

UC
**SANTA
CRUZ**
MAGAZINE
FALL 2016



**Why don't
we say
what we
mean?**





Introducing the UC Santa Cruz Silicon Valley Campus, our multidisciplinary teaching and research hub.

“This building represents a significant step in growing UC Santa Cruz’s presence in this global hub of innovation. It will be a home for our existing ventures and give us room to offer courses and degrees that will help Silicon Valley address some of its greatest challenges.”

– Chancellor
George Blumenthal

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UC Santa Cruz linguists and students are putting research to work for Silicon Valley tech companies seeking to make devices that can understand and decode the subtleties of human language.

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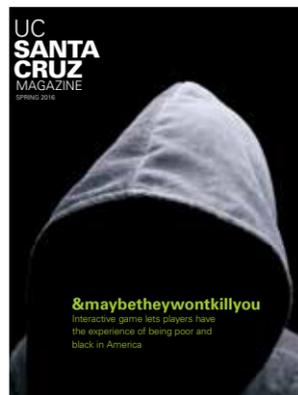
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LETTERS

JOIN THE CONVERSATION. Write us at magazine@ucsc.edu.



READY FOR REAL CONVERSATIONS ABOUT RACE

A video game designed to be a real-life simulation of what it is like to be a person of color in America ... an interesting approach ["&maybethewontkillyou,"

page 8, spring 2016]. With so much talk and news media on the issue, is this what is finally going to break through to people so we can start having real conversations? Time will only tell.

—Sam Doshi (Stevenson '04, business)

Editor's note: With the spring 2016 issue, UC Santa Cruz Magazine made changes to its name, design, and content. Readers responded in a survey we sent asking for feedback.

READERS REACT TO THE NEW MAGAZINE

It totally captured me. I read it all! Stands way above the magazine from my graduate university.

—Carol Leone (Rachel Carson College [formerly College Eight] '90, cultural anthropology)

I liked seeing the things alumni are doing that seem unique to former UC Santa Cruz students.

—Torie Quiñonez (Merrill '03, American studies)

It was a much, much needed update. I went to graduate school at Columbia University and my partner went to a Big 10 school, and it's more on par with more established institutions.

—Jon Carnero (Kresge '94, politics)

THANKS FOR CONVEYING IMPACT

Happy to read about all the great accomplishments of UC Santa Cruz's Latin American and Latino Studies Department ["Crossing borders," page 22, spring 2016]. Always such a strong voice on campus, I was glad to read all of the impact the program is making. Brava!

—Kayla Kimmins (Stevenson '05, modern literature)



Founders Celebration

October 22

6 p.m.

Science & Engineering

Library

Cost: \$195



Institute of the Arts and Sciences exhibition

**November 13, 2016–
February 19, 2017**

Look Back in Time: Russell Crotty and Lick Observatory at the San Jose Institute of Contemporary Art

Crochet Coral Reef exhibition

**January 26–
March 18, 2017**

presented by the Institute of the Arts and Sciences at the Mary Porter Sesnon Art Gallery



Martin Luther King Jr. Memorial Convocation

February 9, 2017

Santa Cruz Civic Auditorium
Speaker: Michelle Alexander

Climate Conference

February 24–25, 2017

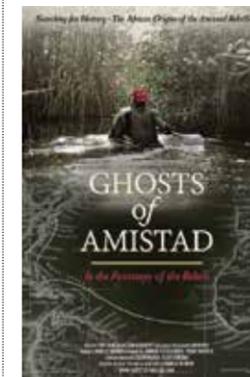
Giving Day

March 8, 2017

Join us online for a day of philanthropy

Alumni Weekend

April 28–30, 2017



Ghosts of Amistad: In the Footsteps of the Rebels

October 27

7 p.m.

Del Mar Theatre, Santa Cruz
Film screening and discussion with producers

To see a full list of upcoming UC Santa Cruz events, visit

events.ucsc.edu.



