculiarity of the African American experience. As opposed to many disciplines that tend to code American society as universal, Africana Studies focuses on the United States as a historical anomaly, and it uses the particularity of the experience of African Americans and other minority communities here to understand systems of stratification and inequality elsewhere.

It is only by placing contemporary police-citizen relationships in the United States into their global and historical context that we can begin to see why African American communities in particular, and other minority communities in general, have such strained relationships with law enforcement. At the heart of understanding our society's troubled relationship with policing is the question of how and why we have divided our society into different groups in order to achieve social stratification.

A DAY IN THE LIFE

INSTAGRAM CONTEST

“OPEN YOURSELF

to new experiences and people, for our value and worth comes not from money or luxury or even career success. No; it lies in those we affect, those with whom we leave our footprints through art, science, politics, language, thought and passion.”

— JENNIFER SIEW, BA INTERNATIONAL AREA STUDIES '15, IN HER DREXEL UNIVERSITY COMMENCEMENT ADDRESS, JUNE 13, 2015.

For the last three years, we've hosted the #CoASDayInTheLife Instagram Contest. Our motives have been selfish, really: we wanted a window into the lives of our students, faculty and alums, a way to represent the beautiful diversity that is unique to the College of Arts and Sciences.

And they, kindly, let us in.

In that time, we've watched their lives play out in field sites and labs, runways and museums. We've journeyed along on their studies abroad, looked over their shoulder in geology class, and stared hungrily at their photos of foam cappuccino hearts and decadent tacos. Through all of this openness and sharing, we've noticed something — something we already knew but have rejoiced in watching nonetheless. No matter the muse or location, they all share a remarkable and powerful trait: a passion to make an impact in the world — not just to leave their mark through fame or fortune, but to truly *change* the world, to challenge norms, to build better institutions, to support their communities — to do *good*.

These photos are just a tiny window into their worlds. Included here are the three winners from the 2014-2015 contest, chosen by the College community, as well as some of our favorite pics from the year.

Although the contest may change in the future, we invite all of our CoAS Dragons to continue sharing their days with us using #coasdayinthelife. And be sure to follow us on Instagram: @drexel_coas.



Vaughn Shirey, BS Environmental Science '17
@von_iferous

Exhibiting proper BEES style; *Eacles imperialis*.
#drexelBEES #nationalmothweek



Rebecca Olsho, BA International Area Studies '17
@rolsho

Chillin at the other end of the world
#PuertoNatales

#Philadelphia #pointbreeze #vw
#nature #greenspace #hybirdcity



A mirror in the sky



#Crete #octopus #Greece
#neverstopexploring



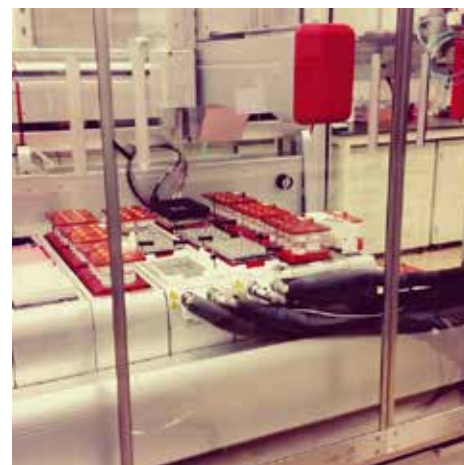
2nd
PLACE



Lakshmi Vilas Palace details in
#Baroda, #Gujarat. #latergram
#architecture #design #vscocam



Gaining topographic map skills
in Valley Forge National Historical
Park. #geologyrocks #drexelgeology
#drexelcoas



Automation Lab, where the
robots have taken over #freeslate
#glaxosmithkline #automation
#mymilliondollarrobots

Left to right, top to bottom: **Benjamin Orner**, BS Environmental Science '15 @banornabanornabanornabanorna; **Oulimata Mbengue**, BA Political Science '15 @ldkoully; **Karly Soldner**, BS Environmental Science '17 @karlymoon999; **Kanan Gole**, BA International Area Studies '15 @kanan_adventuring; **Ted Daeschler**, associate professor, Department of Biodiversity, Earth and Environmental Science @teddaeschler; **Sofia Kochiashvili**, BS Biology '17 @sofokocho

A DAY IN THE LIFE



Karly Soldner, BS Environmental Science '17
@karlymoon999

At the Rebola Cultural Center in a village near Malabo, Equatorial Guinea. The Bioko Biodiversity Protection Program held an event there to teach local youth about the importance of biodiversity conservation on their ecologically unique island home. This photo shows American students, members of the BBPP and the local children working together to draw the different types of turtles, or tortugas, that are present on Bioko Island.



We're joining the sky party!! #drexelcoas #skiesfordays #philly #skyline



"It ain't the speakers that bump hearts, it's our hearts that make the beat."



Co-op at the Philly Zoo. Two of the cubs. So big, almost 1 year old!



3rd
PLACE

Insert cheesy line about the world being your classroom at #Drexel #bees

1st
PLACE



They're called chicken satay tacos. They are pretty dope. #cucinazapata #foodtruck #drexel #visitphilly



Spent the warm Sunday along the river in pursuit of my favorite order of insects. #Hymenoptera #entomology #ansp @drexel_coas @acadnatsci

Left to right, top to bottom: Drexel University College of Arts and Sciences @drexel_coas; Sarah Dillon, BS Psychology '18 @sarahjessdillon; Christina Perella, BS Environmental Science '18 @perellachristina; Vincent O'Leary, BS Environmental Science & Geoscience '18 @vinceoleary; Kerri Yandrich, MS Environmental Policy '16 @kerberg26; Vaughn Shirey, BS Environmental Science '17 @von_liferous

SIX DEGREES

OF DAVID VELINSKY

For the past two years, we've proven that we can connect any prof in the College to any article in the magazine. In honor of our 25th anniversary, we're upping the ante to add students, staff and alums to the mix, creating a total of 25 connections (because, you know, 26 would just be showing off). So, without further ado, let's turn the spotlight on oceanographer and head of our Department of Biodiversity, Earth and Environmental Science, **David Velinsky** (DV)!



Fleming is from New Zealand. Undergrad **Jillian Adair** sailed around Fleming's native land on a semester at sea. [Learn more on page 42.]



Miñana and **Fraser Fleming** joined Drexel this year as department heads of Global Studies & Modern Languages, and Chemistry, respectively.



"The Godfather" is a film favorite for both DV and **Rogelio Miñana**.



Rahaman has traveled to four countries so far as an undergraduate at Drexel. Undergrad **Ian Michael Crumm** co-founded a new travel blog, in addition to his already-successful eponymous style blog. [Learn more about Crumm on page 56.]



Levin Millan led a 10-day literary tour to PEN Haiti with 10 Drexel students. **Farrah Rahaman** was among the 10, and is the founding president of Drexel's PEN Society. [Read about Rahaman on page 36.]



DV, an avid skier, went on a 15-day camping trip through Vermont and New Hampshire, skiing a new mountain each day. English prof **Harriet Levin Millan** also frequents the slopes in VT.



Lowe and **Meghan Butryn** both research obesity and eating disorders. [Read about Butryn's work on page 8.]



Speaking of Love, psych prof **Michael Lowe** was an author on a study showing that women's brains respond more to romantic cues on a full stomach.



DV and physics prof **Christina Love** have both given "Science on Tap" talks (Velinsky on "The Slippery Facts About Oil Spills" and Love on "Dark Matter Matters.")



Vanderkluyesen earned his PhD at the University of Hawaii. Chemistry alum **Cynthia Maryanoff** owns two coffee farms in the Aloha State. [Learn more about Maryanoff on page 43.]



DV searched for the "mighty methane maximum" on the Sargasso Sea (the only sea on Earth without a coastline). **Loïc Vanderkluyesen** spent 42 days without seeing a coastline while sampling rocks from the seafloor of the southern Pacific Ocean. [Learn more about his work on page 11.]



DV studies the effect of climate change and sea level rise on coastal marshes. **Robert Brulle** published the book "Climate Change and Society: Sociological Perspectives." [Discover more CoAS authors on page 60.]



Brulle and **Jason Weckstein** both attended the University of Michigan [Read about Weckstein's research on page 11.]



Weckstein studies the biodiversity of birds and their parasites in Brazil and Nicaragua. **Kate Hughes** went to Nicaragua with Drexel students this spring on a Global Brigades public health trip. [Learn about Hughes on page 23.]



Hughes examined women's microenterprise efforts in South Africa when she was in graduate school. **Katy Gonder** is a queen in West Africa [Read her royal story on page 7.]



Gonder went to graduate school in New York City. **Robert Kane** conducted a study of police misconduct in the NYC Police Department — the largest study of misconduct ever in an American policy agency. [See Kane's perspective on police-citizen conflicts on page 15.]



DV met Jacques Cousteau, the explorer known for wearing a red hat. And if you didn't already know, **Dean Murasko** is also a fan of hats.



Murasko is a microbiologist whose research focuses on influenza and aging; **Tony Glascock** is an anthropologist who researches aging and health.



Glascock was the 2015 winner of the College's annual Raft Debate (a battle of the disciplines); physics prof **Naoko Kurahashi Neilson** was the runner up. [Read about Neilson on page 34.]



Neilson was published in *Science* for discovering extraterrestrial neutrinos; **Lloyd Ackert** teaches a history of science course on extraterrestrial life.



Ackert is the director of the new Emerging Scholars Program (ESP) and **Nomi Eve** is the director of the College's new Storylab. [Read about ESP on page 9 and Storylab on page 58.]



DV and **Susan Kilham** earned their PhDs in oceanography.



Kilham and sociology head **Susan Bell** are both named...well, you know.



Bell was a post-doctoral research fellow at Harvard Medical School. **Yilin Yang** was invited to Harvard earlier this year. She was the only undergraduate in the country selected to present on theoretical mathematics at the National Collegiate Research Conference. [Read about Yang on page 40.]


KEY: **Anthropology** **Biodiversity**, **Earth & Environmental Science** **Biology** **Chemistry** **Communication** **Criminology & Justice Studies** **English & Philosophy** **Global Studies** **& Modern Languages** **History** **Mathematics** **Physics** **Politics** **Psychology** **Sociology**



DV and bio alum **Joe Hodnicki** both started surfing when they were 13. (Well, that connection was easy.) [Read about Hodnicki's adventures on page 28.]

TWENTY-FIVE *faces* / 25 YEARS

IN THE YEAR 1990, Madonna's "Vogue" topped the *Billboard* charts, the Internet was still in its infancy, and then-Drexel President Richard Breslin announced that the College of Sciences and the College of Humanities and Social Sciences would merge, creating the home we now know today as the College of Arts and Sciences. Though the College may be young, many of our programs date back to Drexel's beginnings. In honor of our 25th anniversary, we're sharing the stories of 25 unique members of our community — a mix of students, alumni, faculty and staff from across the decades who have made these years so memorable.



“Students who have worked with Kate know that her foremost interest is student well-being and success, and that she is sincere in her interactions. Because she takes time to listen, I, like many other students, found it easy to open up to her. ... [For] many of us, the thought of letting Kate down was enough to keep us out of trouble!”

— Elias Okwara '13

KATE HUGHES ►

KATE HUGHES

ASSOCIATE DIRECTOR AND ACADEMIC ADVISER,
DEPARTMENT OF GLOBAL STUDIES AND MODERN LANGUAGES
DREXEL UNIVERSITY COLLEGE OF ARTS AND SCIENCES

The road that brought Kate Hughes to Drexel extends far beyond the streets of Philadelphia. From farming in Spain and Italy, to living in South Africa during the height of the AIDS crisis, to traveling around the Americas on a retrofitted school bus, Hughes has built a diverse and detailed portfolio that includes expertise in peace studies, public health, environmental justice and community organizing. Steeped in experience and radiating a sense of calm and a reassuring confidence, Hughes is the quintessential international area studies adviser — just ask her students.

“Very few people encourage you to live your life with conviction, and there is no better living example than Kate Hughes herself.”

Carlos Hernandez '16

“As a first-generation college student, I am still in awe sitting here writing this — I will be attending graduate school in the fall at NYU, thanks to the relentless pursuit of Kate to ensure a future full of endless possibilities for her students like me.”

Kaelee Shepherd '15

“Kate’s focus on each student’s ambitions creates a unique student-adviser relationship unmatched anywhere.

Without her, I would not have accomplished what I did nor made as many connections and discoveries as I had.”

Gregory Kunkel '15

“[Kate] was my mentor and support system throughout my junior and senior years. ... Her innovative spirit helped develop programming, keeping [the international area studies major] a unique and vital part of the College of Arts and Sciences. I will always be grateful for her guidance, especially with my transition into law school.”

Andrew Damron '09

“Kate has watched me grow as a student and as an individual, and she always reminded me of my progress ... even when I felt lost and overwhelmed. I graduated this year, and as I figure out my next steps, I still ask Kate for advice. She has encouraged me to be adventurous and open to new possibilities as I begin my career, and her support and guidance has really been incredible.”

Kanan Gole '15

“With the support of Kate Hughes, anything is possible!”

Sadie Pennington '19

“Not only was [Kate] involved in guiding our academic development, but she was also genuinely interested in getting to know us as individuals and helping us flourish during our transition from wide-eyed high-schoolers to confident, focused graduates.”

Lydia Pappas '13

LEE C. DOLAT

PHD BIOLOGICAL SCIENCES '16

By Daaimah S. Etheridge '12

Lee Dolat has worked as a research technician at Harvard Medical School, contributed and authored articles for *The Journal of Cell Biology* and the *Encyclopedia of Cell Biology*, and become the first student in the history of Drexel’s Department of Biology to secure the esteemed Ruth L. Kirschstein pre-doctoral fellowship award from the National Cancer Institute of the National Institutes of Health. And that’s all before he’s even defended his PhD thesis.

Possessing an easygoing and remarkably humble demeanor, Dolat could be described as one of the rising stars in cellular and molecular biology research.

In his fifth and final year as a graduate student in Drexel’s PhD program in biology, Dolat spends hours inside the lab of Elias Spiliotis, PhD, studying the interaction of septins — a complex family of proteins — and their association with cancers.

“Specifically, we look at how cells form their shapes and how we can manipulate them. It’s really incredible work,” he says.

Dolat grew up in Connecticut, the middle of five siblings. His mother is a retired teacher who taught the hearing impaired. His father is a Navy veteran who works in health care. After graduating from the University of Connecticut with a degree in molecular and cell biology, Dolat was unsure of his next step until he landed a job at 454 Life Sciences, a biotechnology company outside of New Haven, Connecticut.

“They were on the cusp of the next generation of genome sequencing,” Dolat says. For a year and a half, he ran the company’s DNA sequencing machines as a research technician. The experience was good but the work grew repetitive, and in the summer of 2008, he quit his job, moved to Boston and began proactively contacting professors at different universities.

“I sent out numerous emails that went into detail about each professor’s research. It was difficult, and it took a lot of effort, organization and patience,” recalls Dolat.

His hard work and persistence paid off, though. He found a position as a research technician at the Center of Computational and

Integrative Biology at Massachusetts General Hospital, the largest teaching hospital of Harvard Medical School. There, he studied metabolism disorders using genetically modified mice to identify how specific genes were related to human disease.

