COLLEGE MAGAZINE

Pomona

BACK TO THE HOT ZONE
A thwarted movie project reborn on TV

ANATOMY OF AN OUTBREAK
CDC's Matt Wise '01 tracks a deadly bug

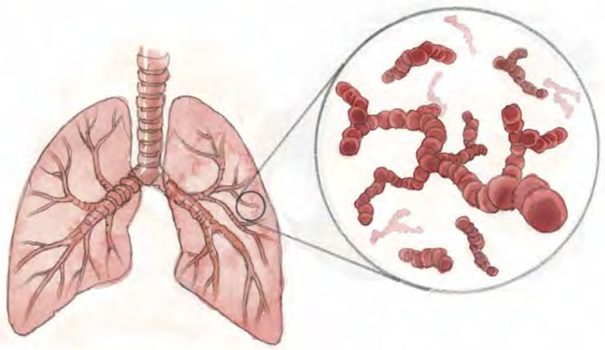
THE FACE OF A PANDEMIC
Why was the Spanish flu of 1918 so lethal?

Spring/Summer 2019

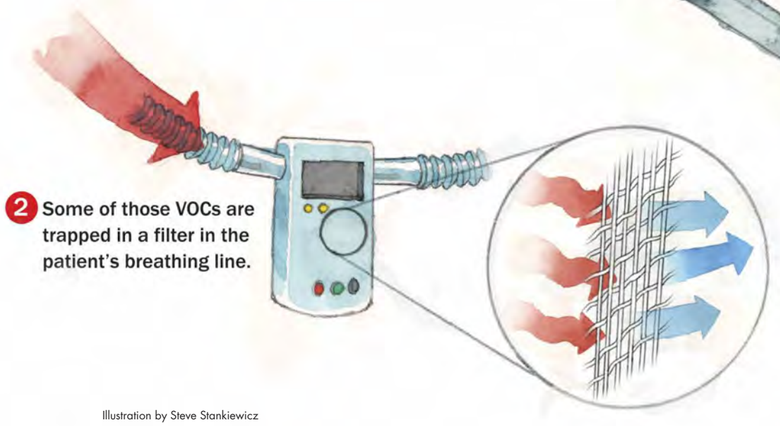
MEDICAL MYSTERIES

DIAGNOSIS BY BREATH

For centuries, medical practitioners have been able to diagnose certain ailments simply by smelling the patient's breath. That, says Professor of Chemistry Chuck Taylor, is due to volatile organic compounds (VOCs) that, when breathed out, provide an identifiable signature of the guilty pathogen. That's what led Taylor to think about the problem of hospital-acquired pneumonia, which is particularly deadly among intubated patients. Would it be possible, he wondered, to create a diagnostic tool that uses those VOCs to detect infections—and to identify the specific bacteria involved—so that they can be treated in a timely fashion? Since then, Taylor and students in his lab have been hard at work creating the knowledge base for developing such a tool. Eric Garcia '19 is one of many students who, in recent years, have helped move this research project forward. Eric's role has been to try to understand the properties of certain lens-coating polymers that also happen to be very good at absorbing airborne VOCs so that they can be released for testing. There's a lot of work still to be done, but here's how Taylor and his students hope it might eventually work:



1 A bacterium such as Staphylococcus aureus infects the lungs of an intubated patient and begins to release signature VOCs.



2 Some of those VOCs are trapped in a filter in the patient's breathing line.

3 The filter is replaced daily and taken for testing.

4 The VOCs are released from the filter and tested in a Raman spectrometer, revealing the VOC signature for S. aureus.

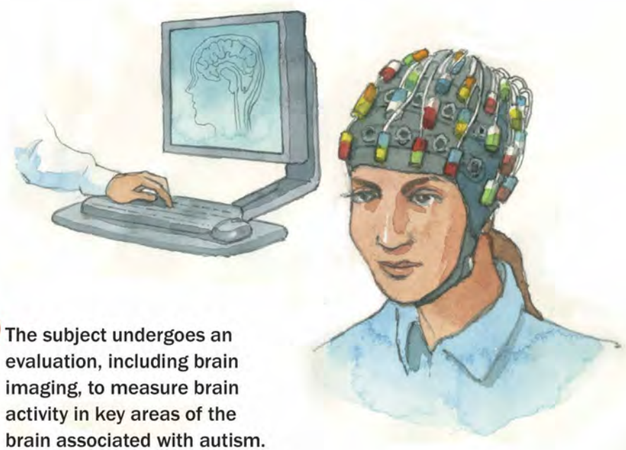
5 A doctor gives the patient an antibiotic known to be effective against the identified bacterial strain in time to save a life.

Illustration by Steve Stankiewicz

From left: Eric Garcia '19 and Professor Chuck Taylor

AUTISM AND VIRTUAL REALITY

With a sister on the autism spectrum, neuroscience major Cynthia Nyongesa '19 has a long-held interest in the widespread neurological condition, which affects the way a person interacts with the world. So when she read about the effectiveness of virtual reality (VR) therapy in a range of other conditions, she wondered if autism could be added to the list. Working with the Center for Autism and Neurodevelopmental Disorders in Santa Ana, California, and with the support of Neuroscience Professor Richard Lewis, she has developed a pilot study to find out. The advantage of VR therapy, Nyongesa says, is that its totally immersive environment can be used to simulate realistic scenarios that couldn't be used in the real world. "Like going through airport security, for example," she says. "You couldn't physically take a subject through TSA—you couldn't get approval for something like that—but you can simulate it in VR." And to determine whether the therapy is working, she plans to use before-and-after brain scans to show whether key parts of the brain are more active. Here's how the study might work:

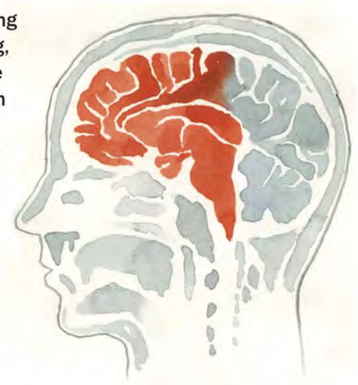


1 The subject undergoes an evaluation, including brain imaging, to measure brain activity in key areas of the brain associated with autism.

2 Over the course of several sessions, the subject dons VR equipment programmed to provide an immersive, simulated experience.

3 Each VR experience requires the subject to interact in realistic situations that challenge the parts of the brain dealing with such functions as social interaction and emotion recognition.

4 A final brain scan, along with behavioral testing, measures whether the therapy has resulted in increased activity in those key areas of the brain.

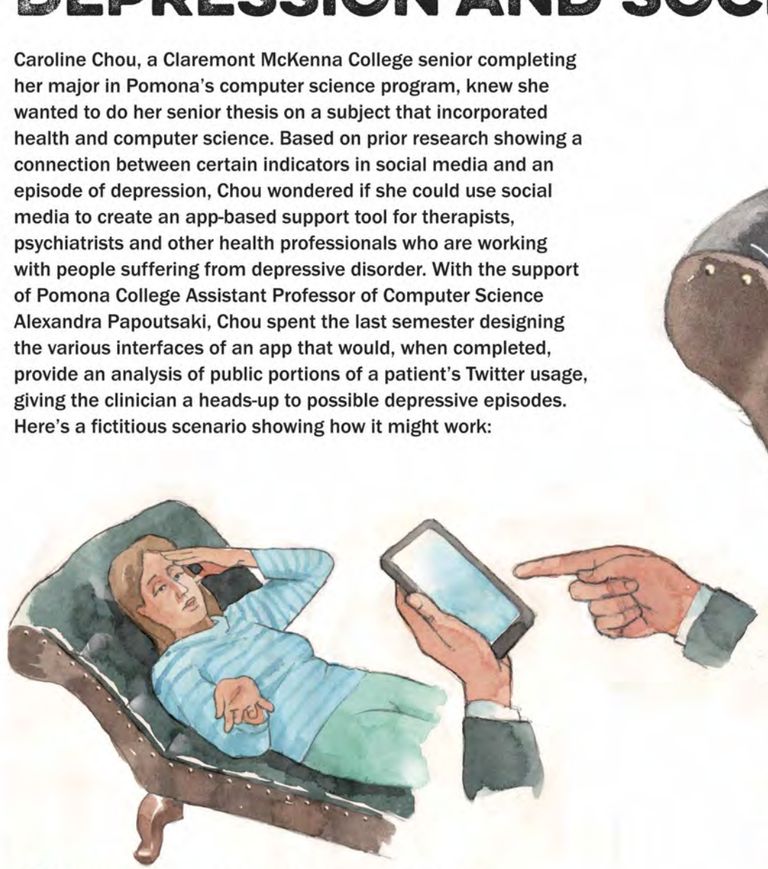


From left: Cynthia Nyongesa '19 and Professor Richard Lewis

Illustration by Steve Stankiewicz

DEPRESSION AND SOCIAL MEDIA

Caroline Chou, a Claremont McKenna College senior completing her major in Pomona's computer science program, knew she wanted to do her senior thesis on a subject that incorporated health and computer science. Based on prior research showing a connection between certain indicators in social media and an episode of depression, Chou wondered if she could use social media to create an app-based support tool for therapists, psychiatrists and other health professionals who are working with people suffering from depressive disorder. With the support of Pomona College Assistant Professor of Computer Science Alexandra Papoutsaki, Chou spent the last semester designing the various interfaces of an app that would, when completed, provide an analysis of public portions of a patient's Twitter usage, giving the clinician a heads-up to possible depressive episodes. Here's a fictitious scenario showing how it might work:



1 Dr. Kay recommends that her patient, Josie, use the app to analyze depression-related patterns in her Twitter usage.

2 Dr. Kay logs in to look at the patient's monthly report for January and sees a spike in depression-related indicators during the second week of the month.

3 During Josie's regular therapy session, Dr. Kay uses the report to jog the patient's memory about significant events of that particular week.

4 Josie tears up as she remembers that week, when her dog was seriously ill, and as a result, her therapy session becomes more productive.

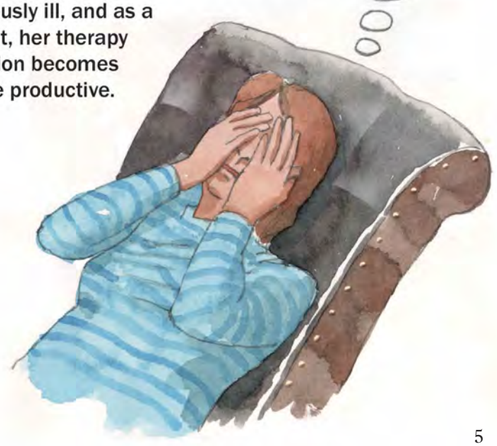


Illustration by Steve Stankiewicz

From left: Professor Alexandra Papoutsaki and Caroline Chou (CMC '19)

A Mystery with a Name

About a dozen years ago, on an ordinary workday morning, as I was following my ordinary workday routine, something inexplicable happened. My wife, a teacher, had already left for school. After dressing, I felt a bit odd, so instead of going straight to work, I sat down for a moment and opened my laptop. And discovered that I no longer knew how to open a file.

My mind had become a hopeless jumble. I couldn't recall the names of the people I worked with, couldn't formulate a clear thought or even hold a murky one in my head for more than a few seconds at a time. Out of all that confusion, one terrible conviction emerged. This must be what it feels like to have a stroke.

It never occurred to me to dial 911. All I could think of was phoning my wife, but I couldn't remember the name of the school where she worked. I pawed through our file cabinet, searching through drawers for old pay stubs. Finding a number for the school's front office, I left what must have been a strange and alarming message for my wife.

I don't remember how long it took her to come to my rescue or what I did in the meantime or what she said to me when she arrived. All of my recollections from that day are sketchy and disjointed. I remember the emergency room and the neurologist questioning me. I vaguely remember various tests and scans. I recall becoming fixated on the initials "TIA," which stand for "transient ischemic attack"—a kind of mini-stroke that my father had suffered on a couple of occasions—telling my wife about them over and over, each time the first for my muddled brain.

And I remember the comic relief of the day—the man in the next bed, who looked and sounded like a character right out of *The Godfather*, asking me what was wrong. I said I was having trouble remembering things, to which he replied with a wise-guy grin, "Well, do you remember the $200 you owe me?"

Eventually, the neurologist returned with a diagnosis and a smile. I hadn't had a stroke. All my results were normal. The diagnosis: a rare and poorly understood condition with no known cause, called "transient global amnesia." (I thought at the time—and still think—that "transient global amnesia" sounds like something invented for a soap opera plot. "Now we know why Bryan disappeared. He was suffering from transient global amnesia.")

The good news, the doctor said, was that I would almost certainly be back to my usual self within a day and never have a relapse. And he was right. By lunchtime, I felt better, and by the time I left the emergency room, mid-afternoon, I was back to normal. And I've stayed that way, more or less—so far, anyway.

But I doubt that I'll ever again have quite the same confidence in my own "normal" cognitive functioning. Since that day, whenever I feel a bit odd or have trouble remembering a word or a name, I go through a careful litany of friends' and family members' names and phone numbers in my mind, just to reassure myself that it's not happening again.

It would be comforting to believe that everything that can go wrong with us has both a label and a clear explanation, but what I learned that day—something every doctor knows, I suppose—is that a disorder can have a name and still be a mystery.

Medical mysteries abound, and not just in the headlines about emerging diseases like Ebola. As you'll read in Kate Becker's "The Face of a Pandemic," a century after the Spanish flu swept away something like 5 percent of the total world population, we're still trying to figure out why it was so lethal. And almost everyone knows someone suffering from some chronic illness that seems to defy diagnosis and effective treatment.

As I learned later, my own diagnosis that day was made purely by process of elimination. It wasn't a stroke or a tumor or anything else the doctors could pinpoint, so it must be transient global amnesia—a mystery with a name, but no less a mystery for that.

—MW

COLLEGE MAGAZINE
Pomona

SPRING/SUMMER 2019 • VOLUME 55, NO. 2

EDITOR/DESIGNER
Mark Wood (*mark.wood@pomona.edu*)

BOOK EDITOR
Sneha Abraham (*sneha.abraham@pomona.edu*)

CONTRIBUTORS
Kate Becker ("The Face of a Pandemic") is a writer based in Brookline, Mass. She studied physics and astronomy and served as a senior editorial researcher for the NOVA science documentary series. She writes about "everything under the sun, and over it, too."

Max Blau ("Anatomy of an Outbreak") is an Atlanta-based freelance journalist focused on narrative and investigative stories. His stories have appeared in *Atlanta Magazine, The Boston Globe, CNN, The New York Times* and *Politico*.

CONTRIBUTING STAFF
Lupe Castaneda
Carla Guerrero '06
Jeff Hing
Mark Kendall
Robyn Norwood
Jeremy Snyder '19
Kristopher Vargas
Patty Vest

Submissions and Changes:
For class notes, address changes, photos and birth or death notices, email: *pcmnotes@pomona.edu*; phone: (909) 607-8129; or fax: 909-621-8535. For other editorial matters or submissions, phone: 909-621-8158, email *pcm@pomona.edu* or mail to *Pomona College Magazine*, 550 N. College Ave., Claremont, CA 91711. Magazine policies are available at: *www.pomona.edu/magazine/guidelines*.

Pomona College Magazine
is published three times a year. Copyright 2019 by Pomona College, 550 North College Ave., Claremont, CA 91711.

Pomona College
is an independent liberal arts college located in Claremont, Calif. Established in 1887, it is the founding member of The Claremont Colleges.

PRESIDENT
G. Gabrielle Starr

Nondiscrimination Policy
Pomona College complies with all applicable state and federal civil rights laws prohibiting discrimination in education and the workplace. This policy of nondiscrimination covers admission, access and service in Pomona College programs and activities, as well as hiring, promotion, compensation, benefits and all other terms and conditions of employment at Pomona College.

FPO
FSC FSC® C013458

FEATURES

DEPARTMENTS

ON THE COVER

Actors Liam Cunningham and Julianna Margulies star in the National Geographic scripted miniseries *The Hot Zone*, the culmination of a 25-year-long collaboration betweeen author Richard Preston '76 and producer Lynda Obst '72, to air May 27. (Photo courtesy of National Geographic/Amanda Matlovich)

magazine.pomona.edu

This issue of *Pomona College Magazine* is dedicated to
Perdita Sheirich
longtime *PCM* class notes editor, who recently retired from that role after carrying it out with great care and dedication, issue after issue, for approximately half a century—or about 150 issues.

