

UCLA College Magazine

SUMMER 2018

WHAT IF?

PHYSICAL SCIENTISTS TAKE ON THE
WORLD'S GREATEST CHALLENGES





The Deans of the UCLA College
From left to right:

Miguel García-Garibay
Dean of Physical Sciences

Darnell Hunt
Dean of Social Sciences

Patricia Turner
Senior Dean
Dean and Vice Provost for
Undergraduate Education

David Schaberg
Dean of Humanities

Victoria Sork
Dean of Life Sciences

WHAT IF THE IMPROBABLE WERE POSSIBLE?

What if we found life on other planets? What if we could cure the deadliest forms of cancer? What if we uncovered some of the greatest mysteries in history? What if we could solve intractable societal issues such as homelessness or poverty?

At the UCLA College, we ask “what if” questions every day — because we are curious and we know that nothing is possible until it is. And there is no greater concentration of explorers and pioneers than at universities like UCLA.

At the center of this issue, we proudly introduce you to UCLA researchers exploring fundamental mysteries in the physical sciences, from the earth’s core to the outer reaches of the universe, from the supermassive to the subatomic.

They are just a handful of the curious who are working tirelessly to find solutions that will someday save lives, ensure a healthy planet for future generations, and turn the impossible into the inevitable.

We hope you will be as inspired by their work as we are.



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#1

in Forbes' ranking of the 300 best value colleges and universities in the United States

#2

among U.S. public universities and No. 9 among all universities worldwide, public or private, in Times Higher Education World Reputation Rankings.

UCLA TOP RANKINGS

UCLA is one of the world's premier universities, according to leading academics from around the world. In the newest Times Higher Education World Reputation Rankings, UCLA placed No. 2 among U.S. public universities and No. 9 among all universities worldwide, public or private. UCLA joins the top 10 for the first time since 2014.

The reputation survey is completed by more than 10,000 senior academics from 138 countries. The questionnaire targets published scholars for their views on excellence in research and teaching within their disciplines and at institutions with which they are familiar.

This year UCLA also placed No. 1 in *Forbes'* 2018 ranking of the 300 best value

colleges and universities in the U.S. The University of California system excelled in the rankings, placing six campuses in the top 20, including UC Berkeley at No. 2.

The *Forbes* rankings were based on alumni earnings (20 percent of the total ranking), net price (20 percent), school quality (20 percent), net student debt (20 percent), timely graduation (10 percent) and the number of Pell Grant recipients (10 percent).

UCLA consistently performs well in multiple rankings that use a wide range of criteria. Last fall, UCLA was named the No. 1 public institution in the nation in *U.S. News & World Report* Best Colleges rankings and the *Wall Street Journal/Times* Higher Education Top Colleges rankings.

PROFESSOR WINS NATION'S LEADING TEACHING AWARD

California Professor of the Year **Neil Garg** is the 2018 recipient of the prestigious Robert Foster Cherry Award for Great Teaching. Given once every two years, the award honors extraordinary, inspiring teachers who have a positive, long-lasting effect on students and a record of distinguished scholarship. Through Baylor University's Cherry Award program, Garg was awarded a \$250,000 prize and the chemistry and biochemistry department will receive \$35,000, which they will put toward the creation of an Education Innovation Fund.

See Garg, a professor of chemistry who has been on faculty since 2007, share teaching secrets in this TEDxUCLA talk: <https://youtu.be/cs95YQLpSjo>



Neil Garg (in jacket and tie) at Baylor University with some of his former UCLA students, who flew to Waco, Texas, to support their favorite professor.

NEW CLIMATE SCIENCE DEGREE ESTABLISHED

UCLA's leadership in environmental research and sustainability took another step forward with a new bachelor's degree in **climate science**. Housed in the department of atmospheric and oceanic sciences — which was tied for the No. 1 department of its kind

in rankings by the National Research Council — the program will be among the world's first major programs in climate science.

The new program will complement UCLA's existing major in environmental sciences, which had its largest enrollment ever in 2017–18. Many students have expressed interest in targeting their studies more specifically to climate change.

The degree program will provide undergraduates with the necessary scientific understanding to assess the effects of climate change, both from human activity and from natural climate variability. It also will provide students with the knowledge and tools to communicate effectively on the subject with decision-makers in the public and private sectors.



A student researcher in the Gulf of Mexico

See a 'spectacular' lunar meteorite at UCLA's Meteorite Gallery

The UCLA Meteorite Gallery has acquired a rare lunar meteorite that was blasted off the moon by the impact of a large meteoroid. Named "La'gad," the 185-gram meteorite eventually made its way to the Earth, landing in North Africa's western Sahara Desert; it was recovered in 2015.

"This is probably the most spectacular lunar meteorite in a museum anywhere in the world," said John Wasson, the gallery's curator and a professor of geochemistry and chemistry.

The La'gad lunar meteorite can be seen along with rare Martian meteorites and about 100 samples of various asteroids in UCLA's Meteorite Gallery, which is located in the Geology building (just southwest of the corner of Hilgard and Westholme avenues) in room 3697. The gallery is open to the public weekdays from 9 a.m. to 4 p.m. and Sundays from 1 to 4 p.m. On Sundays, volunteer docents staff the gallery. Admission is free.



FACULTY, STAFF AND STUDENT HONORS

Faculty awarded Guggenheim Fellowships

Three professors were awarded fellowships from the John Simon Guggenheim Memorial Foundation, chosen from a group of almost 3,000 applicants.

Professor of history **Nile Green** focuses on the globalization of Islam and Muslims. His writings endeavor to bring global history into conversation with Islamic history, spanning the domains of global, social, religious, cultural and literary history. Green will use his Guggenheim Fellowship to complete a concise book that asks what global Islam is and where it came from.

Professor **Eleanor Kaufman** teaches in the departments of English, comparative literature, and French and Francophone studies. Her primary research is on 20th-century French philosophy, with secondary interests in medieval and late-antique philosophy and monotheistic theology. Her current project, which the award will help support, is called "Structure: A Counterhistory of Twentieth-Century French Philosophy."

Stefania Tutino, a professor of history and Italian, focuses primarily on ecclesiastical history in early modern Europe. As a Guggenheim fellow, she plans to finish a book project centered on a 17th-century forgery case that provoked a 20-year-long, uniquely intricate, and at-times dramatic debate in the Roman Curia over the authenticity of the documents on which the forgery was based.

Professors elected to the National Academy of Sciences

Two professors in the College were elected to the National Academy of Sciences. Membership in the academy is one of the highest honors a U.S. scientist can receive.

Utpal Banerjee is the Irving and Jean Stone Endowed Professor of Life Sciences and a distinguished professor in the department of molecular, cell and developmental biology, and of biological chemistry in the David Geffen School of Medicine. He is also co-director of the Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research.



His laboratory works to identify basic molecular strategies that are conserved in development across species. He also spearheaded an approach that takes undergraduate students into a lab to conduct hands-on research.

Andrea Bertozzi is a distinguished professor of mathematics in the College and of mechanical and aerospace engineering in the UCLA Samueli School of Engineering.

Bertozzi holds UCLA's Betsy Wood Knapp Chair for Innovation and Creativity and is a member of the California NanoSystems Institute. She is also UCLA's director of applied mathematics.

She is leading UCLA's new Simons Mathematical NanoSystems Initiative, with support from the Simons Foundation's Math+X Investigator. The initiative focuses on two areas of research: understanding science at the nanoscale through advances in imaging and sensing technology, and the development of micro-scale microfluidic engineering and device design.

In addition to conducting research on nanoscale imaging, Bertozzi plans to develop mathematical theories for behavior of complex fluids in microfluidic geometries in which the physics might be balanced with thermal effects, surface tension effects, contact line dynamics, magnetic forces and other physics relevant to small devices that could have many useful applications.



Utpal Banerjee, left, and Andrea Bertozzi



Philippe Bourgois, left, and Rosa Matzkin

Professors elected to American Academy of Arts and Sciences

Professor in residence of psychiatry and biobehavioral sciences **Philippe Bourgois** and professor of economics **Rosa Matzkin** were elected to the American Academy of Arts and Sciences.

Bourgois, a professor in the departments of anthropology and sociology in the College, is leading a new initiative documenting the intersection between mental illness, poverty, incarceration, homelessness and racism in Los Angeles.

Matzkin's research has been aimed at creating a tight connection between econometrics and economic theory. Econometrics harnesses mathematics and statistical methods to quantify economic phenomena into empirical data, turning theoretical models into useful tools for economic policymaking.

Five faculty members awarded Sloan Research Fellowships

Five professors were selected to receive 2018 Sloan Research Fellowships. UCLA is tied for third in the number of faculty honored this year by the Alfred P. Sloan Foundation, which selects early-career scientists and scholars who are rising stars of science.

Daniele Biachi, assistant professor of atmospheric and oceanic sciences, studies how physics, chemistry and biology come together to regulate ocean ecosystems, and seeks to learn how they might change in the future.

Jingyi "Jessica" Li, assistant professor of statistics, conducts research at the intersection of statistics and biology. She and her research team, which is called the Junction of Statistics and Biology, develop new statistical methods for understanding biological questions, especially those related to large-scale genomic data.

Hosea Nelson, assistant professor of chemistry and biochemistry, focuses his

research on the discovery of new chemical reactions that will enable the efficient and environmentally benign syntheses of fuels, materials and medicines.

Carolyn Parkinson, assistant professor of psychology, studies how our brains allow us to represent and navigate the social world. Her computational social neuroscience laboratory takes an approach to research that integrates theory and methods from cognitive neuroscience, machine learning, social network analysis and social psychology.

Assistant professor of biochemistry and chemistry and John McTague Career Development Chair **Ellen Sletten** develops molecules, methods and materials to enhance visualization and delivery of therapeutics.

Faculty receive Howard Hughes Medical Institute grants

Paul Barber and **Robert Wayne**, both professors of ecology and evolutionary biology, have been selected by the Howard Hughes Medical Institute as HHMI professors. Barber will receive \$1 million over five years and Wayne will share \$1.5 million over five years with Beth Shapiro, professor of ecology and evolutionary biology at UC Santa Cruz, to develop new interdisciplinary approaches to important challenges in science education. The awards recognize excellence in research and education.

UCLA is tied for second in the United States in the number of 2017 recipients.



Robert Wayne, left, and Paul Barber

UCLA Academic Senate recognizes commitment to diversity

The UCLA Academic Senate and its Committee on Diversity, Equity, and Inclusion honored students, faculty and staff with Diversity, Equity, and Inclusion (DEI) Awards for their contributions to furthering a diverse, impartial and inclusive environment at UCLA.