“It was a really good starting point and my first introduction to academic science,” Dolat says.

After two years at Mass General, armed with glowing recommendations and a newfound fascination with epithelial biology, Dolat began searching for graduate programs. He received offers from several reputable programs and chose Drexel and the lab of Spiliotis.

“I distinctly remember Lee’s personal essay, as he stated that he enjoyed spending his Saturdays in the lab,” recalls Spiliotis. “What impressed me most about Lee is how quickly he got up to speed with a field of research that was quite different from what his lab was doing at the time.”

Together, the two have studied the function of the septin cytoskeleton in kidney epithelial cells. Their research has led to publications in the *Journal of Cell Biology* and the *Journal of Molecular Biology*.

“Lee is currently finishing one more first-author research paper,” Spiliotis says. “When he graduates, he will have six

publications under his belt — in just five years — and a prestigious fellowship. That’s exceptional productivity for a biology PhD student.”

Lee remains driven in his final year as a PhD candidate. He’s served as a board member and president of the Biology Graduate Student Association, organized events that promote science literacy and career development, and was an active participant in the journal clubs of the Pennsylvania Muscle Institute at the University of Pennsylvania. He plans to defend his thesis, submit another paper by the end of the year, and interview for post-doc positions during the fall.

“I’m not thrilled to leave Philadelphia, but I know that I have to,” he says with a sigh, noting that he fell in love with the city over the years — the great food, affordability and abundant culture.

“I moved to Philadelphia and didn’t know anybody. I had to find my way here, but it has been a really great experience,” Lee says. “There’s been a lot of personal growth. Graduate school is a good time for you to explore your own ideas. I’ve been lucky that I’ve been able to do that.”



CHRISTOPHER NIELSON, PhD

ASSISTANT DEPARTMENT HEAD AND TEACHING PROFESSOR OF ENGLISH,
DREXEL UNIVERSITY COLLEGE OF ARTS AND SCIENCES

By Mary Caparosa '16

Somewhere in the ridges of Pennsylvania on the Appalachian Trail, a young Christopher Nielson decided that science was no longer his true passion.

As he wandered, he thought of the overcrowded chemistry labs he frequented that never quite felt like home. He didn't miss them. Instead, throughout his whole trip, whenever he had free time, all he really wanted to do was read Shakespeare.

When he got back to school, he changed his major to English and he hasn't looked back since.

"I truly consider myself blessed because I'm paid to walk into a classroom and talk about Shakespeare. I would do it anyway,"

says Nielson. "How many other people can say that their hobby is also their profession?"

Nielson is currently completing his 37th year as a professor and wrapping up a 10-week Shakespeare and comedy class at Hedgerow Theatre, where he's been volunteering for nearly 20 years.

His students at Hedgerow immerse themselves in the material, acting out scenes and poring through lines for hidden meaning. The same teaching method finds its way into his classroom at Drexel: "I try to put my students in the role of the director and ask them, 'What are you going to tell this actor? How are you going to stage that? Why is this happening?'"

He hopes this encourages them to be unafraid of deconstructing and interpreting the text in their own way.

"Shakespeare is tough, but if you invest your time, it's worth it," he says. "I don't show movies in the classroom because, for whatever reason, as soon as it's on the screen, intellectual inquiry shuts down. There are different ways to interpret and present the text, but when students see it in a movie, they stop interpreting for themselves."

Nielson's love of language and technical analysis isn't the only reason he reveres the illustrious author.

"Shakespeare — and all great writers — exposes you to a full range of human emotions and perspectives, and you're better after reading them because you now have these perspectives. You read "Macbeth," and you not only see that Macbeth is inside you, but also you see Lady Macbeth, the porter and Duncan — they're all in here," he says, gesturing to his chest.

"That's a valuable experience," Nielson says, "to be exposed to the range of human thought and emotion."



4

ALISA MELEKHINA, BA '11

LITIGATION ASSOCIATE, DEBEVOISE & PLIMPTON LLP

By Diane Ketler and Amy Weaver

Most first graders are only just beginning to master the skills of reading, writing and arithmetic — but not Alisa Melekhina. By the age of 7, Melekhina had not only competed in the World Open for chess — a game that requires astute calculation and strategy well beyond the years of most first graders — she had also authored an English translation of a popular Russian fairytale (at the age of 6!). As if that's not impressive enough, the now 24-year-old attorney went on to receive a full ride to Drexel and graduate in just two years. The astounding timeline of this accomplished alumna is enough to make even the most industrious of us feel like an underachiever.

June 26, 1991 – Born in Crimea, Ukraine; immigrates to Brooklyn with her parents

AT THE
AGE OF

- 5 Moves to Philadelphia; father teaches her to play chess
- 6 Authors "The Frog Princess," an English translation of a popular Russian fairytale
- 7 Competes in her first chess tournament, the World Open
- 9 Competes in the World Youth Chess Championship for the first time
- 10 Wins gold medal at the Pan-American Youth Chess Championship in the Girls Under-10 category, earns title of Women's FIDE Master
- 15 Places fourth in World Youth Chess Championship in the Girls Under-16 category
- 16 Achieves chess title of National Master and competes in her first U.S. Women's Chess Championship
- 17 Wins full tuition scholarship to Drexel University for Delaware Valley Science Fair project comparing various measures of intelligence
- 18 Enrolls in Drexel's Philosophy program
 - Wins individual gold medal in Women's World Team Chess Championship
 - Places third and is youngest competitor in U.S. Women's Chess Championship
- 19 Co-authors "Copyright Issues in Chess Games" with Drexel Professor Neal Orkin in the *Journal of Intellectual Property Law and Practice*, published by Oxford University Press
 - Graduates summa cum laude from Drexel
- 20 Begins at the University of Pennsylvania Law School, the youngest in her class
 - Finishes top 10 in the World University Championships and in the World Junior Chess Championship in the Under-20 category
 - Works as a judicial intern at the U.S. Court of Federal Claims in Washington, D.C.
- 22 Works in the anti-piracy group of the legal department at FOX Entertainment
- 23 Founds SubLite.net, an online platform for student summer sublets and internships, with a fellow female chess player
 - Graduates with a JD from Penn Law and a Certificate in Business Economics and Public Policy from the Wharton School of Business
 - Passes the New York State bar examination
 - Joins Debevoise & Plimpton LLP in New York City, practicing in intellectual property disputes, white-collar investigations, and commercial litigation
 - Appears on the April 2015 cover of *Chess Life* magazine for article on balancing law and chess careers
 - Competes in her seventh U.S. Women's Chess Championship and represents the U.S. again in the Women's World Team Championship
- 24 Finishes as the top female in the Millionaire Chess Open held in Las Vegas

By Amy Weaver

Joe Hodnicki isn't biased to any one medium; painting, illustration, block printing, merchandise design — he does it all. The biology alum's deep love of the natural world, particularly the ocean, resonates in his art and design work for big-name brands like Vimeo and Urban Outfitters, nonprofits like the Special Olympics, and independent shops like Grain Surfboards and Mother Earth Brewing Company. He's built tree houses in the Virgin Islands, produced merchandise for events like the New York and San Diego Surf Film Festivals, and even designed the medals for the 2012 Winter X Games. But the career path that now so perfectly weaves his love of art and science was once unclear to a young Hodnicki.

You originally came to Drexel for engineering and then changed your major to biological sciences. How did art come into the picture?

As long as I can remember, I've been drawing, and my passion for making things with my hands has never left me. Through school, with my attention focused on classes and studying, I found every chance I could

to keep art a part of my life, even setting up a small studio in a spare bedroom in the house I rented with four buddies.

As graduation came and went, unsure of my next steps, I decided to pack a bag and move to the Virgin Islands to fix tree houses for a short time, to help "find myself." I only had to work four hours

a day, which gave me copious amounts of time to draw, make art, explore other islands and dive into everything I was passionate about. My life has never been the same since, and I am thankful every day for hopping on that plane.

How does your biology background relate to your art? How does it affect it? Marine biology has been a huge part of my life right next to art and design. I grew up spending summers at the beach, surfing, eventually lifeguarding on the beach through my early 20s.

I bought my first surfboard when I was 12 or 13 with money I saved up from cutting grass. I went to a used sporting goods store, fell in love, and without a clue



on what to do, I took that bad boy into the water. As the only one who surfs in my family, my mechanic father in work boots would walk me to the beach and watch me flounder around for hours. Eventually, I stood up on the board, and it changed my life. Snowboarding, skating and every other adrenaline sport soon came after. (Sorry, Mom.)

Through college, in any course I was taking, I found some connection one way or another to my passion for the ocean. It was my way to understand it [...] and now, to continue to be inspired.

What has been the proudest moment in your career so far? This is something I have never publicly shared. I was asked by a very respected Hawaiian local in the surf industry — now a great friend of mine — to make a memorial service and paddle-out announcement for the unexpected

passing of his son. I was honored and proud and humbled to be able to touch the lives of many in the most sincere and intimate way through my art. It was something I will never forget.

What about the coolest moment? Definitely one of the coolest moments for me was when I designed the medals for the Winter X Games. I was simultaneously art directing Vimeo's presence at the X Games, where I painted a 60-foot mural in my studio in New Jersey and assembled it in the snow at the base of the mountain in Aspen for the huge, internationally televised event. That weekend was amazing. I was not only an integral part of [creating] Vimeo's identity, but every athlete who won a medal — gold, silver or bronze — had my design around their neck. I was even given the opportunity to award the athletes their medals right on stage. It was a truly surreal experience.

You dabble in a lot of different art forms — prints, products, paintings and more. What's your favorite, and why? Now this is a tough one. If I'm not learning, I'm not satisfied. With art and design, I am constantly trying to learn new techniques, experiment with new materials and push my boundaries. If I were to pick a current favorite, I'd say reduction block printing. This is a process where you carve a drawing into one block, printing between carvings. The lightest color — white — is what is first carved, inked and printed, and then followed by the next lightest color, which is carved where it will live in the print, and so on. Eventually, the only thing left will be the darkest color and the block will be fully carved and destroyed without another print to ever be made. For me, it's about creating and locking that piece in time.

How do you continue to evolve in your work? I constantly try to push myself out of my comfort zone. There is always learning to be done. A stubborn, younger me said, "I'll never use the computer for art. I'll never become a graphic artist." Years later, I realized that if I didn't take a leap, learn the newest programs, open my mind to new possibilities in art and design, I would be swallowed up by the fast-growing industry and lose out on a career I could create for myself. Soon after diving into graphic design, I was hired by Urban Outfitters and

eventually oversaw art and graphics for their home decor division, where I used a computer every single day. I feel like my options are now endless.

What's your favorite response someone has had to your art? When people take the time to write me emails with pictures of my art in their home, or people come to me in person at events around the country to tell me I inspire them in some way. It brings everything I have worked for full circle.

What's a typical day like for you? I send my beautiful fiancé off to work with a half-awake kiss and coerce our dog Fin to take her spot in bed for a bit until he's ready to go out and chase squirrels. I make a huge pot of coffee (addicted) and sit in front of the computer to wake up and explore everything I missed while I slept. I am obsessed with Kickstarter campaigns, BuzzFeed and TheInertia.com. I start work with emails, then down to business. The days change depending on workload, but include designing, throwing the Frisbee with Fin 100 times, cooking and usually end with a hike or trail run with my fiancé and Fin, followed by dinner, and then usually back to work until bed (with occasional surfing, home repairs, traveling and wedding planning mixed in).

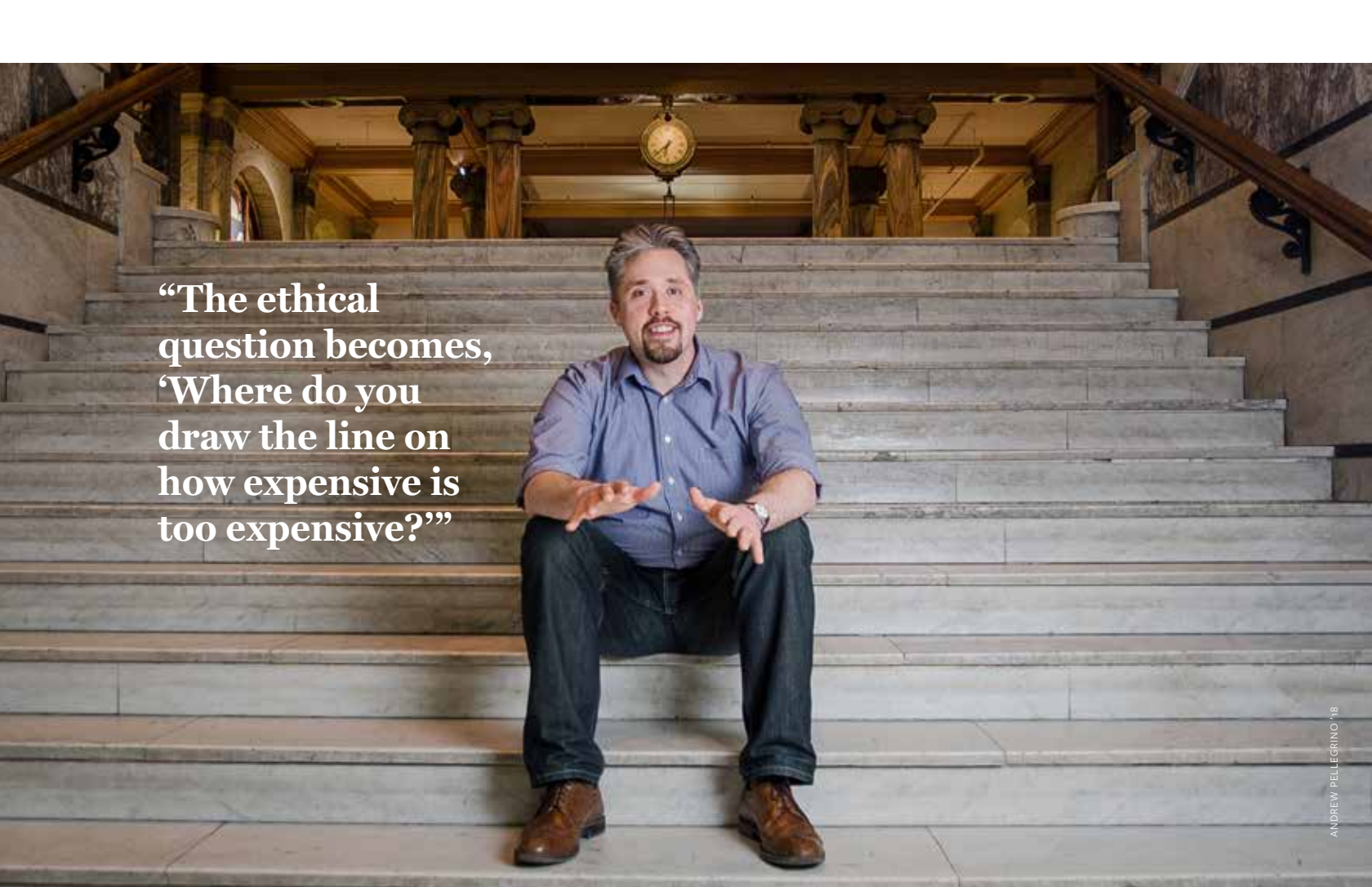
In five years, where do you hope to be, and what do you hope to be doing?