Revelle and Gore

I read with some dismay your editorial introducing the article about Roger Revelle. While I am glad you appreciate the immense impact that Roger had in his scientific career, you have perpetuated a myth that Roger was "somehow persuaded to lend his name to an article he reportedly had no hand in authoring." This myth was created and propagated by Al Gore, who was upset that Roger, whom he had heard lecture in Ashok Khosla's introductory science class that Gore took at Harvard, about carbon dioxide as a greenhouse gas, was not supporting Gore's political position. Gore received a D in that class, one of only two science classes he ever took in college (he received a C– in the other one). Fred Singer was co-author on the referenced paper published by the Cosmos Club in April 1991. I have attached his account of the incident, including the libel suit which he filed successfully against Dr. Justin Lancaster for suggesting, as you have, that Roger was not mentally alert during his last years and that Singer had "used" him.

I am a graduate of Pomona's Department of Geology, as was Roger. I, like Roger, went into oceanography, and I knew him pretty well both professionally and through geology alumni activities. You can see my website for additional information on my scientific qualifications. I have worked on these ocean-atmosphere systems most of my professional life and believe I have, after a lifetime at sea, gained some understanding of how they work. I can assure you that nothing in nature is as simple as Mr. Gore seems to think it is. He is, after all, a politician, not a scientist. His entire academic background in science amounts to the two required science courses he took at Harvard. He likes to say, in his book and in his movie, that anyone who disagrees with his simplistic assessment of climate change is just like the "scientists" who killed his sister. His sister was a smoker and died of lung cancer, but the "scientists" who denied the connection killed his sister. Never mind that he—and his father before him—gew tobacco for decades in Tennessee. He says that anyone who questions his overly simplistic views about climate change is just like those scientists who killed his sister.

For the record, I still sail to the Arctic, as I have since 1967, and have personally observed that the ice is indeed melting due to the Arctic amplification, which is causing the Arctic to warm four times faster than the rest of the Northern Hemisphere. This does not explain why sea ice in Antarctica is increasing at about the same rate that we are losing ice in the Arctic. Perhaps you or Mr. Gore can explain that and the other myriad examples of complexity in the ocean-atmosphere system. Your quotes from Dr. Lancaster that say, "You had what was an insidious example of what I would call a lack of ethics in science and the use of scientists as hired guns by the industry" would seem to conflict with his statement, dated April 29,1994, which resulted from his losing Dr. Singer's defamation suit. There he says, "I fully and unequivocally retract and disclaim those statements and their implications about the conduct, character and ethics of Professor Singer…" It was Gore who tried to use Roger as a "hired gun," not Fred Singer.

—Jim Kelley '63
Loyalton, CA

EDITOR'S NOTE: *I guess in cases like these we all must decide whom to believe. I've chosen to believe Roger's family and close associates. As for the libel settlement, in my experience, lawsuits aren't a dependable barometer for truth. They're often won by those with the deepest pockets.*

Aspirants, Not Victims

I read the letter titled "Korematsu in Context," in the Winter 2019 *PCM*, with deep personal interest. Four now-young men, former high school students of mine, came over the border "uninvited." I have been deeply involved with them for eight years. Two I adopted as adults; the other two are "mine" by affection.

The letter describes people like them as "victims," but I would not. They are aspirants. They all came here for many of the reasons our forefathers came: for safety and opportunity. The letter's author would describe them as "illegals." Is that how we would describe our forefathers? (Note: Those seeking asylum are engaged in a legal activity.)

The "crisis" the letter refers to is political theatre. The real crisis is with our values: Are we no longer a destination of hope, the hope that brought our families here?

—David Lyman, '66
South Pasadena, CA

No More Plastic, Please

I truly enjoy *Pomona College Magazine,* but was disheartened to find the latest edition arrived wrapped in plastic. With all of the programs and policies being implemented worldwide to reduce plastic usage, both to reduce fossil fuel use and to reduce plastic pollution, why, oh, why wrap the magazine? Was this only so that you could enclose the letter asking for monetary support? Not acceptable. It would be far better to communicate with the target audience by email, and to make an online-only edition of *PCM* an option to reduce paper use/waste as well.

But seriously: no more plastic!

—Mary Stanton-Anderson '75
University Place, WA

Dear *PCM* Reader

Your "Dear *PCM* Reader" letter prompted lots of Pomona conversation and reminiscences between my wife (Marilyn Hendrickson '55) and me. We appreciate your letter's approach to the reality of cost vs. your mission of connecting and a sense of pride as part of the college family. Your mission succeeded with us—many fond and proud memories.

Thank you for reminding us of the many good things Pomona College has contributed to our lives, both in the past and continuing today. The Winter 2019 issue was impressive and especially connected with us, since we are Southern California natives and lived in fire-prone Ventura three times and in the Sierra foothills for about 20 years.

—Dave Holton '53
Pleasanton, CA

Kudos for PCM

I just want to thank you for this magazine [*PCM* Winter 2019]. I love geology! About 30 years ago I wrote a fictional story about the Cambrian and the Burgess Shale incident—for children and their parents and grandparents. I never got around to publishing it, but my family are now anxious to visit the exhibit in B.C.

—Barbara J. Sanders '54
Santa Barbara, CA

***PCM* is an** outstanding magazine, and the "Fire and Water" issue was an ideal fundraiser.

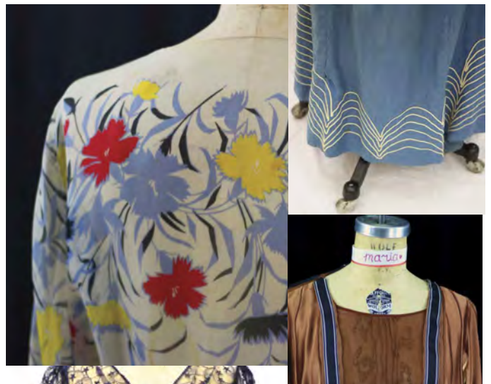
—Helena Zinkham '75
Arlington, VA

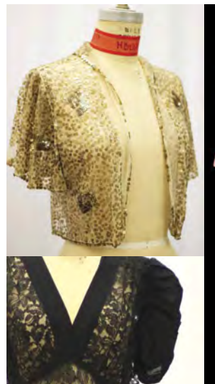
Bravo, *PCM* Winter edition. The cover should be framed on a wall at MOMA.

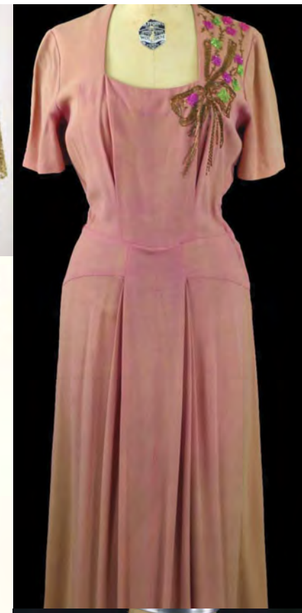
—Marshall Hutchason '52
Glen Head, NY

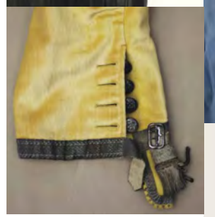
Alumni, parents and friends are invited to email letters to *pcm@pomona.edu* or "snail-mail" them to *Pomona College Magazine,* 550 North College Ave., Claremont, CA 91711. Letters may be edited for length, style and clarity.

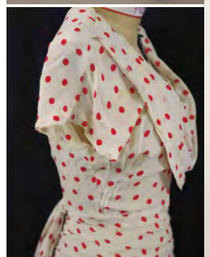
ARCHIVING HISTORIC COSTUMES

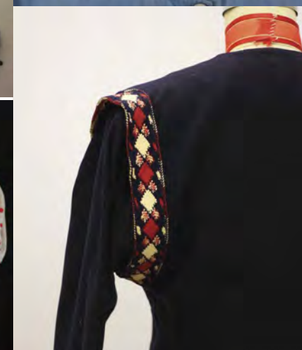












TUCKED AWAY INSIDE the costume shop of Pomona's Seaver Theatre is a collection of more than 150 historic garments—mostly women's clothing dating from the 1920s to the 1950s. They've been used over the years, and many have grown delicate with age.

That caught the attention of Michael Mao '19, a history major and theatre minor with an interest in costume design. With Theatre Professor Sherry Linnell serving as his advisor, Mao decided to combine his fields of study with a research project that encompassed two summers, culminating in the creation of a digital archive of the garments.

Mao spent much of the first summer of his project, in 2017, researching the background of the garments and comparing them to historical catalogs and books about typical women's fashion of the times. He also noted, whenever possible, important details such as style, fabric, construction and trim.

The next step was photography of the garments. Linnell wanted Mao to consider them as three-dimensional objects, much like sculptures. This posed a challenge for Mao, who enlisted the help of Instructional Technologist Jason Smith.

Smith helped him acquire the necessary equipment—a manual camera with a timer, kit light reflectors and lightboxes—and together they assembled a pop-up studio with white and black backdrops against which to photograph the clothing.

Each garment was photographed from the front, back and sides in quarter turns, with additional photographs for interesting details or trims. After taking the photos, Smith spent time editing them to ensure their visual quality.

The digital image database will serve as a lasting resource for theatre and dance students to continue to engage with these historic garments, even though many of them have grown too delicate to pull out in person.

BY THE NUMBERS:

The Class of 2023

In keeping with recent tradition, on the mid-March day that the College sent out acceptance letters to a new class of Pomona students, the staff of Pomona's Offices of Admissions and Financial Aid rang the Sumner Hall bell 23 times to celebrate the Class of 2023. Here are a few facts about the new group of Sagehens:

726 first-year students admitted to the College

26 transfer students admitted, including 10 from community colleges

49 U.S. states represented, plus the District of Columbia and Puerto Rico

47 countries represented

57.9% of class are domestic students of color

13.5% of the class are international students

20.3% of the class are first-generation students

9 are military veterans, representing the Air Force, Army and Marine Corps

6 participated in the Pomona College Academy for Youth Success (PAYS)

Pomona Partners Turns 25

Every Friday at 3 p.m., after the school bell signals the end of the school day, about 30 middle school students at Fremont Academy in the city of Pomona make their way to the cafeteria. The students are not ready to go home just yet—they're sticking around for Pomona Partners.

Pomona Partners, the College's longest-running community engagement program, turned 25 last fall. The program continues today through the Draper Center for Community Partnerships, with more than a dozen Pomona College students volunteering every semester to host a series of activities and experiences with seventh- and eighth-graders.

This academic year, the focus is on critical environmental justice. Students also engage in conversations on other topics, like student activism as a result of school shootings, and share on-campus activities like games, videos, acting workshops, one-on-one interactions and group interactions, as well as two annual field trips, including one to the Pomona College campus.

Danny DeBare '22 engages in a community-building exercise with Fremont Academy students.

FARM TO TABLE AT THE SAGEHEN CAFÉ

It's Friday, and this week's farm-to-table special at the Sagehen Café is a vegetable and mushroom risotto with organic beets, carrots, joi choi, zucchini, yellow squash, garlic and onions, most of it grown and harvested nearby at the Pomona College Organic Farm. For the past five years, the on-campus restaurant, housed in Pomona's Smith Campus Center, has offered a Friday special made with fresh, organic ingredients from the student-run farm. If you want to try it, though, you may need to arrive early, because according to the café's general manager, Cheryl Yarck, it usually sells out.

Inside the Data

A team of math students from Pomona and Harvey Mudd took home one of the three top prizes at UCLA's 2019 DataFest, winning for Best Use of External Data. Given a data set from the Canadian women's national rugby team, Amy Watt '20, Adam Rees '20, Ethan Ashby '21, Connor Ford '20, and Madelyn Andersen (HMC '22) found something important hidden in the data."The really creative thing they did was to find flight information from looking at the social media proathletes," explains Pomona Math Professor Jo Hardin. "They were able to come up with a very clear relationship between fatigue and flying."

Watson Winners

Three Pomona seniors will follow their passions around the globe as recipients of Watson Fellowships, claiming three of the 41 $30,000 grants awarded nationwide. Here are Pomona's winners:

- **Eli Cohen** '19 plans to explore the relationship between technology and daily life in India, Norway, Spain, Malta and Burma.
- **Blake Plante** '19 will study aspects of corporeal mime and physical theatre in France, Canada, Spain, Japan, Italy, England and South Korea.
- **Jeremy Snyder** '19 will visit China, Peru, Brazil, Mexico, Ecuador and Chile to capture on film the real and conceptual characters evoked by rivers around the world.

Tops in Fulbrights

Again this year, Pomona has been named one of the top producers of U.S. Fulbright Scholars among bachelor's institutions. At number 6, Pomona is the only California institution in the top 10. A total of 14 Pomona students and alumni were awarded Fulbrights for 2018–19, with two declining. The Fulbright competition is administered at Pomona through the Career Development Office.

POMONA COLLEGE SAGECAST

THE PODCAST OF POMONA COLLEGE

The first season of *Sagecast,* titled "Backstories," features Pomona faculty members discussing how they came to study what they study, teach what they teach and love the field they love. Sagecast offers our extended community a chance to listen in on vibrant intellectual conversations—whether on the train, in the car, at the gym or at home. **Listen at *pomona.edu/sagecast* or look us up on the podcast sites of Apple, Google or Spotify. Here's a look at season 1:**

EPISODE 1
Nicole Holliday
Linguistics & Cognitive Science
How does language build our own identities and vice versa?

EPISODE 2
Miguel Tinker Salas
History & Latin American Studies
Oil and politics: Growing up in Venezuela

EPISODE 3
Erica Dobbs
Politics
Citizenship as it relates to immigration and social protections

EPISODE 4
Lynne Miyake
Japanese
Japanese literature: From the *Tales of Genji* to Manga

EPISODE 5
Kevin Dettmar
English
The beginnings of literature and rock and roll

EPISODE 6
Guillermo Douglass-Jaimes
Environmental Analysis
When the environment, technology and public health tell untold stories

EPISODE 7
Gizem Karaali
Math
Math, the liberal arts, and math education

EPISODE 8
Tony Shay
Dance
The politics of choreography and dance

EPISODE 9
Lupe Bacio
Psychology & Chicana/o-Latina/o Studies
Addiction among immigrant communities

EPISODE 10
Sandeep Mukherjee
Art
How an industrial engineer became an artist

EPISODE 11
Genevieve Lee
Music
The life of a concert pianist

EPISODE 12
Nicole Weekes
Neuroscience
The physical and psychological sides of stress

New Museum, New Name: The Benton

The Pomona College Museum of Art has a new building under construction, and now it also has a new name, in honor of Janet Inskeep Benton '79, whose lead gift of $15 million is helping to fund the new structure.

Opening in fall 2020, Benton Museum of Art at Pomona College or, more simply, The Benton, will provide a space for some of SoCal's most compelling and experimental exhibitions. The 33,000-square-foot facility is under construction where the campus meets the lively Claremont Village and the city's civic center.

For decades, Pomona College has played a key part in shaping innovative artists on the edge of L.A., including Helen Pashgian '56, James Turrell '65, Peter Shelton '73, the late Marcia Hafif '51 and the late Chris Burden '69. The Benton's collection will include pieces from all of these alumni, and future exhibitions will carry forward the College's emphasis on cutting-edge art in the Los Angeles region.

"The Benton will be a rewarding visit for all who seek to venture beyond the expected and to explore the diversity of California," said Pomona College President G. Gabrielle Starr. "This new museum will benefit our students, our community and the SoCal art scene in which our campus has long played an important role."

Designed by Machado Silvetti Associates and Gensler, the new structure with cast-in-place concrete walls is accented with wood, glass and a distinctive sloping roofline. Built to LEED gold standards of sustainability, the U-shaped museum will define a central courtyard, with a pavilion for events.

Construction of the $44 million facility, located on the west side of College Avenue between Bonita Avenue and Second Street in Claremont, is set to be completed by fall 2019, launching the yearlong process of moving the museum's extensive collection to the new facility and installing opening exhibitions.

The new building replaces the existing Pomona College Museum of Art. Housed in a '50s-era facility, PCMA continues to operate across the street from the ongoing construction. Exhibitions there will continue through May 2020, with the new museum set to open later that same year.

The Benton will continue the current museum's Project Series, focused on contemporary SoCal artists, which has included exhibitions from Andrea Bowers, Mark Bradford, Charles Gaines, Ken Gonzales-Day, Amanda Ross-Ho and many others. The museum also has been part of the Getty Foundation's celebrated Pacific Standard Time projects in collaboration with institutions across Los Angeles.

Built on three levels, the new building is conceived and designed as a teaching museum, fostering instruction within collection areas and exhibition spaces, creating opportunities for active encounters with original works of art.The Benton will provide state-of-the-art storage and ease of access for a growing permanent collection of over 14,000 objects.

"Pomona College has long been at the center of artistic excellence and experimentation for Southern California," said Museum Director and Professor of Art Kathleen Howe. "The Benton continues our commitment to presenting vibrant contemporary art, intimately engaged with the issues of our day, while bringing the art of the past into an ongoing dialogue with the present."