Victoria Sork, dean of the life sciences division and professor of ecology and evolutionary biology, is this year's Faculty Career Commitment to Diversity DEI Award recipient. Among her efforts to promote diversity, the committee recognized her launch of a broad search to recruit outstanding scientists who also had a commitment to mentoring underrepresented minority students.

In recognition of disparity in the retention of undergraduates from underrepresented backgrounds, Sork also hosted workshops to help faculty build inclusive learning environments. Nearly 150 faculty in the life and physical sciences have participated in workshops and reported a transformation in their attitudes and practices.

In addition, Sork developed the nationally recognized Center for Educational Innovation and Learning in the Sciences (CEILS) to help faculty, postdocs and graduate students access support for implementation of best practices in teaching and mentoring students from all backgrounds.

Other 2018 honorees from the College are undergraduate student award recipient **David Nguyen**; staff award recipient **Erin O'Leary Sanders**, adjunct professor and director of CEILS; Faculty Community Service and Praxis DEI Award recipient **Denise Chavira**, professor of psychology; and Faculty Student Development DEI Award recipient **Heather Maynard**, professor of chemistry and biochemistry.

Professor named Cottrell Scholar honoring early-career scientists

Alexander Spokoyny, assistant professor of chemistry and biochemistry and member of the California NanoSystems Institute, is among 24 early-career scientists nationally to be selected as a 2018 Cottrell Scholar. Spokoyny will receive \$100,000 to support his research on nanomaterials based on inorganic clusters.

He will use part of the award to support the UCLA Prison Education Program, of which he is a faculty team member. Launched in 2016, the program focuses on improving literacy in science, technology, engineering and mathematics among Southern California prison inmates in the California Institute for Women in Corona and the Barry J. Nidorf Juvenile Hall in Sylmar.

GIVE THE DEVIL HIS DUE

In new book, UCLA professor says Satan was not originally presented as the implacable enemy of God

By Jessica Wolf

Modern Judeo-Christian rhetoric and

imagery purport that Satan is an evil opponent to all that is good and godly — a literal opponent of God.

But that characterization doesn't hold up under critical scrutiny of the Bible, says Henry Ansgar Kelly, UCLA distinguished research professor of English and one of the world's leading experts on Satan. His 2006 book *Satan: A Biography* was a top seller for Cambridge University Press.

His latest book, *Satan in the Bible, God's Minister of Justice*, combs through all the relevant passages of the Old and New testaments, tracking evidence of stories of the devil we think we know. The early appearances of the word "satan," when literally translated from Hebrew, simply mean "adversary." None of the passages that use the word refer to an inherently evil spirit, Kelly said.

"A frequent assumption about Satan is not only that he is as bad as can be, but also that he has always been considered this bad," Kelly said. "I have been researching and writing about the devil for over 50 years now, and have been making many of the same points without really being able to get across my main point, that no matter when we have heard about Satan and his nature and history, and activities, most them are not to be found in the Bible, where he is a much different person."

Looking back through the Old and New testaments, Kelly said it becomes clear that Satan, no matter what we may think of him or imagine him to be now, was not originally presented as the implacable enemy of God, but rather God's heavenly assistant in dealing with human beings.

As Kelly contends, Satan is more like an old-guard authority figure committed to the status quo and as such is an obstructor of social welfare or change — such as the ideas preached by Jesus. Satan is looking out for God's interests and is distrustful of humans, but that doesn't necessarily make him "evil" per se.

"In our government, he would correspond to the head of the Department of Justice, the attorney general," Kelly said.

In his book, Kelly looks at the ways in which later interpretations of and additions to the Old and New testaments, as well as post-biblical texts — some from as late as the 10th century A.D. — led to an evolving image of Satan.

Questioning the identity of the serpent

Even the notion that Satan assumed the guise of a serpent to play a role in the Judeo-Christian idea of "original sin" when Adam and Eve ate of the forbidden fruit in the Garden of Eden doesn't hold up under a critical lens, Kelly said. While the story of



Adam and Eve leads off the Book of Genesis, there is no reference to it in the rest of the Old Testament, which indicates that it was a late insertion. And in the original story there was certainly no connection of the serpent with Satan.

"I conclude that Satan was not associated with Adam until the second century A.D., when the Samaritan philosopher Justin Martyr identified him with the serpent," Kelly said. "I like to say that Justin was a good Samaritan but a bad philosopher. He was also, more importantly, a bad linguist. The reason he was convinced that the serpent was Satan was that he believed Jesus said so."

Kelly outlines that Martyr came to his conclusion by way of folk etymology. The Hebrew word "satan" had given way to Aramaic "satanah," which in the Greek New Testament is rendered as "satanas." Martyr thought that when Jesus named the devil "Satanas," he was calling him "Satah Nahash," which means "apostate serpent" in Hebrew.

Martyr found verification of this idea in the Book of Wisdom in the Greek Old Testament, which says that death entered the world through the envy of a devil ("diabolos"), but that text was referencing Cain, the first killer, who murdered his brother Abel.

Study of the Bible in school

Fostering research about religious ideals and practices is very important, since religion is such an integral aspect of human culture, said Kelly, who studied as a Jesuit in the 1960s. He has been teaching at UCLA for 50 years and said he is grateful for the existence of UCLA's Center for the Study of Religion.

"One should think that studying and teaching about the Bible's formation, content and influence would be a very big part of university education," Kelly said, "but partially because of misguided ideas of the separation of church and state very few people are exposed to sophisticated examinations of the Bible, and most are left with childhood instruction or vague allusions they have picked up on their own."

Christian and Jewish scholars tend to agree it's best to read the Bible along with notes that explain the scholarship behind the text — something like the *New Oxford Annotated Bible*, he said.

"The Bible, and especially the New Testament, is arguably the most influential book in the whole of human history," Kelly said. "But most people don't have a clue about the huge amount of scholarship that has gone into explaining it."



Henry Kelly's five-plus decades of studying Satan have made him one of the world's leading experts. *Satan in the Bible, God's Minister of Justice* is his latest book.

GENES IN SONGBIRDS HOLD CLUES ABOUT HUMAN SPEECH DISORDERS

By Stuart Wolpert

Insights into how songbirds learn to sing

provide promising clues about human speech disorders and may lead to new ways of treating them, according to new research published in the journal *eLife*.

There are about 9,000 species of birds, about half of which are songbirds. When these birds sing, the activity of a master gene called FoxP2 declines in a key region of the brain involved in vocal control known as Area X. The decrease in FoxP2 produces changes in the activity of thousands of other genes.

FoxP2 also plays an important role in speech in humans. Stephanie White, a professor of integrative biology and physiology and senior author of the study, thinks FoxP2 and the changes it causes could be a part of the molecular basis for vocal learning. In both humans and birds, cells process this gene in a way that produces both a full-length protein and a shorter version of the protein. The long version regulates other genes; what the short version does remains a mystery. Humans with a mutation in the long version have problems with their speech.

To prevent this decline in Area X, White's research team used methods similar to human gene therapy to insert a version of FoxP2 in male zebra finches. After doing so, when the birds sang, instead of their FoxP2 levels declining, the levels remained high. This uncoupling of FoxP2 levels from the birds' singing impaired their song learning.

"In a sense, this may be the molecular version of 'practice makes perfect,' and why one needs to repeat motor skills over and over to learn them, rather than just having someone tell you," White said.



Stephanie White

New treatment possibilities for humans

Few treatments for language impairments have been developed, White said, because scientists have only a poor understanding of the molecular basis for vocal communication. The findings of this study could lead to the creation of new treatments for speech problems in people, including children with autism and people with mutated versions of FoxP2. White is interested in human behavior, but said humans are difficult to study at the cellular and synaptic level.

Through trial-and-error practice during a critical period, the birds develop a song suitable for courtship. Songbirds, much like in humans, have a critical period in youth when they are best at learning vocal

communication skills. In birds, this is when they learn a song they will use later in life as a courtship song. In humans, this is when language skills are most easily learned. After this critical period ends, it is more difficult for people to learn languages, and for certain bird species to learn their songs. Male zebra finches learn to sing a courtship song from 35 to 100 days after hatching.

White and her colleagues set out to identify how FoxP2 affects thousands of other genes in zebra finches before and after the critical period for learning closes.

"We found sets of genes in young birds whose levels change when they sing, and are linked to learning," said White, who is also a member of UCLA's Brain Research Institute. "These patterns disappear in older birds. Many of these genes are essential to human language development."

New drugs could be next

The researchers found that applying methods similar to gene therapy to the long version of FoxP2 disrupted learning. To their surprise, applying the methods to the short version did not. Instead, it led to songs with less variability between renditions.

"We identified networks of genes involved in critical-period vocal learning, including human speech-related genes," White said. "Pharmacologically targeting these pathways could lead to the development of new drugs to treat communication deficits in humans."

The scientists studied thousands of genes in Area X that are an important part of the bird's song circuitry. (Area X is located in the male finch's basal ganglia, beneath the brain's cortex.)

These genes in Area X change in a coordinated way, much like an orchestra being led

by a conductor, with FoxP2 as the conductor, White said.

"It's not that all the genes (or instrumentalists) became loud or became quiet; it's that they change in a coordinated way," White said. "We refer to these as 'suites of genes,' and one of these suites of genes is highly correlated to learning in young birds."

The research was federally funded by the National Institutes of Health.

Co-authors are Xinshu Xiao, UCLA professor of integrative biology and physiology; Zachary Burkett, a former member of White's research team; Nancy Day, a postdoctoral scholar in White's laboratory; Todd Kimball and Caitlin Aamodt, graduate students in White's laboratory; Jonathan Heston, a former member of White's research team; and Austin Hilliard, a former graduate student in White's laboratory.



To understand the molecular basis for vocal communication, UCLA biologists studied the courtship songs of male zebra finches.

MOVING HOLLYWOOD BEYOND 'BLACK PANTHER'

Alumnae share entertainment industry experiences during launch of UCLA's Hollywood Diversity Report

By Jessica Wolf

Two remarkable UCLA alums working in the film and television industries hope that Hollywood is leaping toward a “movement,” not just a “moment” when it comes to celebrating and investing in diversity.

As part of the recent launch of UCLA's fifth annual Hollywood Diversity Report, Darnell Hunt, dean of the division of social sciences in the UCLA College, welcomed to campus Gina Prince-Bythewood and Felicia D. Henderson to talk about diversity issues in film and television.

Prince-Bythewood is writer-director of the award-winning 2000 film *Love and Basketball* as well as *Beyond the Lights* and *The Secret Life of Bees*. Her upcoming projects include a film adaptation of author Roxane Gay's debut novel, *An Untamed State*. Prince-Bythewood is also the first African-American woman to direct a major-studio superhero film, as she takes the helm of Sony's *Silver and Black*, set in the Spider-Man universe.

