

Fall 2016



## ENGAGE

# Beat the Clock

There's probably no way you can guess all of the word combinations (at a minimum of three letters long) made possible by rearranging letters from Catholepistemiad, the original name of the University of Michigan. (The **Catholepistemiad**, a term coined to mean "academy of universal knowledge," was established in 1817.) There may be as many as 2,204\* words possible, and listing all of them would be tough for anybody.

Instead, we're asking you to see **HOW MANY WORDS YOU CAN MAKE IN 5 MINUTES**. Share your total and a photo of your word list with us at @UMichLSA on Twitter or share your best word with us at facebook.com/UMichLSA.

**Follow us on social media and keep your eyes peeled for this and other #UMich200 fun as we get ready for U-M's Bicentennial.**

### BONUS CHALLENGE

So how the *bail* do you say *Catholepistemiad*, anyway? Record yourself trying—nae, struggling!—to pronounce our dear old U's first, true name and tag us on Instagram so we can share the fun.



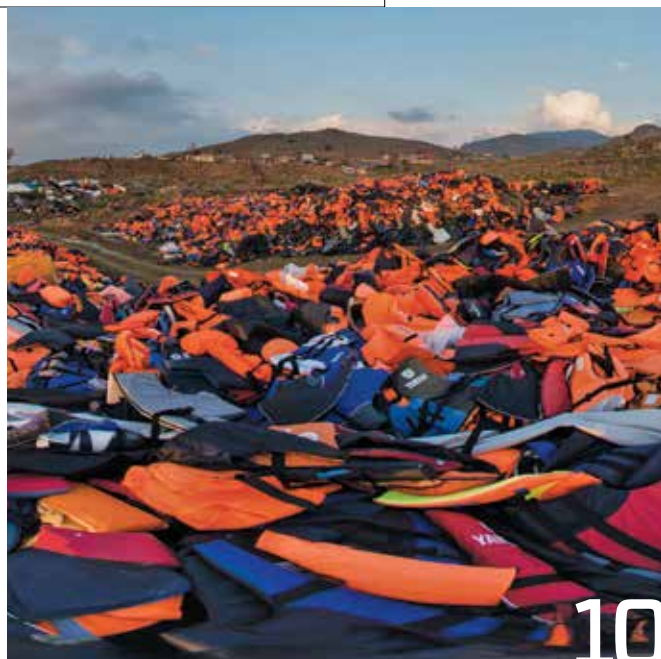
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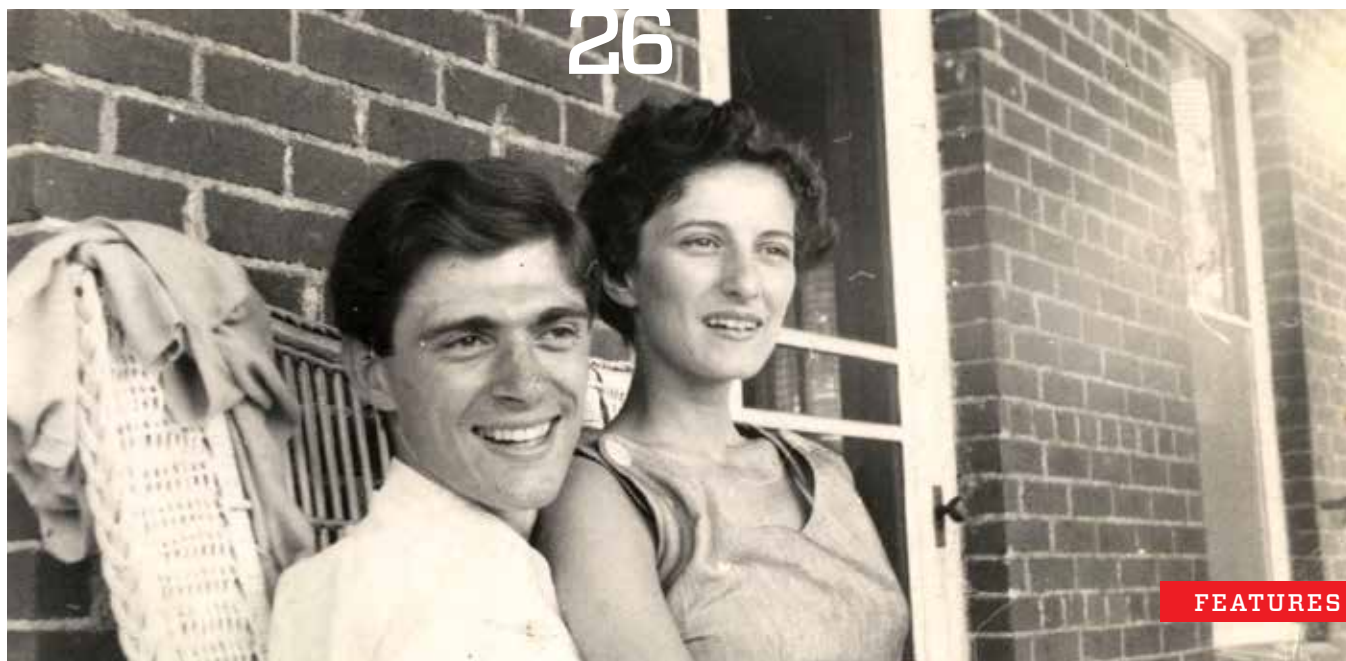
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**by Elizabeth Wason**

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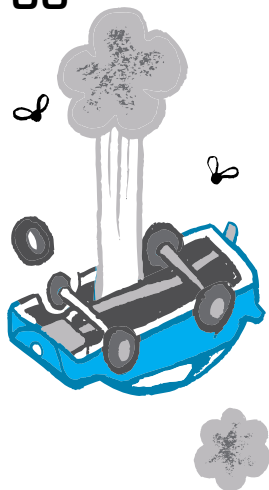
### DIALOGUE

- 3 Inside LSA
- 4 Entry Points
- 5 Your Words
- 6 In Short

### 42.22° N, 83.75° W

- 35 **Epic Grammer Failz**  
Go ahead, call it "expresso."
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Always label your horn cores.

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### THE MICHIGAN DIFFERENCE

- 39 **The Importance of Being EARNEST**  
"You can't write a line of code to represent the entire world of experiences."
- 42 **Failure, Inc.**  
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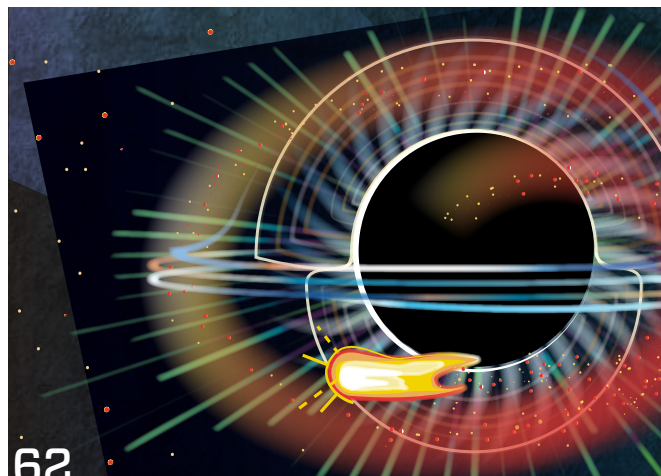
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## Failing Forward

**WE LIVE IN THE MOST DYNAMIC**, globally connected economy the world has ever known. And while that promises an almost limitless range of exciting and important possibilities, it also promises something else: failure. Bold but misguided moves are frequently the price of eventual progress. The pace of innovation often outstrips the process of careful, strategic planning. Ideas and products that do succeed spell doom for others and affect the lives of thousands of people from Wall Street to Main Street.

So how do we create the types of leaders who see failure not as a specter but an ally, the leaders with the courage and capability to redefine an industry or redefine themselves? Through the liberal arts, of course.

Young people today are likely to change not just jobs but careers multiple times. That's why it is more important than ever to teach them to consider new challenges from multiple perspectives and to ask the right questions instead of trying to apply rote answers.

In a recent *Wall Street Journal* blog post, entrepreneur and LSA alum David Kalt (A.B. '89) notes that his experience building tech teams has taught him "that individuals with liberal arts degrees are by far the sharpest, best-performing software developers and technology leaders." The reason, he asserts, is a concept that I hold dear in my role as dean. As Kalt puts it, "A well-rounded liberal arts degree establishes a foundation of critical thinking," and "a critical thinker is a self-learning machine."

Given the shifting tectonics of our modern economy, there's a very real possibility that narrow training can swiftly become irrelevant training. LSA graduates develop the mental agility to succeed in diverse environments and changing conditions. They can collaborate with others, communicate their ideas, and elevate discussions in unexpected ways. And Kalt is just one voice to point out how desirable these skills are to employers, with recent articles echoing the sentiment in the pages of *Fast Company*, the *Washington Post*, and the *New York Times*, among others.

At the highest level, the purpose of a liberal arts education is to learn about the world in all its complexity and understand one's place in it. The ability to do so in a self-reflective fashion contributes to finding a sense of place and purpose. At a practical level, young people today are likely to change not just jobs but careers multiple times. That's why it is more important than ever to teach them to consider new challenges from multiple perspectives and to ask the right questions instead of trying to apply rote answers. And it's why we must continue to inspire and equip them to embrace adversity and become lifelong learners.

To do otherwise would be failing them, indeed.

### Andrew D. Martin

Professor of Political Science and Statistics,  
and Dean, College of LSA



INSIDE LSA

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Wherever this symbol appears in the magazine, you can find expanded content on the LSA website.



## MICHIGAN MUST-READS

We've collected a handful of recent books by LSA faculty and alumni into a handy, can't-miss list of novels and nonfiction that are at turns thrilling, immersive, moving, and introspective.



### THE SMALLEST LIVING MONKEY

Enjoy the best images from the Department of Ecology and Evolutionary Biology's photo contest.



### FINDING DIAMONDS IN THE ROUGH

One alumna's experience appraising antiques on *Auction Kings*.



### PHILOSOPHY FIGHT CLUB

LSA grad students take philosophy to the people.

Plus!



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[lsa.umich.edu/alumni/magazine](http://lsa.umich.edu/alumni/magazine)



LSA MAGAZINE IS PUBLISHED TWICE EACH YEAR BY THE UNIVERSITY OF MICHIGAN COLLEGE OF LITERATURE, SCIENCE, AND THE ARTS

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## Cover

I received the recent issue of *LSA Magazine* and noticed the reference to Erwin Schrödinger. I imagine this was to fit into the theme of uncertainty in the magazine; however, although he developed the quantum mechanical wave equation, he did not introduce the idea of uncertainty. The wave equation is deterministic, and the uncertainty enters from an interpretation of the wave itself. This was done by Max Born, who introduced the probabilistic interpretation of the Schrödinger wave and further by Werner Heisenberg with his Uncertainty Principle.

This interpretation led to the famous dialogue between Albert Einstein and Niels Bohr with the line from Einstein that reads, "God does not play dice with the universe," and Bohr admonishing Einstein for telling God what to do. If the *LSA Magazine* was sent to Schrödinger in the early years, then he might be amused at the association with uncertainty.

**Marvin White (B.S. '60)**

## An Execution in the Family

I applaud the even-handedness of Brian Short's article on the Rosenbergs and their two sons. Although I am a few decades younger, I grew up in something of the same milieu as the Meeropol boys, and it is nice to see that they, too, have an Ann Arbor connection.

The article, however, is marred by one highly suspect statement. The 1949 Soviet atomic bomb test, says Mr. Short, "opened the door to nuclear war..." Of course, the only use of a nuclear bomb in war was by the United States and preceded the Soviet test by four years. Thus, "the door to nuclear war" was already wide open at the time of the Soviet test, and it is we who opened it.

**Joseph S. Lieber (A.B. '86, J.D. '96)**

"I always enjoy your magazine. The article entitled 'Seeing the Unseen' mentioned one of my favorite scientists, Marie Tharp. For more about her incredible career, I suggest *Soundings: The Story of the Remarkable Woman Who Mapped the Ocean Floor* by Hali Felt. Many of her discoveries about plate tectonics were attributed to the men at Lamont-Doherty Earth Observatory."

**Kathy Peters (A.B. '72)**

## TALK TO US

We invite your feedback on *LSA Magazine* content or on topics related to the College. Letters for publication may be edited for style, length, and clarity.

Email: [lsamagazine@umich.edu](mailto:lsamagazine@umich.edu)

Or write to:  
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Most popular  
letter-  
generating  
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**"An Execution  
in the Family"**



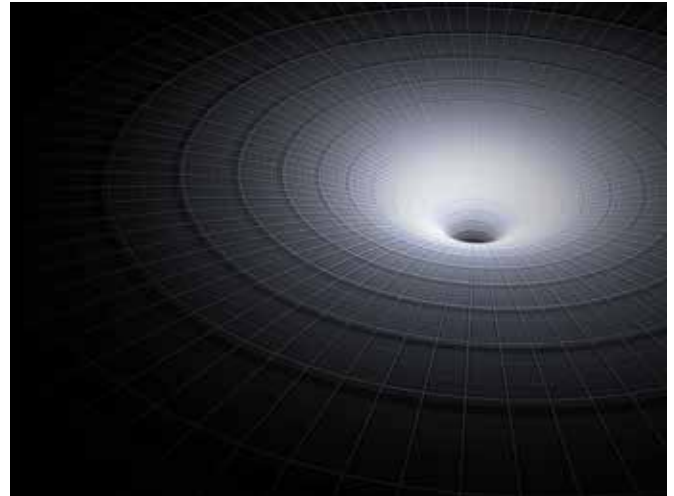
#1

## the Best of the Best

With an average SAT score of 1380 for new students and early earnings for alums as high as \$59,000, U-M was ranked the **No. 1 public university** in America by *Money* magazine.

The Fortunes  
The Mortifications  
The Mothers

Three gripping multi-generational novels that just happen to have weirdly similar titles, written by LSA writers Professor **Peter Ho Davies** (*The Fortunes*), research fellow **Derek Palacio** (*The Mortifications*), and alumna **Brit Bennett** (M.F.A. '14; *The Mothers*).



## “Black holes will be the brightest things in the sky.”

TA-YOU WU Collegiate Professor of Physics **Fred Adams** on the lightscape of a future era when the stars vanish. Adams and a colleague at U-C Santa Cruz, Professor Gregory Laughlin, explored what would happen to the universe in the very distant future a googol—that’s 1 with 100 zeros after it—years from now. They predicted an era dominated by black holes followed by an era of small particles that could resemble the earliest days of the universe.



## “Rhythm Wars”

The name of an art piece by **Camille J. Norment** (A.B. '92), consisting of a large, round drum installed on the outside of the Løren subway station in Oslo, Norway, earlier this year. The piece looks a bit like a clock face and a bit like an animal, with the clamps holding the drum in place seeming like the legs and body of a circle-headed creature that has just crawled over the corner of the building.

### 60+ PEOPLE 50 PROJECTS 15 LANGUAGES

The size and breadth of the Department of Comparative Literature’s annual Translate-a-Thon, an event co-produced with U-M’s Language Resource Center that leverages students’ language abilities to translate text projects for free. The projects include everything from campus welcome brochures to artifacts from the Holocaust Memorial Museum.

### @AngelaHarrisAXO

Enjoyed the shorts by @UMScreenArts students; thank you @UMichLSA for sponsoring #TCFF2016. Go Blue!

### @ProfADM

Pro tip, after dozens of compliments today: Wear #PlaidPants. #ThanksEveryone

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@UMichLSA





400,000  
MILES PER HOUR

The speed at which the Milky Way's halo—a ginormous cloud of superheated gas—spins, according to research done by LSA scientist **Edmund Hodges-Kluck**, Astronomy Professor **Joel Bregman**, and Ph.D. candidate **Matthew Miller**. The halo moves more slowly than the Milky Way, which rotates at a stupendous 540,000 miles per hour. (It sounds even more impressive when you use kilometers.)



### BEHIND THE SCENES

Complaints about the degradation of the English language didn't start with spell-it-out curmudgeons taking on internet shortcuts like IRL and BRB. A 15th-century text—the improbably titled *Polychronicon Ranulphi Higden Maonachi Cestrensis*—bemoaned changes in the language in the wake of the invasion by French Normans in the 11th century, describing the new sound of English as being like “snarling and grating gnashing teeth.” You can read about LSA's class on epic grammar fails on p. 35.



How quickly the Zika virus sometimes leaves the body, according to Margaret J. Hunter Collegiate Professor of Life Sciences and Professor of Biological Chemistry **Janet Smith**. Smith and her team, including scientists at Argonne National Laboratory and Purdue University, mapped the fingerprints of the Zika virus's protein structure, a discovery which could be developed to correctly identify patients who have been exposed to Zika. Current commercial tests only identify someone who has Zika *right now*, but knowing whether a person has been exposed to Zika *in the past* could be life changing.

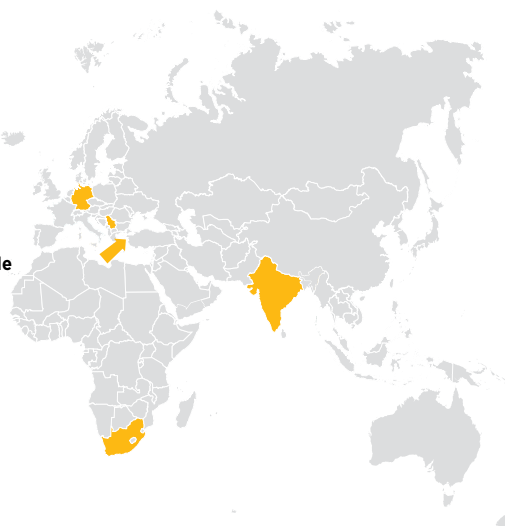
6/  
100

The number of alumnae who made *Crain's Detroit Business's* list of the 100 most influential women in Michigan. Some of the Victors making Michigan great include **Tonya Allen (A.B. '94)**, president and CEO of the Skillman Foundation; **Denise Y. Brooks-Williams (A.B. '89, M.H.S.A. '91)**, president and CEO of Henry Ford Hospital; and **Kym L. Worthy (A.B. '79)**, Wayne County prosecutor.

## LOCATION, LOCATION, LOCATION

The origins of several stories in this issue and online:

- Delhi
- Pristina
- Lesbos
- Palo Alto
- The heart of a black hole
- Toronto
- Cape Town
- The half-court line
- Wolfsburg
- Dearborn



A portrait of Ariel Ragin, a young Black woman with long, dark braids accented with gold rings. She is wearing a grey V-neck sweater over a dark t-shirt with a yellow and blue graphic. She is looking slightly off-camera with a gentle smile.

# Striving.

## **YOU CAN HELP.**

Rising LSA junior Ariel Ragin is making the most of her college experience. The biopsychology, cognition, and neuroscience major has traveled to Tokyo to study environmental science, conducted important research with a renowned expert in child cognitive development, and spent a summer volunteering and researching in Detroit, all just in her first two years at U-M.

## **CONSIDER THE FUTURE.**

Thanks to the generosity of LSA scholarship donors, Ariel has been able to pursue her educational goals without worrying about her financial situation. And support for Ariel today will have reverberations long into the future, when Ariel hopes to become a medical administrator, working to improve the lives of people in the community by increasing access to quality medical care.

## **TAKE ACTION.**

Make a gift today to help Ariel and countless students like her become LSA Victors.

Move forward.  
Give back.

**EVERY GIFT MAKES A DIFFERENCE.**


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A white dress shirt is shown from the chest up. A silver pen is tucked into the pocket. A blue ink smudge is visible on the lower right side of the shirt. The text is overlaid on the shirt.