The Benton will house an extraordinary collection of Native American art; the Kress Collection of Renaissance panel paintings; significant collections of photographs, prints and drawings; and a growing contemporary collection. Four complete series of etchings by Francisco Goya, as well as works by historically important regional and international artists such as Karl Benjamin, Rico Lebrun and José Clemente Orozco, are included in the collection.

A longtime supporter of the museum's programming, Janet Inskeep Benton is also a member of the Pomona College Board of Trustees. A history major at Pomona, Benton went on to earn an M.B.A. at Harvard Business School. After working in product management at General Foods Corporation in the mid-1980s, she left the workforce to raise her family and serve on various not-for-profit boards in her Westchester County, New York, community.

She is currently board chair of the Jacob Burns Film Center, a not-for-profit art-house theatre complex and media-arts education center. In 2000, Benton founded the Frog Rock Foundation, a philanthropy focused on improving outcomes for underserved children.

Benton is most excited about the new museum as a gathering spot on campus where both intellectually and personally enriching experiences happen. "Art is a powerful force, opening up the mind to so many possibilities—new ideas, varied perspectives, interesting questions, emotional responses, reconsidered thinking," said Benton. "My hope is that the new museum creates a stimulating environment for students to explore and engage with art in a deeply meaningful way."

Only blocks from the Claremont Metrolink train station, The Benton will be a focal point for artistic expression on a campus that is also home to a Turrell Skyspace, "Dividing the Light" (2007), which draws visitors from near and far, and muralist José Clemente Orozco's "Prometheus," widely regarded as a masterpiece. Nearby are the Claremont Museum of Art and galleries at Scripps and Pitzer colleges, as well as in the Claremont Village.

"The new museum will serve as a lasting connection point between the College and community, and also with the entire region," said President Starr. "Southern California is known as a place of boundless artistic innovation. Pomona College is part of that unfolding story, and we plan to continue to help shape it."

New Athletics Center

Pomona College has also announced plans for a new athletics and recreation facility to replace the Rains Center for Sport and Recreation, with construction to begin in 2020.

The new center will be 15,000 square feet larger than the existing one, expanding it to 94,000 square feet. More than half of the rebuilt facility will be new construction, and other parts of the structure will be updated and reconfigured to enhance the building's usability.

Two principal gifts of $10 million each kick off the major fundraising campaign to raise a minimum of $29 million that will offset a total project cost estimated at $55 million.

Preliminary designs for the building by the architectural firm SCB include expansive use of glass throughout, with multiple outdoor patios. "This new athletic center will reflect our ongoing commitment to athletic excellence," says Interim Athletic Director and Chair of Physical Education Jennifer Scanlon, "but just as importantly, it will also signal in a very visible way our dedication to the physical education program and to health and wellness across this campus community."

The Rains Center has been home to Pomona-Pitzer's athletic programs and served as the campus recreation and fitness center since it was built in 1989, but in recent years the program has outgrown its home, as more people than ever are using its facilities.

With 21 varsity sports, Pomona-Pitzer fields three more teams than it did when Rains opened. In recent years, the program has seen an unprecedented level of success, finishing in the top 40 of the Division III Learfield Directors' Cup each of the past three years and winning the Southern California Intercollegiate Athletic Conference men's all-sports trophy in 2017–18 for the first time in program history.

In addition to supporting 450 varsity athletes, the building's expanded spaces will serve more than 900 intramural athletes, 550 club athletes and student physical education classes, as well as provide fitness and recreation opportunities for students, faculty and staff.

The plans call for a new and larger recreational fitness area, including additional space for cardio workouts. The studio space available for fitness classes will be doubled. In addition to a general-use weight room, there will be a strength and conditioning center, and locker rooms will be "right-sized" to provide sufficient space for the groups that use them, with separate facilities for faculty and staff in addition to varsity teams.

The men's and women's varsity basketball teams and women's varsity volleyball team will continue to play in the new facility, once complete, with Voelkel Gym remaining largely intact and a new two-court practice and recreational gym added above the fitness area.

"This will truly be a transformational building for our community," Scanlon says. "In addition to providing an up-to-date home for our fine varsity teams, it will be a draw for health-minded students, faculty and staff and reflect the College's deep commitment to promoting health and wellness all across our campus."

Storytelling for Kids

A storyteller from childhood and now an all-grown-up author, Ali Standish '10 is writing children's and middle-grade books that are being noticed by children and critics alike.

Her first book, *The Ethan I Was Before,* received a coveted starred review from *Publishers Weekly:* "Readers will be riveted." Her debut was an award-winner, racking up accolades like the Children's Book Review Best Book of the Year and the North Carolina Young People's Literature Award, and landed on a slew of long-lists, including being named a Carnegie Medal Longlist Title.

August Isle, Standish's second book published by HarperCollins, was released in April and is a work with themes of secrets and lies. A Junior Library Guild Selection, it was praised by *Kirkus Reviews* as "a beautifully written story. An emotional journey of family, friendship, loss, and healing."

Pomona College Magazine's Sneha Abraham talked to Standish about inspiration, imagination, what's an absolute must in children's literature and more.

PCM: So, why writing? What led you down this path?

Standish: You know, it's hard to say that I chose writing. This sounds very cliché, but I think writing more so chose me, or at least storytelling did. A lot of my earliest memories are of making up stories about things. And from when I was really little, my mom and I would play storytelling games. So it's always been something that I needed to do as a creative outlet. I wrote my first manuscript when I was in the sixth grade and have been writing ever since. When I was at Pomona, I was fortunate to be able to take some creative writing classes with [poet and former Pomona College Professor of English] Claudia Rankine, and it was wonderful. I also was able to do creative writing as part of my study-abroad curriculum in Cambridge.

I've just been doing it for really as long as I can remember. Then one of my really good friends, an important person in my life, passed away in fall of my senior year. And a big part of coping with that for me was writing my first children's lit manuscript. I wrote a manuscript that was a very boilerplate, poorly written fantasy novel. And I was able to submit that as my final project for Children's Literature 101. So senior year was when I really edged over into writing children's literature.

PCM: Talk about why you moved into children's literature.

Standish: Astrid Lindgren, who is the author of the Pippi Longstocking series, has this great quote about how she only wants to write for children because children are the only ones who can perform miracles when they read. That quote really resonates with me because I just have such powerful memories of being a reader as a child. And what a sacred experience that was for me and a formative experience. To be a part of creating that for another generation of children, I think, is probably the most rewarding thing that I can imagine doing.

PCM: Where do you get your ideas from?

Standish: I think every book that I've written so far has started with a kernel from my own life experience. With *The Ethan I was Before*, that book really started with the grief that I felt after losing the best friend that I mentioned earlier. With *August Isle*, it started with a trip to Indiana for a family funeral where I was reminded of a family secret that stoked some curiosity for me, and that I thought could potentially make a good book. Then with *Bad Bella*, that book is actually based on my own dog, Bella. The one I have coming out in the winter, called *How to Disappear Completely,* is actually about a girl who gets vitiligo, which is a condition that my husband was diagnosed with a couple of years ago.

It always starts with something from my life experience. Then it becomes a process of finding enough other inspiration in the world around me to take that seed of truth and turn it into a story that is not my story, that is something new and exciting. I was just working on my launch-party speech for *August Isle*, and I was comparing it to being a kid hunting for Easter eggs. It's always that hunt of keeping your eyes out wherever you go and waiting for those interesting people to cross your path, or a news article that has something in it that you are drawn to.

And then once you have those different kinds of sources of inspiration, it's pulling them together and trying to find the connections between them. Because I think how you make the connections between the different elements of your story is how you make your story unique. There's no subject that hasn't been written about; it's how you write about it and what you connect it to that makes it interesting. So that's the part of the process that really is my favorite part, that gets my neurons really firing—thinking about how to bring things together in a new way.

PCM: How do you feed your imagination? You're looking for new ways of telling things. What do you do to stoke that fire?

Standish: I read—that's the main thing. And then I have an overactive imagination. The positive manifestation of that is that I am quite easily able to take someone passing me on the street and create a story around them. The downside is that I have a lot of anxiety in things, and I think that is also a product of imagining different scenarios. Let's see. I travel whenever I can. That is really helpful. In *August Isle,* there's a character who is an old and wizened seafarer who has just come back from a long journey around the world. Being able to rely on what I've learned from being in different places is really helpful in that, and it's cool to be able to introduce those places and different concepts to young readers.

PCM: What's your favorite book or books from your childhood?

Standish: The two that I always go back to are *Bridge to Terabithia* by Katherine Paterson and The *Lion, the Witch and the Wardrobe* by C. S. Lewis. I read both of those books in fifth grade, which was a really transformative and transitional year for me. They are interesting counterparts to one another because they're both about children who find magic worlds. And in one they stumble into Narnia. But in *Bridge to Terabithia* they create that world for themselves. That idea really intrigued me. I lived in kind of a rural place that had a little forest in the backyard, and I just decided that my backyard was going to be my magical kingdom and called it "Nabithia," because I hadn't learned a lot about originality at that point. I just took Narnia and Terabithia and stuck them together, and I brought that into our playing make-believe. I kept a diary in the hollow of a tree, where I would write down these different episodes that I created for myself. And that was a really foundational experience for me in learning how far I could stretch my imagination and what I could do with it.

PCM: Nature plays a big role in your writing. Can you talk a little bit about that?

Standish: Yes. I wrote *The Ethan I Was Before* after my husband and I moved to England. I didn't know anybody. I had no job prospects. I was very isolated. And I was really homesick and particularly homesick for the American South. So writing the setting for *The Ethan I Was Before*—writing that town of Pam Knot, Georgia—was a way for me to reconnect with a place that I really missed.

Nature played a huge part in my imaginative journey. And I think we continue to learn about how important nature is in terms of development, in terms of mental health. I was just reading an article in *The New York Times* yesterday written by Oliver Sacks about the importance of gardens in helping patients that have neurological issues. Unfortunately, because of the way that society has moved, it's harder and harder for kids to have meaningful interactions with nature on their own. So I think it's more important that they get that through books. If they're not getting it anywhere else, at least they can have it on a page.

PCM: Narnia is outdoors. You've been inspired by that. ▷

Standish: Yeah. You think about spaces like the Forbidden Forest in *Harry Potter* and how alluring that is. And even going back to fairy tales, we have a fascination with forests and the secrets that can be found there. Een in an age where children don't play outside as much, I think that fascination is very much in our DNA.

PCM: Something primal about it.

Standish: Yes, yes. And I also think it's important for kids to develop a healthy appreciation of our Earth and to know how important it is to safeguard it. This is kind of off-topic, but I think we're coming to a point where we know that this generation is going to be the one who's either going to really create change and be able to be the ones who are going to force everybody else to save the planet, or they're not. I think having that emphasis there and that exposure early on is vitally important.

PCM: What elements do you think a children's or middle-grade book has to have to tell a story successfully?

Standish: I think the biggest thing is honesty. Kids that age are … they're coming into themselves. They're already looking back on their childhood with the sense of nostalgia but also suspicion. Because for most of them, if they've had healthy upbringings, they have been isolated and insulated from a lot of the harsher realities of life. And they're really curious about those things. So my books tend to have heavier subject matter in them. Adults come up to me all the time and say, "Do you really think an eight-year-old or 10-year-old wants to read about this?" And my answer is emphatically, "Yes, they do," because books are a safe place to learn about those kinds of topics, so what better place to introduce them.

Adventure is always going to be key for middle graders because as much as they may be growing up socially, I think a lot of them are still holding on to that quest kind of structure that they have probably read in *The Lion, the Witch and the Wardrobe* and *Harry Potter* and books like that. So I always try to mix issues that can be hard to talk about with a sense of adventure and humor and sometimes a little bit of magic that helps to lighten up that heavier stuff.

PCM: Kids can deal with more than we give them credit for.

Standish: Exactly. And, you know, they do with the internet and social media, the way they are; they're always dealing with more than we know that they are.

PCM: How do you think your Pomona education contributed to your taking this literary path?

Standish: Pomona gave me everything that I needed to be able to take this path. Part of it was just being around so many people who were passionate about whatever it was they were doing. Even if it was something that didn't seem like it could translate easily into a lucrative career path. And people who were unashamed about what they were passionate about. That made me feel like it was a safe place to explore my passions and to not put myself down for having an idea that I might one day be able to write professionally. I got a lot of encouragement from the faculty there in terms of my writing. I also got an occasional kick in the pants that I really needed.

My advisor was [Professor] Toni Clark, who passed away a couple of years ago. I will never forget the first class I took with her; I wrote an essay on Virginia Woolf's *To the Lighthouse*, where I looked at bird imagery. I typed it up and sent it off to her, and she gave me a C-minus. I was devastated and horrified. That was early on in my career at Pomona. I had a sense that it was confirming everything that my impostor syndrome had told me about—not being worthy of a Pomona education.

When I went in to see her to ask her what I could do better and to plead the case for extra credit, she told me that she had given me that grade because she knew from my contributions in class that I could do much better. And if I were another student, she might have given me a different grade, but she knew that I had it in me to do more and she wanted to pull that out of me. I am so thankful that she did that, because even though it was just a little paper and a small moment, it really made the difference in how I—I'm about to cry about it—it really made a difference in how I saw myself and my potential. That was a message that I didn't get a lot in high school. Pomona gave me a lot of emotional and intellectual tools to be able to pursue this career path.

PCM: It's touching to have someone see more in you than you see in yourself.

Standish: Exactly. And for a girl who came from Greensboro, North Carolina, to Pomona—my guidance counselor cried when I told her I got into Pomona. She said, "I don't believe it." So, when I came, I really was not sure if it was something that I could handle or a place that I belong. So especially for me to have that reassurance was really powerful.

PCM: What are you reading right now?

Standish: I am reading … nothing that's going to look good, in fact. I would love to say I'm reading *Tall Story*. But no, I am reading an audio book by an Australian author I love called Liane Moriarty. She did *Big Little Lies*, which got turned into that HBO series. And then I'm reading a British mystery.

But I will say that's not my usual fare. Usually my bedside table is stacked high with 10, 12-odd children's books that I'm reading.

PCM: Do you alternate between children's books and adult books? Or do you have a method of how you choose your books?

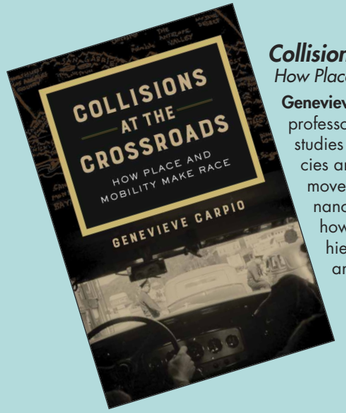
Standish: I try to. It's important for me to see what's out there in children's books. Every time I open a book, I treat it as a learning experience. I always feel like I come away having learned something new about the craft of writing, whether it's what to do or what not to do. Then when I need a break from children's books, generally I tend toward hedonistic pleasures in the adult books. I go straight for the mysteries and *The New York Times* bestsellers.

PCM: Great. No shame in that.

Standish: Yeah, thank you.

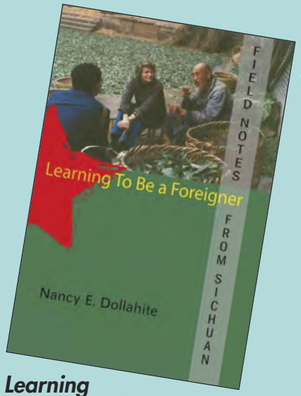
PCM: No, no.

Standish: The English major in me does die a little inside. PCM



Collisions at the Crossroads:
How Place and Mobility Make Race

Genevieve Carpio '05, assistant professor of Chicana and Chicano studies at UCLA, examines policies and forces restricting free movement—from bicycle ordinances to incarceration—and how they constructed racial hierarchies in Los Angeles and the Inland Empire.



Learning to Be a Foreigner:
Field Notes from Sichuan

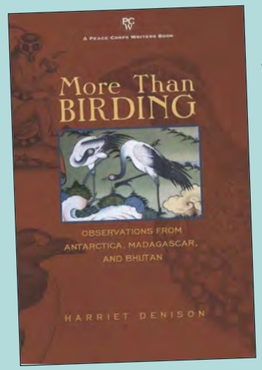
In this novel, **Nancy E. Dollahite** '64 tells a love story between a woman and a country and a woman and a man, based on her experience living in China in the 1980s.

The Also-Rans:
One Step Short of the Presidency

David P. Green '58 profiles and examines the candidates who didn't make it to the White House, from Republican Wendell Willkie in 1940 to Democrat Hillary Clinton in 2016.