Henderson is the creator and executive producer of the BET drama *The Quad* and co-executive producer of Netflix's *The Punisher*. Her credits also include *Fringe*, *Gossip Girl* and the seminal Showtime series *Soul Food*.

“We are seeing a change, but not consistent change,” Henderson said, pointing to the fact that 2013 was a banner year for filmmakers of color, but one that did not play out in the following years. “The more you see a success story like *Black Panther*, while you celebrate it, it also freaks you completely out, because you don't want it to just be a moment.”

Henderson noted the powerful marketing and budget around *Black Panther*, and the ways in which stars like *Black-ish*'s Tracee Ellis Ross got behind the film — even buying out theaters in neighborhoods so members

of the black community could see it.

“How do you make it a consistent change or ‘normal’ to have such movies as opposed to a moment?” said Henderson to the audience of people from campus and the industry at the Meyer and Renee Luskin Conference and Guest Center. “How do we do that so it's a movement instead of a moment?”

Answering that question and others that seek to explain Hollywood's slow progress toward gender and racial parity is what makes the Hollywood Diversity Report and its year-over-year tracking incredibly important, she said.

As this year's Hollywood Diversity Report shows, white men still fill a majority of credited roles in front of and behind the camera. And their continued domination of executive suites has a major influence on what kind of projects get a green light, Prince-Bythewood said.

She shared her experience pitching *An Untamed State* to several studios. Prince-Bythewood is an award-winning writer and director, the book upon which the project is based is a critically acclaimed best-seller, and also attached to the project is a three-time Academy Award nominee, Michael De Luca. The book and film are a survival story about a Haitian-American woman who is abducted, tortured and raped as she is held for ransom.

Prince-Bythewood said the first three pitch meetings were to rooms of white men, who listened politely, but were clearly uninterested.

But there was a palpable difference in the tone of the meeting when she pitched to Fox Searchlight, where the decision makers were two women of color. They bought the project before the meeting was over.

“It was one of the best experiences of my life,” Prince-Bythewood said. “They just got it. They just felt it in their souls. We're passionate

about this project, but they might even be more passionate about it. The people we are pitching to, who are sitting across from us, they are going to greenlight what they respond to.”

Inclusion riders

During her Oscar acceptance speech this year, Frances McDormand, star of *Three Billboards Outside of Ebbing, Missouri*, called for the industry to use “inclusion riders,” contracts that would require film and television projects to aim for gender and racial parity both on screen and off.

This is something Henderson committed to 15 years ago with *Soul Food*, requiring that half of all the episode directors in the series be women.

“I got a call from the Directors Guild marveling that just by me doing that, the number of female directors in that year went up 75 percent,” Henderson said. “That should not be. Things should not be so dismal that one showrunner's choices can make that big of a difference.”

Another UCLA alumna, Ava DuVernay, who directed this spring's *A Wrinkle in Time*, has taken steps to increase representation behind the camera. The first African-American woman to helm a film with a budget of more than \$100 million, DuVernay required all her department heads to be prepared to show proof that they had considered women and people of color for jobs. On her television show *Queen Sugar*, all the episodes have been directed by women.

Henderson observed that women and people of color are making more progress in television, pointing to Shonda Rhimes as an example. She said she hopes that film and television artists and producers embrace the creation of storylines and casting that



Gina Prince-Bythewood, left, talks with UCLA Dean Darnell Hunt and Felicia D. Henderson about representation in Hollywood.

specifically highlight the cultures, behaviors and belief systems of people of color.

Experience is at the center

Henderson said that for executives, the easiest way to show diversity is to hire some black people, which is one of the reasons numbers continue to improve for this segment of the population in Hollywood. But if all characters are written with homogenous behavior and attitudes, that's not really diversity, she contended.

Despite *Soul Food's* critical and popular success, Henderson said doors didn't exactly fling open for her ideas.

"I thought, 'Oh my gosh, I'm just going to be able to pitch all kinds of stories about black folks; this is going to be amazing,'" she said. "And yet what I found literally for five years of trying to pitch things that had the black experience at the center of it was excuses for *Soul Food's* success, rather than a desire to extend it. I got a lot of, 'Well, it was cable so you could depend on language and nudity,' as if my storytelling depended on those things, which is incredibly offensive."

When asked for advice for students or

aspiring artists, Prince-Bythewood said passion and stamina are key.

"*Love and Basketball* took a year and a half, every studio turned it down, and then with *Beyond the Lights*, everyone turned that down twice," she said. "You will get a thousand 'nos' in this business so make sure you are passionate about the story you want to tell because that's going to get you up off the floor and keep fighting."

Henderson pointed out that for artists of color there is a different reality at play, especially when they are the only person of color in a room.

"I always tell my students, you do not have to be the smartest person in the room, but you do need to be the one who works the hardest," she said. "Particularly for a person of color, just being as good as everyone else is not good enough."

A sense of humor is critical, Henderson said. As the only African-American writer for *The Punisher*, all eyes often turn to her when discussing plotlines for the show's only African-American character.

"I just pick up my cellphone and go, 'hold on, I have to call the committee,'" she joked.



Five Years of Progress and Missed Opportunities

Every year for the past five years, the Hollywood Diversity Report has examined

relationships between diversity and the bottom line in the Hollywood entertainment industry.

To read this year's report, go to <https://socialsciences.ucla.edu/hollywood-diversity-report-2018>

LEARNING HISTORY FROM HOLOCAUST SURVIVORS

By Rayna Jackson

UCLA's freshman seminar, Fiat Lux, partners with student-run Bearing Witness program to bring Holocaust survivors to campus

**Carol Roth
with students**

At age 15, Ann Signett was surrounded by war. Every morning she would go out on her balcony and watch B-17 bombers as they flew over her hometown of Rome during World War II.

Knowing that German occupation meant death for his Jewish family, Signett's father led them to the mountain village of Alvito, 100 miles away. There they were sheltered by a Catholic family for 10 months.

Signett's story is just one of the personal histories shared with more than 100 students through UCLA's student-run Bearing Witness program and the Fiat Lux seminar, "Bearing Witness: Interviewing Holocaust Survivors."

Bearing Witness hosted four sessions at UCLA Hillel during which students met one-on-one with a group of 25 survivors.

The students listen, learn, record and "bear witness" to the unique histories presented to them.

With every passing year, there is urgency on the part of survivors to get their message out. The oldest is 105 and the youngest is 76.

Signett, now 89 and surrounded by UCLA students, shared her story with the hope that it will never be forgotten.

"I survived because I was hidden," she said. "But there are survivors who survived the death camps. I was never in a death camp. I was the lucky one."

A group of 20 students learned more about the Holocaust as part of a Fiat Lux seminar taught by professor Todd Presner, who is the Sady and Ludwig Kahn Director at the UCLA Alan D. Leve Center for Jewish Studies.



Holocaust survivor Ann Signett shared her personal history with students as part of UCLA's student-run Bearing Witness program.

Presner has partnered with the Bearing Witness program for the last 10 years because he wants to engage students early in their academic careers. As part of his seminar, freshmen discuss historical issues and oral histories, and visit the Los Angeles Museum of the Holocaust.

"Several students, year after year, come back and talk about their experience," he said. "It deepens their interest in history, their interest in social justice issues, and their interest in community engagement."

Students stand with survivors

Nadine Avari, a freshman in the UCLA College and originally from Pakistan, was immediately drawn to the Fiat Lux course. It offered her the perfect opportunity to interact with and learn directly from Holocaust survivors.

Before coming to UCLA, Avari says she had neither experienced much diversity nor met anyone from the Jewish community.

"Many freshmen come from really small, closed communities with narrow viewpoints," Avari said. "UCLA is a diverse campus and hearing about the survivors' experiences is an opportunity for students to be open and experience cultural diversity."

Now, after studying the Holocaust in Presner's class and hearing survivors' personal testimonies, Avari said she feels empowered to "bear witness" on their behalf.

"There are people who disagree that the Holocaust happened," Avari said. "And I can say, 'No, I heard it firsthand from someone who went through it.' No one can argue with that."

Carol Roth, 76, is the youngest of the survivors. While Roth calls herself the "baby" of the group, she says that as long as she is living, it's her responsibility to both educate a new generation and fight Holocaust deniers.

With a shaky voice, Roth tells students of the day she was walking on the beach with her husband and saw a blimp in the sky that read, "The Holocaust never happened."

"I started crying because it was horrendous," said Roth, who is originally from Couillet, Belgium. "It's real, believe me. My mother was arrested by Nazis on the bus only because



she was Jewish. They took her to the concentration camp Auschwitz. She was never heard from again."

Honoring a disappearing generation

Sonia Khrapkova, 80, and a native of Stalingrad, Russia (now Volgograd), is also a child survivor.

In one session with students, Khrapkova shared a sobering reality. "We will go, my generation," Khrapkova said. "I'm 80 and soon there will be no people to talk to you."

Although Khrapkova was 4 years old when the Germans arrived in Stalingrad, she tells students that she remembers details from 76 years ago "like it was yesterday."

She recalled her family's escape during the decisive Battle of Stalingrad.

"We put logs together, and we were on the Volga River," Khrapkova said. "We were running and running. The pilots were flying above us; the river was burning; the city was so slippery from the blood."

Senior Daniella Chernak, a communication major and co-chair of the Bearing Witness program, understands the importance of personally hearing stories from survivors like Khrapkova.

"We are the last generation to bear witness to survivor testimonials and stories firsthand," Chernak said. "Day after day, week after week, survivors actively choose to relive the unimaginable hardships of their lives by sharing them with us."

When Khrapkova continued her story, she spoke of fleeing to Kyrgyzstan and eventually Ukraine. It was there, in a small forest,

that she witnessed Jewish parents and their children digging their own graves and being buried alive.

"I remember the earth looked like it was breathing," said Khrapkova, whose family was fortunate enough to survive.

Khrapkova's tragic memories have endured throughout the decades and are now in the hands of a new generation.

"Hearing survivor testimonial is a constant reminder that we cannot stand idly by while others face atrocities," Chernak said. "The hundreds of students who participate each year leave the program more open-minded, knowledgeable and committed to stopping biased injustices."

Today, Khrapkova says that Bearing Witness gives her hope that this period of history will not be forgotten and will live long after she is gone.

"These UCLA students brought back my faith in the future generation," Khrapkova said. "I am proud."