Every mistake ~~is a doorway~~  
~~is creative~~  
provides a ~~flashlight~~  
~~a lightbulb?~~  
a chance ~~to learn~~  
~~to reflect~~  
to transform

Every failure is ~~a knock at the door~~ a new beginning





# ONE BET TER





by Susan Hutton

In a world where terrible things do happen, LSA faculty, alumni, and students turn their talents toward righting some of the world's gravest wrongs.

PHOTOS (left) Johan Ordonez/Getty Images; (right) NurPhoto/Getty Images



“AROUND THE WORLD, **1.2 BILLION** PEOPLE  
HAVE NO ELECTRICITY. IT’S ONE OF THE BIGGEST  
OBSTACLES TO ALLEVIATING POVERTY.”



# STAYING POWER

## Government Corruption

In much of the developing world, if you want to know which villages don't have electricity, you hire a guy with a motorbike and send him into the countryside. If he finds villages that don't have access to the power grid, he'll tell you where they are.

It's not exactly efficient, but it is straightforward. What's harder to understand is when a village definitely is connected to the power grid, and the electricity still doesn't work.

These are two of the problems Brian Min, an associate professor of political science, tackles in his work monitoring global energy access. "Electricity is the lifeblood of the modern economy, which is why energy access is so important," he explains. "Around the world, 1.2 billion people have no electricity. It's one of the biggest obstacles to alleviating poverty."

In most developing countries, there is no systematic record that shows which villages are electrified and which ones aren't. Countries might have an electrification rate of, for example, 65 percent. "But where is the other 35 percent?" Min asks. "How can we get electricity to them if we don't know where they are?"

International aid organizations have made huge investments in programs designed to improve energy access for these communities, but evaluating how effective these programs are — and whether or not the money is going where it is supposed to be going — can be difficult.

"These groups spend money to extend power lines to some rural village, but does the electricity keep working after project teams have left?" asks Min. "Is anyone benefiting? No one knows."

To begin to answer these questions, Min has taken a step back — way back — to look at the Earth from the perspective of satellites operated by the National Oceanic and Atmospheric Administration (NOAA). When electricity in a village is working, light is visible in the darkness of night, while places without power appear dark. Satellite data provide, for the very first time, a kind of map that illuminates where electricity is actually working.

"With this information," says Min, "we hope to create a much more focused and rational approach to improving energy access."

### IN THE DARK

For years, NOAA has produced an annual composite of night light images around the world. The images are clear and crisp because they've been filtered to remove clouds and other

obscuring atmospheric disturbances, a process that also, unfortunately, strips away the dim light produced by irregular electricity in much of the developing world.

So Min asked NOAA for access to its entire archive of raw orbital imagery over India since 1993: five terabytes of satellite images containing tens of thousands of orbital image strips collected over some 8,000 nights. Working with U-M's Advanced Research Computing consultants and using Flux — U-M's shared, high-performance computing cluster — Min churned through these images and extracted the light output for more than 600,000 settlements in India to construct a database with nearly 5 billion observations.

It was a huge computational effort, Min says, but the harder part was distinguishing electric light from light coming from other sources, such as reflections from moonlight or electronic static from the sensor itself. To address these issues, he used background noise reduction, a technique he borrowed from astronomy.

To identify an actual light source, astronomers must first filter out noise. Looking at what they know is a dark, empty part of the sky, they can measure the level of background noise and account for its presence in their data. Rather than a starless sky, Min took measurements from parts of India he knew were not electrified and, using a similar process, distinguished the light that had been emitted from electricity from the other sources of light.

### BRIGHT SPOT

The fruit of these efforts can now be seen on a website Min created in partnership with the World Bank, the NOAA, and Development Seed, a mapping and data visualization group. The site, Twenty Years of India Lights (<http://nightlights.io/>), allows anyone to find any village in India and track its light output over the past two decades. Min hopes the site will democratize the data.

"It is about empowering individuals and organizations with information," he explains. "The data is collected autonomously and put in the hands of people who can evaluate and interrogate it themselves. They might even use it to apply pressure to the utilities and the government."

The illuminated maps show where there are gaps in India's electric systems.

They can also help identify patterns in electricity access that are a result of political targeting or favoritism, a focal point of Min's research. And they may inspire new ideas about how to use autonomously collected data to help the poor.

"We're inundated with data, and the volume and speed of data collection is larger than it's ever been before," says Min, "but the big challenge, I think, isn't a technical one. The much harder question is, how do we understand what we're seeing?" ■

(LEFT) **Nighttime satellite images not only capture the lights on Earth that illuminate the darkness of space, but they also identify where electricity is working—and where it isn't.** Satellite photos courtesy of NASA.

# ALL TOLD

## Genocide

Recalling his time at U-M, Patrick Ball (Ph.D. '98) doesn't name the usual places. Sure, he knows the Fishbowl and the Diag, but he took a few important detours while getting his sociology Ph.D. The first was to El Salvador, which, when he arrived in 1991, had already endured 11 years of civil war. There, Ball worked as a nonviolent accompanier by using his U.S. citizenship to protect activists who might be targets of political violence. But by the end of 1991, Ball decided the time for nonviolent accompaniment had passed. His colleagues asked if he knew anything about statistics and computers. "Oddly enough," Ball recalls saying, "I did."

Rather than words, Ball narrates human rights violations using numbers. The director of research at the Human Rights Data Analysis Group, an organization Ball started as a graduate student, Ball has testified in six war-crimes trials and nine official truth commissions, and he has advised the United Nations and dozens of non-governmental organizations.

"I'm not a war crimes investigator in the sense that I track someone like a police officer would," he explains. "I'm looking for the pattern rather than the individual event."

"You can't only look at the data you have. You also need to account for what you *don't* have," Ball says. This new approach used quantitative analysis and reasoning to recognize patterns of violence and even to estimate events that the data don't include. This new evidence was sound, impartial, and it stood up in court. It also created an opening for a new human rights narrative to emerge.

### THE NUMBERS DON'T LIE

When he begins an investigation, Ball usually doesn't have much to go on.

"We get lists of things, and we don't really know why we got these lists," he says. "We don't know who's not on the list for any number of complicated reasons. But if we have a number of lists, we can do some accounting and some math to estimate how many people are missing."

The lists could be census data or handwritten notes of how many people crossed a border. They can include hundreds of thousands of complete and incomplete names as well as inaccuracies. They might say people are dead who aren't or include people who don't exist. Ball's methods are good at filtering through these kinds of bad data — especially compared to



BALL'S RESULTS DON'T PROVE THAT A PARTICULAR EVENT HAPPENED. **HIS NUMBERS CAN CORROBORATE** A WORKING HYPOTHESIS, AND THEY CAN PROVE THAT ALTERNATIVE EXPLANATIONS COULDN'T HAVE HAPPENED.

### SAFETY IN NUMBERS

Human rights violations are notoriously difficult to prosecute. Abuse is usually perpetrated in secret, and in a war people can die indiscriminately from battles and bombs as readily as they can by acts of genocide. Examining morgue records and exhumation reports and identifying an intent, such as systematic detention or ethnic cleansing, is tricky. The accused can counter that the source is biased, or the evidence is incomplete. They can argue that it's one person's story against another's. Ball saw a different approach.

surveys, which, because one person represents hundreds or thousands of people, can be inaccurate. To be sure, his methods stand up to bad data, and he tests them by intentionally adding errors to his analysis.

"You have to add a lot of garbage or delete a lot of stuff — more than 10 percent — before the results start to change," he says. "And when you're dealing with hundreds of thousands of original records, it becomes hard to imagine how you could successfully add invented information or deliberately falsify thousands of records without being detected."



Ball's results don't prove that a particular event happened. His numbers can corroborate a working hypothesis, and they can prove that alternative explanations couldn't have happened. For example, in the trial against the former President of Yugoslavia Slobodan Milošević, Ball graphed Kosovar killings to show they didn't match up with NATO bombings or attacks from Albanian guerilla groups, and, therefore, couldn't have been caused by NATO or the KLA. The killings and the Kosovo migration patterns did correspond, however, to the

In addition to Milošević, Ball testified against Guatemala's General Jose Efraín Ríos Montt, who was convicted of genocide and crimes against humanity in 2013. He testified in the trial of former Chadian President Hissène Habré, who was convicted of war crimes and crimes against humanity in May 2016. Ball has currently trained his attention on Syria.

"Our Syrian partners stagger me with their persistence and meticulousness and courage," Ball says. "I'm doing my best to honor and respect their work by doing the best record linkage I can.

"We don't want to treat two different people as the same



**(LEFT) Former Yugoslav President Slobodan Milošević was charged with 66 counts of war crimes. He was tried in the Hague by the U.N.'s International Criminal Tribunal and died before the trial ended. Photo by Paul Vreeker/Getty Images**

**(RIGHT) In 1999, more than 40 Albanian farmers were murdered in Kosovo by Serbian troops. The massacre became the basis for one of the war crimes charges against Milošević. Photo by Chris Hondros/Getty Images**

Yugoslavian government's actions, evidence that was consistent with the prosecution's argument that President Milošević was responsible for the violence.

### THE DEVILS IN THE DETAILS

Accuracy and rigor are essential, says Ball, in order to get the truth. "We have to be right," he says. "We have to be as accurate as possible, and that means knowing how to interrogate raw data's silences. Otherwise your results become captive to those silences. You just reproduce them."

person," he continues. "And that's hard because a third of all Syrian men have the name Muhammad, and something like 85 percent of the victims in Syria are adult men. So this isn't simple."

But Ball believes doing this laborious, difficult work makes the world a more just place because it leads to accountability.

"My part is a specific, narrow piece, which just happens to fit with the skills I have," he says. "I don't think that what we do is in any way the best or most important part of human rights activism. Sometimes, we are just a footnote — but we are a really good footnote." ■



To pass the time and ease the stress, Mullan-Koufopoulos played on the beach with some of the young refugees.

# LAST RESORT

## Refugee Crisis

Among LSA junior Patrick Mullan-Koufopoulos's earliest memories are the Saturdays he and his mother went to the jail near their home on the Greek island of Lesbos. They were there

because his mother helped to run a non-governmental organization called — in English — Coexistence, one of the very few refugee organizations on Lesbos before the fall of 2015. As a small boy, Mullan-Koufopoulos didn't understand these weekly visits until he threw a tantrum because a child inside a cell would not come out and play.

"My mom explained that he had to stay in that cell because he wasn't free in Greece," he recalls. "And I began to understand what it meant to be a refugee."

Two and a half miles across the Aegean Sea from Turkey, Lesbos has long been a doorway to Europe. In 2015, Lesbos, an island of 86,000, found itself moving center stage in the drama of international displacement. That year, more than 900,000 refugees flooded into Greece from Turkey; on Lesbos, at the peak, that meant 3,300 refugees per day.

The scale of human suffering was overwhelming, and Mullan-Koufopoulos, flying back to Lesbos between semesters, met it the instant he stepped off the plane. "The airport is across the street from the ocean," he says. "We went straight to the beach because a boat was coming in."

In December, the sunny Greek islands are cold, windy, and rainy. The refugees were exhausted and soaked; many were crying. Volunteers waded into the water to guide the boats to shore. They helped the passengers, beginning with babies, who were

passed along a line where they would be diapered, washed, and given some juice. Next were the children, then the next person, and the next. "That first day, it seemed so normal to everyone, which was shocking to me," he says. "But within two weeks it became normal to me, too."

Twenty boats might arrive in an hour, which meant helping people off one boat, and then moving to the next. The volunteers developed a system: first blankets, then tea, food, and dry clothes. Then the refugees boarded the United Nations High Commissioner for Refugees (UNHCR) bus to a detention center called the *Moria*, where they would be processed and either given papers to continue into Europe or turned away.

Lesbos is a way station, and a meaningful one. It's a foothold to Europe that many refugees consider an end goal, though it's also where refugees realize how much farther they have to go. It's an extreme emotional space Mullan-Koufopoulos could enter because he spoke some Arabic and was a Greek American. "They thought Europeans and Americans were racist, that we all opposed immigrants and refugees," he recalls. When they learned he was an American, many asked, "Why did you make ISIS?"

"I responded by trying to embody what I believe the United States is — a beautiful, diverse country. I tried to move that forward instead."

It was important to Mullan-Koufopoulos and his fellow volunteers that welcoming refugees not become rote. "On the front lines, safety was most important," he says. "But humanity came next." Every day, an elderly neighbor walked up and down the beach collecting the refugees' wet clothes and shoes. He'd take them home, clean and dry them, and hand them out the next day. On Christmas, volunteers collected several of the thousands of life jackets that litter the island to create a Christmas tree. "It was a really nice way of taking away the religious connotation of the holiday to make it an experience for intercultural bonding."

The refugees kept their individuality, too. "One woman said to my mother, 'I used to be you,'" he recalls. "I had two kids, my husband was a professor. And now I'm here."

In March 2016, the European Union and Turkey struck a "one in, one out" agreement to return each refugee arriving in Greece to Turkey, and in exchange give one asylum seeker still in Turkey a European home. Many Greeks didn't support the agreement, fearing it would encourage smugglers to send refugees on an even more dangerous route. A few weeks after the deal was struck, a boat carrying 500 refugees sank. "A lot of Greeks pointed at the EU," says Mullan-Koufopoulos, "and said, this one's on you."

Mullan-Koufopoulos's family is still working on behalf of the refugees. In Ann Arbor, he worries about them, but his belief that individuals can overcome institutional failure remains strong.

"At our best, we turned a system that had failed many people many times into a single situation where we didn't fail them," he says. "We created a place, for at least a few minutes, that offered them dignity and kindness in the purest way possible." ■





**(ABOVE) Hundreds of thousands of refugees arriving on Lesbos also meant hundreds of thousands of lifejackets. On Christmas, volunteers arranged some of these into a Christmas tree. Photo Martin Bruining/Getty Images**

**(BELOW) While the vast majority of refugees arriving in Greece came through Lesbos, other Greek cities have also struggled to accommodate refugees. This camp near Macedonia is home to more than 1,000 refugees. Photo NurPhoto/Getty Images**











# If at First You Don't SUCCEED...

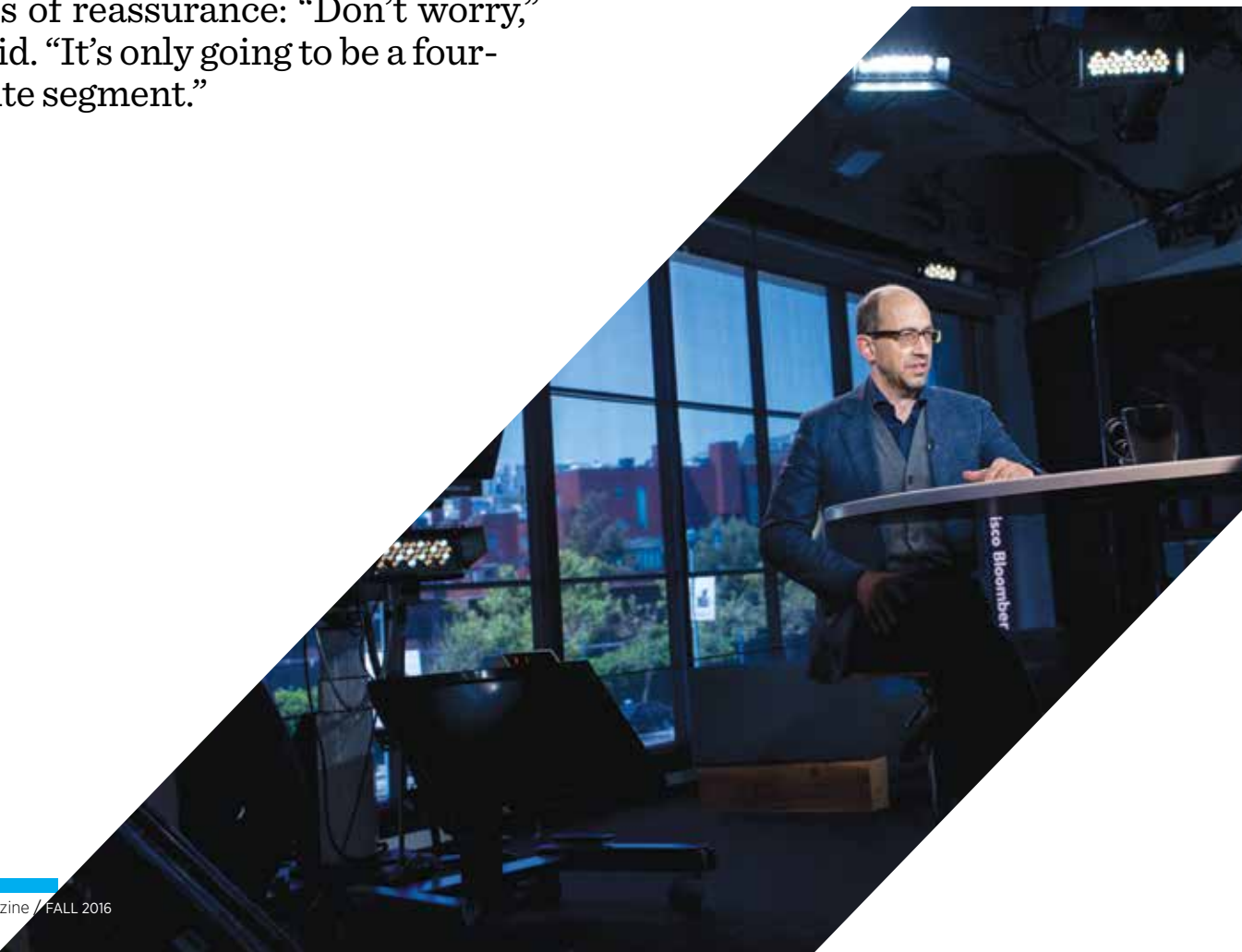
...take a job with a multinational consulting firm, **QUIT**, form a few groundbreaking tech startups, sell them for millions, **DITCH** a dream job with Google to become the CEO of the hottest social media channel on the planet, **RESIGN**, launch another business geared toward redefining the personal fitness industry, and tell everyone your secret has a lot to do with the nights you spent getting heckled as a comedian.


(OR, LIFE LESSONS FROM SILICON VALLEY LEGEND DICK COSTOLO)

by Matt Nelson

## Dick Costolo wasn't nervous.

It was the fall of 2009, just after he had grabbed headlines by accepting an executive position at Twitter, and he was sitting in a chair on the CNBC set. As interns darted about toting coffee and items of possibly even greater importance, Costolo thought about his day, checked his Twitter feed (naturally), and tried to ignore the white makeup bib that made him look more like a pilgrim than a pioneer. The show's anchor strode over with a few words of reassurance: "Don't worry," he said. "It's only going to be a four-minute segment."





appreciated him coming over,” Costolo remembers. “But there was definitely a part of me that thought, ‘After you’ve been booed on stage by a weird crowd in a foreign country, talking to a camera for four minutes does not seem like that big of a deal.’”

### The Tina Fey School of Business

To say that Costolo (B.S. '85, LL.D. '13) took a nontraditional path to the vanguard of Silicon Valley is both true and not true. While he liked to tinker as a programmer growing up in Royal Oak, Michigan, and came to U-M in the early 1980s with his eyes firmly on a computer science degree, he found that his time in LSA opened him up to other ideas and interests.

“I needed to take all these courses outside my major, my concentration,” he says. “And the curiosity that you establish when you go outside your comfort zone and explore something new starts to feed on itself and builds up a lot of momentum. So my junior and senior year, I really started to go well outside those boundaries. I took a course in art history, for example. I’d never known or studied anything about art in my life. And I started taking theater classes and fell in love with those.”

