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How innovative methods and contemporary concerns are helping humanities scholars re-envision the past and imagine the future. *p.* 12



12 Being Human, Now

HOW INNOVATIVE METHODS AND CONTEMPORARY CONCERNS ARE HELPING HUMANITIES SCHOLARS RE-ENVISION THE PAST AND IMAGINE THE FUTURE

18

Changing Fate

HOW NEW RESEARCH IN CELL REPROGRAMMING HOLDS HOPE FOR TYPE 1 DIABETES TREATMENT

to a

22 Reaching Out, Getting Back GSAS STUDENTS GIVE BACK





An alumni publication of Harvard University's Graduate School of Arts and Sciences

3 FROM UNIVERSITY HALL

4 NEWS & NOTES

Harvard Horizons, student innovation, new student benefits, and the launch of the Center for Writing and Communicating Ideas.

8 Q&A WITH DOUGLAS W. ELMENDORF

A public servant returns to Harvard.

10 SHELF LIFE

Abraham Lowenthal discusses democratic transitions, Luis A. Campos details the history of radium, and more.

26 NOTED

News from our alumni.

28 ALUMNI CONNECTIONS

GSAS visits Paris, vote for Harvard Overseer, and access library benefits.

Cover Image: Polly Becker Facing Image: Graduate student lab work. *Photograph by Ben Gebo*.

Colloquy

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Colloquy 3 SPRING 2016

Engaging Alumni

At last count, GSAS had more than 34,000 alumni living throughout the world. These talented master's and PhD graduates are utilizing the experience they gained at Harvard to advance careers in academia, government, the private sector, and more. As dean, I am proud of the education Harvard provides, and I am actively investigating ways to enhance our alumni engagement globally to benefit our students further—focusing on alumni career advice, mentoring, and support.

One of our key engagement events of the year happens during January@GSAS, when the Graduate School Alumni Association Council sponsors several career and professional development-oriented workshops. This January, the workshops focused on strategy consulting, finance, big data, and the experiences of recent graduates. Nearly 20 GSAS alumni returned to campus to discuss the careers they have built outside of academia, providing an excellent opportunity for current students to explore alternative options and seek advice.

Eager to enhance efforts to connect GSAS graduates with current graduate students, the Graduate School Alumni Association Council has taken on the task of determining how to increase alumni engagement. A group of Council members is currently reviewing existing efforts and considering recommendations for further action. I am looking forward to learning their results and implementing their recommendations.

Alumni mentoring and engagement occurs regularly within departments and programs, and I am delighted to support their efforts. Thanks to the great generosity of I am actively investigating ways to enhance our alumni engagement globally to benefit our students further—focusing on alumni career advice, mentoring, and support. David Gochman, AM '90, who established the Gochman Dean's Fund for Innovation and Development, I have been able to fund many activities that provide professional development opportunities for our students. A recent series spearheaded by the American Studies Program is a great example of how alumni can engage with graduate students to help inform their professional development.

During March and April, students and administrators in American Studies organized a series of professional development events focused on helping students improve their teaching, build an online presence, and prepare for the job market. Several alumni participated and provided insights into building careers in academia, while staff from the Office of Career Services and the Derek Bok Center for Teaching and Learning shared networking and writing tips. Most exciting was the fact that the series was open to ALL graduate students, not just those in American Studies (you can read more about the series on page 26).

Harvard's global societal contributions and leading roles in higher education depend critically on the excellence of GSAS alumni. These talented graduates forge new paths in a multitude of fields, and they represent a tremendous resource. Enhancing alumni engagement, mentoring, and support will benefit our current students and ensure that they go on to equally successful careers.



рнотодгарнея Ben Gebo

UNDERSTANDING earthquake research during the Harvard Horizons Symposium FALLER

Estimating the location, size, and timing of future earthquakes is becoming ever more important to keep people safe on an active Earth. Phoebe Robinson DeVries, a PhD candidate in Earth and planetary sciences and a 2016 Harvard Horizons Scholar, works to model the way in which stresses from one seismic event are generated and transferred—and how they may trigger future earthquakes.

Finding ways to share the work of GSAS graduate students in the humanities, the social sciences, and the sciences, within Harvard and with the general public, is a key aim of the Harvard Horizons initiative. Each year, eight PhD students are chosen to participate in an intensive mentoring program designed to help them communicate the substance of important academic work to a broad audience. The training culminates in the Harvard Horizons Symposium, where the Horizons Scholars deliver five-minute talks about their work from the stage of Sanders Theatre, which took place this year on April 5.

How did you develop an interest in science?

My science teachers in elementary school and high school were so creative and engaging. We built models of the solar system and volcanoes, tapped our own maple sugar tree, went to visit a dairy farm, and exploded things in chemistry classes. What I learned in science and math classes changed the way I thought about the world.

What question drives your research?

How can we accurately model timedependent motion across faults both during and between earthquakes? Can these models inform estimates of seismic hazard?

Why is it important to study earthquakes?

Since 2000, earthquakes have killed more than 400,000 people worldwide. Improving estimates of seismic hazard—and in particular, improving estimates of the size, location, and timing of large earthquakes before they happen—could help countries, cities, and individuals to prepare for and respond to these devastating events.

PhD student discusses

Who do you think is conducting innovative research in your field at Harvard?

I feel very lucky to be a graduate student in the Department of Earth and Planetary Sciences (EPS) at Harvard. The department has such a dynamic group of graduate students, and EPS faculty members are leading research groups that are conducting innovative and impactful research in many different areas.

Most scientists believe that earthquakes cannot be predicted. Do you think it is possible to develop a predictive model?

A successful earthquake prediction would include an accurate estimate of the size, location, and time of an earthquake. Many earthquakes happen along the boundaries, or faults, between tectonic plates. But large tectonic plates are effectively made up of many smaller plates, all of which

NEWS & NOTES

Colloquy 5

are bounded by faults that could cause earthquakes. To understand which faults may be the most dangerous, researchers have developed largescale models of the fault systems in the Western United States, Japan, Turkey, and elsewhere, based on the motion of the Earth's surface today, observed with thousands of Global Positioning System (GPS) stations (high-precision versions of the same GPS devices in cell phones). These models can estimate where stress may be accumulating the fastest along fault systems-and in many cases, where, but not when, large earthquakes are likely to occur in the future.

One striking example of the potential of these models is a study published in 2010, in which Brendan Meade and his former postdoc John Loveless used GPS observations to identify the parts of the subduction zone in Japan that could potentially generate a large earthquake. One large area of the subduction zone that they identified was off of the coast of the region of Tohoku. The 2011 MW=9.0 Tohoku earthquake, which caused a devastating tsunami and the meltdown of the Fukushima-Daiichi nuclear power plant, occurred one year later in this location. In other words, and in this case, Meade and Loveless were able to image the location and potential size of a large earthquake before it happened.

Many of the recent advances in earthquake science, including the study described above, have been made possible by the development of satellite technology. In particular, GPS stations can record the motion of the surface of the Earth over time and allow earthquake scientists to watch and study the gradual motion occurring across faults between earthquakes in real time. Building accurate timedependent models of this observable motion across faults between earthquakes could provide valuable insights into all three components of an earthquake prediction, and allow earthquake scientists to see earthquakes before they happen. 🛡



BLUE SKIES AHEAD

How a graduate student entrepreneur leveraged Harvard resources to launch a company

Driven by an interest in helping people, Jay Munster decided to enroll as a PhD candidate in engineering sciences after graduating from Harvard College. "I tried to find a program that would put me in a position to start a company someday or be part of something big that would help the environment and save lives," he recalls. Beginning with the lofty goal of ridding the entire sky of pollution, Munster quickly realized that he faced many practical obstacles. Then he remembered an experience he'd had in Beijing several years earlier.

While visiting the city, Munster went for his customary morning run but started to feel sick soon after. "I was in good shape, but the air pollution was so bad that I got laid low entirely," he explains. This experience, coupled with the World Health Organization's report that one of every eight deaths worldwide is caused by air pollution, spurred him to action: while cleaning the whole sky no longer seemed like a feasible goal, inventing an affordable mask that could filter out air pollution for individuals did. "If I can't filter the entire sky, I can at least filter the infinitesimally small fraction that people actually breathe," he says.

Understanding that advancing this idea was broader in scope than his PhD research, Munster reached out to the Harvard innovation lab (i-lab) and joined their Venture Incubation Program. He finished as a finalist in the i-lab's President's Challenge and received a grant from the Harvard Initiative for Global Health. Thanks to help from the i-lab, he was able to successfully launch his company, Blue Skies, in 2014.

While cleaning the whole sky no longer seemed like a feasible goal, inventing an affordable mask that could filter out air pollution for individuals did.