In my personal life, I'll be married for four years with hopefully at least one child, maybe two. Living a happy fulfilling life, making my wife proud and teaching my children how to appreciate this world.

In my career? I couldn't even begin to imagine where I'll be. If you told me five years ago I would have accomplished the things I have, I would have never believed you. I hope to still be working hard, pushing my boundaries, getting better at business and building bridges for my work well outside the nautical world. I couldn't be more grateful for the amazing companies I have designed for, the walls of collectors who showcase my art, the people who constantly support all my wild and crazy dreams. I hope to continually decorate lives and homes around the world with my passion, while making my amazing family proud.



JARED CASTALDI

A man with a beard and mustache, wearing a blue button-down shirt and dark jeans, is sitting on a wide, light-colored stone staircase. He is looking directly at the camera with a slight smile and his hands are open in front of him. The background shows the ornate interior of a building with classical columns and a clock on the wall.

“The ethical question becomes, ‘Where do you draw the line on how expensive is too expensive?’”

ANDREW PELLEGRINO '18

6

BILL DRUST, MS '15

PHD CANDIDATE, LOYOLA UNIVERSITY CHICAGO

By Mary Caparosa '16

After seven years in a communications role at digital entertainment company Rovi, Bill Drust was looking for a change. While most career jumps look more like hops, Drust took a vaulting leap — and landed in Drexel’s Master’s Program in Science, Technology and Society (STS).

“I’ve always had a wide range of interests,” he says.

The STS program indeed attracts a diverse bunch, from physicists and engineers to sociologists and political scientists. Coming from a family of nurses, Drust’s research interests quickly gravitated toward medical technologies. His master’s thesis focused on the *da Vinci* Surgical System, a minimally invasive surgical platform in which a surgeon’s hands are enhanced by robotic technology. After reading claims of potentially unnecessary risks associated with the technology, Drust decided to investigate further. He conducted interviews with doctors who use the system and explored the ethics of using such a device.

“When you have a new medical technology, there are a lot of reasons why you want to implement it. The one you have to tell the public is, ‘It has better patient outcomes,’

but there are other reasons,” Drust says. “It might make the surgeon’s job easier, or allow more doctors to perform the surgery who wouldn’t have the skill to do it without this technology. But it is wildly expensive, and we live in a country where a lot of people can’t afford basic medical care. The ethical question becomes, ‘Where do you draw the line on how expensive is too expensive?’”

Drust’s work landed him three fully funded offers from doctoral programs around the country. This fall, he relocated to begin a PhD in sociology at Loyola University Chicago, where his research will continue to focus on innovations in medical technologies and their effect on the work done by medical professionals, as well as on the patient experience.

Like his STS classmates, Drust is interested in the social impact of science and technology — something that is easy to forget in the largely quantitative field of medicine.

“Everything is about numbers. I’m in it for the human element,” he says. “I put myself in other people’s shoes, and I think that’s an important part of science that’s missing.”

By Maria Zankey

It takes a certain type of person to work — and thrive — at the National Security Agency.

It takes discretion, considering the organization collects and protects sensitive and classified information for the United States government.

It takes intelligence, working among the best and brightest minds in America to think comprehensively and solve complex, high-level problems.

And it takes resilience, assuming responsibility within an agency whose work is critical to the safety and well-being of every American — work that can never be openly discussed, even with those closest to you.

Christina Achampong, an operations researcher for the NSA and 2006 Drexel mathematics alumna, says she owes her sense of resiliency to her teachers, her role as an RA, her extracurricular activities and her three co-ops at Drexel.

After co-op positions in accounting and auditing at Giant Food, Lincoln Financial and MBNA in Wilmington, Delaware, Achampong says her experiences helped her realize what kind of career she *didn't* want — one in the financial realm.

“True to Drexel style, I left the University seriously prepared for the real world,” says Achampong, who’s been working for the NSA since 2009. “It was tough at the time, but looking back, I really value that insight.”

Resiliency became a necessity to Achampong in 2013, when the NSA experienced one of its most widespread and controversial security breaches in the agency’s history. Former NSA contractor Edward Snowden leaked an unprecedented amount of classified information, polarizing the agency and blindsiding its employees.

“It was difficult in many ways, and it still can be,” Achampong says. “The whole situation ushered in a new normal here at the agency, and we’re still adjusting to that. And we will.”

In part, Achampong’s faith in the agency is due to its history: She was intrigued at the thought of working for an American defense agency, where the field of operations research put down roots during World War II.



CHRISTINA ACHAMPONG, BS '06

OPERATIONS RESEARCHER, NATIONAL SECURITY AGENCY

JARED CASTALDI

“I remember concretely having the day where I said to myself ‘Oh — that’s why I have the security clearance.’ It was a this-just-got-real kind of moment,” Achampong says. “There’s a really great mission here, and I really see what it’s all about.”

But her trust in the agency also grew from the way the NSA achieves its mission. As an operations researcher, Achampong considers herself a practitioner of the “science of better.”

“We make things better, period,” Achampong says. “The question is, ‘What does better mean?’”

At the NSA, she says, it means making government processes more effective and less risky. It requires her to work in the space where mathematics meets the physical, social world. Where human actions and decisions may seem unpredictable to the untrained eye, Achampong sees patterns and formulaic models.

“I think folks might be surprised that the social sciences can be combined with mathematics, especially within game theory, because it suggests this notion of a payoff,” Achampong says. “If you can understand what drives a person, then you can [create a mathematical] model, and you can apply

some probabilities to say, ‘Well, chances are, because I know what drives them and their values, they’ll probably go this way.’”

Achampong explored this approach in more detail while pursuing dual master’s degrees at Penn State. Her thesis, “An Evolutionary Game Model of Self-Deception and the Effect of Belief on Performance,” examined how a person’s belief in victory impacts their performance, and whether a person’s capacity for belief is influenced by their personal history.

“The takeaway is that your belief actually does affect your performance. What you believe actually does go a long way,” Achampong says.

She’s applied that knowledge in her career at the NSA. And as a natural leader and frequent tutor, she encourages aspiring mathematicians to utilize the power of their beliefs as well.

“I remember first tapping into that power as a Drexel undergrad in the National Society of Black Engineers. I was very involved in the organization and that was where I was first encouraged to go to grad school,” Achampong says. “Really and truly, I think that’s where I learned to be my own best advocate.”



By Tinashe Michael Tapera '17 and Amy Weaver

Alden Young wears a T-shirt and workout trousers in colors that mimic the attitude of a campus early in the Friday afternoon, in no rush to be any place in particular. He is soft spoken and calm, and seems to be a man simply going with the flow.

"I was born in New Orleans," he begins.

Something glimmers in his eye as he speaks, as though, like a superhero, Young's true identity lay somewhere behind the simple frames resting on his nose.

Like other heroes, he's had the opportunity to watch justice and injustice battle it out. Though in his case, it was in the political ring, and through the eyes of his mother and father.

"Both of my parents were heavily involved in city planning and civil government," he says. "I guess as a result, I've developed an intrigue in cultures, people, economics, and how the three interact in different parts of the world."

Young's father was a development studies consultant in New Orleans. His mother was a professor of urban studies, the chairwoman of the Port of New Orleans, and later the dean of the College of Urban Labor and Metropolitan Affairs at Wayne State University when the family relocated to Detroit.

Young's public school days were culturally and economically diverse: he lived in Mexico at the age of 5, South Africa at the age of 13 while his mother was there on a Fulbright, and he traveled to France, Germany and Zimbabwe in between.

But most of those early days were spent immersed in the rich culture and history of New Orleans, where he was avidly involved in music and arts programs. The experience still runs deeply through Young's blood: "I love the craft of murals, music and canvas. I walked the hallways of my school with a lot of talented people." People who grew up to become superheroes of the arts world, including concert pianists, jazz musicians, and one Dwayne Michael Carter Jr., who grew up to be known as "Lil Wayne."

Young himself grew up to be an impressive man, with a bachelor's degree from Columbia University, a master's degree from the London School of Economics and Political Science, and a doctorate from Princeton University in African history.

But school wasn't always easy.

"I actually struggled to learn how to read as a kid," Young shares. "I had to wake up every morning at six to meet with my tutor to study and memorize the phonics and spellings.

It was difficult, especially since it was causing me to fall behind in other subjects."

In time, Young caught up, and learned to love not only literature but also the world of academia. He studied American history at Columbia and studied abroad in Egypt in 2003, just as the Iraq War began. Experiencing the world event in a Muslim nation not far from the fighting, Young gained a new understanding of empathy and justice.

"I remember being in the middle of these different protests," he recalls. "It was the first time I had ever seen or been involved in political protests, and it was eye-opening to see how people viewed me as an American and how people thought about the other conflicts in the region.

"I was an Americanist at the time, studying American history, but the experience made me interested in becoming an academic who studies African and Middle Eastern history. It made me want to understand the places I was visiting and the places the U.S. was affecting."

Today, Young's research interests lie in the developmental trends of societies and cultures. His travels and childhood experiences in New Orleans and as a high school student in Detroit allowed him to see firsthand the expansion and deterioration of cities and suburbs, and what it takes to build a community.

"Most importantly," he says, "I learned to think about international affairs through an international lens, to grasp the idea of a worldview from every angle, which was very difficult to do, for example, while attending school in apartheid South Africa, where there were very different perceptions of white and black people."

Young's next publication will investigate how the drawing of state boundaries in Sudan impacts the states' approaches to policymaking and the stability of communities. He'll also look at how the lens through which one investigates such matters plays an important part in the outcome of the investigation.

Young encourages all of his students to travel abroad. Like a hero refining their powers, all people, he believes, must refine their understanding of the world before they can venture to take on the world.

"One's understanding of how things should be must be flexible to the time and situation," Young says. "And that is a skill that can only be learned by hard-earned experience."

"It was the first time I had ever seen or been involved in political protests, and it was eye-opening to see how people viewed me as an American..."

NAOKO KURAHASHI NEILSON, PhD

ASSISTANT PROFESSOR OF PHYSICS,
DREXEL UNIVERSITY COLLEGE OF
ARTS AND SCIENCES

By Amy Weaver

NASA was big in the '80s.

Sure, it was a force in the decades before, but in the '80s, when a young Naoko Kurahashi Neilson was making her way through elementary school, NASA was pop-culture big. Kids gathered in classrooms to watch shuttle missions, and teenagers stared wide-eyed as countdowns and liftoffs filled the opening credits of MTV's first broadcast.

Those images stayed with Neilson. But not just the space shuttles and astronauts.

"Watching teams of really intelligent people dance up and down because something launched — not for the sake of monetary gain but because they were going to discover something about the universe — that was something incredible," says Neilson. "To get that excited about something that probably will not impact you in your lifetime — how exciting is that?"

By sixth grade, Neilson already knew she wanted to be a physicist. And though she felt awkward at times as one of few females interested in science, her family made it clear that her gender did not determine her potential.

"My parents always treated me and my brother equally, and genuinely believed we could do anything," says Neilson. "That expectation was crucial — just because I was a girl, there was no difference in the expectations they had for me."

With their support, Neilson earned her bachelor's degree in physics from the University of California, Berkeley, and her PhD from Stanford University. Today, she is an astro-particle physicist at Drexel with research interests in the high-energy universe; when extremely violent phenomena occur — supermassive black holes, gamma ray bursts, galaxy collisions — she wants to know how and why.

Neutrinos, fundamental but elusive particles, are Neilson's window into this world.

"Right now, all we can really do is look into a telescope and see what's out there, but the problem with 'seeing' is that we're looking at light, at photons," she says. "If I shine a light on the table, you won't see a light behind it because things block light. Similarly, if there's an extremely energetic black hole out there and you use a traditional telescope, all you will see is light. But if I had a *neutrino* flashlight — which I wish I had — it would go straight through, because neutrinos can't be blocked by anything."

Neilson is part of the IceCube Collaboration, a group of

300 scientists from 45 institutions worldwide who are researching neutrinos using a high-energy neutrino detector operating at the geographic South Pole.

The research site sits atop two miles of glacial ice — the clearest ice in the world, says Neilson. Eighty-six holes are drilled vertically down into the ice, almost touching the continent, and 5,000 light sensors are submerged. When the holes freeze back up, no light can be seen from the surface.

"When a neutrino comes in, it interacts and makes particles that give off light," says Neilson. "That's what the sensors catch — these tracks of light whizzing around."

Neilson and her colleagues then attempt to find the source of the light. Was it a neutrino? Where did it come from? What galaxy or phenomena could have caused it?

In 2012, as a post-doc at the University of Wisconsin, Neilson and two fellow post-docs observed 26 neutrino events, including the highest energy neutrinos ever observed and with extraterrestrial (not atmospheric) origin. The finding made the cover of *Science* magazine.

"I was very proud of the three of us," says Neilson. "This is what I had wanted since I was 12 years old: to be part of a team of smart people doing great things and discovering for the sake of discovery."

Science for the sake of discovery — not for monetary gain or even immediate application — is an ideal that sits close to Neilson's heart.

"People often ask of basic science, 'What's the application?'" she says. "My philosophy is that basic science feeds the development of society and civilization, but often we can only see the application in hindsight. It's curiosity that drives development. We see a river or a mountain and we want to know: what's on the other side?"

In her lab at Drexel, Neilson encourages this curiosity among her graduate and undergraduate students. Her role in their development — as scientists and as human beings — is something she takes seriously.

"I love being a mentor," she says. "It's a learning process, and it comes with lot of power and a lot of responsibility. I probably lose more sleep over my students' career paths than they do!"


In addition to mentoring her own students, Neilson presents to elementary and high school students across the country, hoping to inspire the next generation of scientists, particularly females.

In her own academic journey, she struggled to imagine herself among faculty made up of predominantly white males. She recalls a senior male faculty member suggesting that more girls might pass the qualifying exam "if we added cooking problems." Around the same time, former Harvard President Lawrence Summers made the controversial remark that "innate ability" might be the cause of the under-representation of female scientists.

"I remember being so upset," says Neilson. "This discussion isn't like science in the sense that you can list hypotheses and not influence the outcome. Comments like this become self-fulfilling prophecies."

Neilson hopes to combat those messages and serve as an alternative to pop-culture stereotypes.

"There are a lot of people who don't see themselves in media images of scientists, and that's dangerous, to typecast someone or a profession," says Neilson. "I don't know the difference between 'Star Wars' or 'Star Trek,' but I'm an astro-particle physicist. You don't have to be *that* person to become a scientist. And I especially want young girls to see that, to have another data point of what a scientist looks like that can maybe counteract what they see in pop culture. I'm very proud that I have the opportunity to do that."

A woman with dark hair, wearing a red jacket, is shown from the chest up, reaching her right hand upwards towards a bright, glowing point of light. The background is dark and filled with many small, out-of-focus, yellowish-green particles that appear to be falling or floating. The woman's face is partially illuminated by the light she is reaching for. The red jacket has a circular patch on the left chest area.