Costolo became so enamored with those classes in the dear, departed Frieze Building (now the location of North Quad), that he took his computer science degree and promptly turned down a number of relevant job offers in order to head to Chicago and pursue a career in improv comedy, performing with Second City and the Annoyance Theatre with the likes of Tina Fey, Steve Carell, and Adam McKay. Unlike his cohorts, Costolo was not asked to join a house company, but he was still able to spend time traveling the world and exploring an art form he revered. Along the way, he picked up much more than just the confidence to get through a brief cable news interview.

“One of the things you learn in improvisation is that listening is the absolutely

most vital skill,” he says. “The best improvisers are great listeners. Steve Carell, Tina Fey, they’re just great listeners. They’re locked in to the moment and pay careful attention to what’s happening, and then they’re initiating based on what they’ve just heard. And I think as a leader, you always want to make sure that you’re in the moment and listening and paying attention to perspectives while you’re in the midst of some dynamic situation or some rapidly changing environment.”

### Perfect Segues

Eventually, Costolo made the move from show business to the business world. (Carell would run into him years later and joke, “I’m sorry things didn’t work out for you.”) And when he did, the internet made for one of the most dynamic and rapidly changing business landscapes in history. Costolo was paying attention.

Over the course of the next eight years, he rose to a senior position with Andersen Consulting. More and more, his work put him in touch with the power and possibility of even a nascent web experience.

“I was working at Andersen in '93 when I discovered the browser Mozilla and then Netscape and started using those to work on some online learning components of an architecture we were building,” he says. “And I just realized that using the web for this was so much more extensible than any of these proprietary tools we had, and I got excited about it. I realized immediately that this was going to be really important.

“Of course,” he admits, “I think I was sitting 20 feet away from the guy who went and reserved the domain ac.com for Andersen Consulting, and I really should have thought at the time that I could just reserve, like, 50 other domain names and never have to work another day in my life.”



One missed cue aside, Costolo took another by leaving Andersen and founding his first company, Burning Door Networked Media, which leveraged the internet to help companies with design and development. Burning Door was acquired in 1996, so Costolo founded SpyOnIt.com, a service designed to sift through the ever-amplifying virtual noise and deliver users customized results via whatever channel they preferred: email, web page, or — remember, this was the nineties — AOL Instant Messenger. That venture was acquired in 2000, which led Costolo to launch FeedBurner, another pioneering content aggregator. Google thought enough of the platform to offer \$100 million for it in 2007, and they thought enough of Costolo to offer him a job.

### Slipping into Characters

About the same time as Costolo's FeedBurner deal, a recently hatched social media effort became a phenomenon at the 2007 South by Southwest Interactive conference. Twitter, the microblogging network that allows users to broadcast messages (called "tweets") of up to 140

characters, saw its usage triple over the course of that event alone. By the time co-founder Evan Williams stepped down as CEO and Costolo had left Google and taken over, users were sending more than 100 million tweets per day, with server-quaking spikes around major events like the death of Michael Jackson or the crash landing of U.S. Airways Flight 1549 in the Hudson River.

Under Costolo's direction, Twitter grew from an intriguing internet startup with about 50 employees to a digital technology stalwart with more than 1,000. He took the company public, and in his five years as CEO its market value rose to nearly \$25 billion. Due to its explosive growth, Twitter has changed the way news is consumed and redefined the landscape of e-commerce. While it gives "the smallest voices a microphone," as Costolo likes to say, it also provides immediate and captivating access to celebrities with their own accounts. (Everyone from politicians to power forwards has learned how even the briefest comment can lead to big headlines, for better or worse.) And through the use of hashtags — a word or phrase preceded in a tweet by "#" in order to group related content — Twitter has also become a powerful tool for activists.

Hashtags like #OccupyWallStreet, #BlackLivesMatter, #ArabSpring, and #BostonStrong connected hundreds of millions of people across the world around a single cause.

Being the CEO of any public company brings with it a heady level of scrutiny, but that was even more

true of a platform whose very lifeblood is instantaneous commentary. To stay focused, Costolo relied on other vital lessons from his improv days.

"Entrepreneurs have to have short-term memory loss," he says. "The investor Ben Horowitz says that being an entrepreneur is basically 'periods of euphoria followed by periods of total horror and misery.' So you have to know that and embrace it and move on to the next thing instead of obsessing about whatever's gone wrong or why this particular thing didn't work out."

But, he says, it's essential to acknowledge your own mistakes — and learn from them.

"Whenever I screwed up a decision or something bad happened, I would get up on stage in front of the company at our all-hands meetings and admit it," says Costolo, who counts being unable to acquire Instagram just before Facebook did as one of his biggest regrets at Twitter. "The very best companies are learning organizations, and I think that the very best leaders admit their failures as quickly as they can, learn from them, and move on by figuring out what they can do differently."

### Funny Business

By the time Costolo decided it was time for him to move on from Twitter in 2015, he was a long way from the small stages and occasionally jeering crowds of his comedy days. But he says his love of humor has continued to benefit him throughout his career.

"One of the challenges you face as you attain higher status or a bigger role in a company," he says, "is that the good news finds its way to you really fast, and the bad news — not so much. So you want people — particularly people who might feel far away from your position in the company — to be comfortable sharing viewpoints or news that's counter to other

"The best improvisers are great listeners. Steve Carell, Tina Fey, they're just great listeners. And I think as a leader, you always want to make sure that you're in the moment and listening and paying attention to perspectives while you're in the midst of some dynamic situation."



Twitter spent several months without a permanent CEO after Costolo stepped down, leading investor Chris Sacca to take to—you guessed it—Twitter to complain about the board’s slow pace in finding Costolo’s replacement.



Featuring alums of *The Office*, *Freaks and Geeks*, *Chelsea Lately*, and *Portlandia*, the standout HBO comedy *Silicon Valley* was nominated for 11 Emmy Awards for its recent third season. Costolo has consulted for the show since 2015.





narratives you might be hearing. I think that great leaders can be kind without being weak and confident without being jerks, and I think a sense of humor is a great way to communicate that.”

Last year, two of Costolo’s worlds collided when he was asked to serve as a consultant on the hit HBO comedy series *Silicon Valley*, which follows a young entrepreneur struggling to turn an ingenious compression algorithm into a successful

business. The work would be unpaid and uncredited,

“What I love about the writers’ table is that anything goes. Nothing is off limits. Nothing is verboten. They will literally say anything and everything and try out any line.”

and it would entail Costolo commuting (ironically) from San Francisco to Los Angeles on a weekly basis. Call it a performer’s intuition, but Costolo agreed immediately.

“I was around a table of 12, 13 writers who are some of the funniest, smartest, and most thoughtful people about writing structure and style that I’ve ever had the opportunity to hang out with,” he says. “And what I love about the writers’ table is that anything goes. Nothing is off limits. Nothing is verboten. They will literally say anything and everything and try out any line, and I thought that was great. It’s really a ‘yes and’ atmosphere, which you want in a creative environment. There’s a lot of idea exchange going on in that room.”

Costolo admits that the writers’ table and the boardroom are like “oil and water,” but he was struck by how his experience had unexpected relevance to more serious business.

“A boardroom is obviously a lot more structured,” he says. “But as a CEO, I

thought of myself as the facilitator of the conversation, making sure one voice wasn’t drowning out the others, making sure I heard any sort of contrarian opinions that might be quiet in the room if the first few voices were particularly loud.

“One of the things I love about the humanities,” he continues, “is that it teaches you by basically making it a habit of mind to be conscious and aware of perspectives outside the self, perspectives outside of your own. I think that great leaders have an intense curiosity about and respect for other points of view, which enables them to make better decisions.”

### Masterpiece Theater

With its focus on a talented neophyte fighting the juggernauts of the tech industry, *Silicon Valley* is at its core a

David and Goliath story, a theme

Costolo and entrepreneurs

everywhere can relate to. In


fact, Costolo credits what he considers the best corporate

speech he’s ever given to a concept he was first exposed to in one of those elective art classes back in Ann Arbor.

In the speech, Costolo showed his audience of Twitter employees a number of artist depictions of the story of David, all of which portrayed the moment after David’s victory: standing over the giant’s vanquished body or holding his severed head aloft. Then Costolo presented an image of Michelangelo’s *David*, which shows a determined and focused hero in that instant just before the battle begins.

“Really, it goes back to improvisation,” explains Costolo, who earlier this year announced plans for another startup, this one aimed toward customizing strategies for personal fitness. “Be here. Be present in whatever is going on right now and not somewhere else. Whatever you’re doing, it’s easy to start thinking about other things or some problem you’ve got at home or whatever else is going on. But life is just so much more fun and intense and exciting and interesting when you’re right there in the moment and soaking it all in.” ■





**When the Red Scare rampaged across campus in the 1950s, three U-M faculty members were publicly hauled to an anti-Communist hearing. All three refused to cooperate with their interrogators. But math instructor Chandler Davis chose a particularly gutsy legal defense, lost his job, served a prison sentence, and emerged browbeaten but willing to fight to get his life back.**

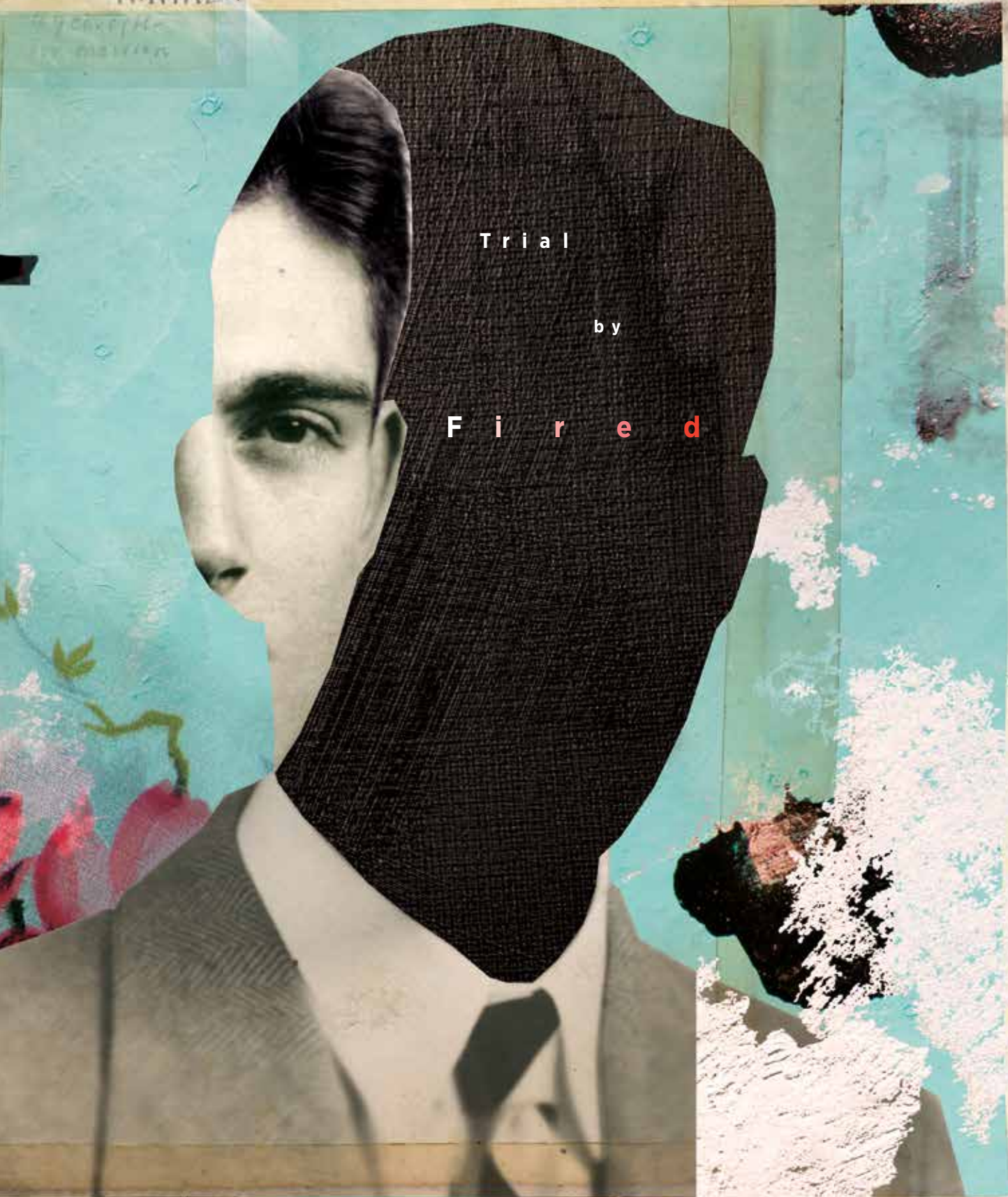
by Elizabeth Wason



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T r i a l

b y

F i r e d

## The FBI banged on the door of the married couple's apartment on William Street in downtown Ann Arbor, where they lived above a bike and hobby shop.

The feds were searching for the author of *Operation Mind*, a pamphlet that spread word across campus that the House Un-American Activities Committee (HUAC) should not be welcome in Detroit. This was 1952, a time when HUAC fingered suspected Communists — threats, in the committee's view, to freedom in America — and dragged the accused into courtrooms for interrogation. With such strong words against HUAC, the pamphlet and its creators quickly drew suspicion from the United States government.

FBI agents had already stopped at the shop where *Operation Mind* had been printed. On an invoice for the print job, they found the signature of Chandler Davis, a new instructor on the faculty of the math department. The FBI tracked him down to his apartment and confiscated his passport, along with the travel documents of his wife, Natalie Zemon Davis (Ph.D. '59).

At the time, Zemon Davis was a doctoral student in the Department of History at U-M, studying people who'd historically been marginalized and rejected. The Davises had just returned

from a trip to France, where Zemon Davis had spent months gathering research material from local archives. She loved poring over official documents from the 16th century, which described the lives of printers who worked in secret for fear of social backlash and political punishment. Zemon Davis was the one the feds were really looking for — she'd written *Operation Mind*.

She and Elizabeth Douvan (M.S. '48, Ph.D. '51), who later became a professor at U-M's Institute for Social Research, had worked together on the pamphlet and published it anonymously. Like the 16th-century printers she studied in France, Zemon Davis felt the fear of repression and repercussions as the anti-Communist Red Scare peaked in the 1950s. She and Douvan knew they had to be careful.

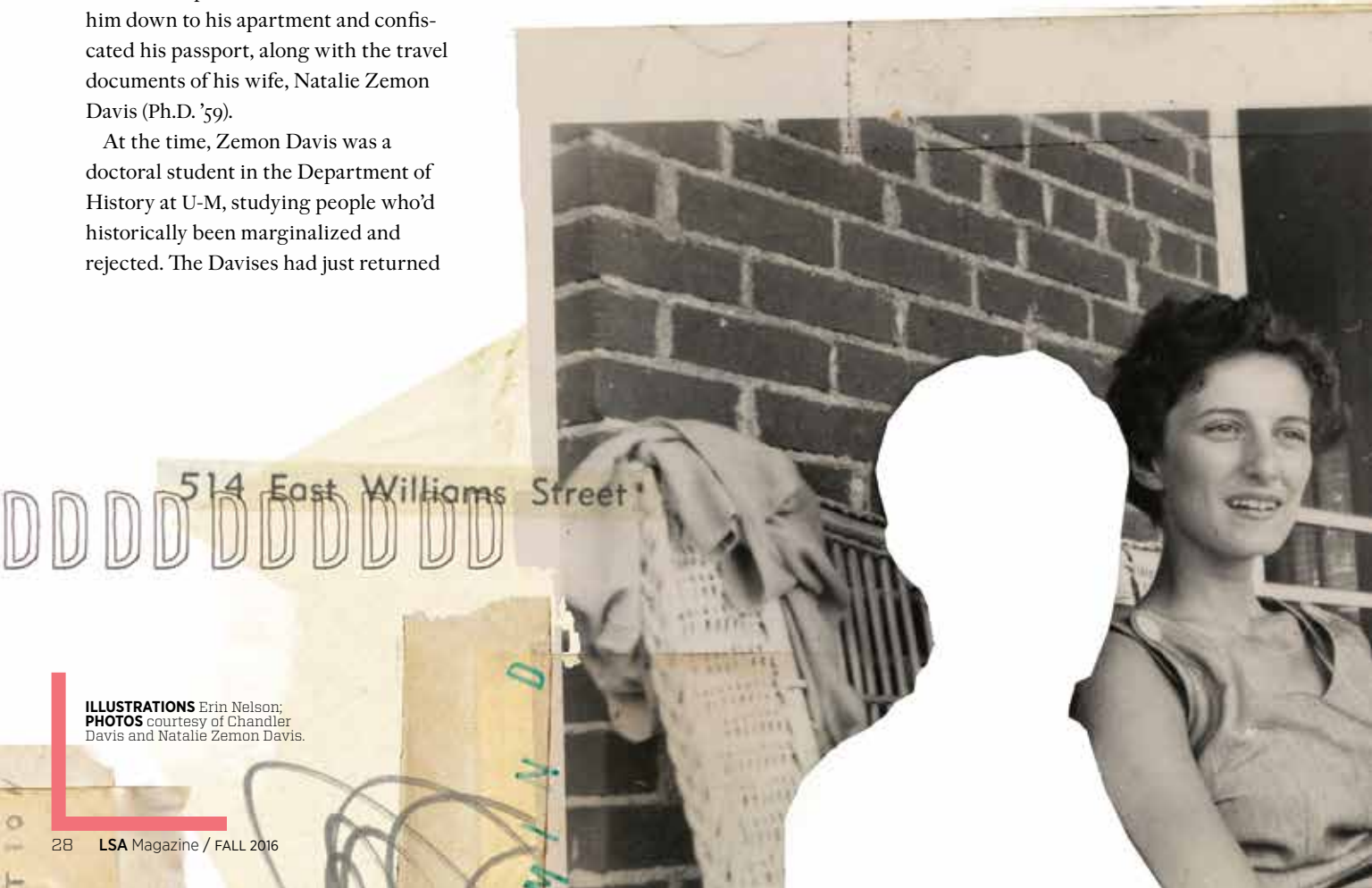
But Davis had signed the invoice and the check at the print shop, so he took the

fall instead of getting them all in trouble. And his pedigree made Davis an easy target. His father was a university professor who moved the family around the country as he repeatedly got fired for voicing strong political beliefs. Both of Davis's parents joined the Communist Party, his great-grandfather was an outspoken abolitionist, and he had ancestors who fought on both sides of the Revolutionary War. Davis himself engaged in revolutionary politics, turning down a position at UCLA because the job would have required him to sign a "loyalty" oath against Communism.

A few months after the FBI nabbed the couple's passports, HUAC sent Davis a subpoena that called him to an official government hearing. He'd been branded a Communist.


## Bold Plan

After World War II ended, veterans—Davis included, who'd served in the U.S.



ILLUSTRATIONS Erin Nelson;  
PHOTOS courtesy of Chandler  
Davis and Natalie Zemon Davis.





**Like the 16th-century printers she studied in France, Zemon Davis felt the fear of repression and repercussions as the anti-Communist Red Scare peaked in the 1950s.**

Navy — deployed in large numbers to universities across the country to take advantage of the G.I. Bill. Chandler and Natalie met at Harvard, where they'd both helped with the presidential campaign of Progressive Party candidate Henry Wallace. Natalie spotted Chandler walking around with a ping-pong paddle; she liked that he was the first political radical she knew who played sports *and* protested. In three weeks, they were engaged. Three weeks after that, they married.