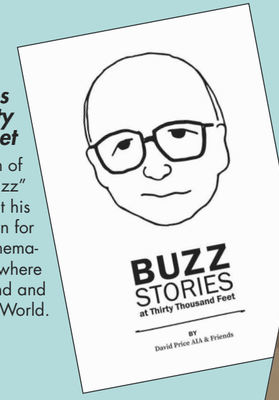
Luxury, Blue Lace

S. Brook Corfman '13 offers poetry exploring the overlapping personalities that can be found in one person. His poems earned him a starred *Publishers Weekly* review, praising it as "a work of rare beauty and thoughtfulness."



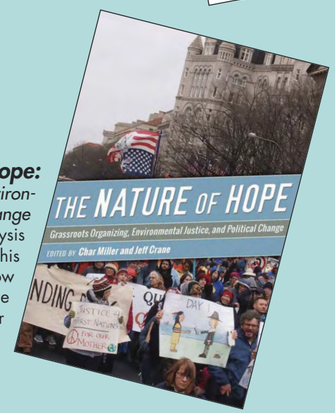
More Than Birding:
Observations from Antarctica, Madagascar, and Bhutan

In this travel memoir, **Harriet Denison** '65 shares her adventures in birding, animal encounters and cultural experiences in breathtaking locations on three continents.



Buzz Stories at Thirty Thousand Feet

David Price '71, son of the late Harrison "Buzz" Price, writes about his father, best known for determining by mathematical formulas where to build Disneyland and Walt Disney World.



The Nature of Hope:
Grassroots Organizing, Environmental Justice, and Political Change

Professor of Environmental Analysis **Char Miller** is the co-editor of this collection of essays exploring how ordinary citizens have come together to organize action for environmental justice.

The Philosophical Baroque:
On Autopoietic Modernities

Erik S. Roraback '89, who teaches critical theory, international cinema and U.S. literature at Charles University, reframes modernity as a multicentury baroque, as part of the Literary Modernism book series.

HOW TO EXCEL IN BOTH BALLET & CHEMISTRY

BY CARLA GUERRERO '06

Lawrence Chen '20 knows how to raise the barre. A ballet dancer since the age of 13, Chen is able to balance his professional dancing career while also being a full-time student majoring in chemistry. This April, Chen saw his first co-authored academic article published in a prestigious chemistry journal—a major achievement for any undergraduate student. The publication of the article is the grand finale for Chen, who spent two years doing research with Professor of Chemistry Roberto Garza-López. To understand how Chen is able to rehearse for 15-plus hours (sometimes up to 40 hours a week during performance season) and do graduate-level computational chemistry research, put yourself in his ballet slippers…

1 Grow up listening to your mother share stories of studying ballet in Hong Kong—and how she had to give up a career in dance to support her family.

2 Own a DVD of the American Ballet Theatre's 1977 production of "The Nutcracker" starring Mikhail Baryshnikov and Gelsey Kirkland and watch it over and over.

3 Begin to study ballet at age 13—an "extremely late" start. Decide to be home-schooled for high school courses in order to allow time to study ballet intensely at a small ballet academy.

4 In addition to home-schooling, attend your local community college part time and take almost enough math classes to get an associate's degree in the subject.

5 Participate in large competitions, like the International Ballet Competition and Prix de Lausanne, to have a chance at scholarships to ballet companies with international prestige. Learn from both your successes and your losses to work even harder.

6 Get accepted to a number of colleges—including the University of Southern California for its dance program—but choose Pomona for its small classes and close-knit community.

7 In your first year, enroll in a ballet class taught by Victoria Koenig, director of the Inland Pacific Ballet dance company. Get invited to audition and dance in productions of "The Nutcracker" two years in a row.

8 Take general chemistry courses and find a supportive mentor in Professor of Chemistry Roberto Garza-López, who attends a performance of "The Nutcracker" to see you dance.

9 Spend your first two summers on campus, thanks to grants from Pomona and the Howard Hughes Medical Institute (HHMI), conducting computational chemistry research for Garza-López.

10 As a co-author, see your data published in *Chemical Physics Letters: X,* a peer-reviewed chemistry journal, during your junior year while starting rehearsals for a production of "The Little Mermaid."

Photo by Siggul/VAM

HOW TO BECOME POMONA'S DEAN OF STUDENTS

BY ROBYN NORWOOD

While **Avis Hinkson** was growing up in a Barbadian immigrant household in Brooklyn, she imagined a career in health care. Instead, her life's work has been guiding college students, first as an admission officer, later as a director of advising and now as Pomona College's dean of students. "I didn't go to college thinking I would stay in college," she says with a laugh. She tells students that "as a college student, you want to chart a career path, and I encourage you to do that. But I also encourage you to be open to the right and left turns that sometimes take place, because they can lead you to wonderful career spots that you couldn't have possibly imagined."

1 Absorb the lesson while growing up in a culturally rich neighborhood that education is the path to a better life. Watch your mother, a seamstress, graduate from college in her 50s after going to work as a teacher assistant.

2 Go along with a high school friend to meet a recruiter from Barnard College. Be impressed that the recruiter is African American, and with the help of financial aid (Barnard costs more than your father makes in a year's work as a mason), become one of about 25 Black students in a class of 500.

3 Bump into Barnard student Vernā Myers on your way to the career center to pick a work-study job as a first-year student. Heed the advice of the future Netflix vice president when she suggests a job in the admissions office. Create Barnard's first overnight-visit program for prospective students of color.

4 Listen to Barnard senior Marcia Sells (a future dean of students at Harvard Law School) when she encourages you to run for the student seat on the Board of Trustees. Take part in the decision that Barnard will remain a women's college instead of merging with Columbia.

5 After graduation, become an admissions counselor at Bowdoin, establishing minority recruitment programs there. Decide on a career in higher ed instead of health care, later earning an M.A. in student personnel administration from Columbia University's Teachers College and an Ed.D. from Penn.

6 Establish minority recruitment programs at Cornell before coming to Pomona in 1990 as associate dean of admissions. Contribute to Pomona's minority recruitment plan before moving on to become director of minority recruitment at the University of Southern California.

7 As director of advising for more than 18,000 undergraduates in the College of Letters and Sciences of the University of California, Berkeley, get an eye-opening look at the bureaucracy of a large public university. While furloughed amid a California budget crisis, remember the allure of small liberal arts colleges.

8 Go home again and call your 96-year-old father to tell him you've been named as Barnard's first African American dean of the college. Feel grateful that a man who felt most comfortable talking with the public safety officers and janitors when visiting campus lived to see it.

9 Go home again (again). Leave behind your newly renovated childhood home in Brooklyn and return to Pomona as you are drawn back to the campus where G. Gabrielle Starr has recently become Pomona's 10th president, the first woman and first African American to lead the campus.

10 Discover that April Mayes '94 is now a professor of history at Pomona, and Nate Kirtman III '92 is on the Board of Trustees. (Both were student workers in admissions when you worked at the College before.) Know that the seeds you planted have helped make Pomona one of the most diverse private residential liberal arts colleges in the country.

Photo by Jeff Hing

Captains to the Power of Two

There are seemingly endless tips for time management, but Vicky-Marie Addo-Ashong ’20 and Andrew Phillips ’19 seem to have found a novel one.

They leave themselves practically no free time to manage.

The two accomplished Pomona College students are both two-sport athletes—not to mention captains of both of their teams.

“I’ve never considered myself a person who likes to have a lot of free time. If I do, I just sleep a lot,” says Addo-Ashong, a track and field athlete who holds the Pomona-Pitzer record in the triple jump but says her true love is volleyball.

Phillips finished his career as a defensive back on the football team with a second consecutive win over Claremont-Mudd-Scripps in the Sixth Street Rivalry game last fall and is a senior utility player for the baseball team this spring. What’s more, he’s a premed student who already scored well on the MCAT after taking the seven-and-a-half-hour test last August—the day before he arrived on campus for football camp.

“My time management has definitely improved over the course of my college career,” says Phillips, suggesting it hasn’t always come naturally. “There are always times where you are like, ‘Aw, I should have done something productive there.’”

FULL CALENDARS

Addo-Ashong, a public policy analysis major and mathematics minor from suburban Washington, D.C., is very active on campus. She’s a campus tour guide—“I love being at Pomona, and I love being able to show it to other people,” she says—a member of the Student-Athlete Advisory Committee, and one of five students on the President’s Advisory Committee on Sexual Violence Intervention and Prevention, which is in its first full year. “That’s been really interesting and important. Being part of that process, I’ve found that to be something I care about a lot,” she says.

Addo-Ashong also works as a research assistant to her academic advisor, Pierre Englebert, professor of international relations and politics. And last year, she was one of the leaders of a sponsor group and commissioner of sports for the Associated Students of Pomona College.

Need a nap yet?

Phillips is also involved in the Student-Athlete Advisory Committee and president of a campus club, the Claremont chapter of Health Guardians of America, a group working to eliminate obesity on college campuses.

What’s more, Phillips has an added degree of difficulty in managing two sports as a neuroscience major preparing to apply for med school. That’s because lab classes—a crucial part of his coursework—often don’t end until after practice begins.

“When I was getting recruited, the Division I schools said you have to do econ or history or something like that; basically, you couldn’t take labs,” Phillips says. “So that was part of why D-III. The coaches are really understanding about labs and the importance of academics. Also, the two-sport thing, that’s something special about D-III, for sure.”

This spring, Phillips has a genes and behavior lab on Tuesdays that starts at 1:30 p.m. and gets out around 4, but practice starts at 3:15. Usually that means putting in extra work before practice or staying late, taking extra batting practice or such. Sometimes, the conflicts are more extreme.

“My junior year, I had a biochemistry lab, which is the lab that takes the most time, I think. I took that during football season, and so I remember a couple of practices where I’d literally be in lab until 6 p.m., and the coaches didn’t get mad or anything.”

With med school in mind, Phillips also has made use of his summers and breaks. He trained as an emergency medical technician after his first year at Pomona and shadowed emergency room doctors at hospitals in Torrance and San Pedro after his sophomore year, along with working in a research lab at Caltech. Last summer, he also worked as an emergency department scribe at St. Francis Medical Center in Lynwood, taking medical notes on a laptop as doctors and nurses treated patients. He has continued that work over college breaks. Phillips is considering orthopedics as a specialty partly because of his interest in sports, but the adrenaline of the emergency room also has appeal.

“I enjoyed that—the idea that you didn’t know exactly what was coming in,” he says. “The pressure situation.”

BEING A CAPTAIN

Team captains, often three or four players who share the role, are sometimes chosen by a vote of teammates and sometimes by coaches. They are leaders on and off the field of competition, counselors for teammates and go-betweens with coaches.

Being a captain “has taught me a lot about understanding where my teammates are at, where my coaches are at, how to navigate both of those and act on the interests of my teammates with my coaches and discuss things,” says Addo-Ashong. “I think it’s being able to balance the interests of the people I’m working for and working with.”

Last summer, she interned at Public Citizen, a consumer rights advocacy group in Washington, D.C., in the Global Trade Watch division. She envisions returning to Washington after graduation to work for a couple of years in a field adjacent to politics or public service before likely returning to graduate school.

“I have a broad range of interests, and I’m not really sure what I’ll end up doing,” she says. “Everything from country development to justice policy interests me, so I just plan on seeing where life takes me.”

First, with one volleyball season and most of two track seasons to go, she has a goal: After finishing 20th in the triple jump at the NCAA Division III track and field championships last year, she hopes to make the top eight to become an All-American before she’s done. Addo-Ashong also is a standout in the 100-meter hurdles, recording the second-fastest time in the nation up to that point this season at a March meet.

Phillips will continue scribing after graduation while applying to enter med school in 2020, and he envisions taking the skills he learned on the field and in locker rooms into his professional life.

“For me, one thing I’ve needed to work on and develop is having the tough conversations with people you’re close with. All my best friends play on those sports teams, so having to talk about why they shouldn’t quit or why they’re not playing right now, those have been kind of tough,” he says.

“I would say that’s been a difficult part for me. And that’s something that as a doctor you have to have—tough conversations. That’s a really helpful skill, for sure.”

—Robyn Norwood

Sagehen Update

It was an eventful winter for Pomona-Pitzer sports as Sagehens swept the SCIAC tournament championships in men’s and women’s basketball and dominated the conference once again in swimming and diving.

The men’s basketball team claimed both the conference title and the tournament, with a historic season featuring program bests for wins (26), conference wins (15), win-streak (18) and highest national ranking ever (No. 9). The team also advanced to the second round of the NCAA tournament with a 58–37 win over Texas-Dallas before losing to second-ranked Whitman College in round two.

After finishing second in the conference, the women’s basketball team won their first SCIAC tournament championship and advanced to the NCAA tournament for the first time since 2002. Although they lost in the first round to the University of Wisconsin, Oshkosh, the team finished with 22 wins, topping 20 wins for only the seventh time in program history.

The men’s and women’s swimming and diving teams also swept the SCIAC championships for the second time in as many years. The women went on to place seventh at the NCAA championships, with the men taking 11th overall. The teams combined to end the year with 20 All-Americans.

The Pomona-Pitzer men’s cross-country team finished the NCAA in seventh place overall, while the women’s program finished 32nd at the national championships.

The men’s water polo team went undefeated in conference play and breezed through the SCIAC tournament to reach the NCAA, where they fell to Long Beach State in the opening round. They finished the regular season 22–8 and held noteworthy victories over UC Irvine and Princeton. This is the third straight year the men’s water polo program are conference tournament champions.

As this issue was going to press, the women’s water polo team had just finished their second consecutive undefeated conference season.

MUSEUM, DECONSTRUCTED

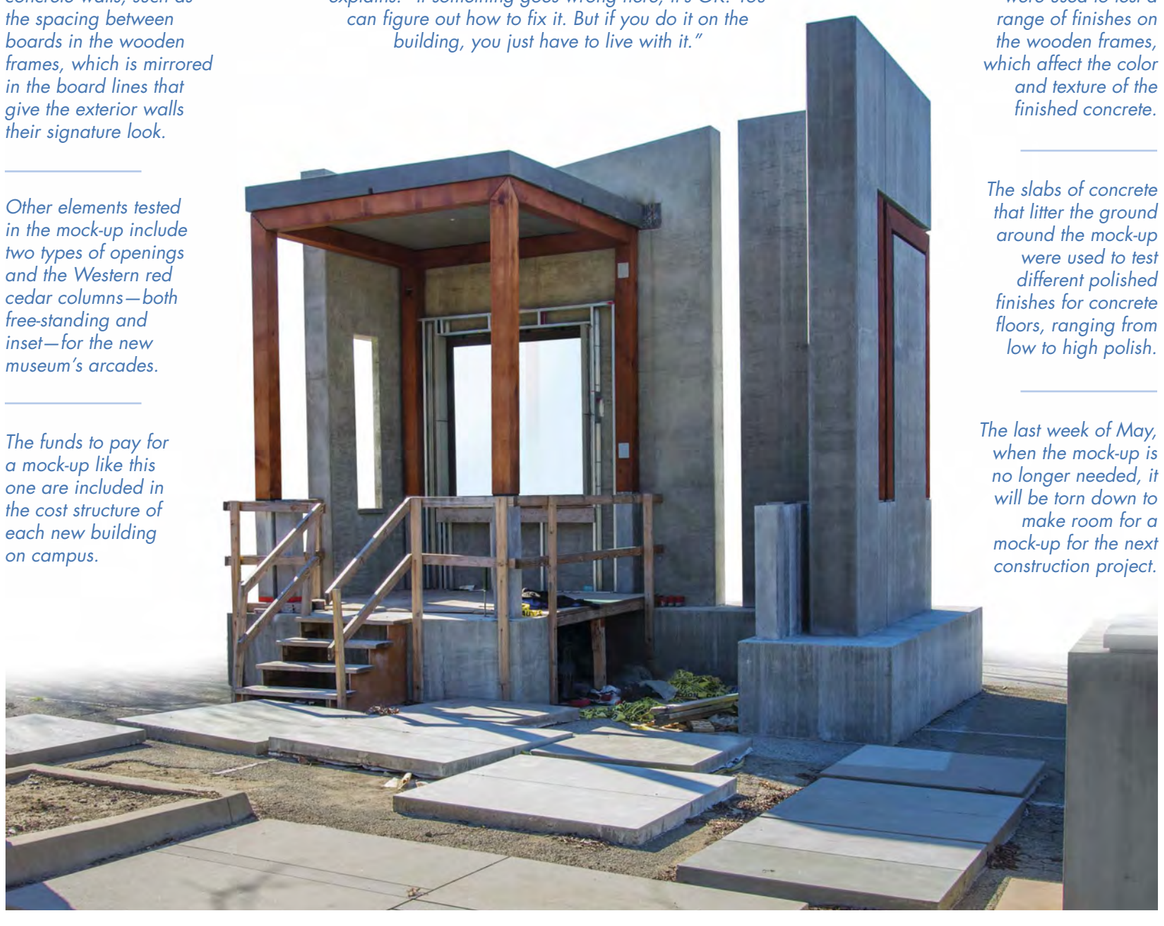
Over the past year and a half, a strange, disconnected structure has arisen at the center of what was once a remote parking lot on Pomona's South Campus. Its concrete walls enclose nothing. Odd slabs and pillars of concrete surround it in no discernable pattern, and yet it includes a number of striking architectural features, making it a puzzle for passersby. It may look pointless, but according to Brian Faber, the project manager overseeing the construction of Pomona's new Benton Museum of Art, this odd assemblage of architectural details is an important part of Pomona's building process—a mock-up where the structural elements of the Benton's new home can be tested, evaluated and, if necessary, adjusted before they are set in stone, so to speak, in the new building.