**“If I had a neutrino
flashlight — which I
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go straight through
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neutrinos can’t be
blocked by anything.”**

10

FARRAH RAHAMAN

BA INTERNATIONAL AREA STUDIES
& BA ART HISTORY '17

By Mary Caparosa '16 and Diane Ketler

"I'm predisposed to having a deep-rooted interest in international issues," says Farrah Rahaman, a junior double majoring in art history and international area studies with a concentration in justice and human rights. At 21 years of age, the undergrad has been to Guatemala, Madrid, Haiti and Peru, and has spent her spring and summer breaks writing alongside leading Haitian poets, volunteering as an English teacher, and studying international development up close.

"When you're from a peripheral country and the dominant news is coming from Europe and North America, you're going to have a deep curiosity in international affairs because you're being flooded with ideas and theories that are removed from your direct experience," Rahaman says.

The Trinidadian grew up traveling and considers herself loquacious and an advocate at heart. At Drexel, she is the president of the Drexel Student Alliance of the United Nations Association and founding president of the Drexel Poets, Essayists and Novelists (PEN) Society.

Regardless of where she is in the world, Rahaman is mindful of her own circumstances.

"Although I'm a woman of color and have had to deal with different intersections of discrimination, I'm educated and have the means to travel. I try to stay very aware of my positionality and be reflexive in the different spaces I'm fortunate to enter," she says.

For Rahaman, that awareness also means giving back. During her co-op in Madrid, her time was split between taking an art history class at the Prado Museum, teaching English as a volunteer, and working in the international development department of a European law firm. In the latter role, she applied her theoretical understanding of international justice and development, writing proposals for the European Union, and acquiring along the way an interest in alternative economies.

"Having that experience in Madrid was really helpful because I got a sense of the bureaucracy that surrounds development projects," she says. "It gave me direct insight into the reality of foreign aid. It was a real turning point for me because I was working on trade projects that didn't really undercut the dominant local issues. Instead, I felt like they were reinforcing the neocolonial power hierarchy, which lies at the root of the problem."

While Rahaman's career plans are still being shaped by her studies and travels, her passion to make an impact is unwavering.

"I've thought about the law, academia and policy work, but feel like I can work across different fields and hopefully use my diverse experience to find my niche," she says. "My hope is to inspire others to think more critically about the world around them."



By Mary Caparosa '16

"I'm always inspired to learn," says Eli Gilman, an alumnus of Drexel's Center for Public Policy. "That's what drives me, regardless of the field."

After graduating with a degree in political science from George Washington University, Gilman made his way to Harrisburg, Pennsylvania, where he landed a job with the Office of Homeland Security working in risk assessment and critical infrastructure protection.

"Many days, I would go into my boss' office and say, 'OK, I've done this, what else can I do?' As they realized I could do more and more, they gave me more and more. Within six months, I was drafting the Strategic Plan for the Commonwealth [of Pennsylvania]."

Although the experience was invaluable, he eventually decided he'd gone as far as he could on his bachelor's degree and started researching graduate programs back home in Philadelphia.

"Drexel's Public Policy program fit perfectly with where I wanted to go in my career. It was one of the biggest things

that helped me conceptualize large institutional momentum and how to make change," he says.

Gilman also kept in touch with connections he'd made throughout his career, including the executive director of the Center for the Study of Terrorism at the Foreign Policy Research Institute (FPRI) in Philadelphia. Before graduating from Drexel, he began putting his coursework into action as a research associate at FPRI. He published articles on emergency management and homeland security issues, and worked on research projects for the Commonwealth and the U.S. Department of Defense. He was soon promoted to director of administration and development.

"Because of my degree, I was able to step right in and perform strategic planning, communications and other duties to help grow the organization into what it is today," Gilman says.

His successes and experience led to an appointment on Governor Tom Wolf's Transition Review Team in 2014 for the Pennsylvania Emergency Management Agency.

The diverse team of emergency management, homeland security, fire department officials and a former state legislator reported on organizational structures, budgets and other policy and legal issues.

"We were responsible for making recommendations to the Governor-elect and his team about potential changes and future policies he might want to implement in those areas," Gilman explains. "It was an honor to be asked to serve."

Back at FPRI, Gilman is growing the Foreign Policy Roundtable for Rising Philadelphians, an event series geared toward young professionals who want to discuss international issues with leaders in the field. He hopes to educate and encourage youth to think critically about U.S. foreign policy and international affairs.

"We operate on the premise that a nation should always think before it acts," Gilman explains, "which is why it's important to get young people involved and doing the same."



ANDREW PELLEGRINO '18

DANIEL MANN, MS '13

CONTENT SPECIALIST, FACEBOOK

By Jacob Harte

When people rank the most desirable places to work, Facebook is consistently positioned at the top of the list. Hundreds of thousands of people apply each year, while many others count themselves out before they even reach the point of submitting an application.

Daniel Mann, an alumnus of Drexel's Master's in Technical Communication program, never counts himself out.

"I don't take 'no' for an answer," he says. "I just see it as 'not right now.' I set goals, and if things don't work out the way I've planned, I keep pushing and planning until I get where I think I should be."

"Bold," "open" and "focused" are attributes listed among Facebook's core values, and within only a few moments of meeting Mann, it's clear why he was hired by the social networking giant.

Originally from Michigan, Mann ventured to his hometown rival — Ohio State — while many of his friends chose colleges closer to home. Two weeks after he finished his undergrad degree, he took another leap and traveled to the East Coast to begin his graduate program at Drexel.

"I knew I wanted to go into technical writing," he recalls. "I chose Drexel because the courses were relevant and the program required internships. There is no replacement for getting hands-on experience. You don't really know what you want to do until you get experience doing it."

Internships are rare at the master's level, and while the classes for Drexel's MS in technical communication set the foundation for Mann's education, the experience he received during his internships played a major role in securing his first job.

"The program prepared me with the essentials to excel in the workforce," he says. "The classes were demanding and focused on applying principles to real-world scenarios. Then the internships gave me the opportunity to actually use those principles in the field. I would encourage all students to get real experience and not be afraid of branching out."

As he'd been doing his whole life, Mann looked beyond his immediate surroundings when finding an internship, searching throughout the U.S. for a position that would offer the experience he wanted. He soon landed a job with Interactive Intelligence, a global communications company based in Indianapolis that provides communication, collaboration and engagement software and cloud services.

"Some people aren't open to change and consequently miss out on opportunities," says Mann. "Many wouldn't consider moving to a whole new place just for the summer,

"I've never been a follower — not that I'm totally against doing what other people are doing. I just want to do it differently."

but the company gave me a relocation bonus for the move and covered my rent in addition to paying me."

Mann's successes have been built on one invaluable fact: his goals are clearly defined and ever present. While at Drexel, he knew he wanted to eventually work for a company like Facebook or Google. He knew he wanted to care about and feel connected to the product he was helping to enhance. Those goals have guided every move he's made — from Michigan to Ohio to Philadelphia to Indiana to California.

After graduating from Drexel, Mann relocated again — all the way to Silicon Valley — to take a job with Workday, a company focused on payroll, human resources and financial software, a mere 40 minutes from the Facebook campus.

"You never really know where you're going to end up, but my goals have kept me on the right track," Mann says. "It also helps when you have people who encourage and support your efforts."

He credits his parents for always driving him to do more, to be more and to set goals.

"I've always been the person who wanted to explore what everyone else wasn't," he says. "I've never been a follower — not that I'm totally against doing what other people are doing. I just want to do it differently."

Professor Lawrence Souder, PhD, of the communication department at Drexel, also played a significant role, Mann says.

ED CALDWELL





“Dr. Souder has been instrumental in encouraging me and supporting me to grow. He wasn’t just teaching the text — he cared and he wanted to see you succeed.”

While on Facebook’s website one night, Mann came across an open position that fit his background and interests and offered an opportunity for growth. He took a chance.

Shortly after, he received an initial screening call from a Facebook recruiter, a second round phone interview with the hiring manager, and was then asked to come onsite for a half-day interview at the Facebook headquarters.

“I was confident at every stage of the process,” Mann says.

“Two days later, I received a call with my offer. I later found out that I was not only hired, I had also received a perfect score on my interview.”

At only 27, Mann has already achieved what some never even venture to accomplish.

“I’ve always been a person to shoot for the stars. The internship experience I received through the program enabled me to enter the job market with confidence. This confidence, and experience, helped me land my dream job at Facebook. My whole philosophy is to never count myself out.”

YILIN YANG

BS MATHEMATICS '17

By Tinashe Michael Tapera '17

The sub-metropolis of Tianjin, China is home to a bustling port and a multitude of urban developments and structures. Not unlike Philadelphia, it has a rich history in arts, politics and trade. In fact, Tianjin is located at the same elevation as Philly, making their climates similar and adaptable to anyone migrating between the two cities. It was for these reasons — and the opportunity to live within walking distance of the legendary Philadelphia Orchestra — that Yilin Yang, a young, starry-eyed student from Tianjin, decided to cross the ocean to study mathematics at Drexel University.

As a child, Yang recalls looking up at the night sky and being awe-struck by its beauty. “How far away are they?” she wondered about the stars. “What are they like? Are there people there?”

Years later, when she stumbled upon the movie “Contact,” she was brought to tears.

“That movie showed me everything I’d ever dreamed about,” Yang recalls. “It basically says that math is the language of the whole universe. If there are people on other worlds, I can’t communicate using our languages, but maybe I can use math.”

Today, Yang is exploring that universal language at Drexel. As a freshman, she completed a research project in the STAR Scholars (Students Tackling Advanced Research) summer program that landed her among the world’s top minds at the National Collegiate Research Conference at Harvard University last year.

Yang’s presentation, “Constructing Jacobi Matrices from Mixed Data,” was based in the field of theoretical mathematics — a complex and beautiful science, according to Yang, that tackles some of the most compelling questions about the universe, its origin and laws.

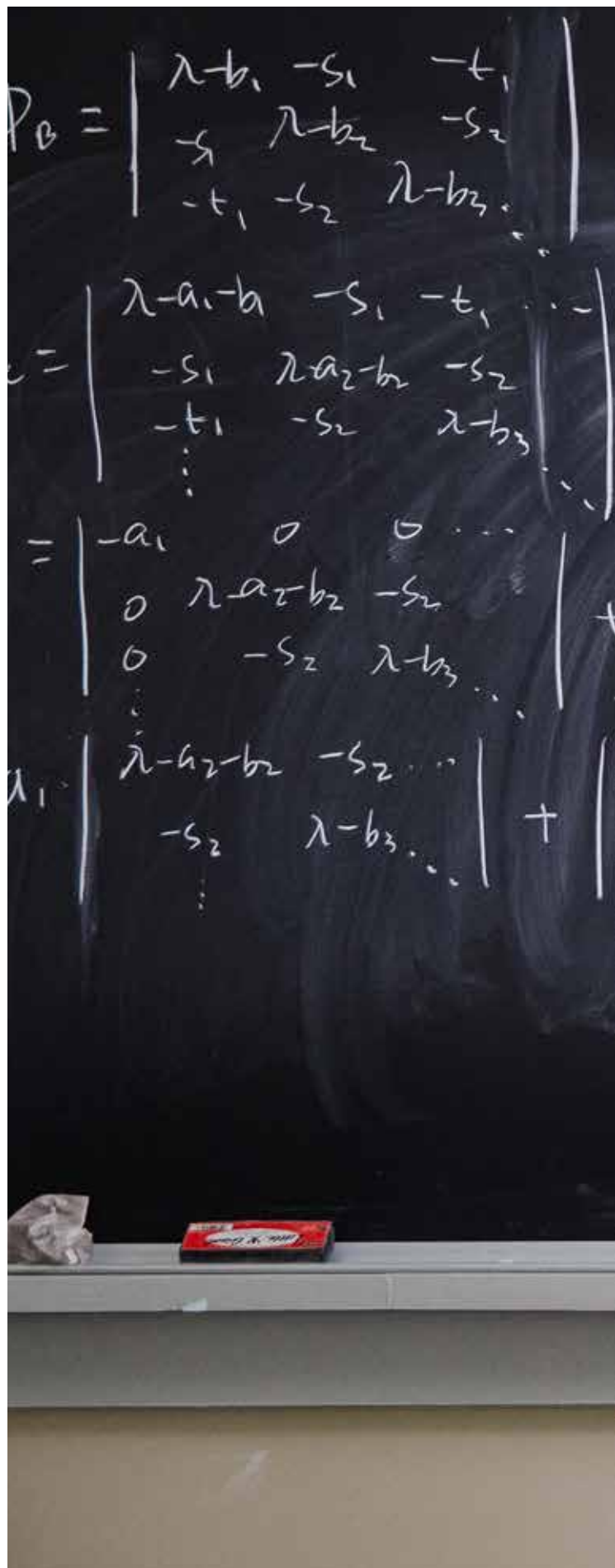
Despite Yang’s passion for the field, she says the abstract nature of theoretical math has led many mathematicians to disregard its potential applications. Professors at Harvard even asked Yang if there was any application of her work, or if there was any point to it at all.

After a brief pause, she answered:

“Many people think of math as two parts: one part contains the things we have discovered, like formulas and theorems; the other part holds the things we want to discover but haven’t yet. But there’s a third part, I believe, that theoretical math falls into, that is full of conjectures. Every time a conjecture is proven, I believe we become more equipped to ask and help find answers to the big questions, such as, ‘What is this world?’ and, ‘Are we alone?’ I’ve been asking those questions for a long time, and I want to know the answers.”

While others set their sights on the everyday world around them, Yang is keeping her eyes on the sky, not unlike the great mathematicians of history.

“The book [of the universe] cannot be understood unless one first learns to comprehend the language and read the letters in which it is composed,” Galileo once said. “It is written in the language of mathematics...”



ANDREW PELLEGRINO '18

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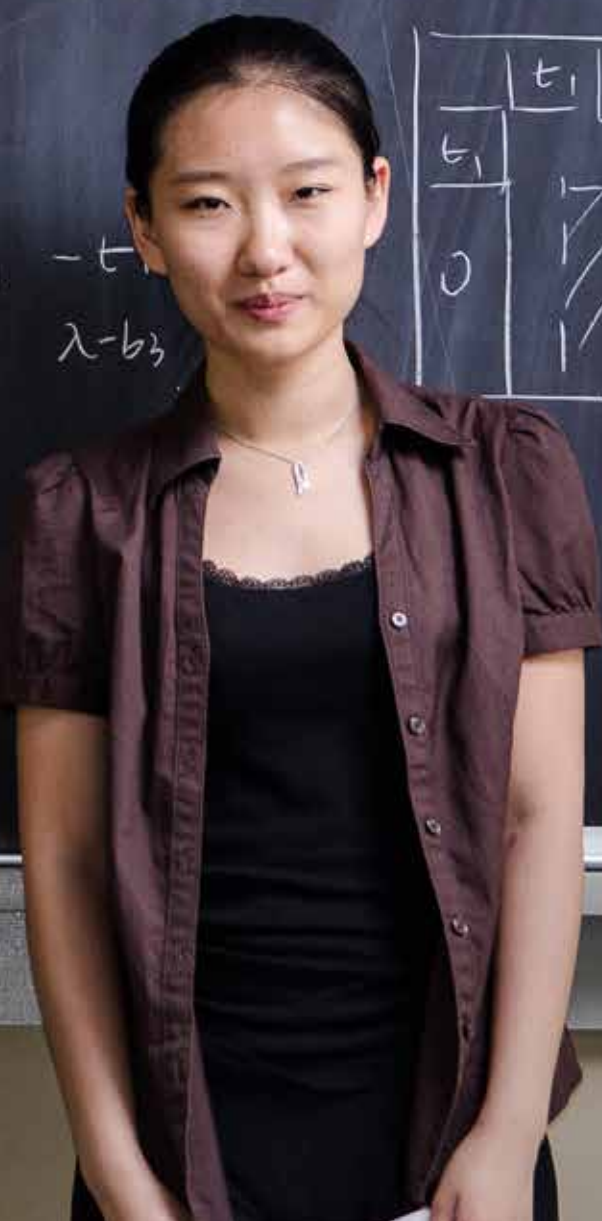
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(The bottom-right area of the table is shaded with diagonal lines.)