When Davis got his legal summons in Ann Arbor, the couple made a joint decision to fight the charges. "I persist in what I consider the best defense of freedom of thought even when it is not expedient," Davis later wrote. Their decision was anything but expedient, and the plan they devised involved incredible risk.

Davis would refuse to answer HUAC's questions, using as a defense the First Amendment, which gave him the right to freedom of speech and assembly. He also would decline to use the more common strategy of pleading the Fifth Amendment — the right to silence if his own answer could serve as evidence incriminating him — because he didn't want to imply that his political beliefs made him a criminal.

Davis's unlikely goal was to get convicted for contempt of Congress during his HUAC hearing. Only then could he take his case to the Supreme Court and make the bold statement that government-sponsored anti-Communism was wrong, unjustified, and illegal.

"A strange plan? Well, it seemed like the thing to do at the time," Davis wrote in *The Purge*, his detailed account of the events. "The motivation was my resolution to face the Red Hunt as squarely as possible."

## Conviction

The hearing took place in Lansing, in the House chamber of the Michigan State Capitol. U-M alumnus Kit Clardy (L.L.B. '25) — also known as "Michigan's McCarthy," who had been dismissed from his post in the state government 20 years

before on mysterious charges of "malfeasance and misfeasance" — led the official investigation of three U-M faculty: Chandler Davis; Clement Markert, a professor in the Department of Zoology; and Mark Nickerson, a tenured professor in the Department of Pharmacology. Economics Ph.D. students Edward Shaffer (A.B. '48, M.A. '49) and Myron Sharpe (M.A. '51) also received subpoenas and testified.

Davis followed through with his plan. While the others rebelled by pleading the Fifth to every political question, Davis

**"I persist in what I consider the best defense of freedom of thought even when it is not expedient."**

invoked the First Amendment. In further hearings led by special committees of their U-M faculty colleagues, Professors Markert and Nickerson responded frankly to questions from peers about their politics. Davis still refused, insisting, "I will not talk politics under duress."

Markert was suspended from U-M but later reinstated. Nickerson was fired, despite having tenure. Davis was fired by U-M, lost his appeal to the Supreme Court, and served a sentence of six months in prison.

## Political Prisoner

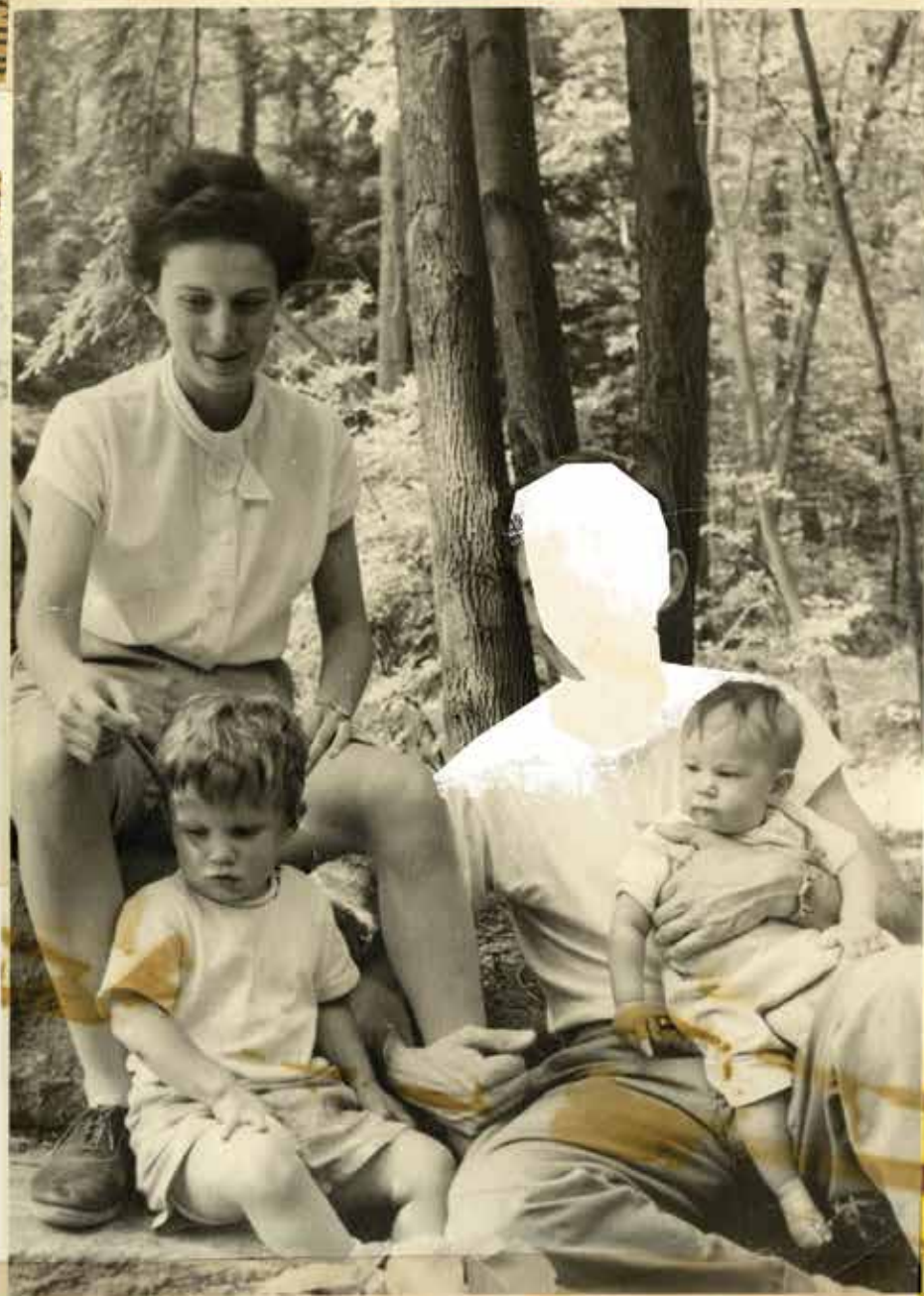
Jail is boring. Davis realized, writing later, "Prison is not one of the heroic or ecstatic forms of martyrdom."

He served his time in Danbury, Connecticut, at a federal correctional institution. Thinking he'd make a political statement as a dissident behind bars, Davis found that activism in a jail cell felt invisible and unflattering. He passed the time working on the prison farm and practicing his Russian. He published an academic article on mathematics, inserting a special note in the acknowledgments:

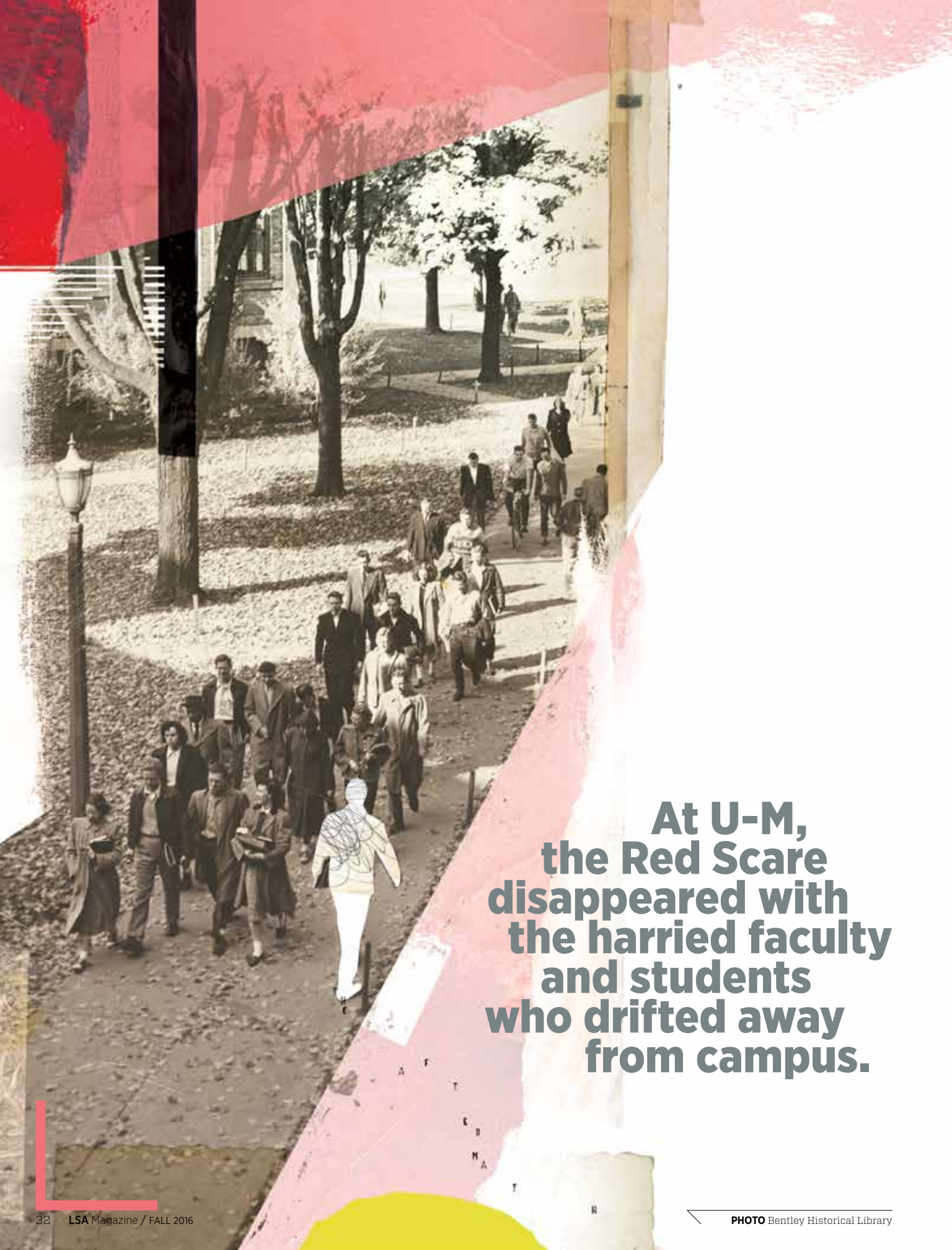




chil dlee



GEORGE



**At U-M,  
the Red Scare  
disappeared with  
the harried faculty  
and students  
who drifted away  
from campus.**



“Research supported in part by the Federal Prison System. Opinions expressed in this paper are the author’s and are not necessarily those of the Bureau of Prisons.”

He missed strawberries, wine, curtains, and his sex life, but he lived in relative comfort — Davis noted that inmates ate better than most of the world’s population, slept in decent beds, and worked less than 40 hours per week.

For others involved in the case, the aftermath of the hearing varied. Although Markert attracted tremendous support from students and colleagues, Nickerson wasn’t nearly so lucky. His eldest son needed a police escort to school after another kid attacked him with a knife. Anonymous neighbors dumped garbage on the family’s porch and threw feces at their screen door. Soon after Nickerson’s wife gave birth to their third child, hospital security had to subdue an angry group clamoring in the hall to “get that new commie kid.”

The economics Ph.D. students who testified at the hearing with Davis, Markert, and Nickerson never finished their degrees at U-M. Economics professor Lawrence Klein cooperated with his interrogators and received support from the Department of Economics, but he still had to leave the country for a position at the University of Oxford in England. Psychology student Lloyd Barenblatt (Ph.D. ’62) fought against HUAC in the Supreme Court just months prior to Davis and lost his case; the court sentenced him to six months in prison. Barenblatt and Davis became fellow inmates at the same correctional institution.

Fortunately, Zemon Davis and the couple’s three children didn’t experience harassment on behalf of her husband, and no one thought to connect her to the forbidden pamphlet that had so riled the FBI. But her time away from Davis wasn’t easy. She had temporarily lost her partner and his support, yet continued her Ph.D. research while caring for the family. For her, the Red Scare brought a “miasma of anxiety” to what felt like a “period of panic.”

Zemon Davis’s family history, though, prepared her for resistance. Her father had played on the U-M tennis team, and he fought to get his varsity letter because the coach had never before granted the honor to a Jew. She and Davis fully agreed that fighting for political, academic, and intellectual freedom warranted the rough times ahead. Davis later reflected, “In mathematics and in life, it is not okay to give up on a problem or a cause just because the struggle is difficult.”

He wrote of the ordeal, “Marginality is good for the soul and better for the intellect.”

## Aftermath

For years after testifying before HUAC, Davis had trouble finding work. This was a time when subtle warnings bristled in recommendation letters — a quiet phrase like “much concerned with social problems” could easily deter employers from making an offer. So Davis assembled his salary from various places: teaching, editing mathematical journals, getting fellowships, and analyzing data for an ad agency.

After leaving prison, Davis found a position outside the country at the University of Toronto, where he’s stayed based — content and with tenure — ever since.

Markert stayed at U-M for another few years following his reinstatement, but he left shortly after earning tenure and spent most of his career at Yale University. Nickerson moved to Canada, ultimately ending up at McGill University. Both achieved remarkable professional success.

At U-M, the Red Scare seemed to fizzle and peter out. The era didn’t end with a bellowed “Tear down this wall!” and crashing bricks. Instead, it disappeared with the harried faculty and students who drifted away from campus — academics who were weary of putting up a fight and ready to continue their work elsewhere.

## Learning from History

1989. In the year the Berlin Wall fell, and 35 years after three U-M professors fell to Cold War hysteria, Davis, Markert, and Nickerson returned to campus.



**Chandler and Natalie got their passports back from the FBI in 1960, after eight years. Ultimately, they emigrated to Canada (pictured here in their Toronto home). Alan Wald, H. Chandler Davis Collegiate Professor of English Literature and American Culture Emeritus, says of Chandler, “At the age of 87, he’s still got the fight.” In 2012, Natalie received the National Humanities Medal from President Barack Obama for a career’s worth of insights and eloquence in her historical research.**



**The three U-M professors who were publicly harassed under accusations of Communism in 1952. The three are pictured here in 1991 at the inaugural Davis, Markert, Nickerson Lecture on Academic and Intellectual Freedom. (From left: Clement Markert, Chandler Davis, Mark Nickerson)**

## “There is no shortage of opportunity to stand up for freedoms and values in the modern world.”

They’d come back for a movie screening. LSA undergraduate Adam Kulakow (A.B. ’89) had pieced together a documentary for his senior thesis about what had happened to them. He based the film mostly on interviews with the three professors and former U-M President Harlan Hatcher. After the screening, Davis, Markert, and Nickerson answered questions. Someone in the audience spoke up: “What can we do to apologize?”

Members of the faculty at U-M jumped at the chance to clear the air. In 1990, the Faculty Senate established an annual lecture series in honor of the slighted professors: the University of Michigan Senate’s Davis, Markert, Nickerson Lecture on Academic and Intellectual Freedom. They also created the Academic Freedom Lecture Fund, which supports the series. The intent of the lecture, wrote the members of the Faculty Senate, “is to guard against a repetition of those events and to protect the fundamental freedoms of those who come after us.”

Davis has attended every year since the first lecture and still does. Markert did, as well, until his death in 1999, as did Nickerson, until he passed away in 1998.

Last year’s event marked the 25th lecture, which featured Zemon Davis as a speaker. U-M President Mark Schlissel introduced her, saying, “At a place like the University of Michigan, it’s essential that we never stop learning and thinking and questioning ourselves. This is especially true of the mistakes of the past.”

When the FBI rapped on the Davises’ apartment door and left with the couple’s passports, Zemon Davis found herself stuck in the United States—far away from the unique documents in France that she needed to finish her Ph.D. She pushed through her devastation, devising a clever workaround: She’d hunt through 16th-century books at the New York Public Library and rare collections in the United States, and she’d trace their provenance back to the printers and artisans in France that she wanted to study. She was

thrilled to discover that even the pages, marginalia, and bindings of books could be clues about her subjects and their clandestine projects.

She writes, “I realized that between heroic resistance to and fatalistic acceptance of oppression, there was ample space for coping strategies and creative improvisation.

“I’ve tried to write a history of hope, where despite all tragedy and bloodshed, the variety of life in the past fascinates us and suggests possibilities for the future.” ■

This story was written primarily using the following sources: Chandler Davis, *The Purge* (American Mathematical Society, 1988); Chandler Davis, Letter to U-M faculty (Bentley Historical Library, 1954); Chandler Davis, “So you’re going to prison!” (*Nation*, 1960); Natalie Zemon Davis, “How the FBI Turned Me On to Rare Books” (*New York Review of Books*, 2013); Holberg Prize interview with Natalie Zemon Davis (2010).



42.22° N, 83.75° W

From **horn cores** to **grammar bores**,  
our tour of campus starts here.

**Mustard up**  
all the strength you have  
**because it's a**  
**doggy dog**  
world out there.\*



FACULTY

## Epic Grammer Failz

We take it for granite\* that there is a right way to use a word and a wrong way. One LSA professor asks us to rethink our orientation toward error.

*\*Eggcorns like these are covered in Professor Keshet's Linguistics 102 class.*

by Brian Short

**HEY “WEIRD AL” YANKOVIC,** Assistant Professor of Linguistics Ezra Keshet would like to have a word with you.

Yankovic, America’s premier musical parodist, released a song titled “Word Crimes,” a humorous take on Robin Thicke’s 2012 dance hit “Blurred Lines.” In the song, Yankovic bemoans the state of the English language, chastising people for confusing “irony” with “coincidence” and saying “expresso” instead of “espresso.”

But these aren’t crimes, Keshet insists.

“Languages are things that occur in the brain,” he explains. “They happen naturally, and there’s the same sort of natural order to every language. There is no purely linguistic reason to say that one way of saying something is really better than another.”

Language variations like those on Yankovic’s hate list are par for the course, Keshet says. Some differences — saying the word “aluminum” instead of “aluminium,” for example — can define speakers

geographically, the first as American, the second as British. Linguistic markers like these might signal where the speaker grew up, or what their race or ethnicity is, or what socioeconomic class they belong to. Sometimes, new uses for words accrete over time, like how “silly” once meant something closer to “innocent.”

Keshet did some detective work to better understand the phenomenon of language peevishness, and that research provided him with an opportunity to educate others about the complexities surrounding complaints about correct and incorrect language. He taught a class on the topic, titled Epic Grammar Fails, for the first time this year.

In the class, Keshet emphasizes that there are reasonable motivations for enforcing language norms, most importantly the need for people with dissimilar life backgrounds to communicate clearly with each other. But he also stresses that language is complicated, and that desires for clarity need to be divorced from the kind of holier-than-thou moral judgment that “Word Crimes” offers. He hopes that his students will replace that impulse to judge other people with a richer understanding of the different sources of language variation.

The final project for the course is a database of language peeves known in class as Wikipееvia. The students write articles about arguments that they’ve encountered, citing both the complaint and any opposing viewpoints on the same linguistic issue. The project and the class are both excellent entry points, Keshet says, for people unfamiliar with linguistics as a field of study, an area that first-year college students often arrive with no experience in.

“We all use language every day, so we all have opinions about how it should be used,” Keshet says. “And it is important to understand that there isn’t just one correct version and the rest are mistakes or bastardizations. Language changes. That’s neither good nor bad. It just is.” ■

No cheese for me,  
I’m **lack toast**  
in tolerant.







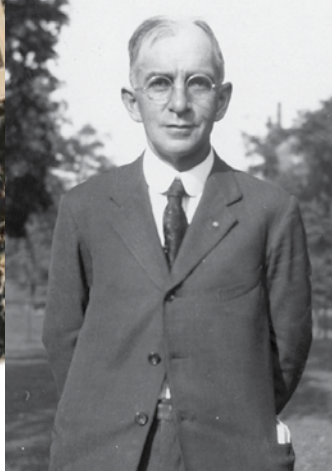
CAMPUS

## Box of Bones

Stuffed with decades of accumulating artifacts, the steampunk basement of the Ruthven Museums Building is sure to hold some buried treasure.