Genomics Institute summit and open house

December 8

UC Santa Cruz Silicon Valley Campus

Faculty Research Lecture

February 7, 2017

Music Recital Hall
Sandra Chung, linguistics

THIS IS UC SANTA CRUZ



Too cool

UC Santa Cruz is one of the 20 greenest colleges in the country, according to *Sierra* magazine's "Cool Schools" ranking.

Coming in at No. 18, the ranking underscored UC Santa Cruz's strong commitment to protecting the environment, addressing climate change, and encouraging sustainability.

Find UC Santa Cruz on Facebook, Instagram, Twitter, and LinkedIn. Read UC Santa Cruz Magazine stories at magazine.ucsc.edu.

The Blob and El Niño are on their way out, leaving a disrupted marine ecosystem behind.



"UC Santa Cruz has been an innovator in many areas of sustainability for several years, most notably in academic programs, social justice, food, transportation, and water conservation," said Sustainability Director Elida Erickson. "The fact that UC Santa Cruz ranks within the Top 20 in an increasingly competitive field of up-and-coming institutions speaks strongly to the ongoing commitment of our students, faculty, staff, and campus administrators to the values of sustainability."

More than 200 schools participated in the extensive survey about sustainability practices on their campus for *Sierra*, the national magazine of the Sierra Club. Using an updated, customized scoring system, *Sierra's* researchers ranked each university based on its demonstrated commitment to upholding high environmental standards.

Above left: Marianne Olney-Hamel, Moretta Browne, and Edgar Flores, apprentices with the Apprenticeship in Ecological Horticulture program, arrange flowers for the Farm & Garden Market Cart at the base of campus.

'The Blob' overshadows El Niño

El Niño exerted powerful effects around the globe in the last year: eroding California beaches; driving drought in northern South America, Africa, and Asia; and bringing record rain to the U.S. Pacific Northwest and southern South America. In the Pacific Ocean off the West Coast, however, the California Current Ecosystem was already unsettled by an unusual pattern of warming popularly known as "the Blob."

New research indicates that the Blob and El Niño together strongly depressed productivity off the West Coast, with the Blob driving most of the impact.

The research by scientists from UC Santa Cruz, NOAA Fisheries, and Scripps Institution of Oceanography is among the first to assess the marine effects of the 2015–16 El Niño off the West Coast of the United States.

Off California, El Niño turned out to be much weaker than expected, said lead author Michael Jacox, a project scientist at UC Santa Cruz and NOAA Fisheries' Southwest Fisheries Science Center.

"Now, both the Blob and El Niño are on their way out, but in their wake lies a heavily disrupted ecosystem," he said.

A song of ice and water

Since its detection in 2014, the brown dwarf known as WISE 0855 has fascinated astronomers. Only 7.2 light-years from Earth, it is the coldest known object outside of our solar system and is just barely visible at infrared wavelengths with the largest ground-based telescopes.

Now, a team led by astronomers at UC Santa Cruz has succeeded in obtaining an infrared spectrum of WISE 0855 using the Gemini North telescope in Hawaii, providing the first details of the object's composition and chemistry. Among the findings is strong evidence for the existence of clouds of water or water ice, the first such clouds detected outside of our solar system.

"We would expect an object that cold to have water clouds, and this is the best evidence that it does," said Andrew Skemer, assistant professor of astronomy and astrophysics at UC Santa Cruz.

We walked this way

Scientists using evidence from bison fossils have determined when an ice-free corridor opened up along the Rocky Mountains during the late Pleistocene. The corridor has

been considered a potential route for human and animal migrations between the far north (Alaska and Yukon) and the rest of North America, but when and how it was used has long been uncertain.

The researchers combined radiocarbon dating and DNA analysis to track the movements of bison into the corridor, showing that it was fully open by about 13,000 years ago. Their findings indicate that the corridor could not account for the initial dispersal of humans south of the ice sheets, but could have been used for later movements of people and animals, both northward and southward.