“If there are people on other worlds, I can’t communicate using our languages, but maybe I can use math.”



A portrait of Jillian Adair, a young woman with long blonde hair, looking slightly off-camera with a gentle smile. She is wearing a blue patterned top under a grey cardigan. The background is blurred, suggesting an outdoor setting.

“It was really beautiful to see the connection between land and water.”

JILLIAN ADAIR

BS/MS ENVIRONMENTAL SCIENCE '16

By Mary Caparosa '16

“I’ve always loved nature, but I never thought I could turn that passion into a career,” says Jillian Adair, a junior in Drexel’s Department of Biodiversity, Earth and Environmental Science.

The once skeptic took a 12-week adventure last summer with the Sea Education Association, studying marine science and maritime history, and then sailing around New Zealand.

“It was absolutely amazing,” Adair says. “When we weren’t in class, we were learning how to sail. We sailed for 25 to 30 days and were in port for about 15. We slept on the ship when we were in port, but during the day, we explored the cities. It was really beautiful to see the connection between land and water.”

Adair is particularly interested in freshwater biological restoration and has studied how urban environments impact fish habitats.

During her first co-op at the Academy of Natural Sciences of Drexel University, she sampled streams throughout the Delaware Watershed for fish, salamanders and algae to characterize the health of the streams. During her second co-op at the New Jersey Department of Environmental Protection, she evaluated the health of New Jersey’s streams so the government could monitor the area’s progress.

“It’s incredible how much pollution comes from freshwater environments and then is transferred to the marine environment,” Adair says. “So the best way to attack pollution is from the freshwater perspective.”

The first step, she says, is to encourage collaboration. Governments, community partners and community members must work together to determine how they can address the problem. Adair wants to help foster those conversations.

“Ultimately, I could see myself working in a government center translating biological monitoring into action with community partners,” Adair says. “I’d like to get government agencies involved with funding and programming so they aren’t just monitoring — they’re actually helping.

“The solutions are out there,” Adair says confidently. “We know what to do. I want to translate the words into action and make a real change.”

CHARLES SHAW CERRONE '13

CYNTHIA MARYANOFF, BS '72

ORGANIC PROCESS CHEMIST
RECIPIENT, 2015 PERKIN MEDAL
INVENTOR ON 67 U.S. OR
EUROPEAN PATENTS
COFFEE-FARM OWNER

By Amy Weaver

What inspired your interest in chemistry?

My first organic chemistry course at Drexel — it was mind blowing to me. Writing down structures of molecules and getting them to follow rules of reactivity, planning syntheses — it was fantastic!

I was raised in a small farming community with little exposure to science, except from my mom, who was a nurse. Marie Curie's story was compelling, so I knew I had to go to a city. Drexel's co-op program, which guaranteed all students — even females at the time — would be placed in science positions, was the key for me.

What was Drexel like in the '70s?

Chemistry had just moved into Disque Hall. Two new professors joined the department — Robert Owen Hutchins and Franklin Davis — and stirred up excitement. I met my husband, fellow chemistry alum Bruce Maryanoff, in Professor Hutchin's lab. Bruce was doing graduate work and I was doing undergraduate research. The three of us were like the Three Musketeers, working long hours and weekends together. I had 13 publications from my undergraduate research — and Bruce and I were married in 1971!

Tell us more about your co-op positions. My first co-op was an analytical position at Atlas Chemical in Wilmington, Delaware. Second co-op was in the Environmental Engineering department at Drexel: we studied the Philadelphia estuary to determine if it was getting cleaner (it was) and studied run-off from artificial lysimeters set up near landfills to characterize trash decay, its impact on the land, and how far possible pollutants, like heavy metals, could migrate. Both of these positions set me up for introducing green chemical processes to Johnson & Johnson. My third co-op was a National Science Foundation fellowship in Professor Hutchin's lab to conduct basic research. All three positions formed an excellent platform for my future endeavors.



What led you to Johnson & Johnson? My parents were role models for contributing to the community in which they lived, always volunteering. I wanted to make contributions as well, and focused on health care. By the time I completed my PhD and postdoc at Princeton, my husband was a happy medicinal chemist. I tried medicinal chemistry as a career at SmithKline & French for a little over four years, but the magnitude of variation in biological studies was too much for me. I joined J&J as a process chemist designing routes to scale up chemical syntheses for molecules to be tested as possible new medications. Chemical reactions have to be reproducible, with a variation of only +/- .5 percent, rather than +/-300 percent. I loved that! As I expanded my horizons, I went on to leading analytical and formulation chemistry, making sure our

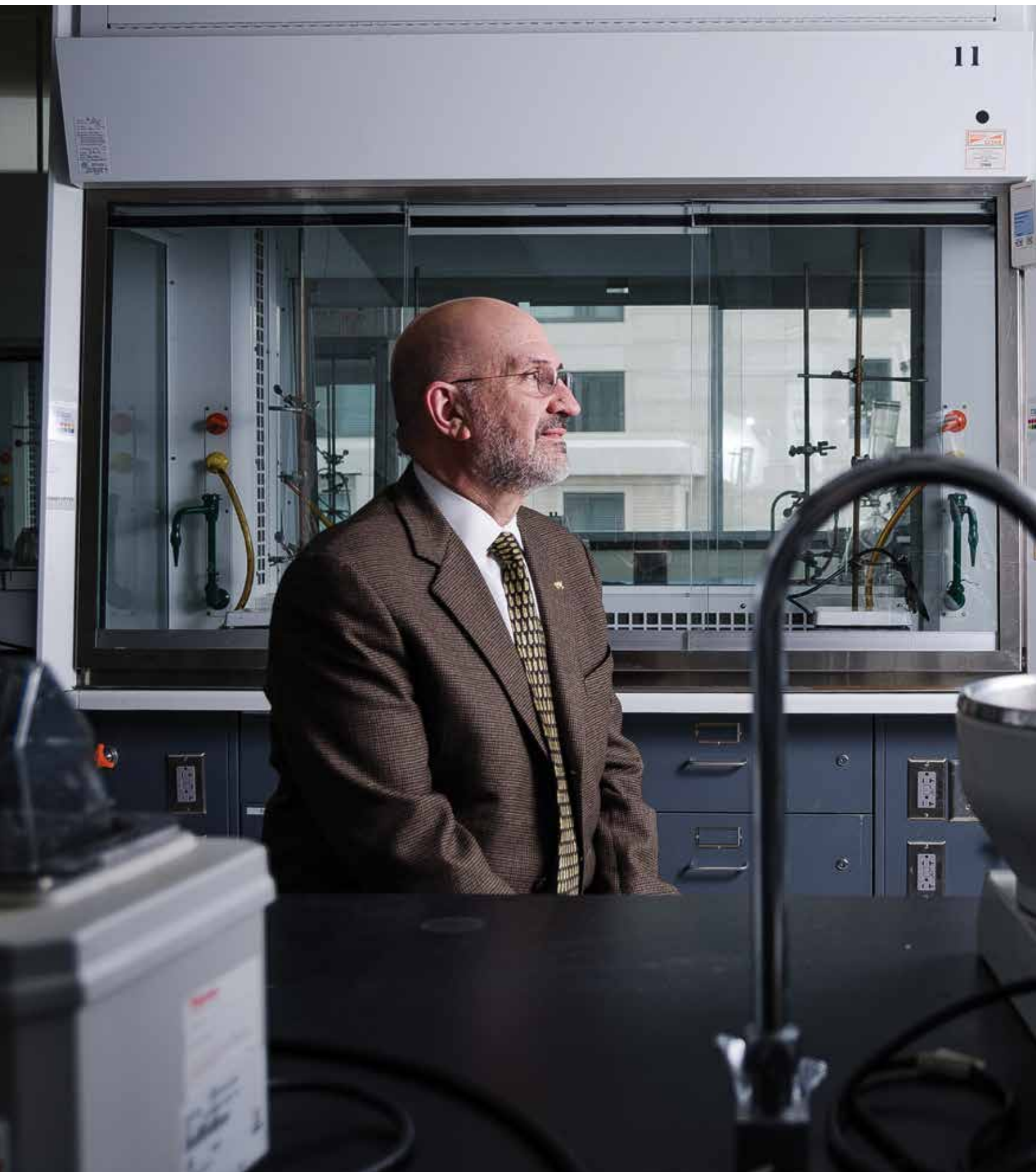
medicines were pure and bioavailable, and that our clinical supplies were safe for human use — all reproducibly! I later became Head of Chemical Development, U.S., for Johnson & Johnson and began interfacing more with our partners around the world.

What were your proudest accomplishments from your time at Johnson & Johnson?

My proudest accomplishment was developing a smooth-running group of people who all cared about getting new medications to patients. The scientists in my groups were fantastic and worked with extreme dedication. I moved to the medical device sector and was able to make very complicated presentations to the Food and Drug Administration that my management and FDA scientists all understood. That was satisfying because it moved products along to patients.

We heard you now own a coffee farm in Hawaii? Tell us more! We now own two coffee farms but we won't have our own beans until 2017. My husband and I love coffee. Together we grew more and more sophisticated in our taste. We had a supplier from Kona, Hawaii since 2002 and became addicted to his coffee. However, he and his wife retired. Knowing how hard it is to keep a quality like his — coffee with varying layers of tastes and aromas as you enjoy a single cup — we tried to buy his farm. While that didn't work out, we did eventually buy two different farms and are really getting into growing quality Kona coffee. I cannot drink caffeine anymore, so we are developing a method to decaffeinate without removing that signature flavor. The beauty of Hawaii makes you forget how much hard work it is. It's all chemical processing, after all!

What lessons have you learned and carried with you? In God we trust; all others bring data. Always ask questions and make your team comfortable about having their data discussed openly. Having "yes men" report to you does not move projects forward. Never be afraid to nurture a future Nobel Laureate; by supporting the best and the brightest and holding them accountable, everyone moves forward. Enjoy every minute because all you can be sure of is change!



IRA TAFFER, PhD
BS '79, PhD '83

INTERIM DEPARTMENT HEAD OF CHEMISTRY,
DREXEL UNIVERSITY COLLEGE OF ARTS AND SCIENCES
By Mary Caparosa '16

From the age of three, Ira Taffer knew that he wanted to be a chemist — at least, that's how his mother tells it. What he may not have known was how big a role Drexel would play in shaping his path. He has been a student, co-op employer, Baiada Institute mentor, advisory board member, Alumni Association chair, and then, coming full circle in 2013, interim head of Drexel's Department of Chemistry.

The role was unexpected, but, as Taffer says, "Nothing I've done has been expected."

Almost immediately after graduation, he started his own business.

"If you would have asked me a week before what I was going to do, it wouldn't even have been on my radar," he says with a laugh.

One Drexel friend *did* ask, to which Taffer replied simply, "I guess I'll find a job."

"Do you want to start a business?" his friend and future business partner, Robert Zipkin '79, asked in return.

Taffer said yes, and the two of them began BIOMOL Research Laboratories, a producer and supplier of life science reagents for pharmaceutical companies, government agencies and university researchers. The company focuses on signal transduction reagents, which regulate how cells start and stop their specific function.

"In the early years, when we needed a new employee, we would call Drexel and they would send over students," says Taffer. "Our first employee was a Drexel co-op who then worked for us for 26 years. At one time, we had seven employees and six of them had an association with Drexel."

Taffer and Zipkin created and produced thousands of molecules over the 27 years the two worked together. BIOMOL eventually gained international recognition for a discovery that could lead to new treatments for age-related illnesses, and the company flourished.

In 2008, the pair decided to sell BIOMOL, which ultimately led Taffer back to Drexel and the many roles he's taken on since. The connection he feels to the University and his department grew out of the camaraderie he felt as a student, he says.

"We were mostly commuters," he recalls. "It wasn't unusual to be taking the Chestnut Hill train home with four other people and to be doing your physics homework."

Each student pushed to work harder than the other, Taffer says, but if anyone was stuck, the classmates would stop to help each other.

"It was also quite common to be out on a Saturday night with some faculty, grad students and seniors," he recalls. "We learned and had a good time together; it was great."

Although the University has changed in countless ways since Taffer first stepped foot on campus in 1974, he says the most important values have remained.

"I think the relationship students have with the faculty is different than at a lot of other schools," Taffer says. "I've noticed this from the time I got here as a student to today. The faculty here are much more open and accessible. At the end of the day, everyone just wants to see our students succeed."

ELIZABETH LOMBARDO, PhD '02

**CLINICAL PSYCHOLOGIST,
BEST-SELLING AUTHOR,
MEDIA CONSULTANT**

By Diane Ketler

"My life was forever changed by a man whose leg had been amputated," says Elizabeth Lombardo, PhD, a clinical psychologist and national media consultant, recalling a former patient at the Baltimore Veterans Association Medical Center. At the time of their meeting, Lombardo had just graduated from Duke University with her master's in physical therapy.

"I knew if I could get him up on the parallel bars, he'd be able to walk," she says, "and I could teach him how to transfer in and out of his wheelchair."

But the veteran didn't share her optimism. After losing his leg to complications from diabetes, he was angry, frustrated, depressed.

"Someone literally cut this man's leg off," Lombardo says. "He needed to talk about it. He needed to process the loss, but I didn't have any of those skills [to help him]."

She considers that day a sign of her true purpose in life. Soon after, she applied to doctoral programs in clinical psychology and chose Drexel's program (formerly part of Hahnemann University) because of its location and because of Arthur Nezu, PhD, one of the program's directors, with whom she interviewed.

"Art is incredible," she says, "I really liked his skills-oriented approach to helping clients. I knew I had to work with him."

The mentorship she received from Nezu and his wife, fellow Drexel psychology professor Christine Maguth Nezu, PhD, was invaluable in her training.

Lombardo remembers she and her classmates trying to outwit the two professors, proposing complicated scenarios, posing as the most difficult clients, but the Nezus would always have an answer.



KARL KRUMMENACHER

REBECCA GOODMAN, BS/MS '11

**DIRECTOR OF PUBLIC RELATIONS,
COMCAST SPECTACOR**

By Daaimah S. Etheridge '12

"On my first night of co-op with the Philadelphia 76ers, my boss led me into the Sixers locker room where the media was gathered," recalls communication alumna Rebecca Goodman. "He handed me a tape recorder and said, 'In five minutes, these reporters will be interviewing Allen Iverson. I need you to go in there and record everything he says.'"