Munster hopes to graduate in spring 2016 and devote himself full-time to Blue Skies, intending to leverage his PhD work to make a lasting impact on global health. "I want to invent something that addresses the problem of air pollution, not in ten years, but right now.". 😴



GSAS Creates Graduate Student Writing Center

Suzanne Smith to lead the new Center for Writing and Communicating Ideas



GSAS is pleased to announce the establishment of the Center for Writing and Communicating Ideas and the hiring of Suzanne Smith as its inaugural director. The Center, located on the second floor of Dudley House, will offer programs to support graduate student writers at all stages of their careers in producing more effective writing.

"Helping graduate students enhance

their communication skills is one of my priorities as dean," said Xiao-Li Meng, dean of GSAS and Whipple V. N. Jones Professor of Statistics. "Once open, the Center for Writing and Communicating Ideas will provide all students with a place to go for assistance, whether they are working on a manuscript, their dissertation, or looking for guidance on how to explain their work to individuals outside their field of study." Dean Meng is working with Harvard's Alumni Affairs and Development office to identify donors interested in endowing the center, which will provide resources that will allow continued innovation and additional programming.

The Center will offer practical, goal-oriented programming and consultations designed to help students improve their writing and editing skills and foster an awareness of the relationship between writing, reading, thinking, and knowing. Students will also gain access to resources that enable them to clearly communicate the complexity of their research and ideas, ensuring they master the skills necessary to describe their work to funders, hiring committees, interviewers, and the general public, as well as students in a classroom. The Center's programming will be designed to complement similar activities taking place within the departments and at the Derek Bok Center for Teaching and Learning.

Inaugural Director

Smith joined GSAS as a writing tutor in 2006 and in that role, she has helped countless students in all disciplines sharpen the way they express their ideas in writing. "I have always loved the chance to be involved in students' intellectual lives, and to think about how their ideas may best be communicated to others," Smith said. "The experience of working with graduate students in so many different fields has helped me to think about what holds various disciplines together, in terms of common aims, and what sets them apart, in terms of different ways of asking and pursuing questions, and arriving at findings." Smith is eager to apply the lessons she had learned from students over the past decade while designing programming that addresses the Center's mission to help students communicate their ideas more broadly.

Smith will be joined in the new Center by three Fellows specializing in the sciences, social sciences, and arts and humanities, who will provide students with individualized coaching. These fellows will mentor graduate students in how to craft persuasive arguments, develop a prose style, use sources more effectively, master the art of revision, and learn to speak clearly about their work to any audience. Working together, Smith and her staff will provide small seminars, workshops, and discussion groups on a variety of topics related to graduate-level writing and communicating ideas.

As Smith develops her plans for the Center, she is keeping in mind the leading role of GSAS research in the world and students who conduct it. "The more that the ideas and findings generated through research at GSAS can be distilled, refined, and made to shine, the greater their impact on the advancement of scholarship and of knowledge may be," she shared. "The role of the Center, then, is to work with students to facilitate the processes of distillation, refinement, and illumination."

"We are thrilled that Suzanne Smith has accepted the position of director," said Sheila Thomas, associate dean of academic programs and diversity. "As longtime writing tutor at GSAS, Suzanne has already provided invaluable assistance to our graduate students and to members of the faculty. She has a deep understanding of the diverse challenges our students face in communicating their scholarship, which makes her the perfect person to lead our efforts to enhance GSAS's existing resources while complementing the activities of Harvard's departments and faculty."

The Center is expected to be operational by fall 2016.

WRITER Ann Hall



Enhanced programs benefit new parents, MBTA commuters

Earlier this year, GSAS announced enhancements to graduate student benefits designed to improve their lives outside the academic sphere.

Recognizing and understanding the pressures faced by graduate students as they become new parents, GSAS has doubled the existing Parental Accommodation and Financial Support (PAFS) program for graduate students who are expecting or adopting a child. In addition to doubling the stipend from \$3,100 to \$6,200, GSAS is increasing the amount of time off that new parents can elect to take and adding a flexible component. With these changes, graduate students can take the equivalent of 12 weeks off (increased from six weeks) and use this time off when needed over the course of a year and not only in one block. Last year, GSAS distributed more than \$150,000 in PAFS support.

Beginning in fall 2016, GSAS students will be able to purchase semester MBTA bus and link passes at a 50 percent discount. Currently, graduate students receive an 11 percent discount on a CharlieCard bus or link pass good for a semester through an MBTA Semester Pass Program administered by GSAS. This new student benefit will augment the current discount to a total of 50 percent. 🛱



For the sixth year in a row, stipends for GSAS PhD students will increase by 3 percent. This increase will affect students in their first four years of study and those on dissertation completion fellowships.

"At GSAS, we are committed to continuing to work with our students to improve assistance and services," said Mohan Boodram, dean for admissions and financial aid. "Not only does our doctoral funding program support them as they pursue a rigorous academic program, it also allows Harvard to remain competitive with peer institutions, attracting students of the highest caliber."

PhD students at GSAS benefit from a financial aid package guaranteed for five years that can add up to more than \$250,000 per student and includes full tuition support, stipends, completely subsidized health insurance, mass transit subsidies, support for new parents, and other benefits. Since full tuition scholarships were introduced in 2001 and stipend support added in 2002, the standard GSAS total aid package has increased by 244 percent, averaging nearly 6 percent annual increases during the 13 years of its existence.

Douglas W. Elmendorf

In January 2016, Douglas W. Elmendorf, PhD '89, took the reins of Harvard Kennedy School as dean. An economist by training, Elmendorf served as a member of the FAS faculty before launching a career in public service.

Born in Poughkeepsie, New York, Elmendorf attended Princeton and graduated summa cum laude in 1983 before coming to Harvard. After earning his PhD in economics in 1989, he remained with the department as an assistant professor of economics until 1994, co-teaching the popular undergraduate class "Ec 10" with Martin Feldstein.

In 1993, Elmendorf joined the Congressional Budget Office (CBO) as an associate analyst and became a principal analyst full-time in 1994, focusing on health-care issues and the economic effects of budget deficits. He later served as an economist with the Federal Reserve Board, senior economist for the Council of Economic Advisers, and deputy assistant secretary for economic policy in the Treasury Department. He returned to the Federal Reserve in 2001 and took on leadership roles as chief of the macroeconomic analysis section and assistant director of the research and statistics division. After two years as a senior fellow in economics and Bernstein Scholar at the Brookings Institution and a year as director of the Hamilton Project, which focuses on creating innovative policy proposals to stimulate inclusive economic growth, he returned to the CBO as director in 2009, a position he held until 2015.

Elmendorf has written numerous research papers on economics and public policy matters, testified many times before Congress, and given dozens of presentations and lectures on a range of topics at universities and elsewhere.

> Q+AID NAME: Douglas Elmendorf PhD '89 FIELD OF STUDY: Economics TODAY: Dean, Harvard Kennedy School

You've mentioned that your interest in public policy extends back to your high school years. Why did you decide to work toward a PhD in economics? How did your PhD studies prepare you for a career in government?

In my high school in Poughkeepsie, New York, I had a terrific social studies teacher who encouraged my interest in public policy. Then, as an undergraduate at Princeton, I took introductory economics from Alan Blinder and Harvey Rosen, both of whom went on to become leading economic policy advisors as well as leading researchers. I loved the way that economics could help to explain the world and also create tools to improve people's lives.

When I came to GSAS to pursue my PhD, I was lucky to find advisors who were committed not only to fundamental economic research but also to economic policymaking. My dissertation committee consisted of Martin Feldstein, Greg Mankiw, and Lawrence Summers—all three of whom were, and are, engaged intellectually and practically in addressing real world problems. They reinforced in me the view that better analysis can lead to better policy and that better policy can lead to a better world.

writer Ann Hall ILLUSTRATOR Tina Berning Colloquy 9 SPRING 2016

"When I came to GSAS to pursue my PhD, I was lucky to find advisors who were committed not only to fundamental economic research but also to economic policymaking."

Are there similarities between working in academia and working in government?

Oh, yes. One similarity in my case is a focus on improving public policy. My colleagues at the Congressional Budget Office, the Federal Reserve Board, and the Treasury Department were trying to apply the best thinking in economics and other fields to the difficult questions confronting policymakers—and my colleagues at Harvard Kennedy School are trying to do imaginative new thinking about those same questions, in the areas of economic development, national security, democratic governance, international relations, and so on.

Another similarity is that both academic institutions and government agencies are most effective when people collaborate to advance a shared mission. In my time in the government, I had a chance to work for a number of excellent leaders. They were able to pull people together, even when those people had different individual goals and priorities, to work for the common good of the group.