The initial southward movement of people into the Americas more than

15,000 years ago now seems likely to have been via a Pacific coastal route, but the Rocky Mountains corridor has remained of interest as a potential route for later migrations.

This Slug is so money

Zhang Tao, who received his master's and Ph.D. degrees in international economics from UC Santa Cruz, has been appointed deputy managing director of the International Monetary Fund.

Zhang, who assumed the post August 22, "brings a strong combination of international economic expertise, public sector policymaking, and diplomatic skills," said IMF

Managing Director Christine Lagarde in a statement. "He also has extensive experience with international financial institutions, excellent communication and negotiating skills, and a superb knowledge of IMF policies and procedures,"

The IMF, based in Washington, D.C., is made up of 189 countries, working to foster global monetary cooperation. Its primary purpose is to ensure the stability of the international monetary system.

Why study the humanities?

Why is studying the humanities—history, literature, languages, philosophy, culture—important? How would you convince your parents, an employer, a politician, or others that there is value in pursuing the humanities?

Those were the questions posed to students across the country by a new contest in response to recent media reports of pessimism about studying the humanities.

Sponsored by 4Humanities.org, the competition encouraged undergraduates to make the case for the importance of the humanities in any medium or format for a public audience.

The contest was run by Alan Liu, a professor of English at UC Santa Barbara.

"I remember how hard it was for me in the 1970s to tell my engineer dad that I was going to be an English major," said Liu, who came up with the idea for the contest. "Today after the Great Recession, it's even harder to have such



Above: Artist's rendering of WISE 0855 as it might appear if viewed up close in infrared light. Below: Radiocarbon dating and DNA analysis of bison fossils enabled researchers to track the migration of Pleistocene steppe bison into an ice-free corridor that opened along the Rocky Mountains about 13,000 years ago.

PHOTOS: STUDENTS BY C. LAGATTUTA; BLOB ILLUSTRATION BY MICHAEL JACOX
BISON FOSSIL COURTESY OF THE GOVERNMENT OF YUKON; WISE ILLUSTRATION BY JOY POLLARD

conversations. I hope young people today, no matter what career they want, will be willing to speak up about why great societies also need great humanities.”

The UC Santa Cruz team of The Gail Project took first prize for Do You Have a Passport?, an essay/memoir about the project written by team member Stella Fronius (Merrill '16, history).

Athletics wins student support

UC Santa Cruz students showed strong support for the campus's NCAA Division III athletics program, with 63 percent of voting undergraduates signaling in a May election that they would be willing to establish a new fee.

A record 43 percent of undergraduates voted in the election. Of those, 63 percent were in favor of establishing

a new undergraduate fee that would be approximately \$90 per student per quarter. Undergraduate students will vote in spring 2017 on establishing a new student fee.

Additionally, two committees—one composed of faculty and one composed of UC Santa Cruz Foundation board members and alumni councilors—are looking at sustainable funding models for the program.

UC Santa Cruz offers NCAA Division III athletic teams in men's and women's basketball, cross-country, soccer, swimming/diving, tennis, and volleyball; and women's golf and track. All the teams will continue to compete next year.

Pulitzer pride

Two UC Santa Cruz alumni were among this year's winners of the Pulitzer Prize,

journalism's highest honor.

Martha Mendoza (Kresge '88, independent major, journalism and education) was part of the Associated Press team that exposed the use of slave labor in the Thai seafood industry.

William Finnegan (Cowell '74, English literature), a *New Yorker* staff writer since 1987, won for his memoir of surfing, *Barbarian Days: A Surfing Life*.

It's the second Pulitzer for Mendoza, an AP national reporter since 1995 who is also a visiting lecturer in the UC Santa Cruz Science Communication Program. She won in 2000 for investigative reporting.

She is also the second UC Santa Cruz alumna to win two Pulitzers. Dana Priest (Merrill '81, politics) won in 2006 and 2008 while at the *Washington Post*.