The mockup tested a range of details involving the poured-in-place concrete walls, such as the spacing between boards in the wooden frames, which is mirrored in the board lines that give the exterior walls their signature look.

Other elements tested in the mock-up include two types of openings and the Western red cedar columns—both free-standing and inset—for the new museum's arcades.

The funds to pay for a mock-up like this one are included in the cost structure of each new building on campus.

"This wall, this piece of wood, this piece of glass—you can build it or install it here, and then the architect can come out and look at it and say, 'This looks good'—or 'This is horrible,'" Faber explains. "If something goes wrong here, it's OK. You can figure out how to fix it. But if you do it on the building, you just have to live with it."



The low concrete pillars just inside the wall on the right were used to test a range of finishes on the wooden frames, which affect the color and texture of the finished concrete.

The slabs of concrete that litter the ground around the mock-up were used to test different polished finishes for concrete floors, ranging from low to high polish.

The last week of May, when the mock-up is no longer needed, it will be torn down to make room for a mock-up for the next construction project.

Photo by Mark Wood

Leanchoiliid fossil from the Qingjiang biota –Photo by X. Zhang

GEOLOGY:

Back to the Cambrian

These days, whenever there's a truly earth-shaking development in the world of Cambrian fossils, Professor of Geology Robert Gaines seems to find himself squarely in the middle of it. Last year, it was an article in *Science* called "Cracking the Cambrian," about the latest discoveries in the fossil-rich sites that Gaines and his team unearthed in Canada's Kootenay National Park back in 2012—considered one of the most important geological finds in recent history. This year, it's something that may be even bigger: a 518-million-year-old fossil site unearthed in the Yangtze Gorges area of South China that may turn out to be even more important, according to a new article, also published in *Science*.

The new site—dubbed the Qingjiang biota—was discovered by a team of Chinese researchers in South China. It's home to a nearly pristine and diverse 500-million-year-old fossil record that has not been impacted by metamorphosis or weathering. The diversity of its fossils may rival that of the Burgess Shale of British Columbia and the Chengjiang fossil site in China's Yunnan province, which are considered two of the most important fossil finds of the 20th century, according to Gaines, the only American on the team that is studying the site. The new site is more than 600 miles from Chengjiang.

In addition to their high taxonomic diversity, Qingjiang fossils are characterized by near-pristine preservation of soft-bodied organisms—including juvenile or larval forms, arthropod and worm cuticles and jellyfishes—and soft-tissue features that are rarely seen in the fossil record. More than 4,000 specimens have already been collected, with 101 species identified. Of these species, 53 are so new to science that names have to yet to be assigned to them.

"This finding enriches our view of the early animal world and offers us really remarkable views of the simplest animals," says Gaines. "One of the most incredible things about this finding is the pristine condition of many of these specimens—fossils that haven't been substantially affected by impacts of time, and in them you can clearly see soft tissues like eyes, tentacles and gills."

BIOLOGY:

Olson Wins NSF Grant for Nematode Research

Pomona College Biology Professor Sara Olson has been awarded a prestigious Faculty Early Career Development Award from the National Science Foundation (NSF) to explore the process of embryo development in roundworms. The five-year award of $827,962 will fund her study, as well as research opportunities for Pomona College biology and molecular biology students and rising high school seniors in the Pomona College Academy for Youth Success (PAYS) program.

Using fluorescence microscopy, biochemistry, molecular biology and genetic approaches, Olson's research focuses on the nematode worm *C. elegans*, a roundworm, as a model organism to explore how protective barriers form around embryos. Findings from this study could shed light on early embryonic development in other species, including mammals.

"The idea of building a protective barrier around an embryo is common throughout the animal kingdom," says Olson. "From worms to flies to fish to mammals, all of these animals build protective barriers around their embryos. We study how that barrier forms over the egg during early development. Before fertilization, it has to be porous so the egg is accessible to the sperm, but after fertilization it has to get remodeled and be closed off for protection."

Another goal is to identify new drug targets to fight parasitic roundworm infection in humans, plants and animals. "These parasitic worms affect people in developing countries in Africa, Central and South America and Southeast Asia," says Olson. "Parasitic nematode infections are a major burden that cause loss in agriculture, sickness in humans and loss of productivity. If we can figure out how the worm's eggshell is built, we can also figure out how to destroy it in the parasitic worms."

Photo by Ao Sun

[PICTURE THIS]

Like the rest of Southern California, the Pomona campus saw unprecedented swarms of migrating painted lady butterflies this spring, due to the superbloom in the desert areas where they breed. —Photo by Kristopher Vargas

THE 1995 BLOCKBUSTER MOVIE THAT NEVER HAPPENED IS REBORN AS A TV MINISERIES, BRINGING THE "ODYSSEY" OF RICHARD PRESTON '76 AND LYNDA OBST '72 FULL CIRCLE

BACK TO THE HOT ZONE

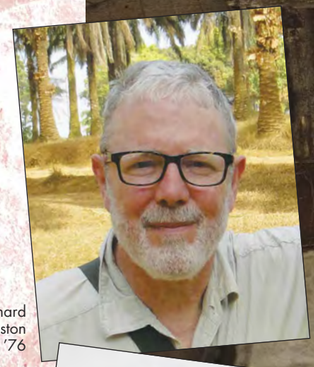
BY ROBYN NORWOOD

"THE HOT ZONE"
NATIONAL GEOGRAPHIC CHANNEL
STARTING MAY 27, 2019

Julianna Margulies stars as Nancy Jaax in the National Geographic Channel mini-series *The Hot Zone*, to air beginning May 27.

Jodie Foster was set to star. Robert Redford was on board. Ridley Scott would direct. And then it all fell apart.

It was the 1995 blockbuster that never was, and it has bound together two Pomona College alumni for more than 25 years, even though Hollywood producer Lynda Obst '72 and author Richard Preston '76 had never met before Obst read the 1992 story in *The New Yorker* that became the basis of Preston's nonfiction bestseller *The Hot Zone*.



Richard Preston '76

Lynda Obst '72

In an episode of *The Hot Zone*, a character played by Grace Gummer (center) tends to a hut of Ebola victims, including a pregnant woman. –Photo by National Geographic/Casey Crafford

Their twisting journey reaches its destination on Memorial Day, when the six-episode limited series *The Hot Zone*, starring Julianna Margulies, premieres on the National Geographic Channel. A quest that began when Preston was 38 and Obst was 42 is ending in triumph with both old enough to draw Social Security.

"The article set the town on fire from the moment it was published," Obst says of Preston's *New Yorker* story, while sitting in the office of her hillside home in the Silver Lake neighborhood of Los Angeles. "Everyone went insane and had to have it. And I was one of those people."

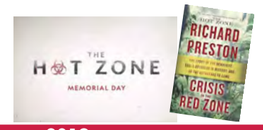
By early 1993, Obst had won the rights to Preston's terrifying true tale about the threat of Ebola and other deadly viruses on U.S. soil. But she lost the agonizing war after Foster pulled out over script differences and rival producer Arnold Kopelson raced into filming a blatant knockoff, the 1995 movie *Outbreak*, despite failing to secure the rights from Preston.

It was a defeat so painful, so public for Obst—who already had *Sleepless in Seattle* to her credit and later added *Contact* and *Interstellar*—that she made its lessons the first chapter of her 1996 memoir about navigating Hollywood, *Hello, He Lied*.

"The pressure can crush you or turn you into the diamond version of yourself: hard and brilliant," she wrote about the necessity of moving on. Yet in the midst of the chapter "Next!" about the ephemeral nature of both defeat and success, she slipped in a caveat: "Reinvention remains an option."

Reinvention it would be: Last September, *The Hot Zone* began filming in Toronto, followed by a December shoot in South Africa, a stand-in for 1970s Zaire. ▷

A HOT ZONE TIMELINE



1992

October 1992
"Crisis in the Hot Zone" by Richard Preston '76 is published in *The New Yorker.*

1993

January 1993
Lynda Obst '72 and 20th Century Fox win the bidding war for movie rights. But despite being outbid, Arnold Kopelson of Warner Bros. plans a competing knockoff, *Outbreak*.

1994

February–August 1994
In February, Ridley Scott agrees to direct *The Hot Zone,* and Robert Redford and Jodie Foster join the cast. By August, both Foster and Redford have dropped out and preproduction for the film is shut down.

December 1994
The Hot Zone is published by Random House and becomes a *New York Times* bestseller.

1995

March 1995
Outbreak, starring Dustin Hoffman, Rene Russo and Morgan Freeman, is released in theatres across the country.

1996

September 1996
In her new book about Hollywaood, *Hello, He Lied,* Obst reflects on the bitter lessons she learned from the failure of *The Hot Zone* project and vows to complete it someday.

2014

March 2014
The World Health Organization reports a new, major Ebola outbreak in West Africa. Before it is over, more than 11,000 people will be dead. Preston returns to Africa to cover the new epidemic.

September 1994
American Eric Duncan returns to the United States and is diagnosed with Ebola, bringing the disease close to home for Americans. In all, 11 people will be treated for Ebola in the U.S., and two will die.

2018

April 2018
Obst calls Preston to let him know that the National Geographic Channel has given the green light to a mini-series of *The Hot Zone.* Ridley Scott returns to direct.

July 2018
Julianna Margulies agrees to star as Nancy Jaax.

September 2018
Filming begins in Toronto, continuing in South Africa in December.

2019

May 2019
The Hot Zone to air on the National Geographic Channel on Memorial Day.

July 2019
Random House to release Preston's new book about the 2013–16 Ebola outbreak in West Africa, titled *Crisis in the Red Zone.*

MONTHS EARLIER, AS OBST was busy with preproduction, her satisfaction was palpable. "Somebody called me 'Tenacious L,' which is my favorite name I've ever been called," she says with a laugh. "So you know, it feels pretty gratifying. Pretty damn gratifying."

Within arm's reach in her office was the final version of the contract with Preston from decades ago.

"I keep it on my bulletin board," she says. "There are many colleagues I still work with who went through the original crisis of 'Crisis in the Hot Zone' with me who are still around now as my peers and allies and friends. And they are having a big laugh."

Preston says he harbored little hope.

"I had given up," he says by phone from the East Coast, where he lives near Princeton University. "I really thought it was never going to see the light of day. However, I was aware of one thing—it kind of lingered in the back of my mind—which was Lynda Obst's vow in her autobiography that if it was the last thing she ever did, she was going to make *The Hot Zone*. I know Lynda well enough to know that was a blood oath.

"I said to Lynda that this could be described as an odyssey, except Odysseus wandered for 20 years," Preston says. "Lynda wandered for 25 years. She beat Odysseus."

THOUGH THEY CAME WITHIN months of passing each other on Marston Quad—Obst graduated in the spring of 1972, and Preston arrived that fall—the two did not know each other. They also had overlapping circles in New York, where Preston was a contributor to *The New Yorker* and Obst had been an editor for *The New York Times Magazine* before moving west, fixing her eye for a story on the film industry and emerging as a powerful Hollywood producer. Obst even knew Preston's brother, author Douglas Preston '78, but didn't make the connection.

Their memories differ as to when they first realized they were two Sagehens trying to make a movie. Obst remembered it as riding in a car to meet Nancy and Jerry Jaax, central figures in the book, but after hearing Preston's recollection, "I think he's right and my memory stinks," she says. As Preston remembers it, Obst mentioned Pomona in their first conversations on the phone.

"My recollection is that she made a real point of that, that she had researched me," Preston says. "I liked that. Pomona people have a lot of low-key credibility in the world. Pomona people are extremely ▷

In an episode of *The Hot Zone,* Dr. Nancy Jaax, played by Julianna Margulies, works with a pipette in the pathology lab. –Photo by National Geographic/Amanda Matlovich

smart, by and large. So I immediately knew that Lynda was very well educated in the humanities, and that counts for a lot with me, because I have a doctorate in the humanities, in English, but I write about science.

"Those first phone calls, I found myself admiring her, and I really like to work with people I admire," Preston says. "I admired her because she already had a fantastic track record as a producer. I admired her because she had succeeded as an editor at *The New York Times Magazine* and then had seemed to shift effortlessly to the West Coast to becoming a producer. And I admired her for her grittiness, for her willingness to get into a major fight with a huge producer like Arnold Kopelson. And I really didn't like Arnold Kopelson at all."

Kopelson. the Academy Award–winning producer of *Platoon*, died last year at 83, but Obst had long studiously avoided mentioning his name, even in her book. Preston says his conversation with Kopelson wasn't much of a courtship.

"Kopelson had me on the phone, just a typical, unbelievably typical, cigar-smoking Hollywood producer," Preston says. "And he goes, 'Richard, you really only have one question you need to ask of yourself. I am going to make this movie, and the only question you need to answer is whether you want to play with me or not.'"

Kopelson later told *The New York Times* he made no threats but simply stated his intentions: The result was *Outbreak*, a movie about a fictional deadly monkey virus called Motaba, minus most of the science and transplanted from labs in suburban Washington, D.C., to small-town California, with a military bomber ordered to obliterate the town of dead and dying before the carrier monkey is found and a cure is created from its blood.

"I FELT LIKE WE WERE TWO POMONA PEOPLE GOING INTO BATTLE TOGETHER. AND I LOVED THE IDEA IT WAS A WOMAN WARRIOR. I JUST LOVED THAT." —Richard Preston '76

THE OFFERS FROM KOPELSON

and Obst, bidding for what was then 20th Century Fox, had been about the same—$100,000 up front and $400,000 if the movie was made. But when Obst and Preston got on the phone, the two Pomona graduates with backgrounds in nonfiction journalism and a passion for science quickly connected.

Obst studied the philosophy of science at Pomona and during a stint in graduate school at Columbia University, and her goal with *The Hot Zone* as well as in projects involving the late Carl Sagan and Nobel Prize–winning physicist Kip Thorne, both friends, has always been to get the science right. The truth is sometimes scarier than any fiction.

"A lot of other producers talk hype. I talk story," says Obst, who zeroed in on the central figure of Nancy Jaax in her proposal to Preston. "To me, the vital, amazing thing wasn't the blood and gore in the piece that attracted some producers. It was that there was a woman Army colonel at the core of this who was a heroine, who exposed herself to danger unwittingly by making a salad for her family, oh my God, on the way to work, where she worked in a [Biosafety] Level 4 containment zone on a regular basis, between visiting her kids at gym and soccer. She was my kind of girl. So I saw a movie star. I saw a great part for women. And I've pretty much devoted my career to great parts for women, without sort of consciously being aware of it."

Kopelson never had a chance.

"I didn't like the way he had treated me or handled me," Preston says. "And I found Lynda to be like—this is an odd thing to say, but I felt like she was a kind of samurai, and that she was an expert in martial arts with regard to film production, and that it was just very, very good to have someone like that behind the project.

"I felt like we were two Pomona people going into battle together. And I loved the idea it was a woman warrior. I just loved that."

But *The Hot Zone*, the movie, was not to be.

Foster and Redford are both directors as well as actors, and both had strong ideas about the script. Preston thought the original script needed only a little work, and he favored the sensibilities of Foster, who has a degree in literature from Yale. He says Redford wanted to enhance his role by adding an affair with Foster's married character, Nancy Jaax, and ordered his own rewrite. Foster pulled out of the project over script issues first, and after Meryl Streep considered it before signing on to *The Bridges of Madison County,* Redford pulled out too. Cameras were rolling for *Outbreak*. There would be no room in theatres for two monkey virus thrillers at the same time. It was over.

Preston saw *Outbreak* and calls it "a ridiculous, idiotic film, through no fault of the actors." (The cast included Dustin Hoffman, Rene Russo, Morgan Freeman, Donald Sutherland, Kevin Spacey and Cuba Gooding Jr.)

Preston says Hoffman called Peter Jahrling, the scientist who discovered the Ebola-Reston virus, in the middle of the night while the film was shooting. "This is a true story," Preston says. "It goes like this, 'Ah, is this Dr. Peter Jahrling? Ah, this is Dustin Hoffman. Listen, I'm sorry to bother you, Dr. Jahrling. I've got Rene Russo, she's dying of Ebola, very attractive lady I will say, and we need to cure her in five minutes of screen running time. What do I do, Dr. Jahrling?'"