That's what I tried to do as director of the Congressional Budget Office, and it's what I'm trying to do at the Kennedy School. After I took the job as dean, someone told me an old joke about deans—that it's easy for them to lead their faculty members except for the problem of having no sticks and no carrots. There's some truth to that joke. What deans do have, however, is the power of persuasion.

GSAS administers several PhD programs that enable students to work with faculty in the Faculty of Arts and Sciences, at Harvard Ken-

nedy School, and at other Harvard schools. How important is it to foster these kinds of interfaculty connections?

The world needs people and ideas that can address its most serious problems, and it doesn't care about the distinctions between fields and schools. So, those of us who are trying to address the world's problems can't get hung up on those distinctions either.

Under President Faust's leadership, Harvard is becoming more of "One Harvard," and I'm an enthusiastic supporter of that movement. From the Kennedy School's perspective, we recognize that future public leaders may come from many schools at Harvard, so we want to teach students from much more of that. Also, I hope to transmit some of what I've experienced on the front lines of public policy to our students. My other title is the Don K. Price Professor of Public Policy, named after the Kennedy School's third dean (who served from 1958 to 1977). He moved between the worlds of public service and academia, and he is a wonderful example for me.

What is your greatest hope for your tenure as dean?

The world desperately needs more of what Harvard Kennedy School has to offer—imaginative ideas, dedicated and well-trained people, and constant attention to the biggest challenges in public policy and public leadership. Since my appointment as dean was announced, I have heard about the importance of our work over and over from a wide range of observers of the school. So, we need to keep getting better at what we do. David Ellwood, who was my predecessor as dean and also earned his PhD at GSAS, led the faculty, staff, and students at

"The world needs people and ideas that can address its most serious problems, and it doesn't care about the distinctions between fields and schools."

other schools as well as from the Kennedy School. Similarly, we know that Kennedy School students can learn a lot from the outstanding faculty members and students in other schools at Harvard, and we want to encourage them to do that.

Do you hope you'll have the time to teach or advise graduate students?

I'm afraid that my role as dean will probably absorb all my attention and energy. But I am enjoying getting to know Kennedy School students in meetings in my office and around the school, and I look forward to doing the school extremely well. Working together, all of us will build on those accomplishments by increasing our efforts in areas of growing importance, by working with current public leaders more closely, by training future leaders more effectively, and by inspiring more people to believe in what good governance can do for the world.

ShelfLife











the Italian Renaissance as an age of individuals "living large." **ANTHONY** F. D'ELIA (PhD'00, history) deftly brings one bold Renaissance man to life as a proof-of-concept and cautionary tale. Pagan Virtue in a Christian World: Sigismondo Malatesta and the Italian Renaissance (Harvard University Press, 2016) recounts an illegitimate son made good, chronicling his military successes (from age 13!) and his career as a condottiero (soldiermercenary). Malatesta (1417-68) was also a poet and patron of the arts who embraced the pagan Greek side of Renaissance humanism. But poor decisions, professional and personal, put him in the crosshairs of Pope Pius II, bringing a fall from grace more dramatic than his earlier achievements.

Historian Jacob Burckhardt viewed

ANDREW LEIGH (PhD'04, public policy) is a Labor member of the Australian federal parliament and former professor of economics at Australian National University. His latest book, The Luck of Politics: True Tales of Disaster and Outrageous Fortune (Black Inc., 2015), is a delightful discussion of the many ways in which luck shapes politics. For instance, having one's name listed first on a ballot translates into roughly a 1 percent boost in votes. Leigh also gently skewers punditry, citing a 2012 analysis of nearly 1,000 predictions by the *McLaughlin Group* which concluded that they were right 50 percent of the time. (So go ahead, flip a coin.) But best of all are his fascinating, well-told political anecdotes.

The Global Transformation of

Time, 1870–1950 (Harvard University Press, 2015) tells a story of time

zones, daylight savings time, and how Greenwich became the prime meridian. VANESSA OGLE (PhD '11, history) chronicles a world of time chaos. In the late 19th century, Beirut used two radically different time systems (Muslim and Christian). Germany's various railroads employed six different times. (Travelers transferring from one regional line to another had to reconcile the discrepancies.) Standardization began with American railroads and various scientific associations and national (and imperial) bureaucracies. Pushback came from nationalist and anticolonial forces—controlling time became political. Thus, France opposed Greenwich as the prime meridian because it was British, while Indian nationalists viewed time standardization as an imperialist ploy of the British Raj.

In his meticulously researched Radium and the Secret of Life (University of Chicago Press, 2015), LUIS A. CAMPOS (PhD'06, history of science), recounts the often-giddy response to this newfound nightlight on the periodic table. Radium's novel properties, Campos shows, were a surprising source of scientific energy and experimentation. Biologists, for example, constructed metaphors that likened radium and life that fueled new findings about genetics, heredity, and evolution. Ultimately, however, the toll the element took on radiation researchers (like Marie Curie) and women who painting radium numbers on watch dials provided a darker counterpoint to a time before the hydrogen bomb would equate radium not with life but with death.

Peiresc's Mediterranean World

(Harvard University Press, 2015) is a bold undertaking. Early modern history can be constrained by limited source materials, but that's hardly the case with French polymath Nicolas-Claude Fabri de Peiresc (1580–1637). Peiresc left an immense archive, most of which survives (77,000 separate pieces of paper, mostly letters). In taking on Peiresc, or rather his archive, **PETER N. MILLER** (AM '87, history), a 1998 MacArthur Fellow, has produced a distinctly untraditional volume far from the conventions of standard biography. Miller takes inspiration from—and challenges—Fernand Braudel. Thus, in topical chapters on such matters as mules, shipping, and merchants, Miller uses the fine-grained details of Peiresc's correspondence to illuminate a much greater Mediterranean world.

In many ways, we are moths drawn to the flames of here-and-now. ABBY **SMITH RUMSEY** (PhD '87, history) challenges our tendency to presentism in When We Are No More: How Digital Memory Is Shaping Our Future (Bloomsbury Press, 2016). She emphasizes the importance of preserving our past and our digital present (the future's past). She also usefully compares the Digital Revolution to previous information gluts: Mesopotamia after the introduction of clay cuneiform tablets, Europe after Gutenberg created his printing press. Digital preservation today poses real difficulties (the sheer volume of data, changing technologies, proprietary restrictions, transitory content, even deciding what should be kept), yet Rumsey remains optimistic that we can maintain our digital legacy.

Alumni authors: Would you like your book (general interest, published within the past year) considered for inclusion? Send it to *Colloquy*, Harvard Graduate School of Arts and Sciences, Suite 350, 1350 Massachusetts Avenue, Cambridge, MA 02138. Questions? E-mail gsaa@fas.harvard.edu.





THE EXILES GALLER Elier Dutridge





DAGUERREGTYPES





STRANGE TOOLS ART and HUMAN NATURE ALVA NOË

The poetry of **ELISE PARTRIDGE** (AM '89, English language and literature) is warm, expressive, and strongly visual, as evidenced by **The**

Exiles' Gallery (House of Anansi Press, 2015), her third collection, published posthumously. In "Years On," an old class photograph evokes sharp memories of a "girl who lost her mind." "Citydwellers" juxtaposes tenement dwellers and the pigeons huddled in the building's airshaft. Her playfulness comes into view when she imagines a historical marker from 5002 AD that wildly misinterprets an ancient, newly-excavated Los Angeles swimming pool. Poems like "Anticancer Charm," "Terminal," "Gifts," and "The If Borderlands" show Partridge's meticulous and defiant use of language.

Schooling the Next Generation: Creating Success in Urban

Elementary Schools (University of Toronto Press, 2015) is a study of lowerincome, culturally diverse elementary schools in Vancouver. In the tradition of Jonathan Kozol and James Coleman, **DAN ZUBERI** (PhD '04, social policy) underscores the troubled state of these schools, using participant-observation and interviews with teachers, principals, and parents. Although Canada doesn't peg education funding to property taxes (which reinforces class-based inequities), poor urban schools tend to have disproportionately more non-English speakers and students suffering from housing instability. Zuberi proposes comprehensive policies, programs, and resources to address these and other issues.

In Daguerreotypes: Fugitive Subjects, Contemporary Objects

(University of Chicago Press, 2015) art historian **LISA SALTZMAN** (PhD '94, fine arts) returns to one of photography's earliest forms to meditate on the role of the photograph in contemporary culture. Salztman argues that despite the digital turn, the photograph often remains a marker of truth even as its veracity has become more malleable and suspect. Just as the photograph approaches obsolescence, she notices, it becomes essential to other forms of representation, as she demonstrates in readings of contemporary literature, film, and art, including W. G. Sebald's *Austerlitz*, Ridley Scott's *Blade Runner*, and the work of Vietnamese-American photographer An-My Lê.