**A SECRET PASSAGE IN THE RUTHVEN MUSEUMS BUILDING** can take you from an office on the first floor to the basement of the building. The space is a dark cave until you find the hidden switches, and long lights flicker on overhead. Pipes span the low ceiling. Closed metal cabinets line most of the subterranean storage space — they hide bones, teeth, shells, and other evidence of ancient animals. On every inch of table surface lie oversized artifacts and dug-up detritus — giant tusks, jaws, and skulls, along with bone fragments, tools, and boxes. In other corners of the basement lean retired roof gargoyles, an old metal grate welded with the word “research,” and antique equipment.

All this scientific stuff — more than two million specimens in the Museum of Paleontology collection alone, though not all held in the basement — must be inventoried and packed for the move from the Ruthven Museums Building to the new Biological Sciences Building (set to open in 2018) or the Varsity Drive collections and



**In this field notebook he kept in 1938, paleontologist E. C. Case (right) describes the Montana dig that yielded nearly 8,000 pounds of fossils, including the giant *Edmontosaurus* skeleton on exhibit at LSA's Museum of Natural History and some *Triceratops* remnants — forgotten and then rediscovered — in the museum basement.**

research facility near campus. The process already has yielded some dusty treasures, like a cardboard box containing what looked like *Triceratops* horns and other bones, packed with a faded tag labeled “Montana, 1938.”

“They were two *Triceratops* horn cores — the bony parts of the horns on the skull,” says Adam Rountrey (M.S. ’06, Ph.D. ’09), the vertebrate collection manager of LSA’s Museum of Paleontology. “But they had never been catalogued.”

Rountrey suspected that any dinosaur bones collected in 1938 probably came to the museum via Ermine Cowles (E. C.) Case, a respected vertebrate paleontologist who liked to call himself a “bonehunter.” Case’s early research involved identifying dinosaur fossils that came out of the American West during the infamous “Bone Wars” frenzy of the late 1800s. He later discovered several dinosaur species — including *Caseosaurus*, named after him — and in the early 1900s became the chair of LSA’s Department of Geology and the first director of LSA’s Museum of Paleontology. According to former U-M President and Museum Director Alexander Ruthven, Case spent most of his career “collecting for the University some of the finest specimens of Permian and Triassic amphibians and reptiles to be found in any museum in the world.”

Case’s field notes mentioned the Montana field site: “Then on road...above dam...a head of *Triceratops* up at end of a long valley among the hills. We will try to uncover this last tomorrow.” He continues, “Rained last night & the roads were rather muddy & slippery & full of pools of water this morning...Spent day working on *Triceratops* skull...Found skull broken rotten & disturbed...” Ultimately, Case and his team packed 7,691 pounds of fossils into 20 boxes on that trip, to be shipped back to the University of Michigan.

The *Triceratops* horn cores that Case retrieved from a muddy site in Montana have come a long way. They’ve been buried among thousands of artifacts in the Ruthven basement and rediscovered. Today, they’re available for inspection in magnificent detail by anyone with access to the internet — they’ve been carefully scanned and included in the Museum of Paleontology’s U-M Online Repository of Fossils. And for visitors to campus, one of the horn cores likely will be on display in the new Biological Sciences Building.

As for a burlap bag found in a far corner of the basement labeled “Princeton thesis 1965” and containing little pieces of unidentified bone — that’s a mystery to be solved another day. ■





ALUMNI

## The Importance of Being **EARNEST**

How Paul Viera built a better kind of finance firm, weathered an economic downturn — and came out on top.

by Rachel Reed

**THE GREAT RECESSION OF 2008** put a number of finance firms out of business. (Remember Lehman Brothers?) Others came away wounded and stunned, limping into the next decade with less confidence and fewer resources.

That's not true of Atlanta-based EARNEST Partners, founded by Paul Viera (A.B. '81), which currently manages more than \$20 billion worth of assets. For Viera, surviving — and thriving — is no accident.

At U-M, Viera was intrigued by the framework for human behavior offered by economics, which is how he selected his major, where his interest in business was piqued. But he kept a broad course load in LSA, seeking a more comprehensive view of the world.

"A liberal arts undergraduate education is way better than a refined business education, which you can get later," says Viera. "You need broad life experience to be able to make good financial decisions."

After graduation, Viera worked at Aetna in their financial department. Eager to learn more about finance, he applied to Harvard Business School, where he earned his M.B.A. But he didn't consider that the end of his education.

"I try to learn at least one new thing each day," he says. "I want to go to bed smarter at night than I was when I woke up. Everyone should live their life like a one-year-old, constantly learning and growing."

## BEING THE CHANGE

Viera went into investment banking after Harvard. And for a few years, he slogged through 14-hour days valuing companies and honing his financial chops. Soon, though, he was eager to strike out on his own — to put his own capital on the line and create the kind of firm he'd always wanted to work for. This meant pulling lessons he'd learned from different industries and, most importantly, putting together a strong team.

"The difficult thing about finance is not the calculation itself, but the assumptions you make before you perform the calculation," says Viera. "That's where

life experiences come in, and that's where judgment comes into play."

In building EARNEST Partners, Viera sought out people who had a wide array of life experiences: people who could bring together their diverse sets of knowledge for a truly holistic view of the companies they'd be working with. For Viera, having a workforce made up of different

“Our job is to look at an idea and discover the truth about that idea. Since no one individual has a universal life experience, we get closer to the truth when we have as many perspectives as possible.”

ages, races, genders, and lifestyles is not just a matter of goodwill — it makes for better business.

"I want to win," says Viera. "Not only did I want to produce better returns than other firms, but I also wanted to work with people who think about the world in a broad way. Our job is to look at an idea and discover the truth about that idea. Since no one individual has a universal life experience, we get closer to the truth when we have as many perspectives as possible."

It's this emphasis on thinking broadly and comprehensively that helped EARNEST Partners come out of the 2008 recession relatively unscathed, while so many others went belly up.

"Survival comes through planning," he says. "We were well prepared for bad weather, and when it came, although it was not pleasant, we survived. People who became content, who didn't plan for a different economic landscape, didn't."

## THE HUMAN ELEMENT

Viera's emphasis on learning reaches even further into his work. In the course of

his career, he has also developed his own sophisticated way to value companies, a process called Return Pattern Recognition. In his system, industries are viewed differently depending on their innate characteristics, and the definition of success varies from industry to industry. Although he's game to use technology to help gather and analyze information,

Viera stresses the importance of the human role in these calculations.

"Sometimes technology can lead to less thinking, because you can be paralyzed by the amount of data available," he says. "Or you think of the information as an infallible tool and stop applying your own analysis to it. The world is complex and requires real thinking. You can't write a line of code that can represent the entire world of experiences."

Viera's belief in people also extends into his personal life. He sits on the board of several nonprofits and civil rights organizations, including the Woodruff Arts Center and the National Center for Civil and Human Rights.

"I think that I have been really lucky, and I am interested in involving myself in things that allow other people to fully express their life's talents and ambitions," he says.

As for Viera's own ambitions, they're characteristically thoughtful.

"To continue to be curious about the world and to let that curiosity express itself in my life and business endeavors," Viera says, "and to try to make the world a fairer place." ■



# FROM THE JAWS OF DEFEAT

**Students in LSA's Barger Leadership Institute create their own learning opportunities, including some that don't go according to plan.**

"Learning to be a leader," says Director of the Barger Leadership Institute and Professor of Sociology **Jason Owen-Smith**, "is a bit like learning to dance. You start out Arthur Murray style, following the footprints on the floor. It's awkward, but with practice it starts to feel more natural." Owen-Smith has a few specific moves he wants students to learn when they come through the Barger Leadership Institute (BLI), a student-powered, faculty-guided organization aimed at developing undergraduates' leadership skills.

Seven times a year, undergraduate students from across campus enter the BLI and learn the same four foundational steps in BLI's Leadership Lab: developing a vision, crafting a strategy around it, devising an experiment to bring their strategy into the world, and evaluating the outcome. "It's this basic cycle," says Owen-Smith, "that gets things done in the world."

One of the hardest and the most productive points in this cycle is when an innovation flops.

"The failure points you toward the weakness of your plan or to a new set of possibilities," says Owen-Smith. "You learn from it and you start again. You're not trudging in a circle, you're climbing a spiral staircase."

The staircase has led students to a number of places. One group started an organization to help Albanian American families navigate the unfamiliar college application process. Another partnered with a nonprofit organization to install solar panels on houses on the La Jolla Indian Reservation. Yet another developed a wheelchair that converts into a bed so nurses can safely move their patients.

Owen-Smith has seen some of the best ideas emerge after a period of doubt and uncertainty. Students who truck in liberal arts disciplines, especially ones like writing poetry or wrestling with philosophical paradoxes, excel in these situations because they're comfortable dealing with multiple meanings and ambiguous outcomes.

The BLI uses the lab metaphor, explains Owen-Smith, because "these are crucibles for students to try to fail over and over in a setting where they don't know the right answer."

Having the fortitude and ambition to do something interesting and new means that failure is much more common than success. The failures students experience are real and they hurt, but they won't result in a permanent disaster. Students aren't risking the GPAs they need for graduate school, and they

won't get fired for taking a risk.

"If that's the cost, they're not going to try it," Owen-Smith says.

"It also teaches students resilience," says Julia Spears, BLI's assistant director. "It teaches them what to do differently next time, and it teaches them that there is going to be a next time."



**Students who have successfully completed a BLI Leadership Lab become Leadership Fellows (pictured at left), a group that includes undergraduates from across campus.**

by Elizabeth Wason

the MICHIGAN DIFFERENCE



ALUMNI

# Failure, Inc.

**Failure analysis firm Exponent investigated the *Exxon Valdez* oil spill, which polluted Alaskan coastal waters with millions of gallons of crude oil in 1989.**

**WHEN THE CONSULTING FIRM RUN BY ROGER MCCARTHY** (A.B. '72, B.S.E. '72) first joined the public market, NASDAQ listed its stock symbol as "FAIL" — appropriate for a company that's made a business of failure analysis.

For almost 50 years, scientists and engineers at Exponent — formerly known as Failure Analysis Associates — have investigated more than 30,000 engineering failures, from revolving door malfunctions to the World Trade Center collapse. Their high-profile cases include the *Exxon Valdez* spill, the *Challenger* and *Columbia* space shuttle crashes, Deflategate, the JFK assassination, and James Dean's car accident. McCarthy joined the



company in 1978 and quickly advanced to become CEO, building a successful career out of understanding unfortunate failures.

"I always used to tease my friends that failures are an infinitely renewable resource," he says. "We can always make more of those, so there's no danger of my profession going away."

McCarthy has personally handled cases like the *Amoco Cadiz*, *Exxon Valdez*, and *Deepwater Horizon* oil spills; the Oklahoma City bombing; and the collapse of the Kansas City Hyatt walkways. "People see a disaster or explosion and think, 'How in the hell do you make any sense out of this jumbled mess?' And the answer is: physics, materials science, and engineering."

Investigating a failure follows the scientific method. First, make observations by taking stock of the accident scene and reviewing witness statements. Second, make educated guesses based on what you've observed and your knowledge of the system. You can work forward by, for instance, estimating the force required to disfigure a mangled structure. Or work in reverse, by reconstructing events. "If you understand the kinds of loads and forces and impacts it takes to deform material structures," McCarthy says, "you can piece together a story to account for the damage that you see."

Third, test your guesses. Experiment with models in wind tunnels, computer simulations, or lab chemistry. "For major fires and explosions, you actually have to map the debris," says McCarthy. "Blueprints can tell you where all the machine parts were initially located. After a major boom, you have pipes, beams, tanks all over the place — sometimes out half a mile. But if you survey where all the damaged parts ended up, then compare where all the parts started from the blueprints, and just connect them with lines — pretty soon, all the lines will intersect pretty close to the same point. That's the center of the explosion, and you look for the root cause there."

Finally, combine all the evidence and draw your conclusions.

## PHILOSOCATASTROPHE

Finding success through failure is exactly the kind of thing a philosophy major would do. As an LSA Honors student, McCarthy loved the linguistic logic and mental clarity that his philosophy classes demanded. But the skeptical, scientific part of his brain interfered.

When McCarthy complained to his housemate about a frustratingly esoteric class discussion, the friend — a naval architect — suggested that McCarthy try out engineering. "I continued to take enough courses to get a degree in philosophy, but I started taking engineering courses," McCarthy remembers. "I enjoyed them, and I was getting As every semester." But then came his sixth year, when McCarthy had to register for his final courses.

"Back then, we used to register in a big mob scene in Waterman Gym," he says, which is where he was told that someone named Professor Quackenbush — at the time, the College of Engineering

assistant dean in charge of student affairs — had put a hold on McCarthy's account. When he found Quackenbush's office on North Campus, McCarthy was perplexed to hear the reprimand, "You can't do what you're doing."

"A good rule of thumb, especially when you're a philosophy major, is to answer a question with a question," says McCarthy. "Which is: 'What am I doing?' And Quackenbush said, 'Trying to earn an engineering degree without enrolling in the College of Engineering.'"

With a little linguistic finesse — along with a track record of perfect grades that earned him a plaque as the 1972 Outstanding Undergraduate in Mechanical Engineering — McCarthy was able to LSA his way to a U-M engineering degree.

Quackenbush encouraged McCarthy to apply for a National Science Foundation fellowship and pursue a Ph.D. McCarthy won the fellowship and went on to earn three more degrees in

Finding success through failure is exactly the kind of thing a philosophy major would do.

mechanical engineering. "So, when you think about the debt you owe your college advisors and your college — holy mackerel, talk about a percussive impact on my life."

McCarthy's life and work developed on the same creative, eclectic course that he insisted on as an undergraduate. He co-wrote the official investigative report of the *Deepwater Horizon* explosion, fire, and oil spill with a committee that included Donald Winter (M.S. '70, Ph.D. '72), an LSA physics alumnus and professor in U-M's College of Engineering. McCarthy helped convict a murderer by reconstructing the crime and testifying at the trial of the Menendez brothers. His IMDb page — yes, McCarthy is searchable in the Internet Movie Database — includes cameos on Discovery's *MythBusters* and the History Channel's *Modern Marvels*.

He's retired now, but McCarthy still consults on projects and thinks about failure all the time, probably just by habit. "My wife always gives me a hard time about it," he says, "because to her, I'll do very strange things that a normal person wouldn't do in terms of risk avoidance and risk adjustment — in my personal and professional life, and even in my hobbies."

But that's what happens to someone like him, who's been fulfilled by thinking practically — and philosophically — about what leads to failure. "You look at life entirely differently when you do what I do." ■



ALUMNI

## Taking Some Latitude

How an LSA alum single-handedly put the Michigan–Ohio State rivalry on the map.

**PAPER TOWN, PHANTOM SETTLEMENT,** trap street, cartographer's folly, fictitious entry. Any of these may explain why you got lost on that road trip: The expressions all refer to fake landmarks on maps.

Cartographers purposely insert false details like extra roads, nonexistent mountain peaks, imagined bends in rivers, or fictional towns, so that copyright infringers don't steal their work. Maps

of the same place contain pretty much the same information, so they're easy to plagiarize — but an obscure detail known only to the cartographer can prove who really made the map. Misleading maps also afford protection. The Soviet Union deliberately printed maps full of mistakes for 50 years and succeeded in confusing the German military during World War II.

But two paper towns on a Michigan

map appeared for different reasons.

No one had ever been to either place, but “goblu” and “beatosu” showed up on the official 1978–79 road map for the state of Michigan.

Peter Fletcher (A.B. '54), chair of the state highway commission at the

time, graduated from LSA with honors as a political science major. One of his pals — another U-M alum — teased Fletcher that the newly painted Mackinac Bridge bore the colors green and white, which represented Michigan State University and its football team. Couldn't Fletcher have chosen maize and blue instead? Well, no. But he *could* get someone to sneak a few shout-outs to their alma mater (“Go Blue!” and “Beat OSU!”) on an official state map.

Some people noticed and complained about wasting tax dollars on a silly joke. But Fletcher had prepared a few reasonable retorts: For one thing, the map accurately represented the state of Michigan — the phantom settlements existed in northern Ohio, outside the boundaries relevant to the state map. Furthermore, Fletcher declined to accept the \$60,000 per year that he could have collected while serving as chair of the state highway commission; meanwhile, the extra ink to prank the maps cost a measly \$6. And anyway, said Fletcher, “We have no legal liability for anything taking place in that intellectual swamp south of Monroe.”

Nonetheless, the state government limited the print run of Fletcher's maps, and most Michigan road maps produced for 1978–79 do not include those paper towns.

The rare first edition became a collectors' item. It's still available on eBay. ■





FACULTY

# Picking Up the Pieces

Trapped between superpowers, the ancient city of Olynthos bet the farm on risky alliances—and lost big. Now a team including LSA faculty and students is sorting through the secrets the city left behind.



**IMAGINE YOU'RE A MID-SIZE CITY-STATE**

in northeastern Greece 2,400 years ago. The Kingdom of Macedon is nearby, and they're pretty tough, so sometimes you ally yourself with them. But the city-state of Athens is also powerful, so you ally yourself with them sometimes, too. In order to beef up your importance, you convince some nearby communities to join together and form a larger city-state — not nearly as big as Athens, but maybe big enough to defend yourself from one of those two behemoths if things get really hairy.

It's a tightrope, of course, switching sides — a series of risky bets that you hope will somehow keep your city going. Until it doesn't.

Olynthos's luck ran out in 348 BCE, when the Macedonians — led by Alexander the Great's father, Philip II — decided that Olynthos lay on their path to glory and laid siege to it.

"Olynthos stood in the Macedonians' way," says Lisa Nevett, a professor of classical studies and the director of the Interdepartmental Program in Classical Art and Archaeology. According to ancient texts, a handful of Olynthians betrayed the city, opening the gates to the Macedonian army, who razed it to the ground.

The city's citizens were either murdered or enslaved according to the text, and the area was never significantly reinhabited: a rarity in a country as broadly populated as Greece.

"Olynthos as a classical city was never rebuilt, which is good for archaeologists," Nevett says. "In Greece, it's quite a full landscape, so you don't always find a city like that. There's often Roman material on top and you have to dig through it, or the Greek material may have been already destroyed by the time you get there. Olynthos was destroyed, but it was also preserved reasonably well."

found there. At the time, the most popular model of archaeology required researchers to look for temples and theaters and other relatively grand buildings. Olynthos didn't have much grandness to it, though. All it seemed to have were houses.

"Finally, there's a point where the archaeologists working there made a virtue out of necessity, and they began digging out the houses," Nevett says. The team excavated about one hundred homes and worked out what they thought was a basic map of the city with two parts, the older part located on a small hill and a larger, newer portion of the city located on another hill nearby.

"The texts mention a period of rapid growth in Olynthos, when people from separate areas came together to become a larger city-state for safety reasons," Nevett says. "And people have surmised that the residences on this second hill come from that time when all these other communities moved in, and they laid out this huge new grid, a more planned-out part of the city."

In hindsight, there were things that could

have been done better, Nevett says. The team tended to keep pottery they found if it was whole — an entire jar or bowl or bathtub, all in one piece — and discard the rest. The team also misidentified the style of many of the ceramic pieces on site, assuming that they were made in Athens, when in actuality the process and materials originated locally. The team made maps based on suppositions about where houses were, but they didn't verify their guesses.