Jahrling explained a possible cure, Preston says, and at the end of *Outbreak*, Russo is given an IV bag "of something that looks like Tang breakfast drink, and it cures her in five minutes," Preston says. "So Jahrling says, 'I gave them their ending, and they never paid me a dime.'"

Obst, however, refused to watch *Outbreak*.

"It made me too angry," she says.

The Hot Zone had come to a painful end, or so it seemed.

"People involved in the project were calling me up and basically weeping over the telephone," Preston says. But in the end, he adds, "the screenplay was so wretched that it was a relief just to see it put out of its misery." ▷

"WANTED Lead Camera and Lights for a documentary-style film."

"Congrats to Maximilian Zarou (PO '99) on his upcoming TV appearance!"

"If anyone has a short or feature film they'd like to get into a festival, PM me."

With nearly 2,000 members, the Claremont Entertainment & Media networking group's Facebook page is a lively community of alumni of The Claremont Colleges who mostly either work in Hollywood or aspire to.

WHERE CLAREMONT MEETS HOLLYWOOD

Founded in 2007 by a group that included actor Kelly Perine '91, the network offers a clearinghouse for job openings, freelance gigs, congratulations and queries from alumni and current students of the seven Claremont campuses.

"I was on the ground floor of getting this puppy up and running, and after 10 years we're on the brink of turning The Claremont Colleges into forces to be reckoned with, just like other universities that seem to have a stronghold on Tinseltown," says Perine, who is currently appearing in Nickelodeon's *Knight Squad*.

The Claremont Colleges have some Hollywood heavyweights in their corner, including *Interstellar* producer Lynda Obst '72 and *The Martian* producer Aditya Sood '97, who is also a Pomona trustee.

"What they're doing is fantastic," Sood says of the group, also known as CEM.

Before the last decade or so, students and alumni often discovered Claremont entertainment industry contacts either by digging hard or by accident, which is how Sood met his first show business contact, Greg McKnight '90, now a partner at United Talent Agency. "I was a sophomore sitting in Honnold reading weekly *Variety*, the print paper," Sood remembers. "All of a sudden this guy came up to me and said, 'Oh, how long have they had that here?' And I said, 'Ever since I've been a student.' And he said, 'When I was a student here, I used to write letters to get [the library] to subscribe.' Then he said, 'Do you want to get lunch?' and we did. We became really good friends and have crossed paths many, many times in business over the years."

At the offices of Lynda Obst Productions on the Sony Pictures studio lot in Culver City, Obst's right-hand woman is Katarina Hicks '10, who reached out to Obst because of their Pomona connection and was hired as Obst's creative executive. She since has been promoted to development executive. There are "tons of people my age in the 'trenches' making moves up the ladder," says Hicks.

Obst proudly notes that one of her former Pomona interns, Justin Huang '09, is now the head of development at Pearl Studio, the Shanghai-based animation studio formerly known as Oriental DreamWorks. Obst says the CEM group has grown "very strong," and she continues to speak on the Claremont campuses and offer guidance to students and recent graduates.

"I have always responded to anyone from Pomona, and they've come to my office, and I've given them advice—but not when I'm in production," Obst says. "Also, they've tended to be my smartest interns, because you know when you get a Pomona person, they can write English sentences; they can analyze scripts; they can speak well; they can think on their feet. I mean there's just been a very consistently high quality."

It is a competitive field, and a shared alma mater isn't enough on its own. But Sood emphasizes the value of the preparation students receive at the 5Cs, as the Claremont undergraduate schools are known. "There's a real literary component to what we do," he says. "You're reading books; you're analyzing material; you have to have critical thinking and a lot of problem-solving in novel situations. I really think the liberal arts background is a perfect steppingstone for this kind of work.

"The advice I give every time I talk to students is something I didn't really have but I think would have been great to have: Try to find the other people on campus who also want to do this, and get to know them now. Get to know them as students, because they will form the nucleus of your network that will last you throughout your entire career."

—Robyn Norwood

BY 2014, THE LANDSCAPE had changed. Ebola emerged again in West Africa in an epidemic that ultimately killed more than 11,000 from 2013 to 2016, and health officials are currently battling a new outbreak in the Democratic Republic of Congo.

What's more, Ebola arrived in U.S. hospitals in 2014, borne by international flights. Two men who traveled from West Africa after contracting the virus, one of them a doctor, died of Ebola. Two nurses treating a dying patient in Dallas also contracted the virus but survived, as did seven other patients treated in the U.S. The Ebola threat was no longer far away in Africa.

But something else had changed, Obst says: Television entered a golden age. Even Jerry and Nancy Jaax, central figures in Preston's book, were amazed when the production came together after all this time. "They'd given up on it," Obst says. "They all think I'm a miracle worker. But the truth is that I'm not a miracle worker: Media has changed. Television grew up, became great, and we were able to take advantage of that."

Though she says the outbreaks are only a coincidence, they make the series resonate.

"Unfortunately, Ebola did not go away, but Ebola showed its ugliest head in Sierra Leone, became the outbreak that was warned about in Richard Preston's book, and then simultaneously, this venue developed called 'Nat Geo,' in which you could do these things called limited series, which we used to call miniseries, but they were shorter," she says. "These are at least double the length. And in this venue, you can do the real science."

Because Fox—now part of Disney after the Hollywood megadeal—owned the intellectual property as well as the National Geographic Channel, Obst saw a way to do the series under the Fox umbrella, and with Ridley Scott's television production company, Scott Free. "It got to be a better show than it would have been as a movie," she says.

Preston agrees. "There's been a sea change in how television series are made and produced and distributed. It's the Netflix phenomenon," he says. "The whole story of *The Hot Zone* has always lent itself to television far better than to a two-hour feature film. You just can't get the story into a two-hour feature film and preserve the muscularity and the drama of the story."

Far from the familiar Hollywood scenario in which writers sign away the rights to their work and watch helplessly as it takes a form they never imagined, Preston became deeply involved in the National Geographic series.

"He's a very important part of the brain trust," Obst says.

As a co-executive producer and consultant, Preston not only served as a liaison between the production and the real-life characters;he also was a fact-checker on the science, working closely with showrunners Kelly Souders and Brian Peterson on the scripts.

He went through the episodes line by line with them, "getting down to the nitty-gritty of the science," Preston says. "The end result is that the audience is going to see something that really feels authentic. It's like you go onto a car lot, you want to buy a car, and you slam the door and nothing rattles."

Preston also made suggestions to make the series more realistic or dramatic. In one scene where Jaax puts on a protective biohazard space suit as she and a soldier prepare to go into Biosafety Level 4—the extraordinarily dangerous containment area for lethal viruses for which there is no vaccine and no cure—Preston flashed back to his own experience.

Liam Cunningham as Wade Carter and Julianna Margulies as Dr. Nancy Jaax during production of *The Hot Zone* in Toronto –Photo by National Geographic/Amanda Matlovich

"I'm not going to tell you what it is, but it's what they did to me the first time I went in with a space suit on," he says. "I told Kelly and Brian about that. I said, 'This is what Nancy Jaax is going to do to this soldier,' and they go, 'Oh my God, yes.'"

With the *Hot Zone* television series likely to boost sales of the original book, Preston went to work on a revised edition, with scientific updates reflecting what is now understood about Ebola and related viruses that wasn't available when he wrote the book, including exactly what killed the Danish boy known by the pseudonym of Peter Cardinal, who became ill after entering Kenya's Kitum Cave.

Slight additional revisions refine the gruesome descriptions of victims' bleed-outs, a part of the book Stephen King called "one of the most horrifying things I've ever read in my whole life."

And although Preston has written other books in the interim, his next book, *Crisis in the Red Zone*, is a successor to *The Hot Zone* and will be published by Random House in July.

"I don't want to give away too much, but it's about emerging viruses—viruses coming out of natural ecosystems and invading the human species," he says.

The original *Hot Zone* will come to life not on the silver screen but on the small screen, opening May 27 with a three-night run. Like the lethal virus itself, the project retreated and re-emerged, perhaps a stronger version of itself.

The final words of Preston's book *The Hot Zone* now seem doubly prophetic:

"It will be back." PCM

TRACKING A DEADLY OUTBREAK WITH CDC DISEASE DETECTIVE MATT WISE '01

ANATOMY OF AN OUTBREAK

STORY BY MAX BLAU
PHOTOS BY DUSTIN CHAMBERS

On a sweltering Monday afternoon last September, a few minutes before 3 o'clock, Matthew Wise '01 hustled down the hall from his office to a windowless conference room at Atlanta's Centers for Disease Control and Prevention (CDC) headquarters. Nearly three dozen scientists had crammed in there for the weekly meeting. At the head of the table, Wise slid into his swiveling chair, trying his best not to wrinkle his neatly pressed commander's uniform. ▶

His team of epidemiologists soon fired off one-minute updates of roughly 30 different food-borne illness outbreaks. He stared at a giant flat-screen filled with bar charts, hoping to triage minor threats from the major ones. *Cyclospora* outbreak caused by vegetable trays? Fully contained. *Listeria* linked to deli ham? Under control. Then came the details of a cluster that demanded his full attention: more than 60 infections caused by *Salmonella Newport* across the western U.S. He could see that the bacteria strain had slowly spread across the country and was sending dozens of people to the hospital.

A member of the U.S. Public Health Service Commissioned Corps, Wise had climbed the ranks of the CDC thanks to his skill as a disease detective. Now a senior official with the federal agency's Outbreak Response and Prevention Branch, he had the power to act swiftly and decisively. If he made the right choice, he might prevent thousands more from falling ill or even dying. But act too slowly or too fast—particularly by lobbying for a recall—and his team might expose the CDC to the ire of industry and the public at large.

Weighing his options, Wise figured this *Salmonella* strain was trickier than most. That's because a new wave of food-borne illnesses had swept the nation in recent years. Unlike traditional outbreaks—which ended nearly as fast as they began—cases were unfolding over longer periods and wider distances. Wise also sensed that these *Salmonella* infections were the tip of the iceberg. As a general rule of thumb, only one in every 30 people affected by a food-borne illness typically reported being sick. The well-being of thousands of people was likely at stake.

Identifying the outbreak pattern was the easy part. The hard part—discovering the source of the *Salmonella*—came next. To do so would require a small army of nearly 250 people from more than three dozen agencies. Investigators would ask fathers who'd just left the hospital to recall what they'd recently ordered for dinner. They'd also persuade mothers to search their purses for grocery store receipts. Instead of charging full speed ahead with an investigation, Wise wondered if the agency's best shot at solving this mystery was to look back to a previous investigation the year before that had gone unsolved. Perhaps an older clue—a fingerprint—might crack open this case.

Ninety-seven percent of America's food-borne outbreaks are confined to a single source in a single state. Wise says these kinds of outbreaks can be caused by anything from chicken at a church supper left uncovered for too long to a fast-food restaurant kitchen forgetting to wash lettuce. When a food outbreak occurs, he said, local and state health inspectors are usually the ones handling the response.

The other 3 percent of outbreaks are the ones that wreak havoc on America's health systems. Of the food-borne outbreaks reported to the CDC, they're responsible for a 10th of the reported sicknesses, a third of the hospitalizations, and more than half of the deaths.

It's the job of the Outbreak Response and Prevention Branch to spot an outbreak that crosses state lines and, once it does, to help guide the national investigation. Officials of the branch are sort of like agents of the Federal Bureau of Investigation. Except, instead of tracking serial killers, they're tracking killer lettuce. ▶

"INVESTIGATING OUTBREAKS is like the emergency room of public health. … I was working in environments where you make real decisions in real time." —Matt Wise '01

To understand food investigations, according to Wise, you need to know how food production has changed in recent decades. Not only is food being produced by fewer companies—thanks to increased consolidation—it is also traveling longer distances to reach consumers. Because of that, Wise says parts of his branch's job have grown increasingly tough, with outbreaks now spanning the entire nation. But the challenges have also bred opportunity: The CDC is helping reshape how state and federal agencies respond to pathogens such as *Salmonella*, *E. coli* and *Listeria*.

In a given year, Wise's epidemiologists will have 200 potential cluster outbreaks. Before one crosses his desk, several steps must be taken. First, when a person gets seriously ill from a potential food-borne illness, a doctor collects a stool sample for testing at that hospital's clinical lab. A technician will then isolate the bacteria and ship the sample to a laboratory that's part of PulseNet, a network of more than 80 labs, to create a DNA fingerprint. That fingerprint is sent off to a CDC lab in Atlanta. It will eventually make its way up to Wise's team, who will analyze patterns of illnesses, connecting each like a detective uses yarn on an evidence board.

"If we see there are people in California and Texas and Illinois that all got sick around the same time, from the same fingerprint, that says to me that people have maybe gotten sick from the same thing," Wise says. "This lets you pull needles from a haystack and see what they have in common."

The old clue Wise thought might be helpful came from a previously unsolved *Salmonella Newport* outbreak that he had first learned about in late January 2017. By then, roughly four dozen cases with a similar bacterial strain had been identified in California, Arizona and Texas. In just weeks, five times as many states had reported similar strains. Soon, local investigators were dispatched to ask sick people hundreds of questions about their recent food consumption and purchasing patterns. The best Wise could tell, ground beef was the likely culprit.

With a decent hypothesis, Wise's team sought more data to lead the team toward the contamination's original source. So they advised local investigators to learn more specifics about how the ground beef had been cooked and consumed. Wise's team also urged the U.S. Department of Agriculture (USDA), which regulates ground beef, to collect further evidence about whether people had purchased a certain brand of ground beef from a grocery store. By compiling those answers, Wise says, they hoped to be able to trace back the *Salmonella*. That might lead the USDA to recall a product, close production facilities or persuade a manufacturer to voluntarily take its product off the shelf.

That strategy, it turned out, led to a minor breakthrough. Sick people had been purchasing five-pound chubs of ground beef. One Colorado public health official even collected leftover ground beef from a patient's home—and it tested positive. Wise and his colleagues eventually realized that the *Salmonella* outbreak was not just linked to those chubs but also to some dairy cows in New Mexico. At that point, however, they hit a snag: The strain found in cattle couldn't be connected back to a single slaughterhouse. Questions ran through Wise's mind: *Was the problem with one farm's cows? Or was there a widespread strain in cattle?*

"If it came from 10 states and 10 slaughterhouses, maybe it's connected, but we'll do more research," Wise said. "A lot of the time, we're looking to see if the same facility produced all of it—if the people who got sick all ate the same thing from the same line, produced in the same hour and at the same facility."

Wise hoped a new kind of technology would crack open the case. For years, scientists in the PulseNet network had used a technique known as pulsed-field gel electrophoresis (PFGE) to create a fingerprint for a bacteria's DNA. But PFGE wasn't precise enough to parse out *Salmonella* strains that were extremely similar to one another. So epidemiologists struggled with statistical "noise" that made it hard to spot which cases were directly linked to ground beef.

The CDC had recently begun shifting toward a more advanced tool—whole-genome sequencing—which allowed them to reconstruct the genome of each bacteria's DNA, putting each nucleotide together like the pieces of a jigsaw puzzle. But the CDC hadn't yet fully rolled out the tool for *Salmonella* cases in real time. The delayed use of the technology, along with the complexity of the ground beef outbreak, stopped the investigators in their tracks. Of the 106 cases ultimately reported, one person died and 42 people were hospitalized.

"We never figured it out," Wise said.

Two decades ago, when Wise arrived at Pomona College, he was more interested in treating illness than tracing its cause. As a high school student, the Sacramento native grew interested in health care after hearing a talk about San Francisco's needle exchange. But by his sophomore year, he no longer wanted to pursue a medical degree. "The chemistry classes were disconnected from actual health and medicine," he said. "And, frankly, I was shitty at organic chemistry." So his coursework shifted toward social sciences—anthropology, psychology and sociology.

During his sociology of health and medicine course, he was first introduced to the CDC's Epidemic Intelligence Service, a two-year program for postgraduate fellows who are among the first to respond to public health emergencies. After graduating from Pomona, he was hired as an epidemiologist at Los Angeles County's public health department. Simultaneously, he worked toward his Ph.D. at the University of California, Los Angeles, which later helped him get accepted into the U.S. Public Health Service Commissioned Corps. He moved to Atlanta but traveled coast to coast, helping to investigate outbreaks in hospitals.

"Investigating outbreaks is like the emergency room of public health," he said. "You don't have the luxury to pontificate. In academia, you can obsess over little details for a really long time to get a perfect analysis. I was working in environments where you make real decisions in real time."