In **The Graduate School Mess**

and How We Can Fix It (Harvard University Press, 2015), LEONARD CASSUTO (PhD'89, English and American literature and language) rethinks graduate education in the humanities, making the case that graduate schools should be training PhDs more broadly and for publicfacing roles outside the academy. He compellingly argues for diversified (and smarter) professional development (with more emphasis on teaching and less on overly specialized research relevant only to the academy), as well as coursework and advising aimed at preparing students for careers outside of academe.

Strange Tools: Art and Human Nature (Hill and Wang, 2015) explores art-what it is, why it matters. ALVA Noë (PhD'95, philosophy) likens art (and philosophy) to a "strange tool," the functions of which are hard to explain (unlike, say, a hammer, thermostat, or particle accelerator) but which are nonetheless profoundly important. Encompassing sculpture, painting, dance, music, and more, *Strange Tools* draws on a heady mix of referencesfrom Plato, Kant, Walt Whitman, and John Dewey to Welcome Back, Kotter, bluesman Robert Johnson, and breastfeeding. Noë concludes that while art's effects are personal and idiosyncratic rather than uniformly reproducible, it matters because it helps us to articulate and reimagine both ourselves and the world.

Democracy-building today seems particularly fraught—as in Iraq or Russia or with the rise of ISIS after the Arab Spring. Democratic Transitions: Conversations with World Leaders (John Hopkins University Press, 2015) provides an invaluable corrective to any slide toward pessimism. Editors Sergio Bitar and ABRAHAM LOWENTHAL (PhD '71, government) interviewed leaders who were part of democratic transitions in nine nations on four continents—among them, Felipe Gonzáles, prime minister of Spain (1982-96); Fernando Cardoso, Brazil's chief executive (1995–2003); F. W. de Klerk, the last South African leader under white-minority rule (1989–94); and post-apartheid president

(1999–2008) Thabo Mbeki.

The interviews elicit several recurring themes: The key to democratic success lies in peaceful protests, not violence or terror. Democratic forces need to unite and transcend their partisan and factional divisions. Securing civilian control over the military is vital, but even more fundamental is a country's democratic culture and the hopes of its people. The success of Solidarity in Poland or Chile's pro-democracy coalition arose from deliberate movement-building, but also fortuitous circumstances. Each country had a comparatively activist and readily mobilized population, and each had a government that was somewhat less authoritarian and more responsive than seemingly comparable neighbors. Finally—and quite surprisingly—these leaders emphasize the importance of working within authoritarian constitutional systems, even when they are rigged against democratic change.

К H',

How innovative methods and contemporary concerns are helping humanities scholars re-envision the past and imagine the future.

Written by Andrea Volpe | Illustration by Polly Becker

Definitions can be telling. Page through *The Oxford English Dictionary* and you'll discover that "humanities" doesn't have its own entry. To get to it, you'll first have to contend with being human, quite literally. What we call the humanities—the branch of learning concerned with human culture, including history, literature, ancient and modern languages, law, philosophy, art, and music—originates from "humane," "human," and "humanity," words that signal the rise of humanist knowledge in the 15th and 16th centuries. And here's where etymology becomes intellectual history. The humanities are not only a means for studying humanity, rather, the emergence of its disciplines announces a fundamentally new configuration of what it means to be human—capable of agency, reason, and imagination—and the historical moment when humans became the measure of knowledge.



The rise of the human was accompanied by a series of revolutionary technologies—the printing press, moveable type, and the book, among them—that would change the way knowledge was constituted and disseminated. These days, humanities scholars are grappling with some equally massive reconfigurations of knowledge. The Anthropocene (an idea borrowed from the geological sciences embodying the belief that human actions have so shaped Earth's destiny that "the age of the humans" should be an entirely new epoch of geological time) is a driving force in the environmental humanities. Pair that with the digital humanities, where the algorithm and computational thinking is driving the profound transformation in how we access and use data, and the transformations triggered by Gutenberg seem almost obsolete.

The challenge for the next generation of humanities scholars will be to synthesize the traditional questions and methods of their disciplines with the most pressing contemporary issues concerning human agency and human knowledge. "When we lose our storytellers we lose the capacity to relate to each other and to tell our own story. We lose the capacity to hear fictional, universal truth and relate it to ourselves. Instead, we just get unrelatable data."

But Van Wagenen worries that the profound ways that digital technologies are changing the way we read have made us "lose patience with literature." She looks to past literary critics to help her face the challenges of studying and teaching literature in the 21st century, including the German philosopher and cultural critic Walter Benjamin. "Benjamin says that the truth-telling authority of the storyteller falls at the same rate that the dissemination of information rises. We see data as something that we don't need to interpret, and thus lose the capacity for interpretation," she explains.

She sees Benjamin's take on the lure of data, written in the 1930s, as a prescient explanation of our current moment. "Why would we read something that we have to interpret to find the truth if we can just get facts from data?

> Julianne Van Wagenen and Curarium screengrab



LOSING OUR STORYTELLERS

For Julianne Van Wagenen, a fifth-year graduate student in romance languages and literatures, whose dissertation concerns the 20th-century Italian singer-songwriter Fabrizio de André, literary techniques for reading texts of all kinds, including song lyrics, have the potential to cultivate greater human understanding. Encountering a different language and culture, she believes, is "how we learn empathy. We learn different ways of living, and we see ourselves as a system rather than separate." When we lose our storytellers we lose the capacity to relate to each other and to tell our own story. We lose the capacity to hear fictional, universal truth and relate it to ourselves. Instead, we just get unrelatable data."

Van Wagenen started to wonder if perhaps technology could enable new forms of storytelling, which led her to a course called Digital Humanities 2.0, offered through the metaLAB, Harvard's networked arts and humanities lab and production studio. She credits the course with helping her "to understand, in a studio and lab setting, how technologies, approached with a humanist mind," can promote "new ways of seeing, new ways of learning, new ways of telling stories that are in the physical world and in the digital world."



"Labs like the metaLAB provide opportunities for students to experiment with what scholarly knowledge looks like," says Jeffrey T. Schnapp, professor of romance languages and literatures, co-director of the Berkman Center for Internet and Society, and the metaLAB's founder and director. They also help train the next generation of scholars, like Van Wagenen, who are in effect, bilingual, as skilled in the traditional methods of humanistic inquiry as they are in software development.

It's not just what digital tools can do for the humanities but how they do it. The metaLAB is premised on working teams, which contrasts with the craft-based idea of training people one-by-one that prevails in the humanistic disciplines. Instead, it's an approach inspired by the laboratory and the art and design studio, which means "a communitybased model of learning through making, doing, and experimenting, which has the potential to change what knowledge looks like in the humanities," says Schnapp.

Van Wagenen is doing both. Parallel to her scholarly training, she is a principal at the metaLAB, where she's the project manager for Curarium, a digital platform that will allow a diverse community of users, from scholars, curators, teachers, students, and the public, to more actively work with image collections than traditional databases allow. "One of the consequences of adopting a lab-based, experi-

"Being at *Public Books* has given me a new appreciation of the potential for the digital to be a medium for spreading ideas." mental ethos is that the kind of things we produce at the metaLAB use languages that cross barriers and reach audiences that would never open a scholarly monograph or pick up a scholarly journal," says Schnapp. "From a humanities perspective, we don't dilute the rigor of what we do. If you design your projects well, you can have it both ways." Or, as Van Wagenen puts it, "There's a reason we call them platforms. The digital platforms we build are a new stage, a new way of reaching audiences."

SPREADING IDEAS

For Liz Maynes-Aminzade, PhD '13, a literature scholar fascinated by the social uses of literature, audience is also a keyword. Maynes-Aminzade wrote her dissertation on the big Victorian novel—think Charles Dickens, Anthony Trollope, and George Eliot—asking an elegantly simple but revealing question: What was the appeal of "the macrorealistic novel" to 19th-century readers? Her answer was that the authors of these sweeping, realistic novels were helping readers trace the connections between, and understand how their actions can affect, people far away and sight unseen in a complex, global society.

The motive for, and result of, literature, in other words, is social, and it was Maynes-Aminzade's interest in the social affect of what we read that won her a fellowship from the American Council of Learned Society's Public Fellows Program. Now in the first year of a two-year fellowship, she's the digital strategist for *Public Books*, an online review of arts and ideas. "The idea is to create a venue where specialists and experts could write about their areas of deep knowledge for a wider general public and make those ideas more accessible," she explains.



Thus far in her fellowship, that might mean working on publicity for a *Public Books*–sponsored public event, such as a moderated discussion, workshop, or book launch, identifying a cultural trend or an emerging issue that would benefit from deeper, scholarly reflection, or commissioning articles and working with writers.

Maynes-Aminzade has a one-word answer to what she's most excited about when it comes to the humanities right now: "the Internet." "Being at *Public Books* has given me a new appreciation of the potential for the digital to be a medium for spreading ideas," she says.