UC Santa Cruz now has six winners of eight Pulitzers. Previous alumni winners

are Laurie Garrett (Merrill '75, biology), with *Newsday*; and Hector Tobar (Oakes '85, Latin American studies/sociology) and Annie Wells (Rachel Carson College [formerly College Eight] '81, individual major), both of whom were with the *Los Angeles Times*.

Shining more light on the slave trade

Drawing on four decades of archival research on five continents, the website Voyages: The Trans-Atlantic Slave Trade Database offers free public access to the details of every documented slave-trading voyage that carried enslaved people from Africa to the Americas.

But recent research has shown that approximately 25 percent of arriving Africans actually soon boarded another ship for distribution within the Americas.

A significant piece of that new research was conducted by UC Santa Cruz Associate Professor of History Gregory O'Malley. His recent book documenting the intra-American slave trade, *Final Passages: The Intercolonial Slave Trade of British America, 1619–1807*, has helped redraw the map of the forced African immigration during the slave trade era.

Now with the help of a \$220,000 grant from the National Endowment for the Humanities, O'Malley plans to add his research to the Voyages database, which has helped scholars understand the massive scale of the slave trade.

“You realize that tens of thousands of people [were] involved in buying and selling people,” said O'Malley, “and that's really important to understanding how racism develops.”

Five food fellows

Five UC Santa Cruz students will team with UC Santa Cruz faculty and staff to improve campus and community food systems as part of the UC Global Food Initiative's fellowship program.

Three graduate and two undergraduate students have received \$4,000 UC Global Food Initiative (GFI) Fellowships for the 2016–17 academic year, and will be involved in ongoing GFI projects at UC Santa Cruz. These include efforts to improve student food security, expand experiential learning opportunities, and disseminate information on the campus's work in agroecology.

Graduate students Keli Benko (sociology), Hamutahl

Cohen, and Emily Reisman (both environmental studies), and undergraduates Cassidy Carmichael (Rachel Carson College [formerly College Eight], environmental studies) and Anne Wiesenfeld (Stevenson '17, environmental studies, literature minor) are part of a cohort of GFI fellows from throughout the UC system who are advancing work to increase food system sustainability and improve food access and nutrition at the state, national, and international levels.



Now hear this: StoryCruz

StoryCruz, UC Santa Cruz's oral storytelling project, captures UC Santa Cruz voices and stories in our very own podcast. Find the StoryCruz link at news.ucsc.edu.

Recent StoryCruz interviews include “Smithies” in conversation with the founder of the Smith Renaissance Society talking about an emotional juncture for the organization, graduate students describing their work at the Graduate

Research Symposium, and Slugs talking about how it feels to “come home” to campus for Alumni Weekend.

Dean tapped for Time's '25 Moments'

Time magazine reached out to 25 historians and asked them to nominate a pivotal moment in history that has changed our nation.

The result is a story titled “25 Moments that Changed America,” which includes short essays—based on interviews with each historian—explaining why their moment was selected.

One of the distinguished historians *Time* contacted for the piece was UC Santa Cruz humanities dean Tyler Stovall, who is also currently president-elect of the American Historical Association.

Stovall chose for his moment: Busing is Mandated in Boston (June 21, 1974). He said that he chose that moment because it seemed to mark a transition between the push for integration that accompanied the Civil Rights Movement, and the resistance to it that has resulted in the re-segregation of American schools today.

“The Boston anti-busing movement and its national repercussions played a key role in the defeat of school integration in contemporary America,” Stovall noted. “Like the challenges to affirmative action and continued police brutality against African Americans, it illustrated the limits of the nation's commitment to racial justice.”

Sky's no limit for planet-hunting grad student

Every night for a year, astronomy graduate student Jennifer Burt would settle into a small room on the UC Santa Cruz campus and begin her job as a planet hunter. While most people slept, Burt would examine weather, atmospheric conditions, and time of year before deciding which stars on a long list of possibilities would be the best targets for a powerful telescope located at Lick Observatory on Mount Hamilton. A run of fingers over computer keys would then start the telescope searching portions of the night sky for its prey: planets that orbited stars beyond our solar system.