"I grew up reading the *Daily News* sports section and watching Comcast SportsNet every day," Goodman adds, "and there I was, standing in front of Allen Iverson with Phil Jasner on my right and Dei Lynam on my left. In that moment, I realized that this is how stories get told."

Goodman, now the director of public relations for Comcast Spectacor, vividly remembers her first visit to Drexel, long before she stood in front of the Sixers.

"My twin sister and I toured the campus during an Accepted Students Day. It was the only school we toured," she says. "My initial impression was that the school was incredibly forward-thinking and technologically advanced. We were blown away."

Both sisters ended up matriculating to Drexel and both began working toward degrees in education. But during Goodman's freshman year, a course with communication professor Allan Stegeman — Mass Media and Society — made her reconsider.

"It was exciting listening to Professor Stegeman's lectures," Goodman says. "We talked about gatekeeping and how the news is generated. We talked about how we, as a society, come to know what we know about world events. I realized that communication majors could do anything with that knowledge. There were opportunities to make a real impact with that degree."

Goodman decided to change her major and enrolled in the College's Accelerated BS/MS in Communication program. Her ambition and fascination with the field soon led to her co-op with the Sixers.

"Networking is key," Goodman says. "I landed my co-op through a summer camp where I was a camp counselor. One of the children's fathers was the head of public relations for the Sixers. I walked up to him one day and told him about my co-op requirement. I asked if I could work with the Sixers, and he said yes!"

"They're unbelievable clinicians and researchers," Lombardo says, "I feel so fortunate to have worked with mentors who were so strong in both of those areas, because that doesn't always happen."

The majority of Lombardo's research and clinical hours were spent with cancer patients at the Bone Marrow Transplant Unit of Hahnemann Hospital. Many of the patients were terminally ill, and one still sticks out vividly in her mind: a father in his 40s diagnosed with stage 4 pancreatic cancer.

Given just two months to live, the man was estranged from his adult children and riddled with guilt about the father he had been to them. Through their work together, Lombardo, then 28, was able to help the man find forgiveness and reunite with one of his two children.

"Helping him get to a place of peace before he passed, getting to be a part of such an intimate, meaningful experience and getting to teach him skills — that will always stay with me. That's what I view as the role of a psychologist: to help people learn new skills and how to interact with the world differently," she says.

When she graduated from Drexel, she poured purpose and passion — words she lives by — into everything she did, first in

her private practice, then as a bestselling author, wife, mother, and ultimately, as a media consultant appearing on countless programs including "The Dr. Oz Show," "The Today Show" and the "Steve Harvey Show."

Years earlier, though, Lombardo never would have predicted a career in the national spotlight.

"When I got married, I didn't even want to have a videographer at the wedding because I was so uncomfortable in front of a camera," Lombardo says. "But when I wrote my first book, the stats were pretty poor. I wanted more than just my mother and my husband to buy the book."

So she created a national platform for herself, getting the word out through speaking and media engagements. Lombardo made her first national TV appearance on "The Montel Williams Show" as one of three doctors speaking on the emotional aspects of pain.

Since then, her reputation and media reel has grown exponentially. She's appeared as a guest expert discussing everything from "happiness hangovers" with "Fox & Friends," to stress management on "The Today Show." But despite speaking in front of millions on a regular basis, she

remains humble and focused.

"I made a big shift in my ability to be effective in the media when I went from focusing on 'Don't mess up, don't mess up,' to 'What's my purpose and passion?'" she says. "My purpose and passion are to teach at least one nugget of advice that at least one person can hear and apply to their lives."

Of all the people she's met in green rooms over the years, it's not the celebrities who leave a lasting impression.

"I remember this one young man who was 17 or 18 and had just won 'Jeopardy,' and he was so nervous. We had this really fun conversation about his life and what he wanted to do after 'Jeopardy,' because he was just graduating from high school and going into college," she says. "It's those kinds of real people who I find most interesting."

Lombardo has worked with individuals from all walks of life — household names like Shaquille O'Neal, CEOs, mothers, the terminally ill — but her role with each client remains the same.

"I help people develop a sense of resiliency and perseverance. That's what I get to do. I get to teach people skills so they can flourish, so that they can fulfill whoever they're supposed to be. I don't know what's more incredible than that."

After her co-op ended, Goodman found herself working with the team's game-night public relations team while attending Drexel as a full-time student. She also assisted with the Sixers' game-day publication *Drive Magazine*, and started going to practices to interview the players.

She did a second three-month co-op at Comcast Corporation and a third co-op with the Sixers again. After her fourth year at Drexel, a coordinator position opened up in the Sixers' public relations department.

"It was a hard decision because I wasn't done with school yet, and it was really important to my family that I finish my degree," says Goodman. "I promised my parents that if I got the job, I would finish my degree no matter what."

Goodman landed the job and started working during the day and attending school at night. In 2011, she graduated with both her bachelor's and master's degrees.

Following her stint with the Sixers, Goodman worked as a publicist for the Philadelphia Flyers before moving on to her current position at Comcast Spectacor, where she oversees public relations for all events at the Wells Fargo Center. In the evenings, she gives back by teaching a communication course at Drexel called Publicity and Promotion.

"I tell my students that they are their best advocates," says Goodman. "To get that awesome co-op, you may need to pick up the phone or send an email. My students have some of the most incredible opportunities: one completed co-ops at both *Harper's Bazaar* and Marc Jacobs. Another worked for the United Nations. I'm blown away by what they have accomplished!"



CHARLES SHAN CERRONE '13

ZEE HAKIMOGLU, MS '79

PRESIDENT, CEO AND CHAIRMAN OF THE BOARD, CLEARONE

By Amy Weaver

Zee Hakimoglu's first laboratory was a rock under a makeshift fort that she and her sisters built alongside a small creek at her family's home in New Jersey. Hakimoglu, then 11 or 12 years old, spent her days and evenings at the water's edge, studying the spiders and wondering about the constellations.

"I had a very keen interest in nature in a scientific sense," she says. "Growing up with sisters, no one ever said, 'The boys go on to school and science careers and the girls do this or that.' I had no door closed. It was at that time that science became a real possibility for me."

In the flower power days of the late '60s, Hakimoglu's family relocated to Los Angeles. Those were her high school years, a time when she and her twin sister would occasionally choose the beach over the classroom.

"I was not necessarily the best student," she says, "but I did manage to do very well in my senior year, and once I got to college, I straightened out."

After graduating with her bachelor's degree in physics from California State College, Sonoma, and her master's in physics from Drexel, Hakimoglu accepted an associate engineering position at aerospace and defense giant Lockheed Martin, in their Silicon Valley office.

Communication theory became her focus after that first job at Lockheed — solving broad conceptual problems related to the transmitting of information. It's a focus that has found its way into every position she's held since, including more than 25 years of executive management roles in business development, product development and product marketing at a number of publicly traded technology firms.

For the last 12 years, Hakimoglu has served as president, CEO and chairman of the board for ClearOne, a communications company specializing in audio and video conferencing systems and products.

"Whether in wireless, fiber optics or conferencing, I've worked at the systems level throughout my career, dealing with audio, video and data," she says. "Today, it's all digitized, and digitized data has to be compressed to be sent over networks. There are lots of theoretical methods and processes on how this is done so that you don't lose quality or use too much bandwidth. It's very interesting work and in some ways, it's very physics-oriented; these are macro-systems that have a life and rules of their own. You keep exploring and extending those rules to see what you can do to get more information reliably from point A to point B."

In fact, Hakimoglu says, her physics degree from Drexel provided some of the best training for the work she does today.

"Physics encourages big-picture problem solving. You take a complex problem or system and boil it down to its most simple, fundamental elements," she says. "You learn that you have to be self-reliant, to have confidence in your ability to solve complex problems, to not be afraid of making mistakes, and to think creatively but with discipline. Physics also encourages innovation, and that's what I do now — I'm here to solve problems with novel solutions."

Hakimoglu's lessons in innovation and leadership actually began long ago though, long before her first physics classes, when she was a young girl watching her father start and run two successful electronic telecommunications companies.

"My father was one of a kind," Hakimoglu says with fondness. "He was what we call an entrepreneur today, but without the venture capital funding. He never told us what to do with our lives. Instead, he would say, 'Even if you end up digging a ditch, then dig it well, as others are depending on you to do so.'"

With the encouragement of her father and the support of bosses and colleagues along the way, Hakimoglu has found success in a largely male-dominated industry.

"When I worked at Lockheed, I had a wonderful but tough boss," she says. "He sent me on a trip as a junior engineer to do a software upgrade on a nuclear submarine. I was so green behind the ears, I didn't know what was happening, but he had expectations of me and I worked hard to meet them. He helped by giving me a chance. That's all you can ask for — to get a fair chance."

Although she says she still felt pressure to be better, to work harder, to bounce back quicker than her male counterparts, she learned to be resilient in the process. More importantly, she learned never to see her gender as a weakness.

"I think that women in science and technology should not lose their femininity or their female instincts — their compassion, their artistry, their creativity," she says. "You should not suppress it but instead use it to empower you. If you do what you like and stay true to yourself, your sense of accomplishment and achievement will follow."





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MARYANN FITZPATRICK AND WOLFGANG NADLER

INSTRUMENTATION SPECIALISTS, DREXEL UNIVERSITY COLLEGE OF ARTS AND SCIENCES

By Mary Caparosa '16

"It was very rapid, the adoption of the computer here at Drexel, and the use of it," Wolfgang Nadler says. He gestures to a wall above his desk that he calls the "nostalgia wall." It's a visual encyclopedia of how information has been shared. There are at least a dozen pieces of technology. He begins to explain the pieces, how they progressed into what we have today.

When he gets to the first personal Apple computers, he pauses. "You like stories?" he asks. "This is a good one."

Maryann Fitzpatrick continues his thought: "We had the very first stolen Mac at Drexel," she says with a laugh.

It's amazing how in sync the two are, but working together for 32 years will do that.

Fitzpatrick and Nadler design and build many of the instruments that students, professors and professionals use in their research at Drexel. If something has never been done before, you can bet that Fitzpatrick and Nadler will try to do it.

Back in the 1980s, the pair had a hand in choosing and developing the computer network for the College (then the College of Sciences). When Apple and IBM presented on campus, the University had to decide which company's products to use. Eventually, Drexel chose Apple, and Fitzpatrick and Nadler were given one of the University's first Apple computers.

Naturally, they were fascinated by it. The first night, Nadler took it home to show his kids. The night after, Fitzpatrick got a turn to show her family. The next day, she brought it back and locked the office before heading out to another building.

"By the time I got back, it was gone," Fitzpatrick recalls. "Wolf thought I didn't bring it from home."

"I asked her where it was," Nadler interjects. "And she said, 'It's here!' and I said, 'No, it isn't!'" he says with a laugh, shaking his head.

"Someone had stolen the key from another room and managed to climb over into our office," Fitzpatrick says. "They took the computer and a few other instruments. When we went next door, there were footprints all over the wall."

"First Mac ever stolen at Drexel," Nadler jokes.

"When we went next door, there were footprints all over the wall."

It wasn't his only notable first with these computers: "I was the first person to hack a Mac at Drexel — not software-wise, but electrically," he says proudly.

At the time, there were no overhead projectors like those we know today, so Mac computers weren't able to project onto screens. The inventive Nadler designed a video board to connect to large televisions in the classrooms.

"That's the ideal situation: Someone has a project and they need an instrument for it, so we get involved," he says.

"And then we build it!" Fitzpatrick finishes.

The two of them have seen many diverse projects. "That's the beauty of this job. That's why we're still here," Nadler emphasizes.

"It's never boring," adds Fitzpatrick.

"You always rub elbows with people who are smarter than you," says Nadler. "Everyone treats you as a colleague. It's a nice environment to work in. It's very stimulating."

"And you never know if you can do what it is they're asking," Fitzpatrick says. "It's challenging, but fun."

At the root of their jobs, Nadler and Fitzpatrick are problem solvers, innovators and creators. They are the realists. They take ideas of great scientists, from the simple to the far-fetched, and turn them into tangible items. If you're ever in need of a good story, head over to their office in Disque Hall. Sit down among the stacks of history. Nadler makes a mean cappuccino, and their passion and excitement are infectious. Make yourself at home with the facilitators of technological change at Drexel. You'll leave inspired, knowing that anything can be done — you just need the right tools.

GEORGE W. ULLRICH, PhD

BS '69, MS '71, PhD '75

**SENIOR VICE PRESIDENT FOR STRATEGY
DEVELOPMENT, APPLIED RESEARCH
ASSOCIATES**

By Tim Hyland

There aren't a lot of people who can say their career path has been directly impacted by the changing winds of geopolitics — or that their work has directly informed how the United States has responded to those changing winds.

George W. Ullrich is one of the few.

Ullrich, who earned his BS, MS and PhD in physics from Drexel, has spent the last four decades working in and around the U.S. defense industry, and has, over the course of his winding career, established himself as one of the leading experts on nuclear warfare and national defense, tackling everything from weapon development to risk analysis and disaster preparedness. He has worked for the U.S. government and for the defense contractors who work on behalf of the U.S. government, has served on boards and panels from the U.S. Strategic Command's Strategic Advisory Group to the Air Force Scientific Advisory Board, and was awarded the Secretary of Defense Distinguished Civilian Service Medal, the department's highest civilian award.

He has also played a key role in the evolution of the nation's defense infrastructure.

His hard work, expertise and ability to adapt to the changing dynamics of global politics — and, by extension, the changing dynamics of the defense industry — have much to do with Ullrich's incredible success. But Ullrich himself says there's at least one other reason why he's been able to enjoy such a long and successful career. That reason, he says, is the Drexel Co-op program.