HUMANIST ACTIVISM

Mention the idea of a reading public to Stephanie LeMenager, PhD '99, the Barbara and Carlisle Moore Distinguished Professor in English and American Literature and professor of environmental studies at the University of Oregon, and she's quick to note the connection between one of literature's essential tasks, "to create an imagined public," and



Stephanie LeMenager and Dear Climate

screengrab

the idea of the commons, which implies shared resources, both cultural and natural.

"The humanities are well equipped to be part of the conversation right now about global climate change and our energy system," LeMenager says. "On the one hand the Anthropocene is all about us driving climate change and our tremendous, accidental power that has also destroyed our conditions of thriving. When students experience it, and when I experience it, it's more as a



profound social failure that has to do with not recognizing our responsibilities to one another and to other life forms."

For LeMenager, it all starts with the question, what is literature for? "I'm a 19th-century literary scholar by training, and I come right from there to the digital age," she says. "The 19th century was a period when people were idealistic about how literature and art could change the world," she explains, adding, "and they were right." Literature, from this perspective, is an active process of telling and sharing stories that can foster social change and create a more sustainable future.

She's quick to note the connection between one of literature's essential tasks, "to create an imagined public," and the idea of the commons, which implies shared resources, both cultural and natural.

The methods of the humanities also have something to contribute. The long-term, wide-angle analytical perspectives that define humanistic studies have the potential to be antidotes to the short-term, fast thinking that defines our 24/7 age: "The *longue durée* is so important to any kind of humanistic work, even in the age of digital media."

Like Schnapp and Van Wagenen, LeMenager believes in the potential of digital storytelling because it gives students the tools to take what they are learning and become active makers of culture. Her students are not only reading literature that engages with issues of climate change, she also asks them to use the tools of literature to respond to their own experiences. For example, on platforms like futurecoast.org, you can leave a voicemail message from the future, and at dearclimate.net, you can write a letter, in any literary form, be it a poem, a tweet, or a short story, to the climate.

In that sense, the environmental humanities are simultaneously an intellectual and activist enterprise, often embracing digital tools to expand, and hopefully transform, public discourse and serve as a channel for cultural change. "I think we are in a very good position to summon up the publics that we want to bring into being," LeMenager says. And changed publics mean changed futures, for us and the planet.

BRONZE AGE BIG DATA

If for LeMenager the humanities have a role to play in creating a changed future, then for Adam Grant Anderson, a PhD candidate in Near Eastern languages and civilizations, advances in computational applications are the key to helping scholars discover new information about the ancient past.

Anderson first combined linguistics and computers as an undergraduate, adapting a text database made by computer scientists to study the Bible and the Dead Sea Scrolls that enabled him to study word-play in the book of Isaiah, contrasting the traditional sources of the text with what appeared in the Great Isaiah Scroll, one of the original seven Dead Sea Scrolls. The process became so helpful that he



now modern-day Turkey. As if reading ancient languages scratched into centuries-old clay tablets wasn't enough of a challenge, Anderson was faced with the complication of papponomy, the naming custom by which sons were named after their fathers or, more commonly, grandfathers. Because of this practice, a major task of Assyriology is "disambiguating" the thousands of people who share the same name in over 2,000 texts across 200 years.

Our shared desire to tell stories, about the past present, and future, and draw on empathy and intellect to reflect on them, remains essential to what it means to be human.

Working with two computer scientists, Anderson created an algorithmic model that could be used to analyze the cuneiforms texts. For his dissertation, *The Old Assyrian Social Network: An Analysis Based on the 'Old Texts' from Kültepe*, he's been working with results of that analysis to

Adam Grant Anderson and Old Assyrian Text Project screengrab



used it to study everything from 16th-century Yiddish texts to the plays of Bertolt Brecht.

Using computers isn't new in Anderson's field of ancient Akkadian and Sumerian studies. Computers were first used to study Old Assyrian tablets, dating from 1950–1750 BCE, in 1960 CE. Fast forward 50 years and computers are far more advanced, even as Anderson explains that the kinds of questions Assyriologists ask remain essentially the same. Much has to do with thousands of highly detailed records left via cuneiform tablets.

Anderson's interest in big data, both ancient and modern, led him to the Old Assyrian Text Project (OATP) at the University of Copenhagen, where he worked with a corpus of 10,000 digital texts curated by leading scholars in Old Assyrian studies in Copenhagen and Leiden. For his dissertation, he decided to study a group of Bronze Age cuneiform texts, including contracts, letters, and receipts, relating to an Assyrian merchant colony in central Anatolia, graphically map merchants' identities in relationship to each other. "We can see the overall scope and organization of the Old Assyrian network in all its complexity, he explains. "In essence, it's the Facebook of ancient Assyria."

The analogy to social media puts the ancient past in a contemporary light. But like LeMenager, Anderson takes his perspective on the contemporary state of the humanities from the past: "Goethe spoke of a moment when the *vergängliche* [transient] subjects from the arts and humanities

would be reunited with the *unvergängliche* [intransient] sciences, and we would then realize that the two were always one as from the beginning," he explains. "It's exciting to be a scholar today after over 150 years of working with these ancient texts, when the obstacles and limitations from Goethe's time can be addressed using computers, thereby making these long forgotten 'big ancient data' relevant again."

Marking cuneiform script into a clay tablet may seem light years away from tapping out a text message, but for Anderson seeing cuneiform tablets as a record of ancient social systems gets at the crux of what connects us to the past and the "common humanity" that drives our desire for connection and communication. The future may not look anything like the past or present, but our shared desire to tell stories, and draw on the power of empathy and reason to reflect on them, remains essential to being human.

"CONVERTING ONE CELL TYPE INTO ANOTHER, ESPECIALLY IN ADULTS, IS REALLY EXCITING."

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HOW NEW RESEARCH IN CELL REPROGRAMMING HOLDS HOPE FOR TYPE 1 DIABETES TREATMENT

Ask the average person about diabetes and they'll probably answer that it has something to do with eating too much candy or being overweight. For people living with type 1 diabetes, these myths mask what is for them a daily grind of blood glucose monitoring, insulin shots, and hyperawareness of diet that quite literally keeps them alive.



Type 1 diabetes, unlike type 2, is an autoimmune disease in which the immune system targets and destroys the insulinproducing beta cells in the pancreas. Without insulin, the body can't control the level of glucose in the blood generated through diet. People with type 1 must monitor their blood sugar levels regularly throughout the day, adjusting diet and administering insulin as necessary. The more they check, the better they manage the disease—some only a few times a day, others many more. And that disease management can change over the years, with many developing complications—for example, hypoglycemia unawareness, which prevents people from sensing dangerously low levels of blood glucose.

Raise the idea of a cure, however, and people with type 1 diabetes are skeptical. "When I think of the word cure as it relates to type 1 diabetes, I get excited and annoyed at the same time," says Anna Floreen, outreach manager at the T1D Exchange—a Boston-based organization dedicated to improving the lives of people touched by type 1 diabetes by driving faster, better research, and improving the quality of care. "On one hand, I can't wait for the day of no finger pokes, insulin pump site changes, and that constant worry and guilt that not having 'good enough' control may lead to a future of complications and physical limitations. On the other hand, as someone who was diagnosed nearly 30 years ago, I feel really skeptical when I see news promising yet another cure."

The Future Is Plastic

Researchers across Harvard are conducting research aimed at managing—or even curing—diabetes. And their approaches are as varied as the disease itself. Doug Melton, Xander University Professor and co-director of the Harvard Stem Cell Institute, uses human embryonic stem cells to develop insulinproducing beta-cells. Denise Faustman, director of the Immunobiology Laboratory at Massachusetts General Hospital and an associate professor of medicine at Harvard Medical School,



is testing a vaccine that may improve or even reverse the disease. Rohit Kulkarni, a senior investigator at Joslin Diabetes Center and professor of medicine at Harvard Medical School, explores why the immune system attacks the body and how to regenerate the beta cells it destroys.

It is this work on beta cell regeneration that attracted PhD candidate Ivan Valdez to Kulkarni's lab. Growing up in South Texas, Valdez watched members of his

family and friends in the wider Hispanic community cope with the effects of type 1 and type 2 diabetes. He knew he wanted to help and first considered becoming a medical doctor. But as an intern at Weill Cornell Medical College through the Minority Biomedical Research Support Research Initiative for Scientific Enhancement (MBRS-RISE) program, he realized that he wanted to move in a different direction. "I always had an interTHAT'S AN ASPECT OF GRADUATE STUDENTS I LOVE; NO MATTER WHERE YOU ARE IN YOUR CAREER, YOU CAN STILI LEARN FROM THEM BECAUSE THEY ASK OUT-OF-THE-BOX QUESTIONS."