“After a year,” said the 28-year-old with a laugh, “I thought maybe we should automate this thing because I would like to sleep at night.”

She went to work helping write software that turned the \$12 million telescope into a robotic version of herself. It became the first automated planet finder in the world.

Burt won a post-doc fellowship at the Massachusetts Institute of Technology and hopes to work on a NASA project aimed at discovering more about these so-called extrasolar planets or exoplanets.



Barbarian William Finnegan surfing in Thailand.

ACQUIRING A PHOTOGRAPHIC TREASURE TROVE: THE PIRKLE JONES AND RUTH-MARION BARUCH COLLECTION

California photographers Pirkle Jones, Ruth-Marion Baruch, Ansel Adams, Dorothea Lange, and Edward Weston were brought together through their artistry that captured the stories and scenery of this fabled state.

The Pirkle Jones and Ruth-Marion Baruch Photography Collection, an extraordinary archive being given to UC Santa Cruz by the Marin Community Foundation, documents the people, landscape, and politics of California in the mid 20th century. The collection, with an estimated value of \$32 million, is the largest single gift ever given to UC Santa Cruz.

The transfer of ownership includes photographic prints, negatives, contact sheets, and transparencies created by Jones and Baruch as well as Adams, Lange, and others, together with rights and interests in the work by Jones and Baruch. Baruch died in 1997, Jones in 2009.

The archive will be based in McHenry Library's Special Collections, where it joins a smaller Jones/Baruch archive given to UC Santa Cruz in 2003. Plans for cataloging, exhibitions, and research based on the full collection are in development. The archive complements campus holdings and interests in Bay Area and California history, social justice, and environmental issues.

Acclaimed work in the collection includes photography projects on the Berryessa Valley by Lange and Jones, and the Black Panthers by Baruch and Jones.

Baruch and Jones met in 1946 in a photography class started by Adams at the California School of Fine Arts (now the San Francisco Art Institute) and were married in his Yosemite home. In 1969, Jones served as a teacher at a workshop held by Adams at UC Santa Cruz and developed a lifelong affection for the campus.

OTHER GIFTS

CHILDHOOD CANCER

A \$2.5 million grant from St. Baldrick's Foundation supports the Treehouse Childhood Cancer Initiative at the UC Santa Cruz Genomics Institute. The grant, to be paid over five years, brings the power of genomics and big-data analytics to bear on finding effective treatments for children with cancer.

INSTITUTE OF THE ARTS AND SCIENCES

A \$1 million gift from alumnus Nion McEvoy (Porter '74, literature) will support programming at the UC Santa Cruz Institute of the Arts and Sciences (IAS) over the next five years. McEvoy is CEO of Chronicle Books in San Francisco and an arts philanthropist. Programming for the IAS includes the current campus-based Collective Museum project, the Look Back in Time: Russell Crotty and Lick Observatory exhibit at the San Jose Institute of Contemporary Art, and the upcoming Crochet Coral Reef exhibit and events in Santa Cruz.

GUNDERSON CHAIR IN ASTROPHYSICS

A \$160,000 gift from James L. Gunderson and Valerie J. Boom, to be expended over four years, supports recruitment of a faculty member in astronomy and astrophysics. The E. K. Gunderson Family Chair in Theoretical Astrophysics honors the work of Gunderson's father, a psychologist whose work on human adaptation to confined and extreme conditions was used by NASA in understanding the implications of space travel.

HONORING FAYE CROSBY

More than 100 donors joined forces to honor Faye Crosby's service as provost of Cowell

Faye Crosby



College (2010–16) with a room-naming gift. In celebration of her contributions and the memory of her father, friends and admirers gathered to dedicate the Faye Crosby and Robert "Bob" Newman Senior Commons. The money raised will support programs at Cowell.