"I'm actually really sympathetic to that original project, because it did so much more than other projects," Nevett says. "They were eventually interested in domestic buildings, which most projects

**Professor Lisa Nevett (pictured at right) is part of a multinational research group exploring Olynthos, a site originally excavated by archaeologist David Robinson, who published a massive 14-volume series of books about the city.**

**CAN YOU DIG IT?**

In the 1920s and '30s, an American archaeology team rediscovered Olynthos, but they were underwhelmed by what they



weren't, and they did try to save some of the material."

But 90 years of broadening perspectives and technical improvements mean that the archaeological team in Olynthos now, co-directed by Professor Nevett, is bringing a whole new toolset to bear on the mysteries of the city.

## UPSTAIRS, DOWNSTAIRS

The Olynthos team consists of a mix of graduate students, undergraduate students, and faculty from partner institutions in the United Kingdom and Greece, as well as three U-M faculty: Kelsey Museum of Archaeology researcher David Stone, Associate Professor of Civil

and Environmental Engineering Dimitrios Zekkos, and Nevett. The excavation teams — which have received funding from the National Geographic Society, the British Academy, and the Loeb Classical Library Foundation — began investigating the site in 2014, which was the beginning of a five-year archaeology project. Many modern archaeological research projects involve either field walking — examining the ground for loose, easily available materials of ancient origin — or excavation. What differentiates Nevett's project is that her team got permission to use both of these techniques and also use magnetic and electrical imaging of the underground portions of the site to get a

better view of what Olynthos looks like now — which means a better view of what it looked like 2,000 years ago.

The work being done by Nevett's team at Olynthos

has already revealed many fresh details about Greek domestic life. They discovered the bones of animals that had been butchered in the house — cows, pigs, and either sheep or goat bones — as well as evidence that women had moved freely throughout the house, inhabiting all of the spaces and participating fully in the work done in the home.

"There is a classical text from Athens that talks about what happened upstairs and what happened downstairs in a Greek home," Nevett says. "And the text claims that the women were kept upstairs so they didn't get into trouble. I've already argued this based on other material, but it was hard to show detailed evidence before now."

## LESSONS FROM THE PAST

One huge problem facing the excavation is that part of the town is on the private land of farmers who own the area next to the archaeological park. There's no way to know how big the city was without getting a good look at the farmers' land,

The work being done by Nevett's team at Olynthos has already revealed many fresh details about Greek domestic life.

In addition to LSA faculty, graduate students, and undergraduates, the Olynthos project includes international partners from the Museum and Ephorate of Pella and the University of Liverpool. The project is conducted by permission of the Hellenic Ministry of Culture in Greece.



and as deep plowing for olive trees occurs there, there's no way to know how much ancient material and knowledge is being destroyed, maybe forever. What remains under the ground of those olive groves is just one of the unknowns that Nevett and her team are eager to uncover.

"There are a number of mysteries about this city," Nevett says. "One of them is about what the old part of the city looked like and another is about how it affected the people already living here when all of a sudden all these new people came in. That's a rather topical question, I think, in Greece today.

"We have this historical account that says there were these people in these different settlements who decided, due to the political threat of the southern Greek cities, that it would be better all to live in one city and then that city would be more powerful," Nevett says. "But there's a question about who held the balance of power. The newer houses are much bigger than a typical Greek home, more often with a fancy dining room with a mosaic floor and painted walls and a bath, which are not common things. So did the people in Olynthos have to build really nice houses in order to tempt people to come? It raises interesting questions about the kind of mechanics of that process.

"We have this attitude about culture that we're always making progress, but actually, if we take a very long-term view, you see that actually progress is not unilinear," Nevett says. "It goes up and down. And I think that knowledge perhaps makes us view our own position differently and realize how privileged we are to have what we have and to live in the time that we live in, and maybe that makes us more considerate of Syrian refugees, for example. I think studying the past is incredibly important for making people question some of their assumptions and their attitudes." ■



SEE IMAGES FROM OLYNTHOS.  
[lsa.umich.edu](http://lsa.umich.edu)

## THE FUTURE OF THE PAST

### TWO LSA PROFESSORS USE 21ST-CENTURY TOOLS TO EX- PLORE THE ANCIENT WORLD.

In a halogen-lit room, six objects sit on six desks. One is a slim, five-sided piece shaped like a child's drawing of a house. There's a vase — or maybe it's a decanter? — covered in brown swooshes and black glaze. Next is a flattened metal blob with two holes punched through it, then some bowls with simple designs along the curved outer edges, and over in the corner is a large stone box with geometric patterns on the side. Pairs of students are each assigned to an object, but they aren't told where the pieces came from, what they're made of, or what their purpose was. The only thing the students are absolutely sure about is that each of these objects survived a journey of 2,000 years and almost 10,000 miles to meet them down in the modest examination room tucked into the back of the basement of the Kelsey Museum of Archaeology.



Welcome to Near Eastern Studies 207.

Students in the course spend part of the term in a regular classroom, studying the history of ancient Israel and Palestine. But they also participate in a hands-on workshop in which they are encouraged to imagine that they have just discovered these ancient objects, using clues about the design, shape, and materials to gumshoe their way into a deeper understanding of the humans and cultures that created them long ago and far away.

"The challenge of teaching the ancient world is that it's a reality far removed from the students," says Associate Professor







**Near Eastern Studies 207 gives students firsthand access to ancient materials over 2,000 years old in order to “foster an archaeologist’s mindset,” says Associate Professor Yaron Eliav. The class allows students to imagine for themselves what it might have been like to discover these objects in the field for the first time.**

Yaron Eliav, who teaches the class. “It is far removed geographically, chronologically, contextually, and culturally. But being able to touch something, to have physical contact with the past, is part of a process of exploration that students can only find in a few places.”

“The expectation at a lot of schools is that you take a greatest hits of archaeology course,” says post-doctoral fellow Jordan Pickett, who leads discussion sessions for Near Eastern Studies 207. “You learn about Howard Carter and King Tut or Leonard Woolley in Mesopotamia, but you aren’t necessarily pushed to think like an archaeologist. That makes a really big difference.”

The class is part of a larger project to transform the teaching of ancient history and archaeology to undergraduate students. The project is led by Eliav and Charles K. Williams II Distinguished University Professor of Classical Archaeology Sharon Herbert, a former director of the Kelsey Museum. The project received grants adding up to almost a million dollars from U-M’s Third Century Initiative—the largest grant ever given by the University to a humanities

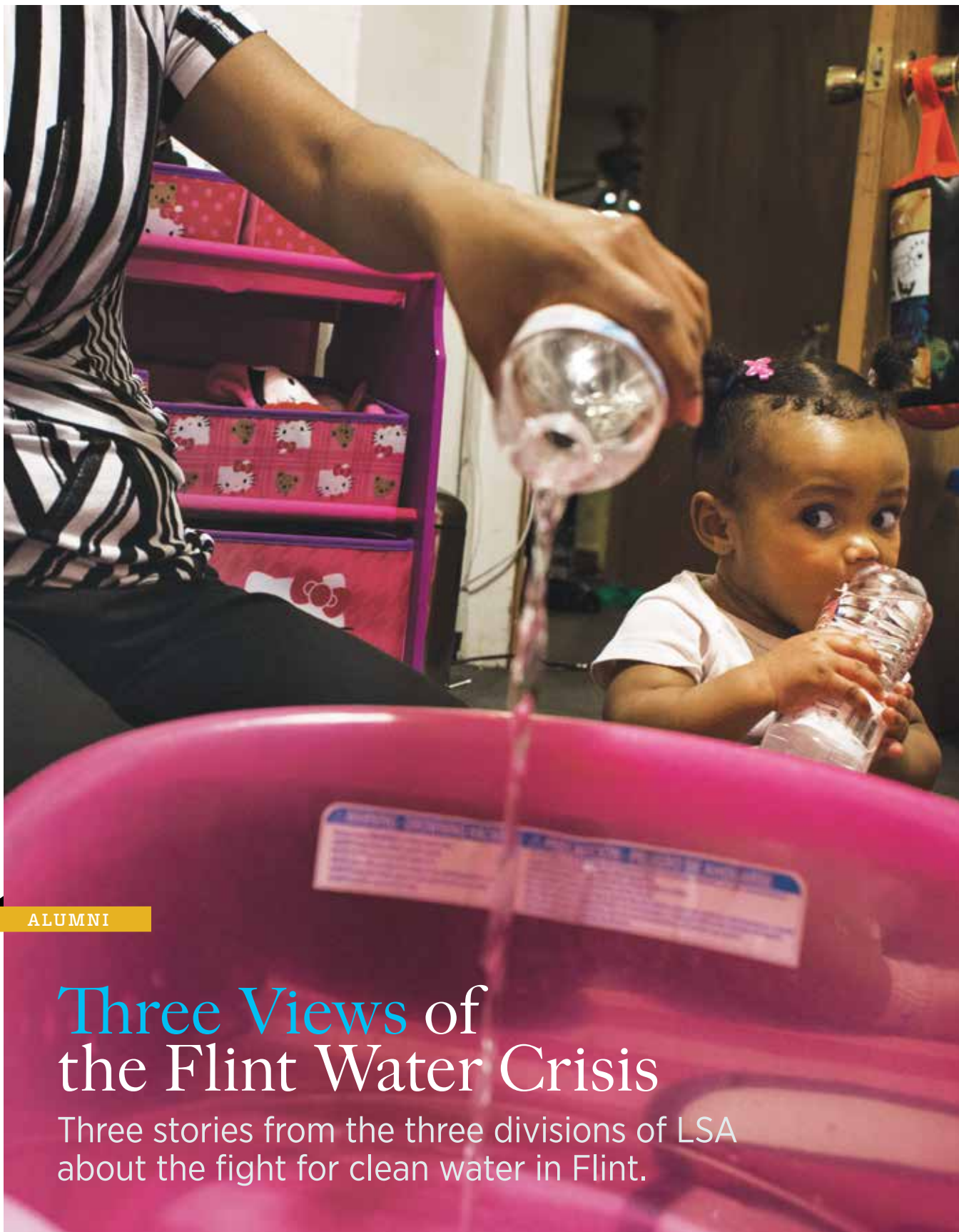
project—and includes video clips, interactive slideshows, a museum-friendly app, regular videoconferences with international partner institutions, and the immersive, hands-on experience of working directly with objects that are over two millennia old.

The objects that students work with have been loaned—over 30 of them, in total—by Lawrence (A.B. ’64) and Eleanor Jackier, collectors who saw the impact that getting objects into the hands of students could have on their education.

“We use these objects to break the monotonous confines of a course where you come to a class, you hear a lecture, you do an assignment,” Eliav says. “We’re somewhere else, we’re at a museum, we’re



downstairs, we’re doing things, we’re touching things. And students have responded to it in vast numbers, and we want to get even more of them to explore the Kelsey Museum and to really see the world around them differently.”



ALUMNI

## Three Views of the Flint Water Crisis

Three stories from the three divisions of LSA  
about the fight for clean water in Flint.



/// FROM THE NATURAL SCIENCES

# Taking the Lead

For too long, denial was not just a river in Egypt — it was a river in Flint.

**“THERE ARE PEOPLE WHOSE MAIN JOB** is to make sure that your water is safe, that populations are healthy, to track these things,” says Dr. Mona Hanna-Attisha (B.S. ’98, M.P.H. ’08). “Why were they not doing their job?”

Hanna-Attisha is naturally vocal on behalf of her young patients. “My role as a pediatrician is to be an advocate,” she said at a talk on the Ann Arbor campus. “It’s part of my job description.” She became a whistleblower on the water crisis in Flint when she released her research on elevated blood lead levels of children in the city.

But well before that, way back in high school, Hanna-Attisha had already begun fighting for environmental justice, with her friend Elin Betanzo. The pair grew up in Royal Oak, Michigan, and nerded out taking honors math together, participating in drama club, and joining the environmental group at school.

“There was an incinerator in Madison Heights, an adjacent city, right next to an elementary school. The people in that neighborhood had higher asthma rates and chronic obstructive pulmonary diseases,” says Hanna-Attisha. “We helped elect a state rep who put a sunset clause on it and closed it for good. That was our first exposure to environmental health and to the world of advocacy.”

After high school, college: Hanna-Attisha at U-M and Betanzo at Carnegie Mellon University. Hanna-Attisha sought bench research studying environmental health. She wrote an honors thesis on the impact of environmental toxins on pregnancy. Betanzo majored in piano and created a custom environmental science degree, which required her to take courses at another campus. The two reconnected when Betanzo chose to spend a summer at

LSA’s Biological Station. There, she and Hanna-Attisha got an early taste of immersive research that would come in handy later on.

While Betanzo made a career as a drinking water expert with the Environmental Protection Agency (EPA) and other agencies, Hanna-Attisha became a clinical physician and medical school professor. But they remained pals, with Betanzo even playing piano at Hanna-Attisha’s wedding.

One night last summer, Hanna-Attisha sent Betanzo a last-minute dinner invitation by text. They got to talking about how families in Flint were complaining that their water had started looking gross, smelling gross, and tasting gross, and Betanzo remembered an experience she’d encountered at the EPA.

“I worked at the EPA during the D.C. lead crisis,” Betanzo says. “In 2004, the Centers for Disease Control and Prevention reported that no children were harmed with elevated levels of lead in their drinking water, but they later corrected that report in 2010. When they made the corrections, it was clear they had excluded thousands of records from their initial analysis, which had led to a different conclusion.”

Betanzo suggested that Hanna-Attisha take a close look at the blood lead levels of her own patients in Flint. “When Elin first told me about the possibility of lead in the water,” Hanna-Attisha says, “That’s when I started not being able to sleep.”

Working in the Flint hospital, Hanna-Attisha had access to exactly the data that would confirm whether the environmental danger of lead in the city’s water — which



had already been demonstrated, most gallingly by lead concentrations in one family’s home that measured well above hazardous-waste

level — translated as a danger to human health.

And what Hanna-Attisha saw in the data scared everyone. After Flint made changes to their water supply, the toxin nearly doubled in most kids’ blood, and it increased even more in particularly disadvantaged neighborhoods. For almost two years, Hanna-Attisha says, kids essentially drank through flaking lead-coated straws.

“There aren’t a lot of individuals who had access to the necessary data to be able to do this study,” says Betanzo. “Mona was magically in the right place at the right time, with the ability to do it. So the fact that we got connected is pretty amazing.”

“It’s like higher forces were at work,” agrees Hanna-Attisha. “When somebody that you trust and have known for decades, who has an inside connection to all this, tells you something, it’s hard not to believe it, and it’s hard not to act on it.”

Now, Hanna-Attisha directs a new public health initiative that will continue to evaluate the impact of lead levels in Flint’s water, monitor the affected children long-term, and provide early interventions to keep kids healthy.

“Our story is not over,” Hanna-Attisha says. “In 10 or 20 years, and hopefully less, you won’t remember Flint as the city that had this disaster. That’s not how we are going to be defined; rather, we’re going to be defined by what we were able to do afterward.” ■



/// FROM THE HUMANITIES

## Yesterday, Today, Tomorrow

Alumna Anna Clark tells it like it is — and was.

**ANNA CLARK (A.B. '03) UNDERSTANDS** what a huge responsibility it is to tell the story of the Flint water crisis.

Over the summer, Clark interviewed people on all sides of the issue: government officials, community activists, and people whose lives — and families — have been affected firsthand by catastrophically high levels of toxic lead in people's drinking and bath water. Now her focus is starting to sharpen on the specific stories that she wants to follow and tell as part of a book-length examination of the Flint water crisis that she is writing.

"Humanity is the core of the project," Clark says. "I want this to be a book that offers a very full, contextualized picture of what happened. People tell me again and again, 'It's not just the

water crisis.' This is part of a larger set of consequences caused by chronic disinvestment in cities like Flint, which unfortunately isn't alone in a lot of ways.

"A lot of people feel that if the water crisis is the only story that's told about their city, then it's missing something," Clark says. "I want to be a listener for those kinds of stories so that this book can honor that."

The tentative title for the book, *Water's Perfect Memory*, comes from an essay by Toni Morrison. The quotation goes, "All water has a perfect memory and is forever trying to get back to where it was."

Clark likes the line's specific connection to water, and also to the struggle to return to something.

"For me, the title suggests how powerful memory is in shaping what happens next in Flint," Clark says. "Flint is really, really broken, and people are trying to figure out how to build up a city when you have such a deep suspicion of decision-makers' respect for the people who live there. It's devastating." ■



/// FROM THE SOCIAL SCIENCES

# Master of Disaster

Alumna Amelia Hoover helps the victims of catastrophe make long-term recoveries.

## THE BASICS OF SURVIVAL ARE SIMPLE:

You need food, shelter, clothing, and — of course — safe water.

That's why, when the city, state, and federal governments finally validated Flint residents' concerns and complaints about the water coming out of their taps, thousands of Flint residents, NGOs, and volunteers swung into action. Amelia Hoover (A.B. '14) was one of them.

A disaster program specialist with the Red Cross in Detroit, Hoover manages emergency response and recovery operations for Wayne, Oakland, Macomb, and St. Clair counties. Her specialty is helping families displaced by house fires, ensuring, first, that they have food, clothing, and shelter, and then starting the casework for their long-term recovery. But sometimes her focus scales to large disasters, such as the water crisis in Flint.

Hoover's work in Flint began on the weekends when she worked as a volunteer, but the Red Cross quickly deployed her to Flint as the assistant director of information and planning. Hoover's main goal was identifying which residents couldn't regularly get water from the distribution centers and setting up systems to make sure the water got to them.

In any recovery operation, Hoover says, her role can vary.

"It can range from liaising with the city to ensuring that people have enough cots and food or warming water to wash babies," she says. "We wear many hats."

One of the most important hats Hoover wears is data management.

"Converting the findings from our 'boots on the ground' work into clear and accurate data is crucial," she says. "Data

management tells the story of a disaster and justifies a relief presence, showing both the need and how to meet it."

There is no map to follow. Each family's long-term recovery plan differs as much as each crisis, but there are clear priorities.

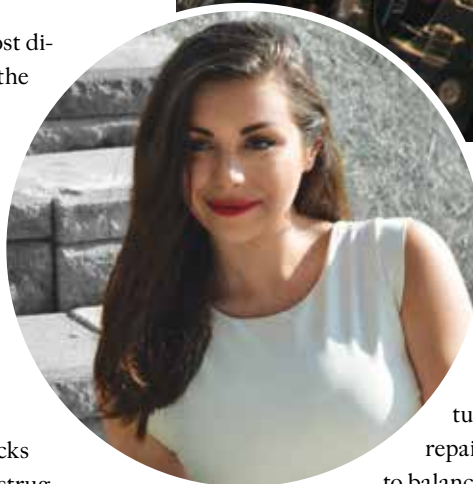
"Generally we meet the client's temporary emergency needs," Hoover explains, "and then we create an action plan with resources and steps specific to each client's circumstances and ability."

"Good casework requires an encyclopedic knowledge of resources available combined with an open ear. You must be fully present."

In Flint, as in most disaster operations, the pace was frantic and the resources were scarce. Dirty boots and red vests were in abundance and phones were ringing off the hook. Volunteers were there at all hours, loading trucks with supplies and struggling to deliver them through a winter that brought ice storms and several feet of snow. Reminders of their purpose were everywhere.

"We were constantly surrounded by cases of water," Hoover recalls. "Water was everywhere you looked. There were walls of it."

by Susan Hutton



In Flint, the challenges include both individuals' need for water and the massive cost and time it will take to make necessary infrastructure improvements and repairs. Hoover is forced to balance the urgency of these ongoing needs with those of new emergencies that continue to crop up.