LEARN MORE:

Download the *Light out of Darkness* app from iTunes. In this interactive documentary, Andrew Rosenstein '16 captures the stories of 16 Bearing Witness survivors.

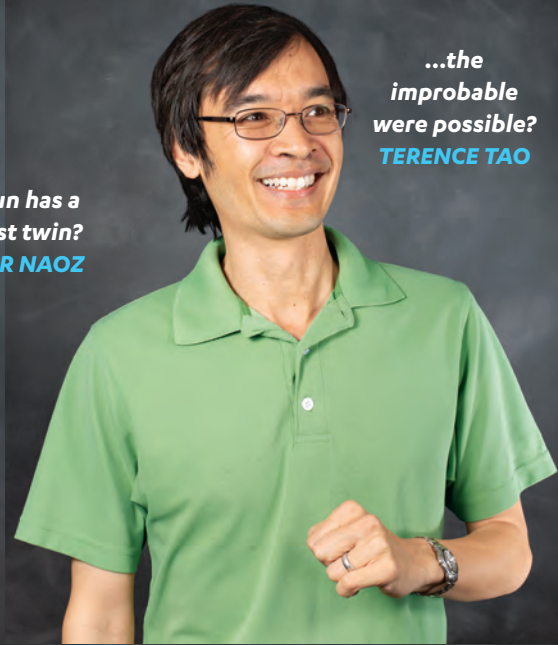
Watch interviews and read the story of Ann Signett (formerly Anna Bondi) on the Museum of Jewish Heritage website at <https://bit.ly/2vG3oJr>



...our cities could adapt to climate change and become environmentally sustainable?
ALEX HALL



...the sun has a long-lost twin?
SMADAR NAOZ

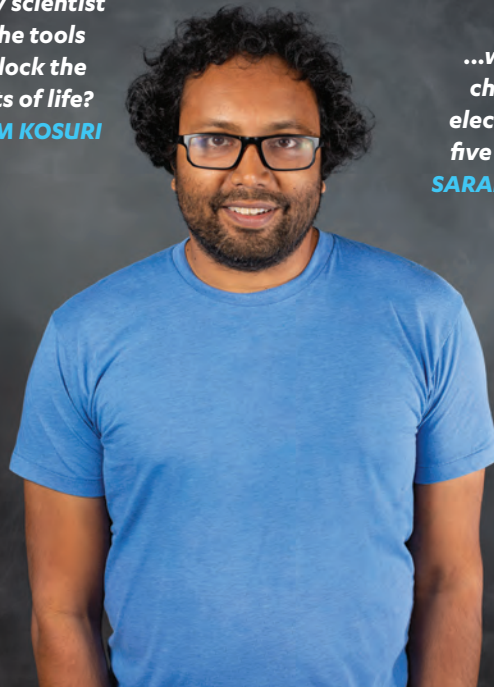


...the improbable were possible?
TERENCE TAO



...we could make space tourism and flights to Mars safe by predicting space weather?
VASSILIS ANGELOPOULOS

...every scientist had the tools to unlock the secrets of life?
SRIRAM KOSURI



...we could charge an electric car in five minutes?
SARAH TOLBERT



WHAT IF?



...we could predict landslides after an earthquake?
SEULGI MOON

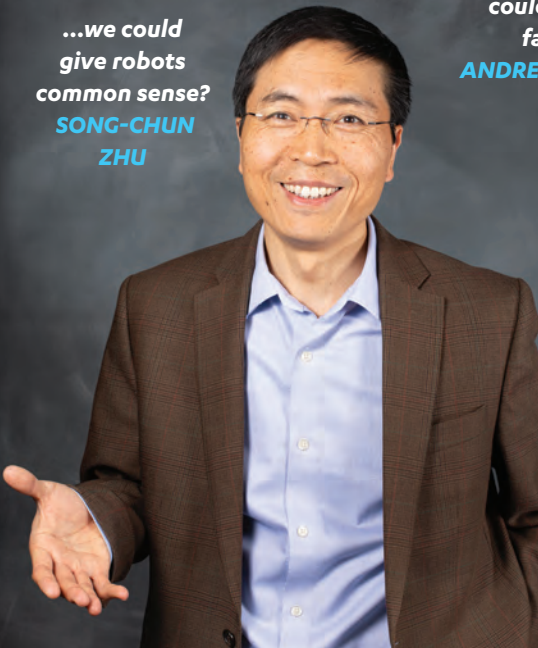
...we could monitor the effects of climate change on plants around the world?
JOCHEN STUTZ



...the power of physics could control molecules that improve computing?
ERIC HUDSON



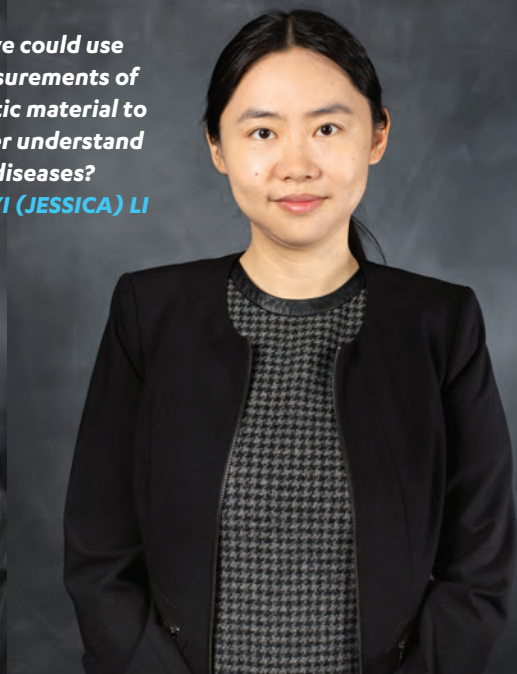
...we could give robots common sense?
SONG-CHUN ZHU



...robot bees could prevent famine?
ANDREA BERTOZZI



...we could use measurements of genetic material to better understand diseases?
JINGYI (JESSICA) LI



SCIENTISTS IN THE DIVISION OF PHYSICAL SCIENCES ARE ON A QUEST TO SOLVE THE SEEMINGLY IMPOSSIBLE, STARTING BY ASKING, "WHAT IF...?" THEIR ANSWERS LEAD TO BREAKTHROUGHS THAT ARE IMPROVING DAILY LIVES, PRESERVING THE HEALTH OF THE PLANET AND REVEALING THE MYSTERIES OF THE UNIVERSE.



FROM THE SUBATOMIC TO THE SUPERMASSIVE, FROM PURE AND APPLIED MATHEMATICS TO KNOWLEDGE THAT IMMEDIATELY IMPACTS DAILY LIVES

WHAT IF THE POWER OF PHYSICS COULD CONTROL MOLECULES THAT IMPROVE COMPUTING? UCLA physicists, led by professor **Eric Hudson**, have pioneered a method for creating and controlling unique molecules that could eventually have applications in computing. The discovery could ultimately be used to create a quantum computer capable of quickly performing calculations, such as drug and material design, which are beyond the reach of even supercomputers.

WHAT IF WE COULD STOP PROSTATE CANCER IN ITS TRACKS? Chemistry professor **Mike Jung** has created molecules in his lab that have become new drugs that are allowing men with prostate cancer, the most common cancer among men in the U.S., to live longer and healthier lives.



Every three minutes a man is diagnosed with prostate cancer. According to the American Cancer Society, more than 160,000 men in the U.S. are diagnosed with prostate cancer annually.

WHAT IF WE COULD PREDICT LANDSLIDES AFTER AN EARTHQUAKE? Assistant professor of geology **Seulgi Moon** was part of a team that devised a mathematical model to identify unstable hills and mountains prone to landslides following an earthquake. Their work is helping to determine whether it is safe to return to an area after an earthquake and helping builders and planners identify safer building zones.



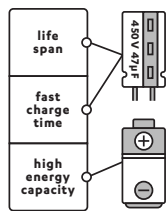
WHAT IF WE COULD CURE BIG DISEASES BY STUDYING THE SMALLEST THINGS? Assistant professor **Jose Rodriguez** pioneered a technique called micro-electron diffraction (MicroED). His lab in the Department of Chemistry and Biochemistry focuses on amyloid proteins, which are responsible for neurodegenerative disorders like Alzheimer's and Parkinson's disease. With MicroED, electrons can now be used to pinpoint the exact location of atoms in these disease-causing prions, offering exciting new prospects for treatment. The technique is more cost-effective and accessible, meaning scientists around the world can use the technology to collaborate in finding cures for an array of diseases.

WHAT IF WE COULD USE MEASUREMENTS OF GENETIC MATERIAL TO BETTER UNDERSTAND DISEASES? Assistant professor of statistics **Jingyi (Jessica) Li** conducts research at the intersection of statistics and biology. She and her research team develop new statistical methods that serve as effective tools for biomedical researchers to uncover hidden information from genomic data, such as identifying important genes associated with various animal tissues and cells; discovering and quantifying mRNA from RNA sequencing data; and capturing and investigating complex gene interactions.



WHAT IF WE COULD GIVE ROBOTS COMMON SENSE? Professor **Song-Chun Zhu** leads the UCLA Center for Vision, Cognition, Learning, and Autonomy, which is striving to develop a statistical framework for general artificial intelligence. He hopes to enable physical robots and virtual agents to represent, acquire and reason with common sense in daily living, such as making coffee and shaking hands.

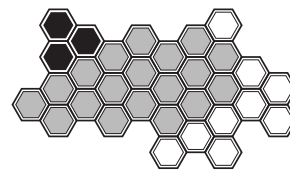
WHAT IF WE COULD CHARGE AN ELECTRIC CAR IN FIVE MINUTES? Professor of chemistry and biochemistry **Sarah Tolbert** uses chemistry to control the structure of materials from the level of atoms all the way up to macroscale, which allows her to create materials with fundamental new functionality. For example, she can make batteries that can charge in just a few minutes and window glass that doesn't conduct heat so that it keeps the cold out in winter.



Tolbert and her team work toward developing energy-storage devices that combine the high capacity of a battery with the fast-charge times and longevity of capacitors.

WHAT IF EVERY SCIENTIST HAD THE TOOLS TO UNLOCK THE SECRETS OF LIFE? Researchers led by UCLA assistant professor of chemistry and biochemistry **Sriram Kosuri** have pioneered a new technique that could enable scientists in any typical biochemistry laboratory to make their own gene sequences for about \$2 per gene instead of the current price tag of between \$50 and \$100 per gene. By making the process more affordable, a greater number of scientists will be able to use gene sequencing to screen for genes' roles in diseases and important biological processes.