During one of his earliest multistate cases at the CDC—a fatal outbreak of fungal meningitis—Wise was assigned to work with employees from the Outbreak Response and Prevention Branch. Their job seemed fascinating. So in 2013, Wise shifted to that team, where he guided epidemiologists through investigations into food-borne illnesses related to frozen pizza snacks and tahini sesame paste. Last year, he was again promoted—this time to the role of deputy chief of his branch.

"I VIEW FOOD more as a product of these complex and massive systems where, if just a couple of little things go wrong, you can have bad results."

—Matt Wise '01

Beyond overseeing investigations, he was tasked with speaking to the press and, at times, taming the public's outrage toward the CDC. He explained the basic functions of the agency, like the fact that it doesn't usually order recalls, or that outbreak investigations take longer than just a few days. While Wise's work with food-borne illnesses hasn't changed his diet—he still eats most things, except for raw sprouts—it has changed the way he sees food systems.

"There's a huge amount of machinery," Wise said. "I view food more as a product of these complex and massive systems where, if just a couple of little things go wrong, you can have bad results."

In late September 2018, weeks after that initial 3 p.m. meeting, Wise finally got to see more data. A familiar suspect—ground beef—was causing more problems.

His epidemiologists had already worked with state health departments to obtain sick patients' shopper records. But the CDC was once again seeing a "noisy" PFGE pattern, complicating the process of finding a single *Salmonella* source. This time, however, they could use whole-genome sequencing in real time. The results allowed Wise's team to see that a third of the initial cases weren't relevant to this investigation at all. Of the remaining ones, they managed to interview 22 people about their ground beef purchases. Twenty-one said they had consumed ground beef.

"It pulled a signal from the noise," Wise said. "And it allowed us to definitively say that the [unsolved] outbreak was connected to this one."

With that information, USDA investigators tracked down more shopper cards and beef grinding logs, which showed that a disproportionate number of cases linked back to several Sam's Club stores located in Wyoming, Utah and South Dakota. Then, another breakthrough: A beef sample purchased by state officials at a California discount grocery store also contained the same strain. That packaging contained an establishment number—EST. 267—which helped trace back the *Salmonella* source to a beef plant just outside Phoenix.

In late September, Wise's team sent over their findings to USDA officials, who then approached the plant's owners: JBS Tolleson. Faced with the evidence, JBS Tolleson agreed to cooperate with the federal government. Between Oct. 4 and Dec. 4, JBS Tolleson voluntarily recalled more than 12 million pounds of beef products. The recall, one of the largest of its kind ever, impacted hundreds of grocery stores from Florida to Washington.

This past March, Wise returned to the windowless conference room and stared at the TV screen full of charts. When the *Salmonella* outbreak came up, he could finally see the full damage it had caused. Over a six-month period, more than 400 people had gotten sick in 30 different states. Nearly a quarter had been hospitalized. This time, though, no one died.

Wise breathed easily—but only for a moment. Another outbreak, he knew, would soon be on its way. PCM

LIKE MILLIONS OF OTHER YOUNG ADULTS, ADOLFO SARTINI SHOULDN'T HAVE DIED FROM THE 1918 SPANISH FLU. BUT HE DID. AND IN RETIREMENT, MOLECULAR BIOLOGIST RUTH CRAIG '74 IS STILL SEEKING ANSWERS.

THE FACE OF A PANDEMIC

STORY BY KATE BECKER | PHOTOS BY JASON GROW

Adolfo Sartini in uniform

ADOLFO SARTINI WASN'T SUPPOSED to die from the flu. He was 29 years old, healthy and strong; he had answered the draft in 1917 and was picked to work as an Army engineer. And yet, the things that should have protected Sartini actually made him an utterly typical victim of the virus that killed him: the notorious 1918 "Spanish" flu.

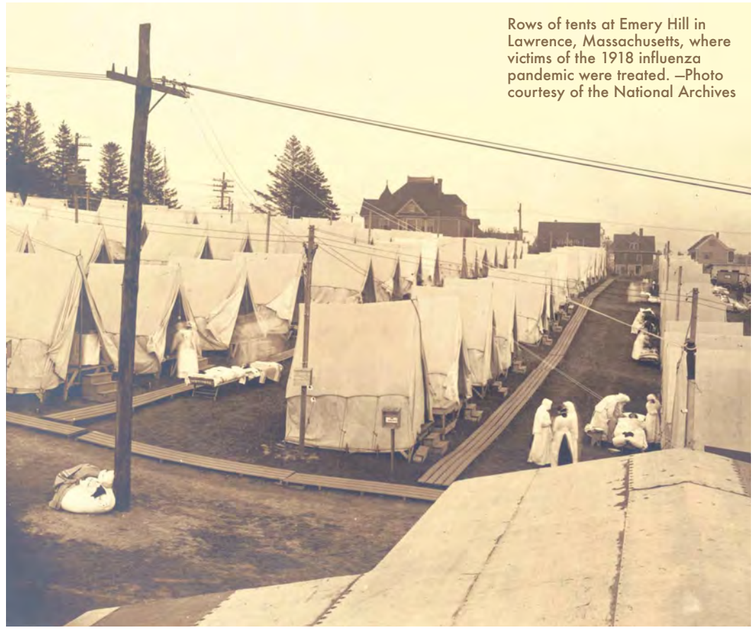
Extending over the world in three deadly waves, the 1918 flu infected some 500 million people and killed at least 50 million—as much as 5 percent of the world's population, though it is hard to pin down a precise figure—placing it among the deadliest pandemics ever recorded. So many died so quickly that cities ran out of coffins. Extra gravediggers were called up by the hundreds, and when there weren't enough gravediggers, steam shovels came in to dig mass graves for the bodies that were piling up in morgues and on roadsides.

The virus piggybacked on World War I troop movements and was sustained by soldiers' close quarters, yet it also spread to people and places far removed from the war. And the world was all but defenseless against it: without vaccines, antibiotics or antivirals, patients made do with rest, fluids, fresh air and prayer.

The 1918 flu was a killer, and it was also a puzzle. Unlike most flu strains, which are deadly mostly to the very young and the very old, the 1918 flu disproportionately struck down young adults. Graph typical seasonal flu deaths according to age, and you get a "U" shape, with high mortality among babies on the left and the elderly on the right, and a strong, healthy trough in the middle. But when you plot out deaths from the 1918 flu, you get a "W" instead, with the peak centered near age 28—almost exactly Adolfo's age when he died.

For decades, researchers have been trying to understand what made young adults like Sartini so vulnerable to this particular flu. Maybe people over 40 had already been exposed to similar strains and built up some immunity, while younger ones were immunologically unprepared. Maybe soldiers like Sartini were already weak from other infections, like tuberculosis. Maybe young, healthy people suffered from an overactive immune response—a so-called cytokine storm, named for proteins that help direct the body's immune response—that damaged their lung tissue and allowed fatal infections to establish themselves. Or maybe it was all of those things at once.

It's a puzzle that fascinates Ruth Craig '74. That's because Sartini's story embodies her two life's passions: molecular biology, which she researched and taught for more than 20 years from her labs at Johns Hopkins University School of Medicine and the Geisel School of Medicine at Dartmouth, and genealogy, which she discovered later on and took up as a second career when she moved from active to emeritus professorship. "The two tracks seem very different but actually intersect," says Craig, "and that intersection is the flu."



Rows of tents at Emery Hill in Lawrence, Massachusetts, where victims of the 1918 influenza pandemic were treated. –Photo courtesy of the National Archives

IN 1987, AS A BRAND NEW FACULTY MEMBER AT

Johns Hopkins University School of Medicine, Craig led a research team that discovered a gene that helps control whether cells live or die. The gene, called myeloid cell leukemia-1, or MCL1, is a member of a family of genes with similar jobs, and their involvement in leukemia surprised cancer researchers—it suggested that cancer isn't just about runaway cell growth, but also about cells that fail to die when their time is up.

But MCL1's influence goes beyond cancer, as Craig discovered over the course of many years examining the gene. In 2005, Craig was part of a team led by David Dockrell, an infectious disease researcher at the University of Sheffield, that looked at how MCL1 helps immune cells fight infection. They found that MCL1 makes a protein that helps signal immune cells called macrophages to attack bacteria. The macrophages swallow up the invaders, and they also recruit other immune cells to join their offensive. When levels of the MCL1 protein drop, macrophages get the signal to stand down and die off, taking their infectious "prisoners" with them and calling off the immune attack. The response is exquisitely tunable and can be turned on and off in different kinds of cells with laser precision and speed. But what would happen if, for some reason, it failed to turn off on time?

Craig and Dockrell tried to answer that question. Their team started with mice with an MCL1 gene that caused them to overproduce the MCL1 protein. Then, the researchers gave those mice bacterial lung infections. Mice with the modified gene could not clear the infection. Moreover, their lungs were overwhelmed with inflammatory cells. The macrophages, it seemed, didn't know when to die—so while the immune system kept up its attack, the bacteria went on multiplying, and the mice got sicker and sicker.

This is where Craig's gene intersects with Sartini's story. That's because if he was like most flu victims, Sartini didn't actually die from the flu, but from a bacterial lung infection that set in afterward. Craig wondered: Could he have died—too young, too early—in part because some cells in his body died too late?

BOB SARTINI KEEPS HIS GREAT-UNCLE

Adolfo's Army chest in his living room in Vermont; on the wall of his Boston apartment, he hung oval-framed pictures of his grandparents and a memorial certificate from the U.S. Army commemorating Adolfo's supreme sacrifice in World War I. When his grandfather died, Bob says, the certificate "was basically on the trash heap," Bob became friends with Craig in the late 1970s, when they worked down the hall from each other at Boston University School of Medicine (Bob, who is now retired, spent his career there), and she had the certificate framed for him as a birthday present. "From then on, it's been on the wall in my house."

Bob imagined filling up Adolfo's old Army chest with "period things," artifacts that would tell the story of Adolfo's life, but the family lore was meager. Bob knew Adolfo had followed his brother Eugenio, Bob's grandfather, from Italy to America. He knew that he had spent time working at a country club in Newton, Massachusetts, before enlisting in the Army, and he knew that Adolfo had died young, of the flu. But he wondered: Why did Adolfo enlist? Did Adolfo know that because he was not a U.S. citizen and had not ▷

Pandemic's Progress

Maps prepared by Ruth Craig '74 and colleagues James Adams and Stephen Gaughan show how the Spanish flu hopscotched through military bases to blanket the country in barely a month, from late August to the end of September.

declared an intention to become one, he was not required to answer the draft? Did he deliberately pass up this exemption so that he could step forward to defend his chosen home? And how to make sense of the irony of a healthy soldier being struck down not by shells or machine guns but by something as mundane and typically benign as the flu?

Bob wondered about this off and on over the years, going so far as to contact the National Military Personnel Records Center, but they could offer no help: Adolfo's records had burned up in a 1973 fire that destroyed more than 16 million Army and Air Force personnel files.

Then, around 2013, Craig mentioned that she was working on becoming a certified genealogist and needed a project—something specific and preferably something in Massachusetts, where, unlike New Hampshire, birth and death records weren't kept sealed. Adolfo seemed perfect.

Ruth Craig '74 and Bob Sartini visit St. Michael Cemetery in Boston, where Spanish flu victim Adolfo Sartini is buried.

Craig began by tracking down the register for the ship that brought Adolfo to America. The register listed his birthplace in a farming region of Italy. Then, from her desk at Dartmouth, she pored over digitized images of 19th-century Italian record books. Finally, she found Adolfo's birth record and birthdate: Feb. 8, 1889.

But what Craig really wanted to find was his death certificate. Not sure where to look next, she posted to an online military history forum, where an expert in World War I history pointed her to a military base that trained engineers, Camp A.A. Humphreys, in Virginia. A search of Virginia death records confirmed it: Adolfo died at the Virginia training camp, far from home and far from the front lines, of a sickness that was one thing that the broken world had in common.

While Craig was searching genealogical records, she was also poring over the scientific literature on the flu, hoping to answer the question that was rising up in her mind: Why did it kill someone like Adolfo?

Flu viruses are always changing, accumulating small genetic mutations and, once in a while, making more radical shifts that constitute entirely new flu subtypes—not just variations on a theme but fresh, unfamiliar melodies. This year-to-year change explains why getting the flu this year doesn't mean you'll be protected against it next year. It also helps explain why older people are sometimes spared the worst of a flu that seriously sickens younger ones: Their immune systems remember similar strains that circulated decades ago and can mount some defense, even if it is an imperfect one.

For instance, some 80 percent of those who died from the 2009 "swine flu" pandemic were under 65—turning the expected mortality statistics for seasonal flus on their head. Why were younger people ▷

The Spanish Flu at Pomona

It was Nov. 11, 1918—Armistice Day. The global catastrophe that was World War I was finally over, and people everywhere were celebrating. But as soldiers paraded down College Avenue in Claremont (above), it wasn't hard to see that the celebration was tempered by worry and caution. Every man in the parade was wearing a white surgical mask to protect himself from the scourge that was striking down the young and fit across the country.

But whether through luck or caution, the pandemic claimed only one life on the Pomona campus. A previously healthy young woman named Viola Minor Westergaard, the wife of Pomona faculty member Waldemar Westergaard, succumbed during the final throes of the epidemic, on Jan. 7, 1919. Viola's parents later donated a collection of books and other items to Honnold-Mudd Library in her honor, including the bust of her at right, by artist Burt Johnson.

likelier to get sick and die of swine flu? Researchers think that older people had been exposed to similar flus, including the 1918 flu, in the early 20th century, and therefore had some protection against the 2009 version.

Yet that can't completely account for the 1918 flu's W-shaped curve and the peculiar vulnerability of those who were born around 1889, like Adolfo. Craig's search brought her to mathematician David Earn, who studies mathematical biology at McMaster University in Canada. Earn and his colleagues have explored the possibility that a person's very first flu—the one he or she encounters as a baby—makes a more powerful impression on the immune system than any other. This hypothesis, called "antigenic imprinting," goes back to the 1950s and offers an appealingly parsimonious explanation for the W-shaped curve. If it is correct, Earn wrote, it means that your risk of dying from the flu has everything to do with the biological "distance" between your first flu and the one you happen to be sick with right now.

IN THE FALL OF 1889, A NEW FLU BROKE OUT IN St. Petersburg, Russia. Quickly, the flu spread west. (It may have actually already made its way through India and Central Asia before being reported in Russia.) Though it wasn't as deadly as the 1918 flu, the flu of 1889 and 1890 is recognized as the first pandemic of the connected world. Extensive railroads linked the countries of Europe, and the United States was less than a week away by boat. In just four months, the "Russian flu" had gone full circle around the world. Little Adolfo was probably exposed when the flu hit Italy in 1890; he was not yet one year old.

"If the hypothesis is correct, Adolfo's immune system was imprinted by the pandemic of '89–90," says Craig. When the 1918 flu, which was presumably a different subtype, came along, his body tried to fight it off, but brought the wrong weapons: "His body was responding, but it was primed to respond to the other flu. It didn't deal well with the flu that he encountered in 1918."

To test this hypothesis, Alain Gagnon, a professor of demography at the University of Montreal, along with Earn and other colleagues, looked for similar mortality patterns in other flu pandemics. Their results suggest that the 1918 flu was not unique: People born near the time of the 1918 pandemic were likelier to die during a 1957 "Asian flu" pandemic, and people born during that outbreak, in turn, were at greater risk during the 2009 swine flu pandemic.

A study published in *Science* in 2016 gave new support to the imprinting hypothesis. In that study, researchers looked at flu infection data from China, Egypt, Cambodia, Indonesia, Thailand and Vietnam. They figured out the "first flus" for every birth year between 1918 and 2015 and then compared that data against flu illnesses and deaths for two different flu types. Just as the imprinting hypothesis predicted, people were more likely to get seriously ill or die from flu subtypes that were very different from their first flu.

These correlations are suggestive, but they aren't conclusive, points out immunologist Matthew Miller, who collaborates with Gagnon and Earn at McMaster. "We see it in epidemiological data, but there's still not a biological explanation of what's causing that to happen." And the epidemiological data still leave key questions open: Perhaps the critical flu exposure happens before a baby is even born, says Miller, when a pregnant woman is infected with flu, sapping her body of resources that would normally be directed to the developing fetus. Or perhaps being exposed to any virulent disease as a baby imparts a lifelong fragility, normally invisible, that makes a person more vulnerable to future illness of any kind. Miller and his colleagues are currently working on testing these ideas.

Yet Miller can sketch out a rough story of what might have happened to Adolfo and other young-adult victims of the 1918 flu, if the "first flu" imprinting hypothesis is correct. "People who were exposed to the 1890 virus would have made antibodies against that virus and T-cells against that virus," says Miller, describing proteins and immune cells that fight off infections. When the 1918 flu came around, their bodies could have responded with a rush of antibodies and T-cells that "remembered" the earlier flu. But the defensive assault might backfire: The mismatched antibodies would be ineffective, and the T-cells could run riot, making the victim sicker and sicker.