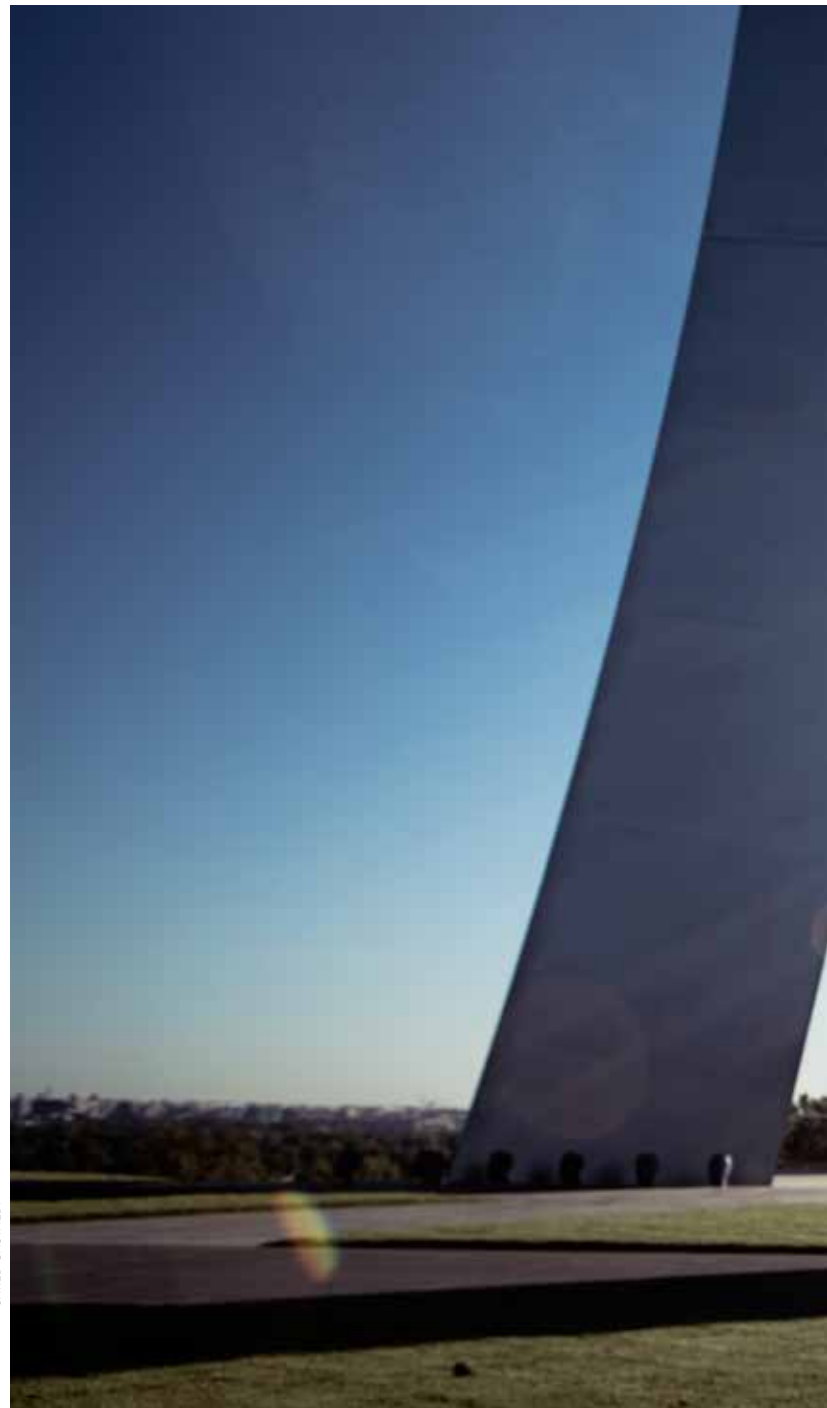
"I honestly believe co-op really helped me," Ullrich says. "I didn't plan [my career] this way. I think people sometimes over-plan their careers. I believe in the value of trusting your instincts, and for me, that's made for a very rich career."

As a star student at St. Joseph's Preparatory School in Philadelphia, Ullrich had plenty of options when it came to his college choice. But after seeing his older sister enroll at Drexel — and after seeing her get the opportunity to work alongside top researchers through her co-op — he was sold on becoming a Dragon. He enrolled as part of a unique fellowship program designed to help Drexel attract some of the top students in the Philadelphia area, and very quickly came to understand that he had made the right choice.

"My co-ops were all with General Electric, and it was an experience I'll never forget," Ullrich says. "I made professional connections there that continued for years down the road — these are people that I still have interactions with to this day. To be sure, it set me up for success when I graduated."

That might actually be an understatement. Ullrich so impressed his bosses at GE that, upon his graduation, he was offered a position working on the company's Viking Mars Lander project team. He was later diverted to what he called the "dark side" in GE's reentry business when the Viking project was awarded to a competitor, and from there, he only enjoyed greater successes.

After a stint with the U.S. Army Mobility Equipment Research and Development Center, where he began working on military barrier systems, he would later spend more than 20 years with the Defense Nuclear Agency, where he served as Director of Shock Physics, overseeing all energy programs tied to President Ronald Reagan's famed "Star



JARED CASTALDI

Wars” program, and later as Deputy Director, serving under then Secretary of Defense Dick Cheney. In that role, he led efforts to transform the agency to meet the nation’s changing defense needs, transitioning from a nuclear-first organization to one focused on everything from counter-proliferation to arms control to treaty verification.

He would later return to the private sector, and now serves as Senior Vice President for Strategy Development at the international research and engineering firm Applied Research Associates, where he leverages his years of expertise to identify emerging trends and potential growth areas in national defense.

Looking back on his career, Ullrich says he’s proud of the work he’s accomplished, and somewhat amazed at all the changes he’s

seen: the end of the Cold War, the rise and fall of the nuclear era, the national tragedy of 9/11 (he was working for the Pentagon at the time of the attacks).

He’s managed to thrive despite all of the change — and says that his willingness to adapt with the times has been a big factor in his successes.

His advice to his fellow alums and current Drexel students?

“When an opportunity opens up, take advantage of it,” he says. “I’ve found that, particularly in times of rapid change and turmoil, there are many opportunities created. You must take advantage of change and the opportunity that change presents — and don’t be too rigid in your career plans.”





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PATRICK RAFFERTY, BS '87

MANAGING PARTNER, RAFFERTYWEISS MEDIA

By Tim Hyland

Patrick Rafferty's entrepreneurial adventure began with a promise to his wife.

The year was 1993, and Rafferty was a young television copywriter and producer working for Nagy Films, a small production company in Washington, D.C. Rafferty enjoyed the work, but after six years in the industry, he saw an opportunity that he knew he had to seize — even at the risk of upsetting his new wife.

"It was kind of scary," Rafferty says. "When I first started out, we had just recently gotten married, and I was making this decision to leave a full-time job to start working as a freelancer. My wife was looking at me like I was crazy."

She had good reason, too. To get the funds he needed to launch his new venture — a company that would help large organizations tell their story through the then-exploding medium of digital video — he sold off the couple's brand new wedding china. But promised he'd buy it back for her within a year.

He did precisely that, and in the years since, he's gone on to establish his firm, RaffertyWeiss Media, as one of the most sought-after video production companies in the Northeast.

His company works with health care firms, nonprofits and other organizations to create award-winning commercials, public service announcements, documentaries, marketing videos and more. Over the years, he's interviewed numerous celebrities — everyone from Wyclef Jean to Ross Perot, Bill Gates to Hillary Clinton, Val Kilmer to Quincy Jones — and counts among his clients Discovery Communications, the Centers for Disease Control and Prevention, Georgetown University, the National Institutes of Health and Walt Disney Pictures.

The firm targets only high-end work from high-end clients — a

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SHOVAL DORANI, BS CRIMINOLOGY & JUSTICE STUDIES '17

By Maria Zanke

Shoval Dorani has looked justice in the eye before.

Rather than diving into college after high school, Dorani left her hometown of Wynnewood, Pennsylvania, to fight in her father's native country for the Israel Defense Forces.

As a canine handler and commander in the IDF, Dorani — along with her trained military dog, a Belgian Malinois named Gula — came face-to-face with enemy soldiers in combat for three years.

So, when she left the IDF to study in Drexel's Criminology and Justice Studies program, Dorani had one goal in mind: she wanted to "lock up criminals."

"I've always been very physical, and I loved the excitement and the adrenaline, the adventure of the military," Dorani says. "I knew I wouldn't just be able to sit at a desk all day [for my career.]"

But shortly upon her arrival at Drexel, Dorani came to know a side of the criminal justice system she'd never expected.

She signed up for one of the College's community-based learning courses — a class called Prison, Society and You — and says it changed the way she envisioned her future in criminology.

During the course, 15 Drexel, or "outside," students, visited the Curran-Fromhold Correctional Facility (CFCF) in Philadelphia,

where they met with 15 incarcerated men — "inside" students — in a peer-to-peer open dialogue about social justice.

For four hours each Thursday, Dorani spoke with and listened to the "inside" students.

"We were all involved. We all shared our thoughts and opinions about the criminal justice system, and got to share things about ourselves," Dorani says. "How many people can say they've hung out with prisoners and got to hear what they think? You always hear the outside perspective, but it was truly eye-opening to talk with the ones on the inside."

The experience was so moving to Dorani that she signed up for not one, but two more community-based learning courses.

She delved into the world of political science in the course Constitutional Controversies, where she and the "inside" students at CFCF explored the First Amendment and prominent Supreme Court cases.

"It was so interesting to hear the opinions of people I would otherwise never be communicating with," Dorani says.

Later, in the writing course Once Upon a Time (So Far...), the "outside" and "inside" students crafted personal memoirs, sharing

strategic decision that Rafferty says he and his partners made from the very start. And in truth, Rafferty says, that decision has been crucial to the firm's success.

"When we started, we made a pact with each other that we weren't going to do work that we didn't really want to do," he says. "We weren't going to go after the low-hanging fruit. From a business standpoint, that was a very smart thing for us to do. And so, we continue to this day to look at everything we do from that business standpoint."

The fact that Rafferty is in business at all — and that he's making a career in film production — is somewhat of a surprise, even to him. After all, when he first enrolled at Drexel, his main focus was basketball (he was a star player for the first Dragons team to ever make the NCAA basketball tournament). And if he had any ideas about his career, they were focused on the world of politics.

Everything changed, though, when his Drexel co-op landed him a job working at a D.C.-area radio station alongside longtime University of Maryland sports play-by-play man Johnny Holliday. It was there that he got his first taste of media production, and by the time he was a senior, he was sold on the world of media — thanks, he says, in large part to his co-op experience and his challenging classroom training.

"Drexel was a stretch for me," he says. "It was hard academically, very strenuous. But it taught me a lot. It helped me grow up."

So much so, that by the time he graduated with his degree in communication, Rafferty felt ready for any opportunity that may come his way. After briefly considering a move into sports broadcasting, he ultimately decided to return home to D.C., where friends and colleagues had told him of a fast-growing market in video production. He landed a job at Nagy Films and found himself thrown into high-profile

projects right from the start.

"This was the late '80s, and getting a job then was tough," he says. "But I think the fact that people knew I played sports and the fact that they really respected the Drexel name helped a lot. Because of co-op, they knew I worked — that I wasn't just a life-guard during my summers."

Nearly 30 years later, Rafferty is still working, still delivering high-quality productions for his clients, and still building the RaffertyWeiss brand.

He says the experience has been great — and one that has made sacrificing his wife's beloved wedding china worth it.

"The competition is as tough as ever, but the world of video production has changed and it's changed for the better," Rafferty says. "I still believe our difference is our experience. People are comfortable working with us because they know we can go in there and interview a Bill Gates or a Wyclef Jean or a John Glenn and do a great job. People trust us."

each other's past experiences and dreams for the future.

"I kept coming back to the community-based learning courses because, over the time I was there [at CFCE], I felt like I was learning the most I could possibly learn," Dorani says.

"You can sit in a classroom and learn from a textbook all you want, but when you go into a correctional facility and hear the experiences of those who have been incarcerated, you realize these are smart people," she says. "Hearing their perspectives made me see a whole different side of the criminal justice system, its issues and how deeply flawed it is."

Dorani says the experience has inspired her to dedicate her career to helping those affected by the system.

"It introduced me to an entirely different side of the system and to the people we define as criminals," Dorani says. "It made me realize maybe I would like to work on that side to help the incarcerated."

As she embarks on her junior year with her eye on a spring co-op, Dorani is confident Drexel has led her where she's meant to be.

"I know my major is right for me. I know Drexel is right for me. I'm still learning, but I know I'm in the right direction," she says. "I've already seen some of the things I've learned come to life."



CHARLES SHAN CERRONE '13

"I was standing in the restaurant of the Four Seasons in Beijing. Camera lights were flashing, a model was posing; I was in the middle of it all. This was my 'aha' moment. It was when I realized all of my hard work spent networking, traveling, organizing photo shoots, staying up late to design and maintain my website — it all paid off. 'This is happening,' I thought. 'I created my own career.'"

Ian Michael Crumm, a senior communication major at Drexel, smiles as he recounts one of his fondest memories: helping to organize and model in a fashion shoot for Beijing's *LifeStyle* magazine with one of the

city's well-known fashion bloggers. His friend and fellow Drexel communication major Mollie Snyder was on co-op with the magazine at the time and invited Crumm to be a part of the spread.

"We shot a lot of amazing photos, some for my personal style blog [ianmichaelcrumm.com], some for *LifeStyle*, and some for a new website Mollie and I developed [wearwewent.com], which is geared toward the young traveler," Crumm explains.

Balancing projects like this with school is all in a day's work for Crumm, who manages his own personal brand in addition to collaborations with designers and business owners in the Philadelphia area and beyond.



Crumm comes from a family of entrepreneurs and business owners who gave him a good sense of how to run his own company. At 22 years old, he has the business savvy of an established entrepreneur and a surfeit of energy and enthusiasm that stems from his passion for the fashion business.

"I started collecting sunglasses when I was 8. I've always loved clothes," he says with a laugh, reminiscing about dressing himself as a child. "I remember being in elementary school, strategically planning my outfits."

In high school, he and a friend were co-presidents of the National Art Society. They decided they wanted to start a

fashion show, so Crumm took it upon himself to plan and promote the event.

"That was the moment I said, 'This is awesome; I want to work in the communications world with design and fashion.' I chose communication as my major and it evolved from there," he says.

These experiences in high school brought Crumm to Drexel, where "fast-paced" and "self-motivated" are integrated into the "Drexel DNA," as he calls it.

"The environment here helps you get out into the world," he says. "Philly in general is very collaborative and a welcoming space for young professionals. I came to Drexel for that reason and for the co-op program."

Over the past four years, Crumm has capitalized on his co-op experiences with a multitude of companies. He's worked in public relations and event planning for the likes of Prada in New York City and the Chamber of Commerce in Philly. He established the first-ever co-op with Philadelphia social photographer HughE Dillon and has also worked for a talent management company and a local PR firm.

Even before he started co-op, he was making connections. Instead of going home for the summer between freshman and sophomore year, Crumm decided to stay in the city and work with a local event planner to organize a fashion show. Shortly after, he connected with a local designer to help build her brand, coordinating a trunk show, supporting her social media and styling her photo shoots — all while beginning his first co-op.

Networking has been an integral part of Crumm's journey.

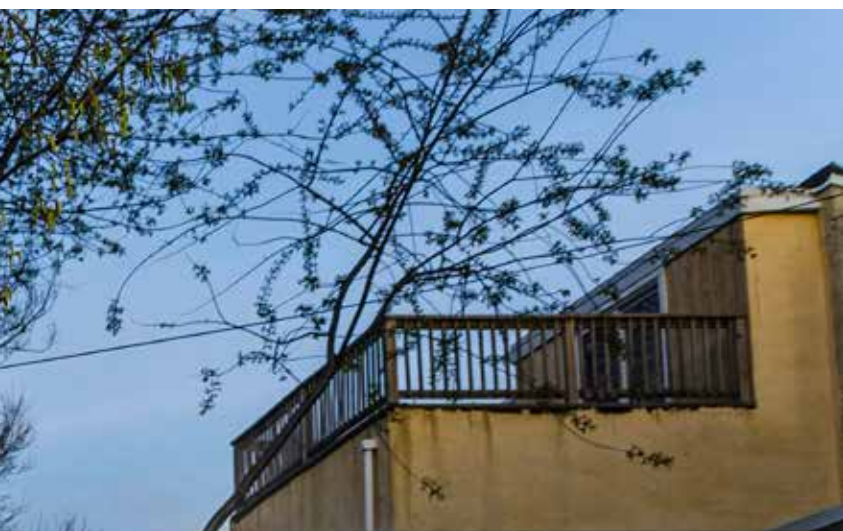
"I go to events and try to meet new people to see how we can work together," he says. "I collaborate with different brands, which gives cross exposure. Last spring, I partnered with Jonathan Adler to host a spring redecorating event at his store in Old City. Proceeds from the event went to benefit the Wistar Institute, [a biomedical research center in Philadelphia]."