"THE IDEA IS THAT THE CELLS WITHIN THE PANCREAS ARE Plastic, in the sense that They can convert from One type of cell into Another type of cell."

est in the scientific method and in problem solving," he shares. "But



during MBRS-RISE I got carried away with medical research."

As a first-year PhD student in biological and biomedical sciences, Valdez took a class that introduced him to the work of Shinya Yamanaka, the Japanese scientist who won the Nobel Prize for discovering how to turn a mature human cell into a stem cell—called induced pluripotent stem cells. "When I heard about Yamanaka's work, I knew that I wanted to conduct similar research," remembers Valdez. "After researching the principal investigators operating on the Longwood Campus, I discovered that Professor Kulkarni conducted research on my two interests, diabetes and pluripotent stem cells."

The overarching focus of Kulkarni's lab is beta cell regeneration, since beta cell loss unexpectedly occurs in patients with type 1 diabetes. "The beta cells are still trying to replicate and function, and finding therapies that aid this process while suppressing the autoimmune response is an important approach to the problem," Kulkarni explains. "By increasing the number of insulin-producing beta cells by even 10 to 20 percent, we can better control the disease."

Valdez helped advance this work during his first two years as a graduate student. But as he began considering options for his thesis, he decided to bring a new idea to Kulkarni: pancreatic plasticity. "Pancreatic plasticity is a very new area in diabetes research," he explains. "The idea is that the cells within the pancreas are plastic, in the sense that they can convert from one type of cell into another type of cell." The pancreas contains endocrine beta cells that generate the hormone insulin, which regulates the body's blood sugar. It also contains exocrine cells, whose function is to secrete enzymes into the small intestine. Valdez decided to target the exocrine tissue and successfully demonstrated that they could be coaxed to transform into insulin-producing beta cells. Valdez described this achievement in an article that has been recently accepted for publication in the journal *Cell Reports*.

For Kulkarni, Valdez's initiative in trying something new is the best part of working with graduate students. "Ivan was excited about regeneration and after talking with others in the lab, he developed his own project that tackled a new idea in the field," says Kulkarni. "That's an aspect of graduate students I love; no matter where you are in your career, you can still learn from them because they ask out-of-the-box questions. It's amazing how they keep me on my toes."

Valdez cautions that while he has demonstrated that other pancreatic cells could be enlisted to produce insulin, these basic-science results need to be applied by other investigators and in human cells. And other factors need to be taken into account as well. "We have to learn how to control this plasticity," he says. "It's exciting to derive beta cells from other cell sources, but some of the mechanisms activated are also reported to occur, not surprisingly, in cancer where cell growth is a constant phenomenon. Researchers need to take this into account when moving forward."

Changing Fate

When Chaiyaboot Ariyachet arrived at Harvard to begin his PhD in biological and biomedical sciences, he didn't have a specific project in mind. His academic studies at Bowdoin College and at school in his native Thailand had focused on biology, and he wanted to continue his science research. As he participated in rotations early in his graduate-student career, he considered joining smaller, recently-established labs, where he could be involved more directly in the research and with the principal investigator. Then, he found the lab of Qiao Zhou, an associate



professor in the Department of Stem Cell and Regenerative Biology, whose work in the field of regenerative biology and regenerative medicine concerned cell reprogramming. Zhou investigates how to regenerate

insulin-secreting beta cells as a potential treatment for type 1 diabetes patients, as well as those with severe forms of type 2. While Valdez exploits pancreatic plasticity, Zhou's reprogramming approach

uses genetic information to induce other cells in the body to become insulin-producing cells.

"His work in manipulating cell fate is pioneering," says Ariyachet. "Converting one cell type into another, especially in adults, is really exciting."

Each cell type in our bodies has a different function, guided by genetic information. Zhou discovered that by creating a cocktail of three specific genes expressed in the developing pancreas, he could induce an exocrine cell to produce insulin. Over time, the cells become more and more like beta cells, and eventually cluster together to form structures similar to the Islets of Langerhans.

The cocktail didn't work only on pancreatic cells, however. Any cell could be reprogrammed to produce insulin. Working with Zhou, Ariyachet began wondering whether some cells would be more responsive than others.

"We used a mouse-model that contained these reprogramming genes and looked to see where insulin was being produced in the body," Ariyachet explains. "We found that the gastrointestinal tract, specifically the pylorus region, is WE NEED MORE YOUNG PEOPLE, UNAFRAID OF CHALLENGES, NOT BOUND BY DOGMAS, TO DEVOTE THEIR TIME, ENERGY AND WE NEED THE MEANS TO SUPPORT THEM. THEN THE CURES WILL COME TO TACKLING THIS DISEASE, Ľ AND

particularly amenable to insulin production."

The pylorus, the area where the stomach opens into the small intestine, seemed an odd location for beta cell reprogramming, so much so that it had never been considered as a candidate before. "Actually, if you look closely at the development of the stomach, especially the pylorus, it's closely related to the pancreas," explains Ariyachet. "It arises from a common pool of progenitors."

Using pylorus cells as a starting point, Ariyachet collaborated with David Mooney, Robert P. Pinkas Family Professor of Bioengineering at the Harvard John A. Paulson School of Engineering, who provided a biometric scaffold. Ariyachet added tissue to the scaffold and implanted it in the mouse's abdominal cavity. Soon, cells formed and eventually created a "mini-stomach" that began producing insulin, essentially serving as an internal, organic insulin pump.

The structure had an added benefit: regeneration. "In the gastrointestinal tract, adult stem cells renew the gut epithelial cells every four to five days," he says. "We were able to tap that process in the mini-stomach as well." When they tested what would happen if they destroyed the first reprogrammed cells, they discovered that the local stem cells sprang into action and created more, a huge advance for a disease that nearly eradicates beta cells not so easily replaced.

Zhou credits Ariyachet with making very important contributions to his research program. "His recent study on reprogramming gastrointestinal tissues into beta cells has led us down a new path," he says. "He deserves much credit for tackling a challenging project and, through his hard work and creativity, bringing it to fruition." Zhou's lab is currently working on developing a human version.

While Ariyachet continues to conduct research on human stomach stem cells, he's moved from mini-stomachs to a broader approach that simply converts cells into insulinpositive cells that can be constantly replenished. "When gut epithelial cells die, they are replaced with new ones for the rest of our lives," he says. "The problem with type 1 diabetes is that insulin-positive cells are attacked by the autoimmune system. In this case, if you constantly produce an insulin-positive cell, it doesn't matter. If they are destroyed, you can make more."

The Challenge Ahead

With excitement building among investigators regarding the innovative research occurring in the type 1 diabetes space, it's hard not to hint at the idea of a cure. But tackling, once and for all, such a complex and devastating disease requires dedicated scientists taking unique approaches. "Major scientific break-throughs are needed for this disease, and true to all major scientific breakthroughs, one needs scientific minds with great creativity who think outside the box," says Zhou. "We need more young people, unafraid of challenges, not bound by dogmas, to devote their time, energy, and life to tackling this disease, and we need the means to support them. Then the cures will come."

GSAS STUDENTS GIVE BACK

EACHING

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WRITTEN BY LUSIA ZAITSEVA | PHOTOGRAPHY BY BEN GEBO

The image of graduate study is often a solitary one, filled with long hours of work in the library, the archive, or at the lab bench—and often that's the reality, as well. And yet, all across GSAS, students are finding ways to connect their scholarly interests and creative passions with communities beyond Harvard's gates. Whether they are founding nonprofits, demystifying the latest advances in science for the public, or sharing classical music with new audiences, GSAS students are discovering that what they do outside the classroom provides as much opportunity for learning—about themselves and their community—as what they do in it.

From the Lab to the Great Outdoors

For Erin Fletcher, AM '15, biological and biomedical sciences, a part-time commitment to service became a full-time career. As an undergraduate in California, Fletcher volunteered at a camp for pediatric cancer patients and survivors. The experience inspired her to study microbiology and devote herself to cancer research—a decision that, in turn, brought her to Harvard. When she arrived in Cambridge in 2013, she went looking for a way to continue her volunteer work, expecting to find a similar camp in Massachusetts.

"I wanted to stay involved and thought a similar camp must exist on the East Coast," Fletcher explains. To her surprise, it didn't. For most people, that would be the end of the story, but Fletcher wasn't interested in giving up. "I thought, if no camp for kids battling cancer exists, we could start one." Today, Camp Casco is gearing up for its second summer session.

Laying the groundwork for Camp Casco turned out to be just as much an education for Fletcher as her courses in biology, as she faced the challenges of starting and funding a non-profit organization from scratch. She had an ambitious vision in mind: a no-cost, sleep-away camp that would foster friendships among children who shared similar experiences, capable of offering medical care and support, and at the same time providing a place where kids could be kids and do all the typical camp things-from archery, swimming, and canoeing to gathering around a campfire.