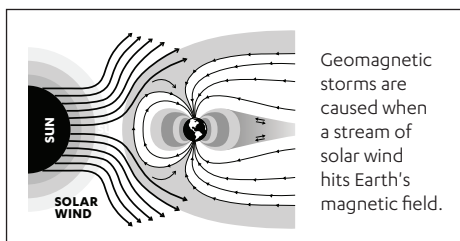
WHAT IF ROBOT BEES COULD PREVENT FAMINE? Pollinating bees are crucial to our food supply yet are increasingly endangered. Mathematics professor **Andrea Bertozzi** is designing algorithms for autonomous robots, like robot bees, so that a group of them can "swarm" around a crop field for pollination purposes.



Beekeepers report 30-90% annual loss of their colonies.

1 in 3 meals eaten by humans is made possible by honeybees

WHAT IF WE COULD MONITOR THE EFFECTS OF CLIMATE CHANGE ON PLANTS AROUND THE WORLD? Atmospheric and Oceanic Sciences professor **Jochen Stutz** hopes to monitor the health of all plant life on Earth by developing technology that measures the light emitted during photosynthesis (known as solar induced fluorescence). Stutz believes that measuring this fluorescence can provide scientists with a more accurate picture of how plants react to climate change and how this influences our planet's health.



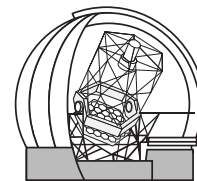
WHAT IF THE IMPROBABLE WERE POSSIBLE? The 200-year-old Navier-Stokes equations explore how all fluids behave and are used to model everything from ocean currents to the flow of blood in the body. At our current level of understanding, it is possible (though highly improbable) that fluids could explode by acquiring velocities so large that the laws of fluid dynamics no longer apply. The extreme challenge for theoretical mathematicians like **Terence Tao** is to determine if the Navier-Stokes equations always have solutions that last for indefinite periods of time. Whoever is the first to prove or disprove this stands to win a \$1-million Millennium Prize endowed by the Clay Mathematics Institute.

WHAT IF OUR CITIES COULD ADAPT TO CLIMATE CHANGE AND BECOME ENVIRONMENTALLY SUSTAINABLE? Research by UCLA climate scientists, led by professor **Alex Hall** in the Department of Atmospheric and Oceanic Sciences, projects that California will experience a much greater frequency of drought and flood by the end of the century. Hall is using his models to convince decision-makers of the need for sustainable environmental policies that would allow communities to weather climate change, and begin to reverse it.

WHAT IF WE COULD MAKE SPACE TOURISM AND FLIGHTS TO MARS SAFE BY PREDICTING SPACE WEATHER? With the advent of space tourism and a greater reliance on satellites, understanding space weather is becoming increasingly important to our society. **Vassilis Angelopoulos**, a professor in the Department of Earth, Planetary, and Space Sciences, studies space weather and how it can be predicted. His work could lead to an early warning system that would not only protect technology here on Earth, but allow safe travel between planets.

WHAT IF THE SUN HAS A LONG-LOST TWIN? Most if not all stars are binary, meaning there are two of them at birth, but decades of sky surveys have yet to find our Sun's long-lost twin. Professor **Smadar Naoz** in the Department of Physics & Astronomy is studying the complex interactions between planets and host stars when a stellar companion is present. Her research aims to uncover new information about the evolution of our solar system and that of multi-planet systems elsewhere in the Universe.

WHAT IF EINSTEIN'S THEORY OF RELATIVITY IS INCOMPLETE? Astrophysicist **Andrea Ghez**, director of the UCLA Galactic Center Group, is using Adaptive Optics to study the movement of stars and the supermassive black hole at the center of our galaxy. This work is advancing our understanding of gravity, which cannot be fully explained by Einstein's theory of general relativity.



For over two decades, the UCLA Galactic Center Group has been using the 10m Keck I and Keck II telescopes, mapping the orbits of objects within one parsec of the Galactic center.



JULIAN SCHWINGER LOUNGE Our cover photo shoot took place in the Julian Schwinger Lounge, located in the Mani L. Bhaumik Institute for Theoretical Physics in the UCLA Physics and Astronomy Building. The institute was made possible by an \$11 million gift to UCLA from physicist and philanthropist Mani Bhaumik.

To learn more, please visit:
<https://www.college.ucla.edu/what-if/>
To learn more about the Division of Physical Sciences, please visit:
<https://www.physicalsciences.ucla.edu/>

UCLA PHYSICAL SCIENCES: ONE OF THE MOST DIVERSE, PRODUCTIVE AND CREATIVE GROUPS OF CURIOSITY-DRIVEN SCIENTISTS ANYWHERE

GRANT FROM THE ARNOLD FOUNDATION EMPOWERS SOCIETAL CHANGE

By Margaret MacDonald

Thanks to major funding from the Laura and John Arnold Foundation (LJAF), the California Policy Lab (CPL) is proving to be an innovative force. With sites at UCLA and UC Berkeley, CPL is helping state and local governments solve urgent issues affecting millions of Californians, including homelessness, poverty, crime, low wages and education inequality.

First set up as a pilot in February 2017, CPL pairs policymakers with social science researchers at UCLA to generate evidence-based policy recommendations and innovative solutions to persistent social problems.

CPL was established with a \$2 million pilot grant from LJAF, with \$1 million grants each to UCLA and UC Berkeley. Following the success of the pilot phase, the foundation recently awarded CPL an additional \$5.5 million, with \$2.85 million for the UCLA site to advance its work through April 2020. The latest grant requires both sites to raise matching funds, with UCLA's requirement totaling \$1.85 million.

"We're extremely grateful to the Arnold Foundation for their vote of confidence in UCLA," said Darnell Hunt, dean of the social sciences division. "This renewed support underscores the power of the social sciences to change lives and better our communities."

From the lab to the street

Due to its size, California is fertile ground for the "policy lab" model. The state is experiencing large-scale shifts in economic and social policy, sparking new interest in evidence-based policy among California's policymakers.

"It can be difficult to detect whether a government program or policy actually



improves outcomes," said economics professor and CPL faculty director Till von Wachter.

But top research universities like UCLA can help move the needle, he said.

"We have the intellectual resources to help think through complicated data questions with our partners and collaborate with them to design research projects that can untangle complex issues, advance our knowledge and potentially transform policy," von Wachter said.

Working closely with state and local government departments, CPL has launched more than a dozen research projects in five focus areas: criminal justice, the social safety net, homelessness/high-need populations, labor/employment and education. Partners have included the Los Angeles Homelessness Initiative; the LA City Council, mayor's office and police department; and the California Employment Development Department.

Some of this work is already having an impact. For example, CPL and its research partners at the University of Chicago worked with LA County to develop an early-concept algorithm to predict first-time homelessness among individuals receiving county services. The research team hopes to implement the algorithm in early 2019 to help the region

target homeless prevention resources. CPL was also selected to evaluate a new family homeless prevention program.

"The California Policy Lab is taking on projects with real-world impact," said Michelle Welch, director of Results-Driven Government for the Laura and John Arnold Foundation. "If the lab is successful in using data and state-of-the-art research tools to move the needle on important issues like homelessness, fewer people will be sleeping on the streets at night."

Pairing policymakers with researchers

California Policy Lab's model is designed to reduce the barriers to effective partnerships between UCLA and government partners. The lab has its own data hub, full-time analysts, IT staff and research staff who can respond nimbly to partners.

To learn more, please contact Kate Hawthorne at (310) 825-8654 or khawthorne@support.ucla.edu, or visit <https://www.capolicylab.org>.

ALUMNUS NATHAN MYHRVOLD ESTABLISHES GRADUATE FELLOWSHIP IN DEPARTMENT OF EARTH, PLANETARY, AND SPACE SCIENCES

By Margaret MacDonald

Business leader, author and prolific inventor

Nathan Myhrvold was only 19 years old when he graduated from UCLA with both a bachelor's degree in mathematics and a master's in geophysics and space physics.

This year he established the Nathan P. Myhrvold Graduate Fellowship in his home department of Earth, Planetary, and Space Sciences. His gift was augmented by two matching fund programs for graduate student support — from the UCLA Chancellor's Centennial Scholars Match and from the dean of physical sciences — bringing the total endowment to just over \$1 million.

"We are so grateful for Nathan's generosity and his support of the department's mission," department chair Jean-Luc Margot said. "He appreciates the incalculable value of our graduate students. Thanks to him our research and teaching got a tremendous boost."

The Myhrvold Fellowship is open to UCLA graduate students who conduct research in earth, planetary and space sciences, including related fields such as paleontology, astrobiology and SETI (Search for Extra-Terrestrial Intelligence). The fellowship is currently supporting students studying asteroid properties, a research topic of interest to Myhrvold, who regularly comes to campus to discuss the project with them.

"Graduate students are an incredibly important part of the university workforce and research machinery," Myhrvold said. "There are lots of ways to give back, but very few have as much leverage or impact as supporting graduate students."

Myhrvold should know, having spent a number of years as a graduate student himself. As well as his UCLA master's degree, he earned a master's degree in mathematical

economics and a doctorate degree in theoretical and mathematical physics from Princeton University.

Myhrvold subsequently worked as a post-doctoral fellow at the University of Cambridge under the late Stephen Hawking before founding a software company acquired by Microsoft in 1986. That marked the start of his 14-year career at Microsoft, which in turn led to many of the company's most successful product launches and the founding of Microsoft Research. In 2000 he founded Intellectual Ventures, which manages one of the largest and fastest-growing intellectual property portfolios in the world.

A critical need

Regarding his recent gift to UCLA, Myhrvold encouraged anyone who remembers what it was like being a graduate student to consider supporting graduate fellowships.

"The graduate students I've met at UCLA are great, they're smart, they're eager," he said. "Supporting fellowships is a terrific opportunity to make a major impact at top research institutions like UCLA."

A lifelong learner with seemingly boundless curiosity, Myhrvold has become an expert photographer, paleontologist and chef. He has published numerous academic essays and an acclaimed 2,438-page cookbook, and participates in annual fossil-hunting expeditions in Montana.

Myhrvold delivered the UCLA College 2015 commencement keynote, in which he urged graduates to pursue their passions and not worry too much about failure.

"It turns out that if you try to do anything interesting or hard in life, you're going to fail sometimes. And I think one of the most important aspects of life is how you cope with failures."



Nathan Myhrvold

GIFT FROM 'A TRUE CHAMPION OF THE PHYSICAL SCIENCES'

By Ariel Okamoto
and Margaret MacDonald

Physicist and former UCLA postdoctoral fellow Mani Bhaumik has given \$2 million to the division of physical sciences, offering students new resources.