Though Crumm hasn't made any final plans for life after graduation, his experiences in Beijing and at Drexel have reassured him of his path. He is certain it will be in the world he has immersed himself in the past four years.

"I've had a lot of different experiences with fashion, media and marketing, and I've loved them all. With my website, I get to pull a lot of things together, like styling, events, writing and collaborations. I could work in fashion, travel, PR, event planning, journalism, marketing... there are so many things I would love to do."

He smiles.

"I'll make my own way." ●



ANDREW PELLEGRINO '18



NEIGHBORHOOD

COMMUNITY CONNECTIONS

STORYLAB

Inspiration seekers are invited to unleash their inner creative writer in the new Drexel Storylab. A creative and professional resource, Storylab allows non-matriculated students, including alumni and the general public, to explore genres from fiction and poetry, to memoir and creative nonfiction. Unique insider-access workshops feature Drexel's incredible costume and specimen collections, inspiring writers through hands-on experience. Private manuscript workshops and a master class for advanced students are also offered.

Housed in the Department of English and Philosophy, the program is taught by practicing writers, including Storylab director and Philadelphia novelist Nomi Eve, author of "Henna House" and "The Family Orchard."

Workshops vary in length from one-day to 10-week programs, and are offered weekday evenings or weekend mornings. Writers of all levels are welcome. Drexel alumni receive a 10-percent discount.

LEARN MORE AT: Drexel.edu/Storylab



Nomi Eve



Homegrown

While farm-to-table restaurants are trending, hundreds of thousands of people remain without access to fresh foods. Drexel environmental studies student Lindsay Bushong is hoping to put a dent in that number, one family at a time. In 2014, Bushong and classmate Christian Brown were working in the Drexel Dornsife Center community garden, teaching local residents plant and soil basics and sending them home with fresh produce. One of the residents in attendance asked how the raised garden beds were built.

"We tried to explain but realized it would just be easier if we showed her," says Bushong. "That conversation spawned the idea for Backyard Beds. We began going to residents' homes and installing raised [garden] beds for them."

The organization's business model is simple: local residents apply through the group's website and, as long as the yard is suitable, the group installs a raised bed. The cost to install is based on a sliding scale and, once the garden is built, the group provides residents with educational materials and access to free workshops hosted by Drexel Urban Growers, a student group led by Bushong.

"Many people in the communities near Drexel can't access fresh food as easily as students or Center City residents," Bushong says. "Being able to act as a tool of action for city residents is incredibly rewarding."

Hope For At-Risk Youth

If you're an avid *Ask* reader, the name "Naomi Goldstein, PhD" will sound familiar. Last year, we featured Goldstein's collaboration with the Philadelphia Police Department, Philadelphia Department of Human Services, and School District of Philadelphia on the Philadelphia Police School Diversion Program, an innovative new approach to addressing in-school misconduct. Goldstein's evaluation of the program is supported by a grant from the U.S. Office of Juvenile Justice and Delinquency Prevention, and the first-year results are impressive:

- The number of school-based arrests in the 2014-2015 academic year dropped 54 percent from the previous year, prior to implementation of the program (a decline from 1,582 to 724 arrests).
- Arrests rates dropped significantly in the following areas: 87 percent reduction in possession of weapons and cutting instruments (from 162 to 21 arrests); 85 percent reduction in marijuana possession and use (from 130 to 19 arrests); and 77 percent reduction of disorderly conduct and fighting (from 319 to 74 arrests).
- The program diverted 486 students from arrest to support services, and the vast majority of these youth and their families accepted the program's voluntary intensive prevention services.
- Only six diverted youth (1.2 percent) were later arrested for other offenses in school or in the community — an impressive rate when compared to available data on the number of youth rearrested within

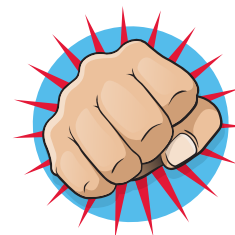
one year of release from correctional custody, which ranges from 37 to 67 percent, depending on the state (Mendel, 2011).

The American Civil Liberties Union of Pennsylvania reported that 5,261 school-based arrests took place during the 2011-2012 academic year in Pennsylvania alone. For many students, these arrests lead to detention or placement in juvenile justice facilities, says Goldstein, and 50 percent of those students later drop out of school upon release.

The initial outcomes of the Philadelphia Police School Diversion Program suggest significant progress in meeting the program's goals of diverting youth away from arrest, decreasing court caseloads, reducing collateral consequences of justice system involvement, and providing youth with preventative services to address underlying issues. The final report of President Obama's Task Force on 21st Century Policing cited the Philadelphia diversion program as a model of community policing, emphasizing the value of partnerships with community agencies.

Philadelphia Deputy Police Commissioner Kevin Bethel — the driving force behind the program's development — will spend the next three years expanding and disseminating the program as the first Diana A. Millner Youth Justice Fellow at the Stoneleigh Foundation. His work will be housed in Goldstein's Juvenile Justice Research and Reform Lab.

DISORDERLY CONDUCT & FIGHTING



77%
REDUCTION

MARIJUANA POSSESSION & USE



85%
REDUCTION

READING LIST

FROM CLIMATE CHANGE, TO CREATIVE INSIGHT, TO CHEMICAL PRODUCTION IN THE U.S., THIS YEAR'S FACULTY-WRITTEN PUBLICATIONS WILL HAVE YOU BRIMMING WITH CONVERSATION STARTERS FOR ALL OF YOUR DINNER PARTY NEEDS.

THE AMERICAN SYNTHETIC ORGANIC CHEMICALS INDUSTRY:

War and Politics, 1910-1930

Kathryn Steen, PhD | HISTORY

Prior to 1914, Germany dominated the worldwide production of synthetic organic dyes and pharmaceuticals like aspirin. When World War I disrupted the supply of German chemicals to the United States, Americans responded by trying to manufacture chemicals domestically; however, learning the complex science and industry posed a serious challenge. This book explores how the U.S. built a synthetic organic chemicals industry during WWI and the 1920s. Steen argues that Americans' anti-German sentiment in WWI helped forge a concentrated effort among firms, the federal government and universities to make the U.S. independent of "foreign chemicals."

COMMUNITY NEWSPAPERS AND THE JAPANESE-AMERICAN INCARCERATION CAMPS:

Community, Not Controversy

Ron Bishop, PhD, Morgan Dudkewitz '15, Alissa Falcone '14, and Renee Daggett '14

| COMMUNICATION

About 120,000 people of Japanese descent — two-thirds of them American citizens — were forced to live in internment camps during World War II. Though much has been said about the camps, little attention has been paid to the community newspapers closest to the camps and how they constructed the identities and lives of the occupants inside. In this book, Bishop and his co-authors reveal how journalists positioned the incarceration camps as a potential economic boon and how evacuees were framed as another community group, there to contribute to the region's economic well-being.

CLIMATE CHANGE AND SOCIETY:

Sociological Perspectives

Robert Brulle, PhD | SOCIOLOGY

Climate change is one of the most critical issues of the 21st century, presenting a major intellectual challenge to both the natural and social sciences. While there has been significant progress in natural sciences' understanding of climate change, social science analyses have not been as fully developed. Brulle breaks new theoretical and empirical ground by presenting climate change as a thoroughly social phenomenon, embedded in behaviors, institutions and cultural practices.

THE EUREKA FACTOR: Aha Moments, Creative Insight, and the Brain

John Kounios, PhD | PSYCHOLOGY

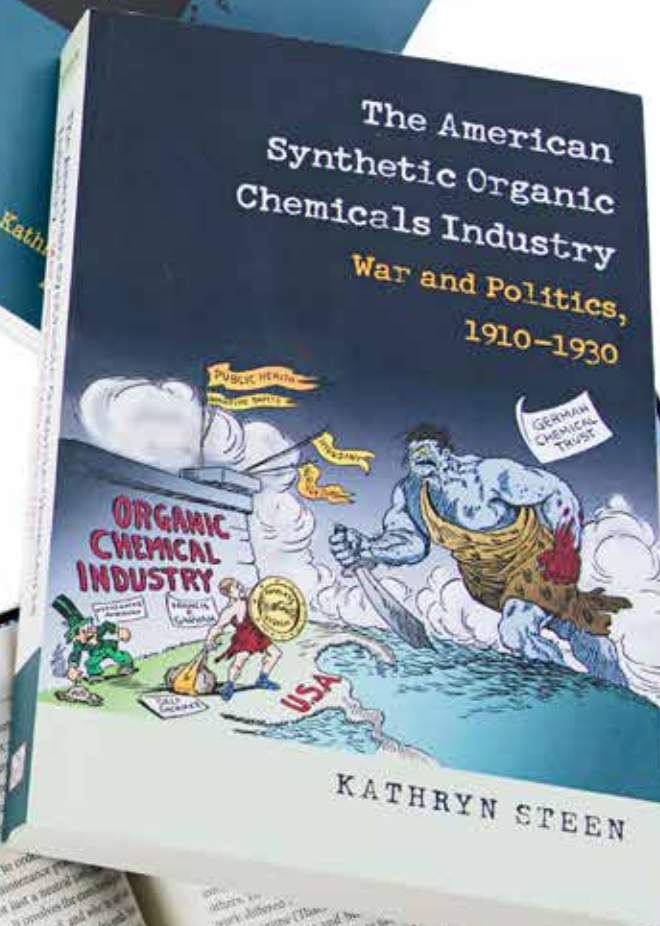
Eureka or "aha" moments are sudden realizations that expand our understanding of the world and ourselves. Kounios examines how these insights arise — including the



factors that impact our chances of having an “aha” moment and the relationship between insight and intuition — while also offering techniques for realizing your creative potential both at work and at home.

**A FIELD GUIDE TO THE TIGER BEETLES
OF THE UNITED STATES AND CANADA:
Identification, Natural History, and
Distribution of the Cicindelinae, 2nd Edition**
Dan Duran, PhD | BIODIVERSITY, EARTH &
ENVIRONMENTAL SCIENCE

Tiger beetles are among the most widely investigated groups of insects — more than 2,600 species can be found all over the world. This second edition field guide details the identification, distribution, natural history and habitats of the 116 species of tiger beetles living in North America.



READING LIST

HUMOR: A Reader for Writers

Kathleen Volk Miller | ENGLISH

From Jerry Seinfeld's legendary standup to Kristen Wiig's sidesplitting impersonations, "Humor: A Reader for Writers" explores the key patterns and features within numerous comedic sources to show how jokes work. This survey looks at comedy in a variety of genres including popular media, academic essays, personal narratives, fiction and poetry.

LGBT ACTIVISM AND THE MAKING OF EUROPE: A Rainbow Europe?

Phillip Ayoub, PhD | POLITICS

Europe has long been regarded as a unique place for the promotion and furthering

of LGBT rights. "LGBT Activism and the Making of Europe" investigates this alleged uniqueness and its ties to a relatively long history of LGBT and queer movements in Europe. The book explores the "idea of Europe" as it relates to LGBT rights, the history of European LGBT movements, the role of European institutions in adopting LGBT policies, and the construction of European "others" in this process.

MOBILITY AND LOCATIVE MEDIA:

Mobile Communication in Hybrid Spaces

Mimi Sheller, PhD | MOBILITIES

RESEARCH AND POLICY

The study of mobilities has become an important framework for understanding and analyzing contemporary social, spatial, economic and political practices. Especially as mobile media become seamlessly integrated into transportation networks, navigating urban spaces and connecting with social networks while on the move,

researchers need new approaches and methods to bring together mobilities with mobile communication and locative media. Scholars have focused on cell phones, often ignoring broader connections to urban spaces, geography and locational media. As a result, they've emphasized virtual mobility and personalized communication as a way of disconnecting from place, location and publics. The growing pervasiveness of location-aware technology urges us to rethink the intersection of location, mobile technologies and mobility. This edited collection explores that intersection, as well as the implications for adjacent fields such as mobile art, mobile gaming, architecture, design and urban planning.

THE OXFORD HANDBOOK OF POLICE AND POLICING

Robert Kane, PhD | CRIMINOLOGY & JUSTICE STUDIES

The police are charged with what has been characterized as an "impossible" mandate — control and prevent crime, keep the peace, provide public services — and do so within the constraints of democratic principles. Police are trusted to use deadly force when called for and are allowed access to our homes in cases of emergency. In fact, police departments are one of the few government agencies that can be mobilized by a simple phone call, 24 hours a day, seven days a week. They are ubiquitous within our society, but their actions are often not well understood. Kane brings together research on the development and operation of policing in the United States and elsewhere to provide an authoritative and comprehensive overview of the institution of policing.



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Chris McKendry

BS HUMANITIES & COMMUNICATION

'90

OCCUPATION: SPORTSCASTER AND EVENT HOST, ESPN

DREXEL ALUMNA CHRIS McKENDRY has been an ESPN anchor since 1996 and co-host of the midday SportsCenter since 2008. A Philadelphia native and former Drexel tennis player, her broadcasting résumé includes the NFL Draft, Little League World Series, and all four tennis majors. Formerly a reporter for ABC-affiliate WJLA-TV in Washington, D.C., McKendry was the first woman television sports news anchor in the market.

Favorite food/restaurant? Scales & Shells, Newport, RI. Awesome fresh fish joint.

Favorite two books right now? I loved the Broadway show “Hamilton.” It got me hooked on history again. I am enjoying “The Quartet” by Pulitzer Prize-winning author Joseph Ellis, who also wrote “Founding Brothers.” I also just finished “It’s What I Do: A Photographer’s Life of Love and War,” by Lynsey Addario. She is amazing.

Who are your heroes? My mother. Billie Jean King.

Last time you did something for the first time? A year ago [in] January, I climbed the Sydney Harbour Bridge...with my then 11 year old. I question my parenting sometimes.

Best mistake you ever made? Working every college summer for free...at a TV station.

Favorite Drexel memory? Tennis team road trips. And sharing my college experience with my older brother, Dan (class of '89).

Current event you wish people knew more about? Food insecurity in the U.S., particularly affecting children.

Proudest accomplishment so far? My children.

Best place the job has taken you? Melbourne, Australia and Paris, France. I cannot choose between the two.

What are the best qualities a person can have? Honesty. Conviction. Modesty.

What is your favorite of the five senses? Why? Hearing. The best journalists and interviewers are the best listeners.

If you had the time to learn any skill, what would it be? Playing the piano. I quit lessons in fifth grade. My mom said I would regret it, and she was right.

Do you have a catchphrase? My catchphrase goes unsaid — I roll my eyes, often.

What would you name the autobiography of your life? “Hi, I’m Chris. I Work in Sports...”

If you could communicate using only Twitter or Instagram, which would you choose (i.e. words or pictures)? Instagram. Although don’t try finding me on it now — I’m not.

If you could trade places with someone for a day, who would it be? Myself, 15 years ago. The things I could tell her...

What makes the world go ’round? Intelligence. Humor. Sarcasm. Maybe not in that order.

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Marissa Anderson '14
MS in Communication

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