The first challenge for Fletcher and the team of fellow graduate students who helped her launch Camp Casco was to raise the \$50,000 needed to send 13 campers and a team

CAMP CASCO: CHRISTIAN PLEVA IMAGES



(top) and Camp Casco participants. Opposite: Erin Fletcher, AM '15, established

a camp for pediatric

cancer patients and

survivors.



"Research can be hard, and its benefits aren't always immediately apparent. I wanted to have an impact, not in 15 years, but today."

of 22 counselors and medical professionals to camp in the Berkshires. She started locally, asking members of her department for donations.

Whitney Silkworth, a PhD candidate in biological and biomedical sciences, was among the first to sign on. "I couldn't donate much money, but I told Erin she could have all of my spare time," Silkworth says. Together with Yi-Jang Lin, another doctoral student in biological and biomedical sciences, they secured pro-bono legal services to set up the non-profit, and then Silkworth turned her eye towards helping Fletcher raise money.

According to Silkworth, who now serves as Camp Casco's Chief Operating Officer, the challenges of serving as director of corporate relations for Camp Casco have provided her with a new and unexpected skillset. "In science, I lead with the data and culminate in a conclusion, but in fundraising I have 30 seconds to grab the donor's attention," Silkworth explains. "Instead, I lead with impact and emotion." The experience has definitely benefited her graduate studies. "The skills I've developed really complement my research work."

Her philanthropic efforts are also providing muchneeded balance inside the lab. "Research can be hard, and its benefits aren't always immediately apparent," she shares. Although Silkworth knows her work in the lab will ultimately pay dividends, she's realistic about the slow timeframe involved in bringing the innovations of research to patients. "I wanted to have an impact, not only in 15 years, but today as well," she says. "I can't cure our campers and I can't treat them at the moment, but at least I can give them a week of fun."

Needless to say, the experience of starting Camp Casco has been a life-changing one for both Fletcher and Silkworth. "I had never done anything quite like this before, and it was the best and most significant week of my life," Silkworth says. Fletcher has translated her part-time commitment to Camp Casco into a career—she left her program in spring 2015 to run Camp Casco as CEO.

Science for All

While Fletcher's and Silkworth's vision extended all the way from the lab to Western Massachusetts, graduate outreach groups on the Harvard campus are ensuring that the University is making connections closer to home.

Take Science in the News (SITN), the graduate-student organization focused on bringing the latest scientific discoveries to the public through seminars, events, an engaging and accessibly-written blog, and their most recent addition, a podcast series. During SITN's Science by the Pint events, Harvard scientists (often graduate students, but not exclusively) speak informally about their work at Cambridge-area pubs. Topics have included everything from Red Dwarf stars to the treatment of blindness using gene therapy.

For Vinidhra Mani, a fourth-year PhD candidate in immunology, events like Science by the Pint share what it means to be a modern scientist with a local, often non-scientist, audience. "Graduate students are the next generation of scientists. Part of SITN's mission is to enable students to reach out and be part of the real world," she explains. "We want others to see that we're engaged, we don't just wear white lab coats and ponder minute problems divorced from everyday life."

Mani, who serves as SITN's co-director, says that the graduate students who give lectures and talks for the group learn just as much as the audience. "Presenting to nonexperts helps grad students learn how to communicate their work to different audiences, and this is important no matter where you go in your future career," she explains. "It's a two-way street. When an audience member asks me a question that I'd never thought of before, not only does it show me that I explained my work effectively, it also broadens my perspective on the project."



Opening Doors

Oftentimes student outreach projects are sparked by academic interest, but in other cases students seek out volunteer opportunities that diverge entirely from their field of study. Take Chris Faesi, a fifth-year PhD candidate in astrophysics, who has studied music seriously for most of his life and had a career as a professional dancer before pursuing graduate study.

Faesi joined the Dudley Orchestra during his first year at Harvard, playing percussion and timpani. Based in Dudley House, the GSAS student center, the Dudley Orchestra offers members of Harvard and greater Boston area a way to continue their serious engagement with music.

Music is nothing without an audience, however, and throughout its twenty-odd year history the orchestra has sought to engage with the local community. Although lowcost performances have until now been their prime means of doing so, the orchestra has recently begun to broaden its engagement outside of Harvard.

In fall 2014, for example, the orchestra began a collaboration with the Prospect Hill Academy Charter School, a K-12 school in nearby Somerville, that brought classical music into the classroom. The orchestra chose a timeless piece, long used to introduce orchestral music to new listeners: Sergei Prokofiev's 1936 classic, *Peter and the Wolf*.

> "Our students were 100 percent engaged in the concerts. Many sat on the edges of their seats with eyes wide open and totally silent. It's hard to say who gets more out of it, the audience or the performers."

"Each instrument represents a different animal or character," explains Faesi, now in his fifth year with the orchestra. "It's perfect for introducing kids to the different voices that make up an orchestra." According to Nancy Alach, the principal of Prospect Hill Academy, the students were prepared for the performance ahead of time and came eager to ask questions. "Our students were 100 percent engaged in the concerts," she shares. "Many sat on the edges of their seats with eyes wide open and totally silent." Faesi says that the pleasure was mutual. "It's hard to say who gets more out of it, the audience or the performers."



As the enthusiasm of the Prospect Hill students demonstrates, classical music has the ability to speak to and engage people of all different backgrounds and ages. Like Faesi, Aaron Kuan, a PhD candidate in applied physics and former director of the Dudley Orchestra, has been committed to making music for many years. A talented violinist, he participated in the inaugural class of the Harvard-New England Conservatory Joint Program as an undergraduate and went on to receive his master's from NEC in 2010 for violin performance before coming back to Harvard to pursue his PhD.

According to Kuan and Faesi, classical music opens a door to many central life experiences. "Playing music with others teaches you about discipline and teamwork," Kuan says. "It's also a free social environment where children don't have to worry about fitting in or being cool." Faesi adds that exposure to orchestral music, and music in general, provides unique benefits. "It's a wonderful and marginalized art, allowing one to access a feeling of what's greater than oneself. If we lose that, we lose a piece of our own humanity." This is the philosophy that drives the members of Dudley Orchestra to share their passion for music with children the same age as they were when many of them started playing.

Regardless of their fields of study, for the graduate students involved in Camp Casco, Science in the News, and the Dudley Orchestra, the benefits of the outreach they do in their precious spare time greatly outweigh the costs. As Faesi puts it, "We all benefit from stepping outside ourselves. As graduate students at Harvard, we're in a privileged position, and part of that privilege is the duty to share what we know and what we find interesting. We have a duty to reach out to others." Chris Faesi (bottom left), Aaron Kuan (top right), and the Dudley Orchestra with Prospect Hill Academy Charter School students. Colloquy 26

SPRING 2016

Noted

REGIONAL STUDIES-EAST ASIA

Shen Yue, AM '11, was named "Investor Education Journalist of the Year" by the Securities Investors Association of Singapore. The award recognizes journalists for educating the investing community and demonstrating "sound knowledge of the investment principles and the instruments discussed" in their articles. Yue is a journalist with *Lianhe Zaobao*, the largest Singaporebased Chinese language newspaper.

EAST ASIAN LANGUAGES AND CIVILIZATIONS

Don J. Wyatt, PhD '84, is one of three inaugural recipients of the 2015 John Hope Franklin Award of the Phi Beta Kappa Society, for "especially meritorious service." The society praised Wyatt as a "longtime stalwart," for his 25-year tenure as president of the Middlebury College Chapter of Phi Beta Kappa. He is currently the John M. McCardell Jr. Distinguished Professor in Middlebury's Department of History.

NEAR EASTERN LANGUAGES AND CIVILIZATIONS

Pamela Barmash, PhD '99, co-edited a collection of essays, *Exodus in the Jewish Experience: Echoes and Reverberations* (Lexington Books, 2015). Featuring contributions from scholars in comparative literature, religious studies, and theology, the anthology investigates how the Exodus has been, and continues to be, a crucial source of identity for both Jews and Judaism. Barmash is an associate professor of Hebrew Bible and Biblical Hebrew at Washington University in St. Louis.

AFRICAN AND AFRICAN American studies

Currently provost postdoctoral fellow in the history department at Duke University, **Ashley Farmer, PhD '13,** prepared for exciting changes this winter. Farmer's article, "Reframing African American Women's Grassroots Organizing: Audley Moore and the Universal Association of Ethiopian Women, 1957–1963" will appear in the 2016 winter-spring issue of the Journal of African American History. Her book, What You've Got Is a Revolution: Black Women's Movements for Black Power

HISTORY OF AMERICAN Civilization

Robert Allison, PhD '92, professor and chair of the Department of History at Suffolk University and Christine Dee, PhD '02, an associate professor of history at Fitchburg State University, participated in a professional development series organized by students and administrators in the Program in American Studies during March and April 2016. During the panel discussion titled "Teaching at Non-Elite Institutions after Graduation," Allison and Dee shared their experiences building academic careers outside the Ivy League.