Half of the gift, when combined with matching funds offered by the UCLA Chancellor's Centennial Scholars Match and the dean of physical sciences, will establish the Mani L. Bhaumik Graduate Fellowship in Theoretical Physics in the Department of Physics and Astronomy.

The other \$1 million supports the creation of the Mani L. Bhaumik Centennial Collaboratory, a dedicated study and collaboration space in Young Hall. Available mainly to students studying chemistry and biochemistry, the 6,500-square-foot space, which recently began construction, will serve as a resource for the entire physical sciences division. Other donors have stepped up with major contributions to support the collaboratory, including Dongwon Yoo and Jim and Barbara Tsay.



Mani L. Bhaumik

A legacy of giving

Bhaumik's latest contributions follow his \$11-million gift in 2016 establishing the Mani L. Bhaumik Institute for Theoretical Physics — the largest gift in the history of the division of physical sciences. He previously established the Mani L. Bhaumik Presidential Chair in Theoretical Physics and supported the work of physics professor Zvi Bern, now the director of the Bhaumik Institute.

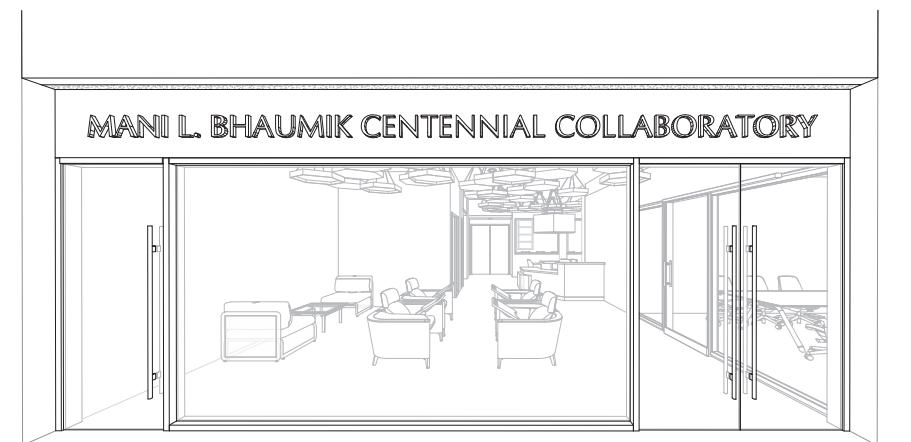
"Mani Bhaumik is a true champion of the physical sciences and of UCLA," said Miguel García-Garibay, dean of the physical sciences division. "His generosity and vision will undoubtedly benefit generations of faculty and students in ways we can't yet imagine."

Rising to the challenge

Bhaumik rose from poverty to become an eminent scientist who played a key role in developing the laser technology that paved the way for Lasik eye surgery. As a member of the UCLA Physical Sciences board of advisors, Bhaumik has witnessed declining funding for scientific research from state and federal government, particularly in the field of theoretical physics.

"It's very difficult to raise funds for this area, because people don't understand what theoretical physicists do," he said. "But physics holds the answers to the most fundamental questions of our very existence. Imagine what could be solved right here at UCLA."

To learn more, please contact Brooke Sanders at (310) 794-9045 or bsanders@support.ucla.edu.



Rendering of the Mani L. Bhaumik Centennial Collaboratory

UCLA PROFESSOR EMERITUS ENDOWS FACULTY CHAIR IN MATHEMATICS

By Ariel Okamoto and Margaret MacDonald

The UCLA College Department of Mathematics received a \$1 million gift from Professor Emeritus Masamichi Takesaki to endow a new faculty chair, only the third such chair in the history of the department. Funds associated with the Yuki, Kyoko and Masamichi Takesaki Chair in Operator Algebras will enable the department to recruit and retain top professors, strengthen teaching and support research in the field of operator algebras.

“Professor Takesaki has established a stellar legacy at UCLA, not only through his own career but also through his generous philanthropy,” said Miguel García-Garibay, dean of the physical sciences division.

Takesaki’s recent generosity extends his previous investment in his home department. In 2004 he established the Kristyn Yuki Takesaki Endowed Fund, which has partially

sponsored a workshop series in mathematical topics related to operator algebras, such as von Neumann algebras and group theory.

“All of us in the department are profoundly honored by Professor Takesaki’s gift,” said Bill Duke, professor and department chair. “It will help ensure UCLA remains one of the best places in the world to study mathematics.”

Excellence in mathematics

Takesaki earned his bachelor’s, master’s and doctorate in mathematics from Tohoku University in Japan and joined the UCLA mathematics faculty in 1970. An expert in functional analysis and operator algebras, he had a highly distinguished career and obtained several fundamental results that now bear his name. His honors included a 1973 Guggenheim Fellowship and election to the inaugural class of American

Mathematical Society fellows in 2013. Retired since 2004, he occasionally returns to campus from his home in Japan for math conferences and other events.

“This gift is a way to express gratitude to UCLA and to contribute to mathematics long after I’m gone,” Takesaki said. “My wife, Kyoko, and I want to ensure that the field of operator algebras continues to flourish.”

UCLA’s math department is home

to world-renowned faculty, a highly ranked graduate program and excellent undergraduate education. Numerous faculty honors include the Fields Medal and prestigious awards such as the Nobel, Crafoord and Gauss prizes.

The department administers the Curtis Center, dedicated to education and K-12 outreach activities, and is closely affiliated with the Institute for Pure and Applied Mathematics at UCLA.

- **No. 6 mathematics department** - 2017 Academic Ranking of World Universities
- **Youngest of the top mathematics departments in the U.S.**, with its first Ph.D. awarded in 1947
- **50 faculty and 72 assistant adjunct professors, postdoctoral fellows, lecturers and visiting faculty**
- **Received the 2007 American Mathematical Society’s Award** for an Exemplary Program or Achievement in a Mathematics Department



Masamichi and Kyoko Takesaki



INSPIRED

EXCELLENCE

*In UCLA College commencement ceremonies held across campus,
the class of 2018 heard from a crop of distinguished alumni.*

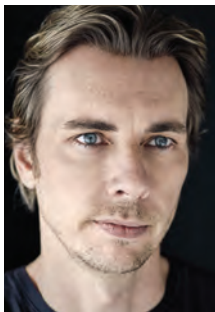


ALUMNI DISTINGUISHED
SPEAKERS BY CEREMONY >>



THE ACCOMPLISHMENTS
OF THE CLASS OF 2018
WERE CELEBRATED IN
CEREMONIES HELD ACROSS
CAMPUS JUNE 15-17, 2018.

ANTHROPOLOGY



DAX SHEPARD '00

While attending UCLA, Detroit native Dax Shepard trained at The Groundlings Theater for improv and sketch comedy and landed his first TV role on *Punk'd* in 2003. Since then Shepard has appeared in multiple films, including *Without a Paddle*, *Idiocracy*, *Employee of the Month*, *Baby Mama*, *The Judge* and *This Is Where I Leave You*. He wrote, directed and starred in the films *CHiPS*, *Hit and Run* and *Brother's Justice*

(co-directed by David Palmer). He also starred in the network television drama *Parenthood*, for which he received a 2015 People's Choice Award nomination.

Shepard will star in Fox's upcoming comedy pilot, *Bless This Mess*, opposite Lake Bell. He also recently launched *Armchair Expert*, a podcast in which he talks with some of the most iconic creative personalities from around the world.

"I have had a disproportionate amount of luck and good fortune, but the cornerstone of my self-esteem is the accomplishment of having attended UCLA."

13,000 APPROXIMATE NUMBER OF BACHELOR'S, MASTER'S, DOCTORAL AND PROFESSIONAL DEGREES UCLA EXPECTS TO CONFER IN 2017-2018

CHEMISTRY AND BIOCHEMISTRY



HARLAN C. AMSTUTZ '53, M.D. '56

Harlan C. Amstutz was a standout athlete at UCLA, playing basketball for Coach John Wooden. He also played on the volleyball team and worked as a lifeguard. After earning Phi Beta Kappa honors in chemistry, he attended the UCLA School of Medicine where he worked on one of the first heart bypass machines and became fascinated with research that has proven to be his life's puzzle.

Currently founding director of the Joint Replacement Institute at St. Vincent Medical Center in Los Angeles, Amstutz trained to be an orthopedic surgeon at the Hospital for Special Surgery in New York, served two years as an Air Force captain at the hospital at Minot Air Force Base, and was awarded an NIH fellowship at the Royal National Orthopaedic Hospital in London. He then returned to the Hospital for Special Surgery where he established one of the country's first bioengineering laboratories. His work led to the first total hip replacement in the U.S., the design and manufacture of the prostheses and ultimately to the hip resurfacing procedure.

Amstutz was named Outstanding Alumnus by the Hospital for Special Surgery in 2010. He is an honorary member of the German Orthopaedic Society as well as one of the few foreign orthopedists to be named a member of the Royal College of Surgeons of England. He has published more than 350 scientific papers and is the author of two books.

"UCLA has provided me with a long-term stimulus for education and knowledge, for which I am eternally grateful. I am proud to claim it as my unofficial home for 28 years, first as an undergraduate, then a graduate and ultimately as a faculty member. So many wonderful memories!"

COMMUNICATION



ROSIE O'NEILL '00, M.B.A. '05

Rosie O'Neill is the co-founder and co-CEO of Sugarfina, a fast-growing luxury confections brand. Inspired by a third-date screening of *Willy Wonka and the Chocolate Factory*, O'Neill and her co-founder and fiancé, Josh Resnick, dreamed up a "candy boutique for grown-ups" featuring the finest sweets from artisan candy makers around the world. With more than 50 retail locations

across North America, Sugarfina has built a reputation as the category disruptor in the \$200-billion confections industry and was recently named to *Fast Company's* "World's 50 Most Innovative Companies" and "World's 10 Most Innovative Retailers."

Prior to founding Sugarfina, O'Neill was director of marketing for Barbie at Mattel for seven years, leading a global business unit that sold more than 50 million Barbie dolls annually. Before that she was an account manager at CarryOn Communications, where she worked on public relations campaigns for consumer brands like Nature Made vitamins, Got Milk? and Razor scooters.

O'Neill was named to *Fast Company's* "100 Most Creative People" and Goldman Sachs' "100 Most Intriguing Entrepreneurs," and she holds nine design patents for her innovative packaging creations at Sugarfina. In her free time, she loves to cook, shop the flower market and research obscure facts on the internet.

"Coming from a small high school, I felt UCLA was a shining beacon of opportunity and a window to the bigger world around me. Every time I step onto campus, I still get that same feeling of empowerment – that through education and connecting with a thriving community of leaders, I can accomplish anything."