There may be no single explanation for what made young people like Adolfo Sartini so vulnerable in 1918; imprinting probably combined with other factors to create a particularly deadly risk profile. After all, most people who got the 1918 flu, even those born around 1889 and 1890, recovered just fine.

But in Adolfo's story, Craig sees the shadow of MCL1 and wonders: Did MCL1 help his immune cells "remember" the Russian flu, and did that memory make it harder for him to clear the lung infection that took his life? Did it help unleash a deadly cytokine storm?

To Dockrell, it's plausible that, at a minimum, Adolfo's childhood infection with Russian flu may have made him more susceptible to complications of Spanish flu. In fact, in still-unpublished research, Dockrell and his colleagues have found that the flu virus can dial up MCL1 in lung cells, possibly making them more vulnerable to bacterial infections like pneumonia.

"This is total speculation, but in my mind the immune imprinting hypothesis and the cytokine storm hypothesis are not mutually exclusive," Craig says. "They could both have been at work in 1918."

Whatever made the 1918 pandemic so deadly, one thing is clear: There will be a next time. And the more researchers know about what happened in 1918, the better prepared we will be to protect ourselves from future pandemics.

AFTER ADOLFO DIED IN VIRGINIA, HIS BODY was brought back to Boston, and he was buried at St. Michael Cemetery, a largely Italian cemetery about five miles south of downtown Boston and a few miles west of the Atlantic shoreline. On a chilly day in March, Craig and Bob met there and found Adolfo's grave, which is packed close with others dated 1918: young children, elderly people, and many in the prime of life, like Adolfo.

A century later, memories of the 1918 flu are mostly like this—gravestones, fading certificates, old Army trunks. But among the headstones at St. Michael, Adolfo's stands out. It is a granite cylinder carved with winding vines. At the top, it is cut rough. To Craig, it looks like a toppled column: a monument to a life built up and struck down. But the granite is surprisingly smooth, and the flowers she lays are fresh.

The story could begin again tomorrow. PCM

Ruth Craig '74 places flowers on the grave of Adolfo Sartini, who died of the Spanish flu in 1918.

Ideas@Pomona Summit

With featured speaker: Ari Shapiro, host of NPR's All Things Considered

The Ideas@Pomona Summit, Pomona's premier lifetime learning event, is an energetic, day-and-a-half conference dedicated to bringing together Pomona College alumni, parents and friends for a weekend of meaningful connection and active dialogue around timely, newsworthy and captivating ideas. It will take place **Oct. 25–26, 2019, at the Hyatt Centric Fisherman's Wharf in San Francisco**.

"Liberal Arts NOW and NEXT" will serve as the weekend's theme. What does cutting-edge research tell us about the NOW and the NEXT, about who we are and where we are going? How are liberal arts values such as critical thinking and creative learning being brought to bear on today's unique challenges and opportunities?

Featured speakers will include **Ari Shapiro**, host of NPR's *All Things Considered;* **Laszlo Bock** '93; **Martina Vandenberg** '90; **Liz Fosslien** '09; professors **Kevin Dettmar** and **Nicholas Ball;** and more.

The **Ideas@Pomona Summit** promises to curate the best content from around campus and the greater Pomona community to ignite discussion, share ideas and highlight exciting research and trends.

Registration opens spring 2019 at *www.pomona.edu/ideas-pomona-summit.*

Ari Shapiro

Alumni Travel Program

Andalucía: The Enduring Legacy of Islam April 4 to 12, 2020

The real charm of Andalucía lies in its countryside, featuring blindingly white mountain villages (the so-called pueblos blancos) and endless olive and almond groves. Infamous for its scalding summers, Andalucía is equally renowned for its mild springs, the perfect season for enjoying the countryside the way it is meant to be enjoyed: on foot. The southernmost tip of Andalucía greets its visitors with whitewashed splashes on its craggy hillsides and minarets reshaped into Christian bell towers. Herds of wild bulls roam the upland pastures, pigs root for acorns under isolated oak trees, and Egyptian vultures soar overhead. Hike by day and enjoy village life by night in the midst of a week-long festival leading up to holiest of Christian holidays: Easter. What better way to appreciate the uniqueness of the southwesternmost corner of Europe?

For complete tour information, please visit *www.pomona.edu/alumni-travel-program.*

PHELPS

GARVEY

EPPS

Alumni Service Awards

47 Chirps to our Alumni Distinguished Service Award Winners

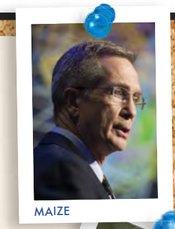
The 2019 Alumni Distinguished Service Award winners, selected by a committee of past Alumni Association presidents, are:

- **Lisa Prestwich Phelps** '79 P'12, who initiated the growing tradition of regional service events for 4/7 with the first-ever such event in Seattle and has served on the Alumni Association Board and class reunion committees.
- **Susanne Garvey** '74, who has served as a regional leader for Washington, D.C, an admissions volunteer over many years, and former Alumni Association president.
- **Faye Epps**, the first to receive a special honorary Alumni Distinguished Service Award in recognition of her tenure as the administrator for Pomona's alumni programs over four decades.

Blaisdell Awards

The 2019 Blaisdell Distinguished Alumni Award winners, selected by a committee of Alumni Association Board members for their contributions and achievements in their profession or community, are:

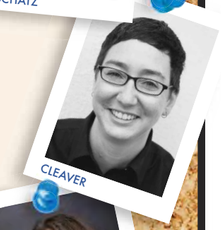
- **Earl Maize** '72, manager of the Cassini Program, a mission that began exploring the Saturn system in 2004 and concluded operations in 2017 with a spectacular plunge into Saturn's atmosphere.
- **Marilyn Ramenofsky** '69, Olympic medalist and former world-record holder in swimming, and researcher into the physiology and behavior of migratory birds.
- **Brian Schatz** '94, senior United States senator from Hawai'i, focusing on climate change, access to higher education, privacy and consumer rights, and health care.
- **Debra Cleaver** '99, founder and CEO of Vote.org, the leading nonpartisan, nonprofit organization increasing voter turnout.
- **Lynda Obst** '72, one of Hollywood's most successful film and television producers, known for *Interstellar, How to Lose a Guy in 10 Days, Sleepless in Seattle, The Fisher King,* and *Good Girls Revolt,* among many others.



MAIZE

RAMENOFSKY

SCHATZ



CLEAVER

OBST

4/7 #SagehenImpact

Sagehens turned out across the globe to celebrate Pomona's 4/7 Celebration of Sagehen Impact. Volunteer service events as near as Claremont and as far as Hong Kong brought enthusiastic alumni and parents to the Food Bank of the Rockies, the Sacred Heart Community Service Food Pantry, Teach4HK, Special Olympics and other impactful organizations. Others chirped across Sagehen social media about the ways they are changing their communities for the better.

Start planning your #SagehenImpact for next year's 4/7 at *www.pomona.edu/sagehenimpact*.

At left: Orange County Sagehens at a 4/7 event at the Back to Natives Nursery

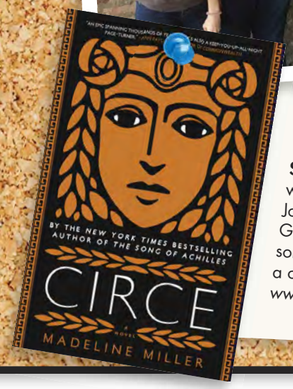
CONNECT EXPLORE INSPIRE

SAGEPOST 47

Mentor Current Students with SagePost47

Have you checked out SagePost47, Pomona's online platform that bridges the gap between students and alumni by fostering one-on-one connections and mentorships? Founded by an alumnus and a student in 2014, SagePost47 has grown to feature 100-plus alumni mentors, blogs, panel events and mock interviews. Learn more and sign up today at *sagepost47.com*

Pomona College Book Club of Chicago



Pomona College Book Club

Seeking your next spring novel and a way to connect with fellow Sagehens? Join the Pomona College Book Club on Goodreads to chat with alumni, professors, students, parents and staff around a common love of reading. Visit *www.pomona.edu/bookclub* or attend an in-person discussion in your city. This spring, we will be reading Madeline Miller's *Circe,* described by *The New York Times* as "a bold and subversive retelling of the goddess's story that manages to be both epic and intimate in its scope, recasting the most infamous female figure from the *Odyssey* as a hero in her own right" and named one of the best books of the year by NPR, *The Washington Post, Time, The Boston Globe* and many others.

Book Club Events Near You

Honolulu, HI – Saturday, May 18 | 2 p.m.
Los Angeles, CA – Sunday, May 19 | 2 p.m.
Chicago, IL – Saturday, May 25 | 2 p.m.
Shenzhen, China - Sunday, May 26 | 2 p.m.
Austin, TX – Sunday, June 2 | 2 p.m.
Seattle, WA – Sunday, June 2 | 2 p.m.
Denver, CO – Monday, June 3 | 6 p.m.
Washington, DC – Thursday, June 13 | 7 p.m.
Pittsburgh, PA – Saturday, June 22 | 2 p.m.
St. Paul, MN – Saturday, June 22 | 7 p.m.

Class Notes only available in print edition

SHARE YOUR NEWS HERE!

New job? Interesting hobby? Travel stories? Cool photos? Share your news with your classmates through *PCM* Class Notes.

Email: *pcmnotes@pomona.edu*

Mail: Class Notes Editor
Pomona College Magazine
550 N. College Ave.
Claremont, CA 91711

Class Notes only available in print edition

Mike Budenholzer '92

Coach of the Year—Again

Milwaukee Bucks Head Coach Mike Budenholzer '92 was already the talk of the NBA before his selection in April by a vote of his fellow NBA coaches to receive their Coach of the Year award for 2019.

"In less than a year since taking over as head coach," Matt Velazquez in the *Milwaukee Journal Sentinel* wrote the day the award was announced, "Budenholzer has totally transformed the Bucks. They went from being one of the worst defensive teams to the best in the NBA. They rebound at a high level, they don't foul and they punish opponents with a potent offensive attack built on points in the paint and letting three-pointers fly. After years of up-and-down play, the Bucks were consistent on their way to recording the best record in the league this season. They lost two games in a row just one time and won the season series against every Eastern Conference foe. Budenholzer's schemes, love of efficiency in all aspects of life and individual development— known as 'vitamins'— are hallmarks of his philosophy that have paid dividends since the day he arrived in Milwaukee last spring."

In his first year with the Bucks, Budenholzer guided his team to a league-best record of 60-22 and the top seed in the playoffs. The last time Milwaukee had 60 regular season wins was almost 40 years ago, in 1980–81, the era of Marques Johnson, Bob Lanier and Sidney Moncrief. This year's record was a 16-victory improvement over last season and gave the Bucks their first divisional title since 2000–01. The Bucks were the only team to rank in the top four in both offensive and defensive ratings, and had the best net rating in the NBA.

Still described occasionally as a "disciple" or "acolyte" of the legendary Coach Pop—Gregg Popovich of the San Antonio Spurs (and previously the Pomona-Pitzer Sagehens)—under whom he served as assistant coach for almost two decades before getting his first head coaching opportunity with the Atlanta Spurs, today Budenholzer has earned his own three-letter nickname—"Bud"—and has emerged as a coaching force in his own right, though he still attributes much of his success to learning at the feet of the master.

Of course, all he did in Atlanta was lead the Hawks to four playoffs and record the team's first 60-win season while being named 2015 Coach of the Year. Last year, however, with the Hawks in a rebuilding mode, Budenholzer decided that the time was right to move on—and the offer from the Bucks was the perfect next step.

AP Photo/Aaron Gash

As with Coach Pop, Budenholzer brings to the team not only a deep understanding of the game, but also a host of intangibles that sports writers struggle to describe. Take, for instance, his reputation for making strange faces in the heat of the moment.

"Though friendly with the media, Budenholzer has long eschewed the spotlight, as Pop always taught his staff to do," reports Chris Ballard '95 in *Sports Illustrated*. "Fairly or not, what Bud may be best known for—outside his coaching—are his facial expressions. The cameras started picking them up in San Antonio. His greatest hits include: Disappointed Dad; Dude-Cut-Me-Off-on-the-Merge; Man-Trying-to-Decipher-Legal-Document; and Just-Watched-a-Bull-Gore-Someone. Observers delight in captioning them on Twitter. An example, from Rob Perez of the Action Network: 'I swear every time Mike Budenholzer is on camera he looks like he just watched the stampede scene from *The Lion King*.'"

At the same time, however, that naked authenticity seems to be one of the keys to his success as a coach. Ballard quotes Utah Jazz guard Kyle Korver, who played for Budenholzer in Atlanta: "One of the best parts about playing for him is watching him in the film sessions. But that's how his heart feels, man! He cares so much and he's just so disgusted with what's going on in the court, but it's so genuine. He's just someone you want to follow because he's not just a good person, but he's great at his craft."

Personally, Budenholzer had previously expressed his hope that the Coach of the Year award this year would go to his former assistant, Kenny Atkinson, for the job he's done as head coach of the Brooklyn Nets.

"It is an incredible honor to be recognized by your peers, and that makes this award truly special," Budenholzer said after the award was announced. "Thank you to my colleagues across the NBA, and most importantly thank you to our players and staff in Milwaukee. The players' and staffs' work this year has given our team and our fans a very special season."

—Mark Wood

Scott Kratz '92

Spanning the Divide

Scott Kratz '92 was having breakfast with a good friend, who at the time was director of D.C.'s Office of Planning, when he asked an offhand question about all the construction going on with an old bridge over the Anacostia River. To his surprise, Harriet Tregoning began to lay out her dream for transforming that old span into a park.

"You want to help?," she asked.

That was six years ago. Kratz, a history major in his Pomona days, eventually quit his job at D.C.'s National Building Museum to lead an effort that now employs nine full-time staffers and has set a $139 million goal that includes bricks and mortar as well as investments in nearby neighborhoods to ensure local residents can thrive in place by the time it opens in 2023.

Along with lots of good press, the project has drawn financial backing from the city, foundations and corporations as well, with Building Bridges Across the River, (a nonprofit where Kratz is vice president), so far securing $85 million of the needed funding while engaging the community in a positive vision for the future.

Ambitions for the 11th Street Bridge Project were big from the start. Take an abandoned bridge connecting the well-off Capitol Hill and Navy Yard neighborhoods to low-income and often overlooked Anacostia. Turn it into a vibrant park devoted to recreation, environmental education and the arts. And, in some way, help bring the city together.

Plans soon grew even more ambitious. During one of the 1,000 community meetings held to date, one thing became clear: there were much greater needs in Anacostia—for wealth creation, housing, jobs and more. The effort shifted toward the concept of equitable development, with the aim of getting ahead of gentrification and potential displacement. The key question: "Who is this for?" asks Kratz, noting the massive disparity in household incomes between the mostly white area west of the river and mostly black Anacostia to the east.

Some of the answers: launch workforce development efforts to help people get jobs in fields such as construction, start a homebuyers club and a community land trust, a mechanism that allows people with limited incomes to become homeowners. (Simply put, buyers purchase the house, but the trust owns the land beneath it, which reduces the price. Deed restrictions limit buyers to those within a certain level of income.) Already, 71 renters have become homeowners. Long-term plans call for 1,000 units of affordable housing. Kratz recently piloted 5-to-1 matched savings accounts for 110 east-of-the-river families to support access to college.

Of course, economic justice isn't the only aim of the project. Everything from urban agriculture to an environmental education center to public art and performance space are part of the plan.

This may sound like a lot for one span to hold, but for Kratz it's not so much about the bridge as the communities it will connect. Kratz notes how D.C. is booming, with a growing population, but areas such as Anacostia have been left behind.

"It's really tempting to think, 'This isn't our job,'" says Kratz. But "if we don't get this right, then we're probably not going to get it right in this city."

—Mark Kendall

Class Notes only available in print edition

Class Notes only available in print edition

Class Notes only available in print edition

Class Notes only available in print edition

4/7 Day

As Sagehens around the globe—from Claremont to Hong Kong—volunteered for community service projects in honor of 4/7 Day, the campus celebration was designed for a lighter purpose—to give current students a chance to shed some of their mid-term stress. For a day—Sunday, April 7—Marston Quad took on a carnival atmosphere with everything from a zipline and a rock-climbing wall to a petting zoo and a range of food trucks—all in honor of Cecil's favorite number, 47.

Photos by Kristopher Vargas and Jeremy Snyder '19

Pomona College
333 North College Way, Claremont, CA 91711
Change Service Requested

Nonprofit Organization
U.S. Postage
PAID
Claremont, CA 91711
Permit No. 17