The series grew out of several events planned by Arthur Patton-Hock, administrative director of the American Studies Program. Current PhD students in the program decided to join forces with Patton-Hock and expanded the offerings to include discussions with students, alumni, and members of Harvard's Office of Career Services and the Derek C. Bok Center for Teaching and Learning. The topics ranged from building a scholarly online presence to constructing an effective teaching portfolio, important topics that may not be covered in the researchfocused discussions occurring around a seminar table.

is forthcoming from the University of North Carolina Press. Farmer will join the Department of History and the African American Studies Program at Boston University as an assistant professor this summer.

HISTORY

Phi Beta Kappa presented the 2015 Christian Gauss Award for literary scholarship to **James Turner, PhD '75,** for *Philology: The Forgotten Origins of the Modern Humanities* (Princeton University Press, 2014). This ambitious



While Allison and Dee shared their perspectives as alumni of the History of American Civilization (American Studies' predecessor), the organizers felt that it was critical from the outset that the series not be limited solely to students in American Studies. "First, these are topics that all graduate students across GSAS (and beyond!) could benefit from," said one of the organizers, PhD candidate Zach Nowak (above). "More important, we knew we would benefit from having graduate students based in a number of disciplines around the table."

The professional development series was supported by generous funding from the Gochman Dean's Fund for Innovation and Development, established by David Gochman, AM '90, Regional Studies–East Asia. intellectual history traces how the study of ancient languages and texts led to the development of the modern humanities and the modern university. *The Times Literary Supplement* earlier named *Philology* a 2014 Book of the Year. Turner is Cavanaugh Professor of Humanities Emeritus at the University of Notre Dame.

Yonatan Eyal, AM '02, PhD '05, was appointed director of graduate studies at the University of Cincinnati in late 2015. Eyal was previously a professor of history at the University of Toronto and currently serves on the Graduate School Association Alumni Council.

COMPARATIVE LITERATURE

Christina Pugh, PhD '98, received a Guggenheim Fellowship in poetry for 2015–2016. Pugh is the author of three books of poems, Rotary (Word Press, 2004), winner of the Word Press First Book Prize; Restoration (Northwestern University Press, 2008); and Grains of the Voice (Northwestern University Press, 2013). A fourth volume, Perception, is due out in 2017 from Four Way Books. Her poems have been featured in Atlantic Monthly and the Kenyon Review among others. Pugh is professor of poetry in the Program for Writers at the University of Illinois at Chicago.

ROMANCE LANGUAGES AND LITERATURES

Translator of French poetry and drama, Norman R. Shapiro, BA '51, AM 'TK, PhD '58, published *Fe-Lines: French Cat Poems through the Ages* (University of Illinois Press, 2015). The book's poems, many of them translated into English for the first time, are delightfully illustrated and capture the French affection for *le chat*. Shapiro, who remains closely tied to Adams House, is a prolific and prize-winning translator of French and Francophone literature. His most recent translations include *Poetry of Haitian Inde-*

GEOLOGY

The Canadian Mineralogist, the journal of the Mineralogical Association of Canada, honored the internationally-known mineralogist **Edward Sturgis Grew, PhD** '71, on the occasion of his 70th birthday. The journal featured an illustration of edgrewite, a newlydiscovered mineral named for him, on its cover. Grew is research professor in the School of Earth and Climate Sciences at the University of Maine.

Grew began collecting minerals as a child in Andover, Massachusetts, publishing one of his first discoveries in the periodical *Rocks* & *Minerals* while still a student at Phillips Academy Andover—the construction of Interstate 93 had exposed veins of igneous rock containing minerals never before reported in Eastern Massachusetts. This hobby led to a career during



which he has discovered or co-discovered 18 new minerals, many of them in Antarctica. During his Antarc-

tic expeditions, he spent time at the then-Soviet Molodezhnaya Station, where he developed relationships with Russian scientists that extend to the present day.

These relationships also led to the naming of edgrewite, which was discovered in a caldera in the Northern Caucasus. "The mineral was named for me by Evgeny Galuskin and Irina Galuskina, a husband and wife team with whom I have been collaborating for several years," says Grew. In addition to edgrewite, a calcium silicate with fluorine, Galuskin and Galuskina also named hydroxyledgrewite, a similar mineral containing water (in the form of hydroxyl) instead of fluorine. Its crystal structure is related to that of peridot.



A rock containing hydroxyledgrewite, which occurs with other minerals in gray lenses up to 0.5 cm across on the polished surface.

"I feel very honored to have a mineral (actually two) named for me," Grew shares. "Not every mineralogist is so fortunate."

In the course of his career, Grew has conducted numerous field studies, co-authored 170 articles, edited two books, and mentored undergraduate and graduate students. In recognition of his academic efforts, he received the Collins Medal from the Mineralogical Society of Great Britain and Ireland in 2015. The award is presented to a scientist who, during a long and active career, has made an outstanding contribution to pure or applied aspects of mineral sciences and associated studies.

Edgrewite is not the first object to be named for Grew. In 1973, the US Advisory Committee on Antarctic Names designated a mountain, located in the Mount Murphy massif of Antarctica's Marie Byrd Land, Grew Peak. —Ann Hall

pendence (Yale University Press, 2015) and Théophile Gautier's *Selected Lyrics* (Yale University Press, 2010). He is professor of French and distinguished professor of literary translation at Wesleyan University. ♥ Colloquy 28 SPRING 2016

SAVE THE DATE Global GSAS: Paris 2016

Save the date for Global GSAS in Paris on June 17, 2016. Join Dean Xiao-Li Meng and Harvard faculty for a reception and program, hosted by the Graduate School of Arts and Sciences and the Harvard Club of France. *E-mail gsaa@fas.harvard.edu for program details and registration information.*



Harvard Library Benefits for Alumni

Through the Harvard Library, alumni may now access over 7,500 online journals, e-books, and resources, including JSTOR, *Time, Foreign Affairs*, the *Journal of the American Medical Association*, and the *Oxford English Dictionary*. Offered exclusively to Harvard alumni across the University, these resources can be unlocked using your HarvardKey.

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Visit alumni.harvard.edu/harvard-alumni-library-access for details.

LET YOUR VOICE Be heard

Make Your Choice for Harvard Overseer and HAA elected directors

Voting is open for Harvard Overseer, one of Harvard's two governing boards. Alumni can also vote for Harvard Alumni Association (HAA) elected directors. This is your opportunity to have a voice in Harvard's governance.

Ballots were mailed to alumni worldwide in early April, and votes are due by May 20, 2016. Election results will be announced at the HAA's annual meeting on Commencement Day, May 26, 2016.

Review a list of candidates and learn about eligibility at harvard.edu/ elections-2016.



OnDevelopment

Giving isn't just about donating money, says Stephanie C. Skedros, new director of Graduate School of Arts and Sciences (GSAS) Giving. It's a chance to be a part of the creativity and discovery that forge new ideas and new knowledge at GSAS. "Each day, I get to witness GSAS's global leadership and innovation in graduate education. Our students, faculty, and alumni have a transformative effect on our society, and I am thrilled to help ensure that this work is strengthened and advanced," she says.

Skedros meets with the Graduate School Fund Committee and with alumni to help inspire support for GSAS fundraising priorities, resources dedicated to attracting the most promising scholars to Harvard and ensuring their success throughout their time here. Not only do donors help provide the research and fellowship funds necessary for trailblazing scholarship, but their generosity also fuels new initiatives that enhance the graduate student experience. The Harvard Horizons symposium, an increased parental leave stipend, and professional development offerings all have been made possible by recent donor philanthropy.

"This is important work, and our alumni are part of this positive change," she says. Skedros is no stranger to Harvard, having worked in the financial aid office at the Harvard Kennedy School. Most recently, she served as director of annual giving at Hellenic College. She revels in her daily conversations with donors and volunteers. "There's not one perfect plan in development," she says. "I look forward to getting to know you, our GSAS alumni: what excites you and what drives you to give back to a place you love."

For more information on opportunities to match your unique interests and passions with the training and development of the world's emerging leaders, please contact Stephanie Skedros, director of GSAS giving, at stephanie_skedros@harvard.edu or 617-495-1629.

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Image of a mini-stomach showing insulinproducing cells in red, stomach stem cells in green, and cell nuclei in blue. *Courtesy Chaiyaboot Ariyachet*.