EARTH, PLANETARY, AND SPACE SCIENCES



CHARLES ELACHI M.S. '83

Charles Elachi is professor emeritus of electrical engineering and planetary science at the California Institute of Technology. From 2001 to 2016 he was the director of the Jet Propulsion Laboratory and vice president of the California Institute of Technology. During his 16-year tenure, he oversaw the development and operations of more than 45 flight missions and instruments. He was

a principal investigator on a number of NASA studies and flight projects, including the Shuttle Imaging Radar series, the Magellan Imaging Radar, the Cassini Titan Radar and the Europa Sounding Radar. He has authored more than 230 publications on active microwave remote sensing and electromagnetic theory and holds several patents in those fields.

In 1989 Elachi was elected to the National Academy of Engineering. His honors include the Space Foundation J.E. Hill Lifetime Space Achievement Award, the American Institute of Aeronautics and Astronautics Carl Sagan Award and the *Aviation Week* Lifetime Achievement Award. He is a three-time recipient of the NASA Outstanding Leadership Medal (1994, 2002 and 2004) and was awarded the NASA Exceptional Service Medal in 2005.

"I remember fondly my days in the EPSS department, particularly the field work. The education I received at UCLA was of tremendous help in my career at JPL in space exploration and enriched my scientific knowledge, considering that all my prior education had been in physics and engineering."

ECONOMICS



RON HAVNER '79

Ron Havner is chairman and chief executive officer of Public Storage. He joined Public Storage in 1986 and held a variety of senior management positions prior to his appointment as CEO in 2002. Public Storage is the largest self-storage company in the world, with 2,600 facilities in 38 states and seven Western European nations, more than 6,000 employees and

more than 1 million customers. Public Storage is a member of the S&P 500 and FT Global 500.

Havner is the former chairman of the National Association of Real Estate Investment Trusts and currently serves as a director of the Huntington Memorial Hospital in Pasadena. He graduated summa cum laude from UCLA in 1979. He and his wife LeeAnn were married in 1978 and have three children.

"I take great pride in having graduated from UCLA. It was an outstanding institution when I attended 40 years ago and has gotten better each year. I 'learned how to learn' at UCLA, and that has been invaluable."

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ENGLISH



MATEA GOLD '96

Matea Gold is the national political enterprise and investigations editor for *The Washington Post*. In that position she plays a leading role in some of *The Post's* most high-profile stories, helping guide coverage of the Russia investigation and President Trump's private businesses, while also overseeing the vetting of congressional and presidential candidates. Before moving

into an editing role in 2017, Gold spent two decades as a reporter – covering a wide range of stories that took her from the dusty squatter settlements of Tijuana to the smoldering ruins of New York's World Trade Center.

Gold joined *The Washington Post* in 2013 as a national reporter covering money in politics. She has written extensively about campaign finance and the Supreme Court's Citizens United decision. She was one of the first to trace the architecture of the Koch political network, led an effort to map the Clinton donor network and detailed how the Mercers built a populist power base in partnership with conservative strategist Stephen Bannon. Prior to joining *The Post*, Gold was a reporter at the *Los Angeles Times* for 17 years, beginning in the Metro section before moving on to the New York and Washington bureaus.

“Attending UCLA was a pivotal time in my life – one that gave me real-world experience that has been essential to my career as a journalist. I learned to write with precision and power. I was exposed to work that challenged me to think in new ways about our world and our history. As editor of The Daily Bruin, I learned how to cover a diverse community and witnessed the impact of independent, fearless reporting. Throughout it all, I made some of the best friendships of my life.”

HISTORY



LISA GREER '80

Lisa Greer is a philanthropist, investor and entrepreneur. She is an active real estate investor and the founder of CaregiversDirect, an online marketplace for home health-care and wellness providers. Previously she founded Beverly Hills Egg Donation, which helps people become parents through assisted reproductive technology. Prior to that, she led a management consulting and strategic advisory firm specializing in digital

media and entertainment. She also oversaw the development of the online and other business divisions as an executive at NBC and Universal Studios.

Parents of five children, Greer and her husband, Joshua, are proud and involved residents of Beverly Hills. She has served as an inaugural member of the Beverly Hills Cultural Heritage Commission, board member of the New Israel Fund and member of the Rotary Club of Beverly Hills. Greer leads the Cedars-Sinai Board of Governors. She is former president of Temple Emanuel of Beverly Hills and previously served on the boards of the LA District Attorney's Crime Prevention Foundation, the Jewish Community Foundation of Los Angeles, the Jerusalem Foundation, Make-A-Wish of Greater Los Angeles and the Girl Scouts of Greater Los Angeles.

“My UCLA experience provided me with the rock-solid base that enabled me to proudly and confidently become the person I am today. Those four years not only opened my mind to information, experiences and critical thinking but also gave me a safe environment to establish lifelong relationships, learn how to interact with the world around me and learn myriad life skills. I am grateful for the opportunity to have been part of this important institution.”

MATHEMATICS



NATALIE W. CRAWFORD '61

Natalie Crawford is an internationally recognized air and space expert with a career spanning more than 50 years at the RAND Corporation, where she is currently a senior fellow and holds the Distinguished Chair in Air and Space Policy. Crawford is an expert in attack and surveillance avionics, fighter and bomber aircraft performance, force modernization, and space systems and capabilities.

Since joining RAND in 1964, Crawford has had many leadership roles, including vice president and director of RAND Project AIR FORCE from 1997 to 2006. Her work has included studies on the role of air power for the 21st century, analysis of the results of the Gulf War air campaign, and assessment of the costs and risks associated with Advanced Tactical Fighter avionics.

Crawford received the U.S. Air Force Academy's 2012 Thomas D. White National Defense Award — an honor bestowed on very few civilians who have not served in government — for her contributions to national security. In 2011 she received the Air Force Association's Lifetime Achievement Award for her contributions to aerospace science and technology. She has also received the Secretary of Defense Medal for Exceptional Public Service, the National Defense Industrial Association's Lifetime Achievement Award, and the Vance R. Wanner Memorial Award from the Military Operations Research Society. She was twice awarded the Department of the Air Force Decoration for Exceptional Civilian Service, in 1995 and 2003.

"I entered UCLA with a love of mathematics. My professors expanded my understanding of what mathematics encompasses, and ignited the passion I had for it and carry with me today. My education at UCLA sharpened my ability to think critically and enjoy it. All of this preparation has brought me to where I am today. I am eternally grateful."



PHYSICS & ASTRONOMY



E.C. KRUPP M.A. '68, PH.D. '72

E.C. Krupp is an astronomer and director of the Griffith Observatory in Los Angeles. While still a graduate student at UCLA, Krupp began his Griffith Observatory career as a part-time planetarium lecturer in 1970, a job professor George Abell insisted he take. He was appointed curator in 1972 and has been director since 1974. He led the Observatory's \$93-million restoration, renovation and expansion, a project he conceived and

shepherded through design, fundraising, construction, reactivation and return to full public operation. After completing his thesis at UCLA, he became fully engaged in public astronomy and began researching ancient, prehistoric and traditional astronomy and studying the relationship between astronomy and culture worldwide.

Krupp is a prolific author and editor whose work includes books on ancient astronomy, formal research papers, articles for the general reader, and children's books. He has visited, studied and photographed more than 2,200 ancient, historic and prehistoric sites around the world. Krupp has been recognized internationally and has received several prominent awards from U.S. astronomical and civic organizations.

"UCLA's astronomy faculty reconfigured my astronomical perspective with scientific rigor and academic discipline, and my mentor and adviser, professor George Abell, created multiple opportunities — including the presentation of programs in the UCLA planetarium — for my immersion in every realm of public astronomy. I am grateful for the opportunity to confirm that what the world needs now is more astronomy and physics, to acknowledge the debt I owe to UCLA and George Abell, and to salute the graduates all now launched on their distinctive trajectories."



SOCIOLOGY



NANCY H. RUBIN '64

Nancy Hirsch Rubin served as U.S. Ambassador to the United Nations Commission on Human Rights during the Clinton administration. She has been a teacher, public servant and global champion for human rights, social justice, public service and mental health. Rubin was a teacher before beginning her long career in public service. She helped build

AmeriCorps, which has engaged more than 800,000 young people in public service programs since 1994. She served as a director of the International Human Rights Law Group and chaired election observation for countries making the transition to democracy. She served on Amnesty International's Leadership Council and chaired its Committee on Women, Law and Development, which built legal literacy clinics in Asia, Africa and Latin America. She was the first chair of the National Mental Health Awareness Campaign and served on the board of Didi Hirsch Mental Health Services.

She is a member of the Council on Foreign Relations at the Brookings Institution, a director of the National Democratic Institute and a leader in the ongoing effort to ratify the U.N. Convention on the Elimination of All Forms of Discrimination against Women.

"We all had dreams ... and UCLA was the place to be! UCLA awakened our curiosity. It was a campus that sparked energy and engagement, and the warm air helped infuse a warm culture. I was able to befriend across boundaries and explore other cultural identities. I became politically aware, and the politics became personal. UCLA had 'buzz.' Activism looked exciting; civic participation and the importance of my vote became clear. UCLA was alive and dynamic and I moved out into a reality where I wanted to exude those qualities."

UNDERGRADUATE ED - ACADEMIC ADVANCEMENT PROGRAM



MICHELE SIQUEIROS M.A. '97

Michele Siqueiros is president of the Campaign for College Opportunity, an organization dedicated to increasing college-going and completion rates. In this role she works to raise awareness of the critical challenges facing higher education, mobilize supporters and influence policymakers. In 2010 Siqueiros and the Campaign led the effort for historic transfer

reform that smooths the path for California community college students to transfer to the California State University system and, soon, to the University of California. She has advocated for additional funding to expand student enrollment and student success funding at community colleges, CSUs and UCs. She also advanced legislative efforts to increase access to Pell Grants, protect Cal Grant funding, support undocumented and DACA students, promote college readiness, and reform remedial education.

Previously, Siqueiros was senior project coordinator with LA's Department of Neighborhood Empowerment, founding program manager for Public Allies-Los Angeles, and assistant director of constituency services for the National Association of Latino Elected and Appointed Officials Educational Fund. She is a member of the Statewide Leadership Council for the Public Policy Institute of California, and serves on the boards of the Institute for Higher Education Policy and the Alliance for a Better Community. In 2014 she received *La Opinion's* Hispanic Leader Award for her leadership in education. She earned a master's degree in urban planning from UCLA and a bachelor's degree from Pitzer College.

"Becoming a Bruin gave me the confidence and skills to do work that I love. I firmly believe that the opportunity to go to college should not be a privilege for the few, but a gift to many."