"I never doubt the importance of what we do," she says. "It becomes more evident every day. Doing the job well can mean the difference between a family becoming homeless after a disaster or making a full recovery." ■

by Phillip Eli

the MICHIGAN DIFFERENCE



ALUMNI

# Rabble Rouser

One LSA alumnus courts controversy covering the biggest fight in the country — the battle for the White House.



**JONATHAN CHAIT (A.B. '94) GREW UP** watching his father hold a running dialogue with the evening TV news and commenting on whatever he saw there — subjects like Ronald Reagan, the “nuclear freeze” movement, and the election of conservative firebrand Jesse Helms to the U.S. Senate. Politics were a frequent topic of discussion for both parents in Chait’s house in the Detroit suburbs, and it didn’t take long for young Jonathan to share his own provocative opinions. In first grade, Chait “talked [himself] blue” trying to convince classmates that Santa Claus didn’t exist. In high school, a fierce debate with an English teacher about George Orwell’s *Animal Farm* ended with her labeling him a Communist.

Nowadays, Chait is *New York* magazine’s national affairs columnist, and he’s still happy to prod, poke, and provoke. Pieces like “Donald Trump Poses an Unprecedented Threat to American Democracy” and “The Case Against Bernie Sanders” give an idea of the tone and temperament that he brings to his online and print pieces. In January 2015, he penned a lengthy essay titled “Not a Very P.C. Thing to Say: How the Language Police Are Perverting Liberalism” that triggered aftershocks across the country. *Slate*, *Salon*, *Gawker*, the *Atlantic*, the *Nation*, the *Wall Street Journal*, *Forbes*, and the *New York Times* were among the outlets to publish responses. That kind of tough dialogue is important to democracy, Chait says. One sentence from his “P.C.” piece reads, “Politics in a democracy is still based on getting people to agree with you, not making them afraid to disagree.”

But Chait admits that a fiery dialogue also suits him, personally. “Somehow, hostility is energizing for me,” he says.

## MAKE 'EM LAUGH

In lecture halls at U-M, Chait soaked up classes on political theory, history, and philosophy. (He says he still references his old textbooks “all the time.”) Outside of class, he was immersed in a large, diverse, ideologically passionate campus filled with partisan factions. There was a competitive student council and a robust press corps — in other words, “all the real elements of a political system, but they were all smaller, and the stakes were

smaller,” Chait says. “You could study everything up close and understand how it all worked.”

At the time, Chait dreamed of becoming a humor writer in the vein of syndicated columnist Dave Barry. Unfortunately, his first attempts at reporting news for the *Michigan Daily* — news-writing being the traditional stepping stone toward a columnist gig — fizzled due to the fact that he was, in his own description, a “stammering, inept interviewer.” Undeterred, Chait submitted unsolicited humor columns to the *Daily* and, eventually, the paper started publishing them. Shortly thereafter, the reactions arrived. Chait remembers picking up a copy of the paper one morning on his way to class and spotting a letter to the editor with the headline, “Chait Needs to Be More Sensitive.” That moment brought an “electric jolt of excitement,” he says. A columnist was born.

## ATTACK OF THE KILLER THINK PIECES

A tumultuous election cycle has brought out sharp opinions from across the spectrum of political punditry. Below are a few that have stirred conversation—and contention.



### “THE FATHER-FÜHRER: CHAOS IN THE FAMILY, CHAOS IN THE STATE” by Kevin D. Williamson

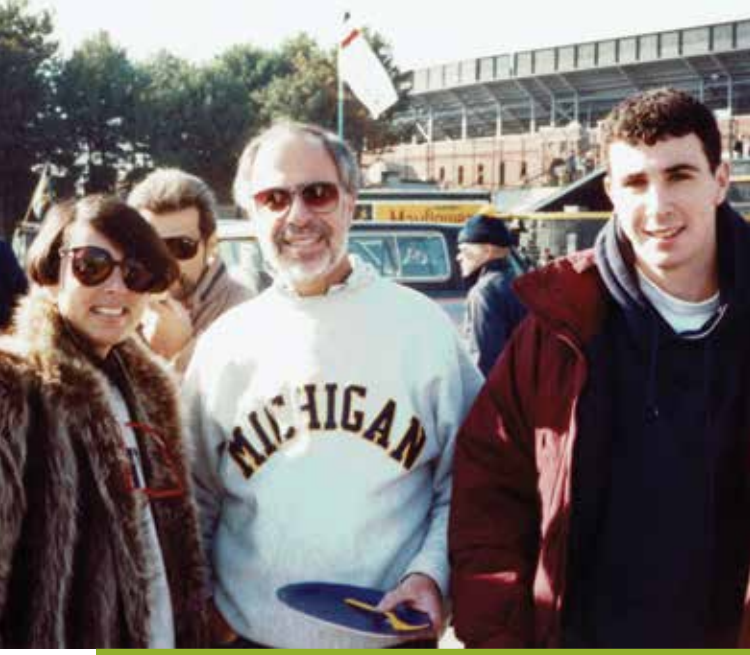
A blistering critique connecting working-class voters’ support of Donald Trump to lethargy, nuclear family dissolution, and opioid addiction. Published in the *National Review*.

### “THE ORIGINAL UNDERCLASS” by Alec MacGillis and ProPublica

An examination of the ugly tone in media coverage of white poverty (including references to Kevin Williamson’s *National Review* article), with a historical exploration of anti-poor rhetoric. Published in the *Atlantic*.

### “AMERICA LOVES WOMEN LIKE HILLARY CLINTON—AS LONG AS THEY’RE NOT ASKING FOR A PROMOTION” by Sady Doyle

A piece questioning the drop in public approval of Hillary Clinton between her work as Secretary of State and her presidential election campaign. Published on the digital news site Quartz.



**Jonathan Chait (on the right, pictured here with his parents, Ilene and David, during Jonathan's college days) courted controversy even as a student, when he wrote for the *Michigan Daily* and co-founded the *Michigan Independent*.**

## / FIGHTING WORDS

After graduation, Chait worked and wrote extensively, covering politics for the *American Prospect* and the *New Republic*, serving as a columnist for the *Los Angeles Times*, and making a long list of guest commentator appearances on national TV and radio stations. Over time, he garnered more than 70,000 Twitter followers and published an acclaimed book, 2007's *The Big Con: Crackpot Economics and the Fleecing of America*. In 2014, *New York Times* columnist Ross Douthat called him one of the "internet's most admired liberal journalists."

His mission as a writer, Chait says, is simple: to explain the world as he sees it. "I synthesize as much information as I can. I

Chait tries to give people something they haven't heard somewhere else—regardless of whom it ticks off.

develop an analysis of what's happening in American politics," he says. From there, Chait tries to give people something they haven't heard somewhere else—regardless of whom it ticks off. In 2011, he argued that Congressional Republicans were approaching "a more right-wing position [on Israel] than even the right-wing party within Israel." In February 2016, he wrote that the Senate's "blockade" of Supreme Court nominee Merrick Garland "has never happened in American history."

Unsurprisingly, Chait hasn't shied from perhaps the country's most controversial subject: the presidency. In January 2014, he produced a 3,400-word piece in *New York* arguing "history will be very generous with Barack Obama, who has compiled a broad record of accomplishment through three-quarters of his presidency." At that time, the 44th president had, according to Chait, "incontrovertibly made major progress on, or fulfilled, every one" of the major goals he laid out in his first inaugural address: "not only to rescue the economy from catastrophe but also to undertake sweeping long-term reforms in health care, education, energy, and financial regulation." The piece resonated, and Chait recently completed a book-length expansion titled *Audacity: How Barack Obama Defied His Critics and Transformed America*.

Like many aspects of his career, there's a U-M connection to the new book, too. Chait calls it the culmination of ideas he's been pondering since college, ideas "about liberalism, as a philosophy and a political style, as distinct from conservatism and also distinct from Marxism." For Chait, who describes himself as a "mainstream liberal...near the middle of the Democratic party," Obama is "a politician who embodies the kind of style that I've always admired and believed in."

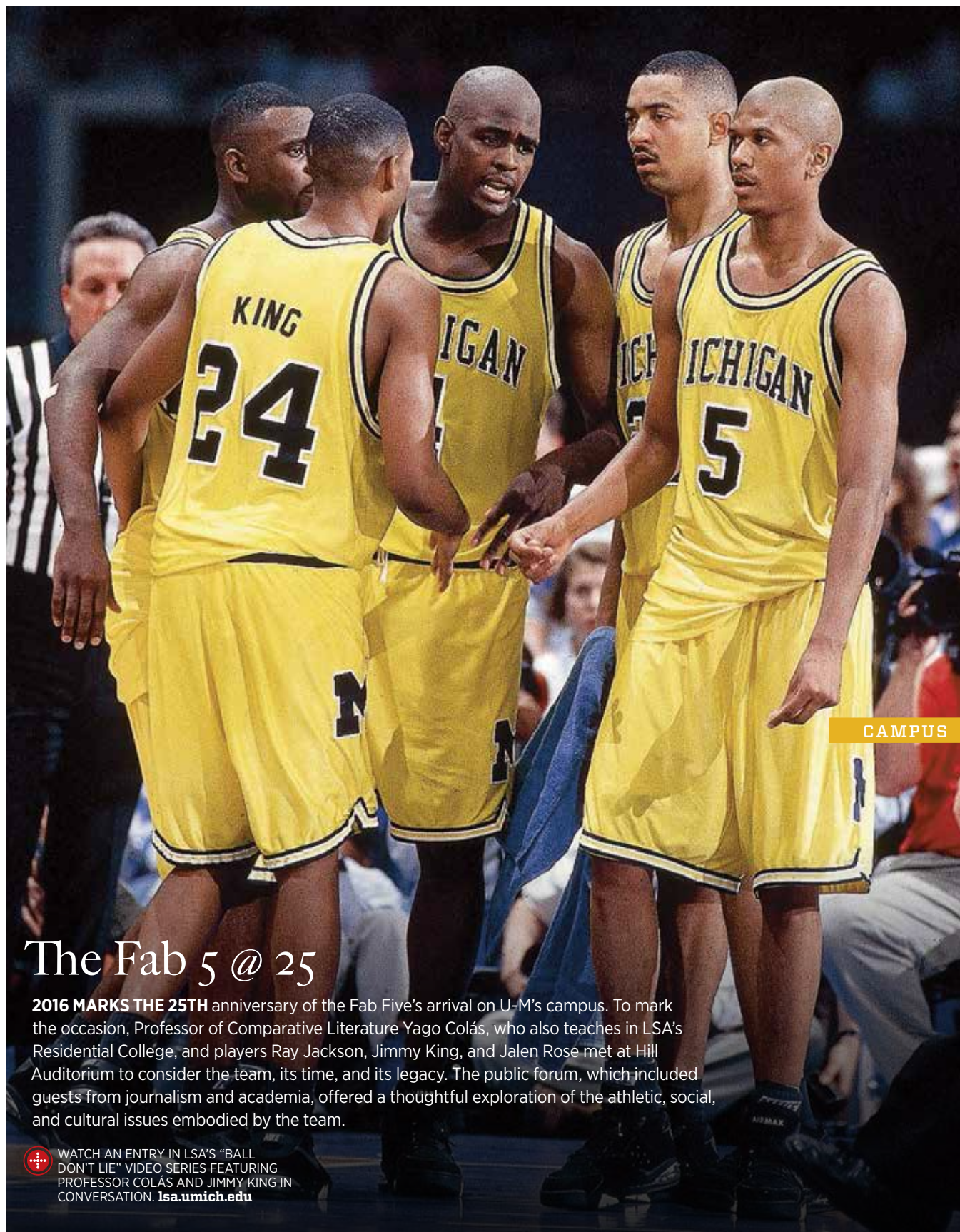
But, of course, Obama's term is ending. And the campaign to replace him, an eye-popping and contentious primary season that left Donald Trump and Hillary Clinton standing as party nominees, has been extraordinary. On the Democratic side, Chait offered a detailed analysis of Clinton in a May column titled "Looking to Harry Truman to Understand Hillary Clinton," pointing out that both politicians were mocked for the sound of their voices, haunted by charges of corruption, and attacked relentlessly by ideological purists within their party. And yet, as Truman eventually carved out a respected legacy, Chait sees a path for Clinton, too.

"An über-establishment president leading in anti-establishment times may, over the long run, come to be seen as commanding the American center—even, perhaps, something like an American consensus," he wrote. "Truman was a figure of crushing ordinariness, a quality that, over time, came to assume something close to greatness. Clinton gives off a similar sensibility despite her extraordinary life experience. If you withdraw the presumption of calculation that is attached to her every action, one can see her character aging well through history."

As for Trump? When asked about him, Chait hardly hedges, calling the prospect of his victory—which he believes is slim—"a devastating change in the course of American history" and "off the grid of the good and bad outcomes we had imagined, in the bad way."

Regardless of the outcome on November 8—or in 2020, or 2024—Chait won't be shy about sharing his opinion on the matter. ■





CAMPUS

## The Fab 5 @ 25

**2016 MARKS THE 25TH** anniversary of the Fab Five's arrival on U-M's campus. To mark the occasion, Professor of Comparative Literature Yago Colás, who also teaches in LSA's Residential College, and players Ray Jackson, Jimmy King, and Jalen Rose met at Hill Auditorium to consider the team, its time, and its legacy. The public forum, which included guests from journalism and academia, offered a thoughtful exploration of the athletic, social, and cultural issues embodied by the team.



WATCH AN ENTRY IN LSA'S "BALL DON'T LIE" VIDEO SERIES FEATURING PROFESSOR COLÁS AND JIMMY KING IN CONVERSATION. [lsa.umich.edu](http://lsa.umich.edu)

# Lemon.



ALUMNI

## Backfire

A year after alumnus John German broke the VW scandal, LSA gets an update on what Volkswagen and other diesel manufacturers have done to clear the air.



**WHEN JOHN GERMAN (B.S. '75)**, a senior fellow at the International Council on Clean Transportation, hired researchers from West Virginia University to run some tests in the real world on Volkswagen's diesel cars, he hoped to get additional data points that would help improve diesel emissions in Europe. The United States has the world's most stringent emissions standards, and VW's diesel cars had always passed them. That's why, at first, German thought the results he got were a mistake.

"I thought there was something wrong with the vehicle, that it was literally malfunctioning," he says. "The contractors thought there was something wrong with their equipment, so they kept recalibrating and coming up with the same results."

But the results weren't caused by a malfunctioning car or faulty equipment. The surprising test outcomes were caused by software VW had secretly installed in its diesel vehicles beginning in 2009. When the software — known as a "defeat device" — detected testing conditions, the cars produced lower emissions that enabled them to pass the test in the laboratory. The rest of the time, the cars gushed pollutants into the air, as much as 40 times the permitted limit.

"This is the part I find to be completely inexplicable," German says. "When the EPA and the California Air Resource Board first looked into the emissions problem, VW conducted a service campaign that they claimed would fix the problem. They could have taken out the defeat device as part of this service campaign and no one would have known."

"Instead, VW lied to them and tried to get away with the defeat device," he continues, "which I just find completely incomprehensible."

## COMING CLEAN

Since the company conceded the cheat last fall, 450 investigators have combed through 1,500 Volkswagen laptops, encountering dozens of code words employees used

“These agreements require Volkswagen to pay a restitutive \$10.03 billion to affected consumers, to put \$2.7 billion in an environmental remediation fund, and to invest \$2 billion into zero-emissions infrastructure and technology—a total fine of \$15 billion that far exceeds any previous automaker settlement.”

to cloak their actions. The investigators waded through more than 100 terabytes of data — approximately 40 times as much material as was leaked in the Panama Papers — trying to figure out how VW had pulled its deception off.

In July, VW reached a settlement with the Department of Justice and the State of California Air Resources Board for violating some, but not all, of the provisions of the Clean Air Act. (The fines for these extant provisions have not yet been determined.) VW also settled with the Federal Trade Commission for deceptive advertising. Together, these agreements require VW to pay a restitutive \$10.03 billion to affected consumers, to put \$2.7 billion in an environmental remediation fund, and to invest \$2 billion into zero-emissions infrastructure and technology — a total fine of \$15 billion that far exceeds any previous automaker settlement.

On top of the federal settlement, VW has also settled with 44 states for \$603 million, but the civil and criminal charges have not yet been heard in court. The automaker's saga is far from resolved, as are the questions the scandal has raised, including one that particularly interests German: Is Volkswagen the only diesel manufacturer using a defeat device?

## END OF THE ROAD

Diesel cars make up more than half the European market, and European governments have had qualms about diesel vehicle emissions since 2011. After VW's chicanery in the United States came to light, the U.K., German, and French governments tested almost 150 diesel models in the real world. About 90 percent of the vehicles they tested exceeded the legal nitrous oxide limit that the cars met when they were tested in the lab. In the real world, the vehicles emitted, on average, more than six times the emission standards.

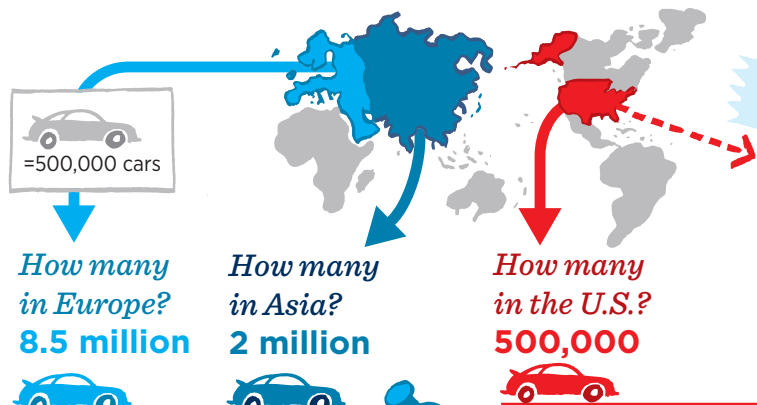
But this news, which came to light in April, has not ignited a similar firestorm. This is partly because these carmakers didn't hide their defeat devices; instead, they claimed the devices were exempt.

There are valid exemptions. When a vehicle has to blast up a mountain, for example, it must temporarily turn its emissions controls off to avoid burning out the engine's catalyst. This temporarily releases more pollutants, but it's limited, has a purpose, and is within defined conditions, which makes it both a desirable and a legitimate exception.

But automakers often claim other, more questionable justifications, including changes in the ambient air temperature

# Farfrömwörkin

We break down the numbers on Volkswagen's 11 million diesel vehicles with defeat devices.



## Agreement in the U.S. The Money:

**\$2.7 billion** to remediate emissions.  
**\$2 billion** to promote zero-emission vehicles.

**\$10.03 billion** to compensate consumers, including buying back or fixing cars and compensation for false advertising.

## Who's involved:

### ★ The Judge

Judge Charles Breyer (Stephen Breyer's younger brother), who always wears bowties and is known to quote Shakespeare in court. He first planned to become a Shakespearean actor.

One day, Breyer said to a VW lawyer whose son laments his dad was never home:

In a month's time, we will reintroduce you to your family. They can all come to San Francisco for an environmentally correct holiday.



### Volkswagen

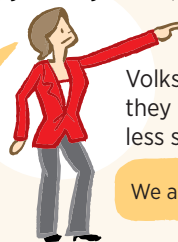


### ★ California Air Resources Board

### ★ United States (DOJ, EPA, FTC)

By duping the regulators, Volkswagen turned nearly half a million American drivers into unwitting accomplices in an unprecedented assault on our atmosphere.

—Deputy Attorney General Sally Q. Yates



Volkswagen may not export the cars they haven't fixed to countries with less stringent emissions standards.

We are not shipping the air pollution elsewhere.