STATISTICS



KATHLEEN KERR M.A. '94, M.S. '98, PH.D. '99

Kathleen Kerr "accidentally" completed two master's degrees at UCLA before becoming the second person to earn a Ph.D. from the newly formed Statistics department in 1999.

After UCLA she moved to the opposite corner of the U.S. to take a postdoctoral position in statistical genetics at The Jackson

Laboratory in Bar Harbor, Maine. Her contributions to the design and analysis of gene expression microarray studies were considered important advances for a then-emerging genomic technology. She joined the Biostatistics faculty at the University of Washington in 2001 and has been in Seattle ever since.

Kerr continues to work in statistical genetics and genomics as well as the evaluation of biomarkers for diagnosis, prognosis and screening. A theme of her work is identifying statistical best practices to ensure and improve the integrity of the scientific process. As a biostatistician she loves to collaborate with scientists in many different fields. When she's not working, Kerr enjoys hiking, biking and spending time with her husband (a UCLA triple-alum) and their two children.

"When I think of my time at UCLA, I remember inspiring, generous mentors and wonderful, smart fellow graduate students. I think of mountain biking in the Santa Monica mountains, repeatedly taking intermediate tennis through the rec program (never advancing but always having fun), and the best and most authentic Thai food outside of Thailand (where I spent one spring break)."



FORMER LA METRO BUS DRIVER TURNED UCLA GRADUATE STEERS LIFE IN NEW DIRECTION

By Rebecca Kendall

Sequoia Thompson '18 recalls watching

the sunrise day after day as she drove the No. 2 route from downtown Los Angeles to Westwood. Much of the then-LA Metro bus driver's route included Sunset Boulevard. Turning off the ignition and exiting her bus on the UCLA campus, Thompson would walk to Ackerman Union to get something to eat, envious of all the people she saw on their way to lectures and labs.

"It was so hard because I really wanted to go back to school," said Thompson, whose educational career got sidetracked by working through gender identity and sexuality issues, uncertainty about studying psychology and the need to support herself financially.

After working several years in transportation, Thompson, now 33, speaks openly about her experience as a nontraditional student and an androgynous lesbian woman, leads a biweekly discussion circle at the UCLA LGBT Campus Resource Center, works with transfer students at UCLA and Pasadena City College and graduated from UCLA this spring with a bachelor's degree in psychology and a minor in LGBTQ studies. Her life experience, something she once thought of as shameful and of no value, has proven to be the nexus of her professional life.

"I'm really passionate about working with queer black youth because for me it was difficult coming up," the aspiring clinical psychologist said. "Psychology in the African-American community is largely approached with hesitation and skepticism, and the black LGBT community is a subculture of the African-American culture that is often overlooked and not fully accepted. Being a

member of the black LGBT community, I have seen the need for clinical psychologists who are members of this community."

Navigating work and school

As a high school student, Thompson enjoyed learning but her grades suffered as she worked to understand the woman she was becoming.

"I definitely wanted to go to college, but I definitely didn't think I was college material," Thompson said. "I was also battling with my identity as someone who loved women. But growing up in a very religious household, that was not OK."

After finishing high school, she got a full-time job with FedEx, but her inner scholar remained restless. She loved the idea of studying human behavior and learning more about why people think and do what they do. To satisfy her curiosity, Thompson enrolled in a psychology class at Chaffey College near her home in the Inland Empire. Her studies were going well until her car was hit by another vehicle. Physically she was fine, but the incident left her relying on public transportation, which was time-consuming.

For the next several years Thompson tried to figure out how to manage both school and work. She also questioned whether psychology was a good choice for her and if she would ever be accepted in the African-American community as a therapist.

"Generally speaking, we're told that we need to stay strong and not really talk about our feelings," Thompson said. "Homophobia is strong within the African-American community as well. I was just like 'Well, I'm gay, I'm androgynous and I want to be a

psychologist? Yeah, right.' I didn't feel like there was a place for me in that business, so I went into the world of transportation, which is predominantly controlled by men, and just thought I'd do my best to excel there."

She did this for many years, working as a FedEx package handler and becoming the first female facer — someone who directs the outbound packages to the trucks, ensuring that there are no impediments to the workflow — at her worksite. Thompson later parlayed her experience into a switcher job at Union Pacific Railroad.

After being laid off during the recession she landed a job as a bus driver with Metro. After a few years she developed tendonitis in her shoulder and went on disability leave. It was then that she enrolled at Pasadena City College (PCC) and put her education in drive.

"I resigned from the world of transportation and took a leap of faith," Thompson said. "The decision to sacrifice my financial security to pursue my passion in psychology has been the most rewarding decision I've ever made."

Next stop UCLA

Thompson graduated with honors from PCC in 2016, giving the student commencement speech at the college's African-American transfer celebration, and transferred to UCLA that fall. Appreciative of all the support she received at PCC, and with a desire to help others achieve the same success, she has continued to serve as a transfer student peer counselor there.

"Because I had people to lay that foundation of inspiration, motivation and support, I have to pay that forward any way I can," Thompson said.



Sequoia Thompson '18 mentors transfer students, sharing her experience as a nontraditional student who returned to school after the age of 25.

At UCLA, Thompson has been an asset to the Center for Community College Partnerships, said Santiago Bernal, the center's assistant director. Bernal, who works one day a week as a transfer student advisor at PCC, met Thompson when she was a student there.

He said that although Thompson hadn't initially considered UCLA to be realistic opportunity for her, he convinced her otherwise. "I think her hesitation was partly because she was an older student and she thought of UCLA as a young person's playground," Bernal said.

UCLA resources aligned with Thompson's interests and needs as a scholar, Bernal said, included UCLA's fifth place ranking in the 2017 Best LGBT Colleges and Universities by College Choice; its LGBTQ studies and African-American studies programs; and its LGBT Campus Resource Center, transfer student center and Bruin Resource Center, which would make the transition to UCLA easier.

"I also knew that she was interested in global issues, so I told her about this great program that she needed to apply to," Bernal said. That opportunity was a diversity and

inclusion student exchange program for first-generation college students. Now in its eighth year, the program sends two students to the Netherlands for six weeks each summer to study at Vrije Universiteit.

Thompson took his advice to study abroad, where in addition to taking a class, she conducted research into how Dutch colonial history affects queer people of color in Amsterdam and how that compares with American colonialism and its impact on queer people of color in the U.S. She interviewed LGBTQ people of color to learn about their attitudes and experiences, spoke on panels hosted by the University of Amsterdam and community organizations that work with people who are LGBTQ, started a thriving

online community called Queer People of Color Community of Care, and networked with local LGBTQ artists.

"That experience changed my life," she said. "It really allowed me to embrace my purpose and feel fearless. I'd never felt that that. Just being accepted was so validating."

On the UCLA campus Thompson has participated in a variety of panels and summer programs organized by the Center for Community College Partnerships.

"For me, she's become the perfect scholar that we want at UCLA," Bernal said. "I think this is someone we're going to be hearing from in the future, particularly in the field she has chosen."

"So many people are sitting on their potential, and all they need is someone to just support them." - Sequoia Thompson



Howard and Astrid Preston in front of a painting by Astrid in the UCLA Luskin Conference Center

IN CONVERSATION WITH HOWARD '65, Ph.D. '74 AND ASTRID PRESTON '67

By Margaret MacDonald

Howard and Astrid Preston met as undergrads in 1963. After earning a doctorate in physics, Howard founded Preston Cinema Systems, maker of high-tech camera and lens control systems for film and television. Astrid was born in Stockholm after her parents, both architects from Latvia, had fled the violence of World War II. She graduated with a B.A. in English and is an acclaimed painter.

The Prestons have generously supported the Department of Physics & Astronomy for more than 20 years, most recently with a gift creating the Howard and Astrid Preston Term Chair in Astrophysics. They previously established the Preston Family Graduate Fellowship in Astrophysics. Howard serves on UCLA's Galactic Center Group Board of Advisors and Physical Sciences Entrepreneurship and Innovation Fund. Astrid has been involved with Friends of English and UCLA Women & Philanthropy. The couple lives in Santa Monica, California.

How did you end up in your profession?

Astrid: I knew I wanted to be an artist, but studying art would have been too indulgent for my parents; they had a lot of artist friends who couldn't support themselves! After graduation I worked full-time at Powell Library but on nights and weekends I worked on my art.

Howard: My love of photography, film and science — all amplified at UCLA — led to my finding the perfect arena to indulge both my creative instinct and technical skills.

What's memorable about the day you met?

Astrid: Everything! It was about 5 p.m., I was eating dinner with my best friend at the Coop [a student hangout in what is now Ackerman Union], and an Edith Piaf song was playing in the background. I saw this guy walking in and he had all these pens in his shirt pocket. I said to myself, "I'm going to marry him." He came over to say hello to my friend — he'd met her at a frat party the previous weekend. After that things evolved very quickly. It was one of those really weird psychic moments in life.

What has UCLA meant to you?

Howard: When I was in high school, UCLA was the bright shining light on the hill. Then I arrived at this wide open community with so many things to stimulate the young mind. Here I was studying physics and I could just walk over to north campus and see art shows at the Wight Gallery or plays at MacGowan Hall. It was an absolute wonderland.

What have you learned the hard way?

Howard: When I began the company I wore all the hats, so if there was a problem I got an earful! I quickly learned that this feedback was

not only the key to improving our products but also informing future innovation. Our success today is a direct result of continuing the same close connection with our users that I had when I began the company.

Best kept secret on campus when you were a student?

Howard: Not many people knew about the small Tesla coil in the basement of the physics building that could throw out lightning bolts 10 feet long and make your hair stand on end. I took Astrid down there to impress her, and I think it worked!

What motivates you to give back?

Astrid: UCLA is a public university but there isn't enough state support. Any investment in UCLA will come back a thousandfold.

Howard: The term "give back" is really applicable in our case, as neither of us could have afforded to go to a private university. Also, I get such gratification from seeing UCLA excel. Because it excels, it attracts the best students, who in turn inspire new students. It's a wonderful cycle of success that we want to help along.

A photograph of Michael E. Jung, a distinguished professor, sitting at a desk in a library. He is wearing a light blue dress shirt and a dark blue patterned tie. He is smiling and looking directly at the camera. In front of him on the desk is a molecular model made of sticks and balls. Behind him are bookshelves filled with books.

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BE LIVES
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“I GIVE so that UCLA can continue to do drug discovery research well into the future, with the hope of producing more useful drugs that will save lives.”

MICHAEL E. JUNG

DISTINGUISHED PROFESSOR
DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY

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UCLA LEGACY CHALLENGE

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