—Gina McCarthy, EPA Administrator



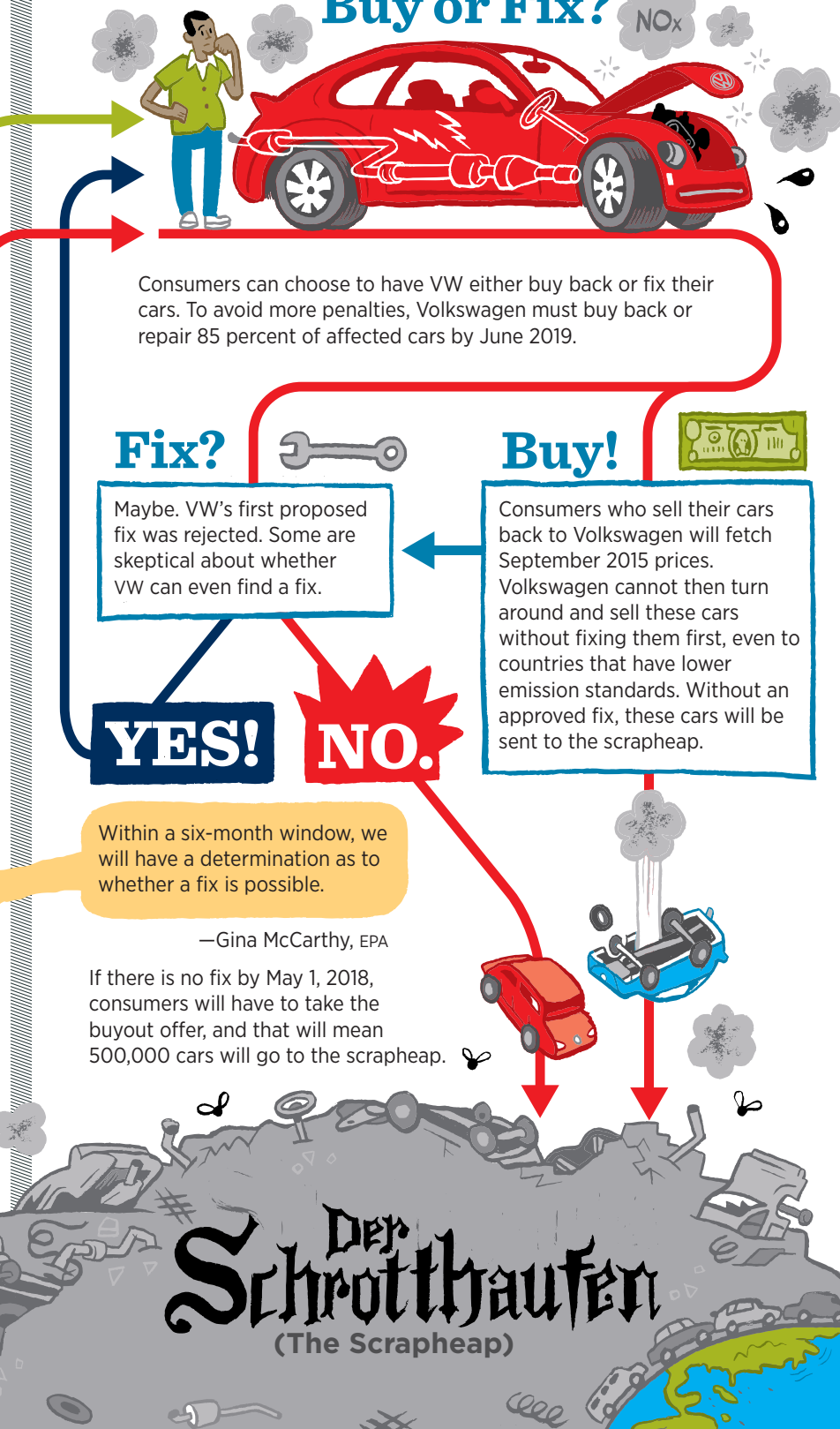
What will be done with affected cars in Europe and Asia? Too soon to tell.

**What the settlement doesn't cover:** Some states haven't yet filed suits against VW for violating state environmental and consumer regulations or false advertising. Criminal charges have not yet been filed, either.



Consumer

## Buy or Fix?



and hot restarts. The justifications manufacturers offer for these exemptions, German says, “are, from an engineering point of view, mostly bogus.”

Unfortunately, when it comes to enforcement, Europe has a structural problem. The European Commission sets emission standards for the entire European Union, but it’s up to individual countries to certify that vehicles meet these standards — and because it’s the European Union, every country must accept every other country’s certification. This means, explains German, “that manufacturers just go shopping to see which country is going to do the least enforcement.” And because the E.U. hasn’t even defined important terms such as “normal use” and “emission control system,” companies have been even more emboldened to define those things in ways that benefit themselves.

German lingers on this point for several reasons: Though U.S. standards are strong, the rest of the world mostly follows Europe, which means manufacturers can exploit Europe’s imprecisions and spew pollutants all around the world. And though VW’s cheating has raised a huge stink in the United States, only 500,000 vehicles were affected here. Compare that to the 11 million vehicles that VW also equipped with defeat devices around the globe — and the even larger, yet unknown, number of bad diesel cars made by other manufacturers. The settlement VW reached with the U.S. government doesn’t affect any of them.

But though the U.S. settlement covers just a sliver of the problem, its scale is still staggering. If VW can’t find a way to fix the models covered in the settlement, which it has not yet been able to do, it must buy the cars back at the price they would have fetched before the scandal broke. And VW isn’t allowed to sell those 500,000 cars anywhere else. And that could mean that the company would have to turn a mountain of defunct diesel vehicles, once known as *Das Auto*, into *Der Schrotthaufen*: the scrapheap. ■

# STARSLAUGHTER

## FACULTY

A step-by-step illustrated explanation of Astronomy Professor Jon Miller's research.

### 1. A STAR VENTURES TOO CLOSE TO A BLACK HOLE.

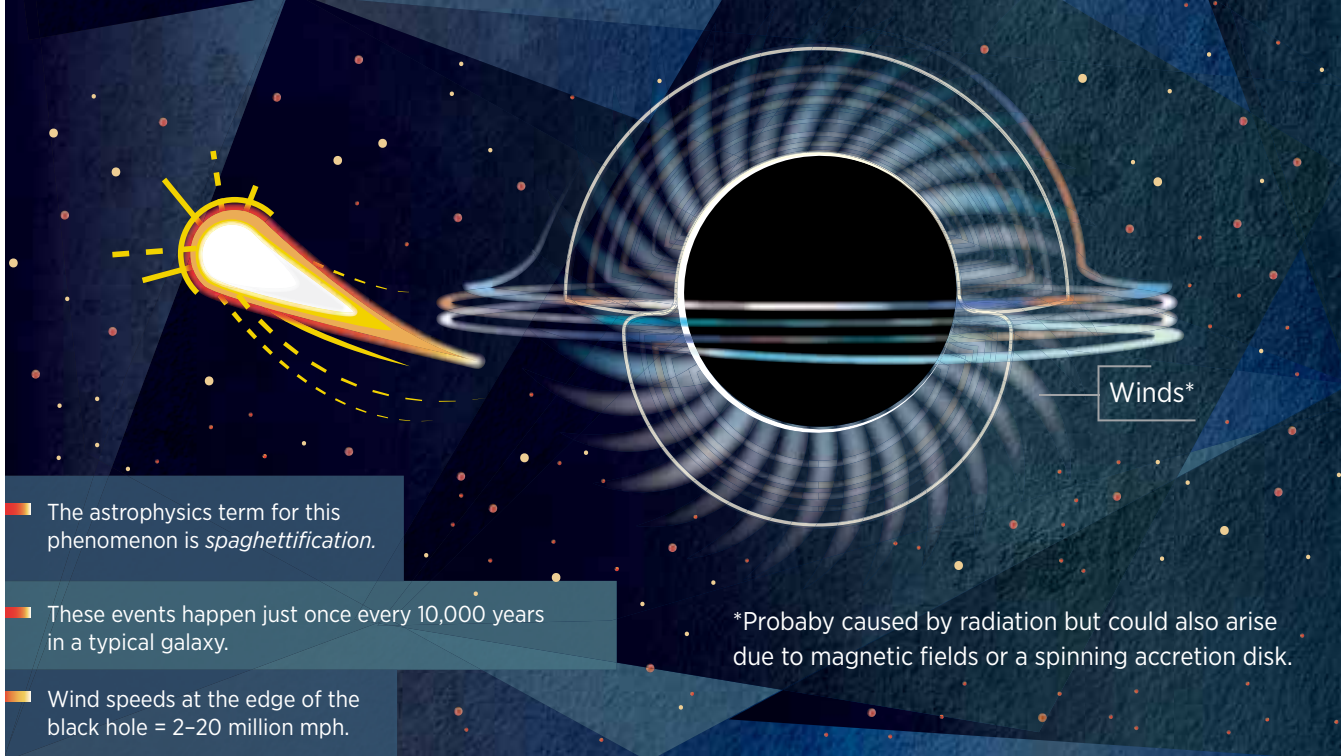
A trio of X-ray telescopes observed the destruction of a star called ASASSN-14li.



Black hole mass = a few million times greater than our sun.

This black hole is at the center of a galaxy about 290 million light years away from the Milky Way.

### 2. THE BLACK HOLE'S IMMENSE GRAVITY STRETCHES AND TEARS APART THE STAR.



The astrophysics term for this phenomenon is *spaghettification*.

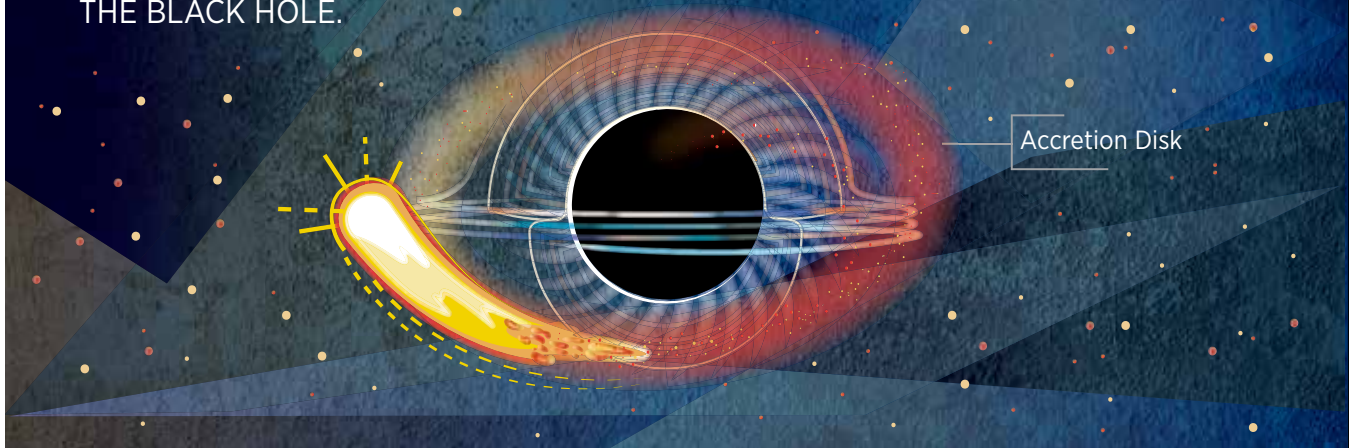
These events happen just once every 10,000 years in a typical galaxy.

Wind speeds at the edge of the black hole = 2-20 million mph.

\*Probably caused by radiation but could also arise due to magnetic fields or a spinning accretion disk.

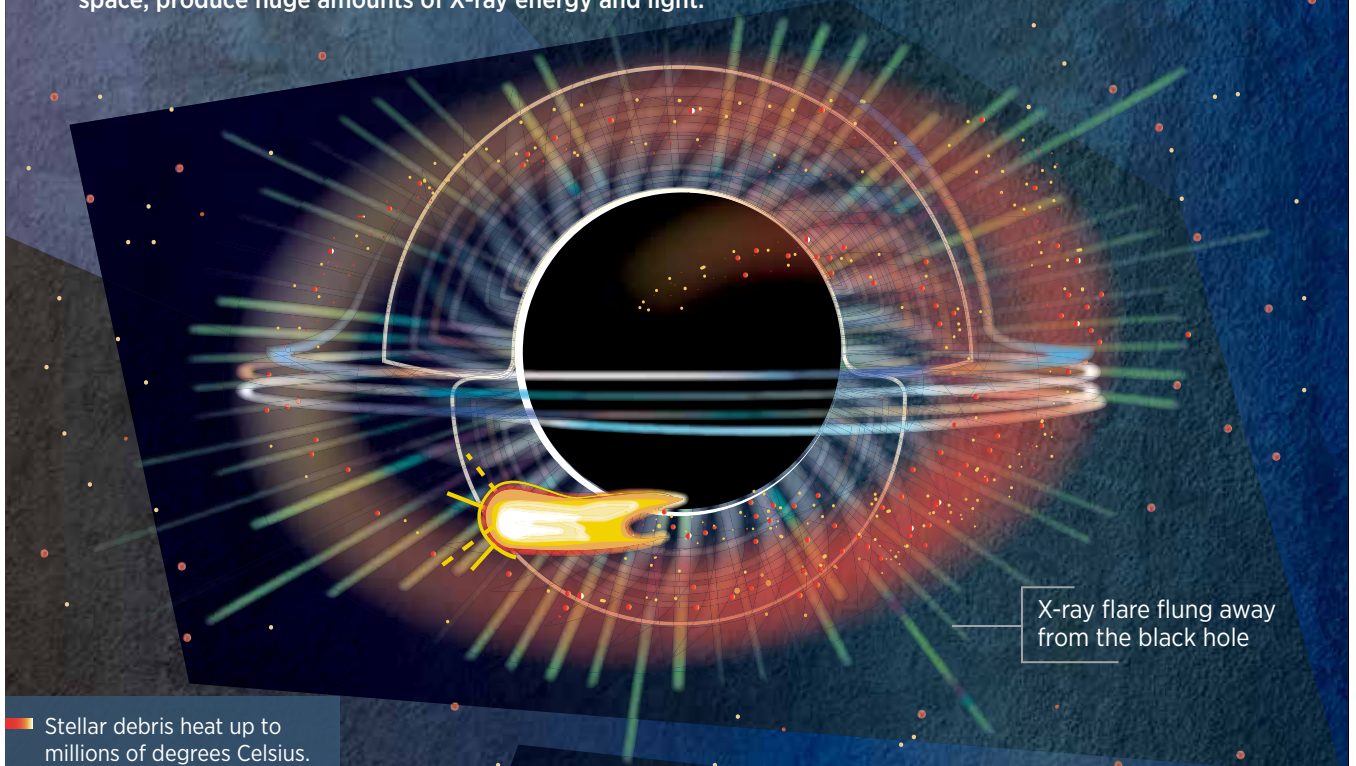


3. AS THE BLACK HOLE SHREDS THE STAR, PIECES OF THE STAR SPIRAL INWARD TOWARD THE BLACK HOLE. STAR GAS AND DEBRIS FORM A DISK THAT ORBITS THE BLACK HOLE.



4. THE BLACK HOLE SWALLOWS MOST OF THE STAR.

But winds at the edge of the black hole expel some of the debris at high speeds. The star debris, flung into space, produce huge amounts of X-ray energy and light.



Stellar debris heat up to millions of degrees Celsius.

X-rays travel at the speed of light.

A black hole gets bigger each time it consumes a star.

In hours or days, the black hole shreds about half the star. Within months or years, the rest of the star and the accretion disk fall into the black hole.

# In the Middle

by Fatina Abdrabboh (A.B. '03)



**IT WAS A CALM, QUIET AFTERNOON** in the summer of 2014. I was sitting in my office in Dearborn, Michigan, talking with a client. I froze as the caller described in chilling detail how her 13-year-old son was jumped in a middle school cafeteria by a group of kids. While attacking him, they screamed threats about ending his and his “raghead” mom’s life. The mother’s frantic pleas were made to me while she drove her son to the emergency room.

I sped to the hospital to meet the family. As I talked with the child about the attack, he felt the need to repeatedly remind me how he kept saying sorry as the attackers called him names and hit him. He said sorry even though he didn’t know what he was sorry for. That was two years ago. I still get regular updates from his mother about the small strides the child is making in “being normal again,” as she puts it, but I fear the long-term effects of this hate-fueled attack on his young life.

I am the executive director of the Michigan regional office of the Arab American Anti-Discrimination Committee, and my office receives cases of discrimination

each and every day. Whether it is the Yemeni American assembly line workers who were denied time to break their fast during Ramadan; or the 14-year-old Syrian American student who was called “ISIS” by classmates; or the Lebanese American woman who was denied service at a place of business because she refused to remove her headscarf; or the student at a prestigious prep school who was verbally harassed, threatened with bodily harm, and told to “go back to your country,” my response as a leader is to never waiver in my willingness to combat this kind of hate. I vow to do so no matter where it rears its ugly head.

In my line of work, everything depends on meeting people who care. We have had many successes in the courtroom combating bias, discrimination, and hate, but a lot of civil rights victories actually occur outside of the courtroom through cultivating relationships of trust and collaboration. Our allies include human resource professionals, principals at public schools, police officers, and others who are neither perpetrator nor victim but who find

themselves, like me, in the middle.

Prior to accepting my current position, I considered the words President John F. Kennedy spoke when he accepted the nomination for President 56 years ago. He said: “We are not here to curse the darkness, but to light the candle that can guide us through that darkness to a safe and sane future.” I chose a career in civil rights because it was my belief that promoting justice and civil rights for Arab Americans would help my community find their way into the very light Kennedy sought. It is this promise of freedom and equality that the Constitution of this country ensures for all of us.

As the challenges facing us all grow, we must continue to open lines of communication and establish trust. It won’t be fast, and it won’t be easy. But we can do it. And we’ll do it together.

**Fatina Abdrabboh is the executive director of the Michigan-ADC.**



READ MORE ABOUT FATINA ABDRAHBOH’S WORK. [lsa.umich.edu](http://lsa.umich.edu)



# Living in America

A look at the 3.5 million Arab Americans in the United States



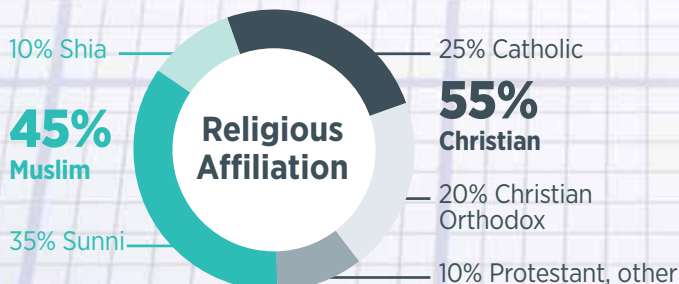
**371,233**  
Greater New York City

**403,445**  
Metro Detroit  
Largest concentration is in Dearborn, Michigan—40% Arab American

**308,295**  
Los Angeles

**38%**  
originate from Egypt, Somalia, Morocco, Iraq, Libya, Saudi Arabia, Kuwait, Bahrain, Qatar, UAE, Oman, and elsewhere in the Middle East and Africa

**62%**  
originate from Syria, Lebanon, Palestine, Jordan



## Non-Arabs from Arabic Countries

Immigrants from Arabic-speaking countries who are not classified as Arab Americans include:

- Armenian Americans
- Kurdish Americans
- Coptic Americans
- Jewish Americans of Middle Eastern origin

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**be a victor.**

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**Tuesday, November 29, 2016.** No matter  
where you are, or the time of day, you can  
support what you love about Michigan.

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