3,000 GIFTS IN A SINGLE DAY

UC Santa Cruz received more than 3,000 gifts in 24 hours in its first-ever online Giving Day. With matching funds and challenge prizes delivering an energy boost, donors gave \$340,000 on May 11. Scores of project teams all across campus connected with supporters in a celebration of grass-roots philanthropy. Stay tuned: Giving Day 2017 will be March 8.

These and all gifts count toward the Campaign for UC Santa Cruz.

THE CAMPAIGN FOR UC SANTA CRUZ

supports excellence across the university through private investment in the people and ideas shaping the future. It is bringing critical new resources to the student experience, academic research, and environmental and social justice programs.

LEARN MORE

campaign.ucsc.edu
Questions? Contact Campaign Director Rebecca Levy at rebeccal@ucsc.edu or (831) 459-1365.

COLLEGE EIGHT BECOMES **RACHEL CARSON COLLEGE**

A UC Santa Cruz college born of the environmental movement is named for the writer who inspired it

College Eight at UC Santa Cruz was born embracing environmentalism. Now it's getting a name befitting that passion: Rachel Carson College.

Rachel Carson, the late writer and conservationist, is widely credited with launching the modern environmental movement. Her 1962 book, *Silent Spring*, dramatically chronicled the damage caused by indiscriminate application of chemicals in an attempt to control pests. Her larger theme: humans are a part of nature—not its masters.

Within two weeks of its release in 1962, *Silent Spring* was a bestseller. The chemical industry struck back, launching intense attacks on Carson's reputation and scholarship. While terminally ill with breast cancer, she calmly defended her work at congressional hearings. Years later she would be awarded the Presidential Medal of Freedom.

Silent Spring drew its title from a striking decline in the nation's bird populations—"the early mornings are strangely silent where once they were filled with the beauty of bird song," Carson wrote. Just 18 months after the book's publication, she died at age 56 at her home in Silver Spring, Maryland.

The naming gift from the Helen and Will Webster Foundation recognizes Carson for her courage



and pivotal role in awakening the public to environmental issues.

It establishes an endowment to ensure the college can provide opportunities for students in perpetuity and establishes a chair in ecology and environmental justice. Concurrently, citing the impact of Carson's writings, a chair in science communication is also being created. The gift package totals \$7 million.

"We could not think of anyone who would better embody the core values of UC Santa Cruz than this environmental pioneer," Alec and Claudia Webster of the Helen and Will Webster Foundation wrote in a letter to Chancellor George Blumenthal on their proposal to recognize Rachel Carson. "Rachel Carson challenged authority, risked everything, and changed the world

for the better. In doing so, she provided a model that students need and deserve, and that we, as a society, require."

University of California President Janet Napolitano is among those who share the sentiment. "It is wonderful to see Rachel Carson honored in this way. She exemplifies so much of what is right in life. She has long been one of my personal heroes: a champion for the environment, a woman excelling in science, a person of dignity."

College Eight, embracing the heightened awareness and commitment to a healthier planet, was established in 1972 with the theme Environment and Society. A few years later, it would become the base for the team of scientists and volunteers who would save the peregrine falcon, pushed to the

continued on page 13

PHOTOS: CROSBY BY C. LAGATTUTA; CARSON © ERICH HARTMANN/MAGNUM PHOTOS

Natural allies

The renaming of College Eight to Rachel Carson College highlights the legacy of a campus with roots deep in environmentalism, leading to a role in shaping public policy



There couldn't be a more perfect new name for College Eight than Rachel Carson College. To understand why, take a look back at the Predatory Bird Research Group, started on campus in 1975 by the late natural history professor Ken Norris.

There wasn't much the research group did that was by the book.

That's because there was no book when the group set out to save a dwindling peregrine falcon population.

Working out of a tiny office in the then-headquarters of College Eight, this ingenious group of scientists, workers, and volunteers did the unimaginable to get falcon eggs, made fragile by the shell-thinning effects of the pesticide DDT, to hatch—they stretched budgets, MacGyvered equipment, and scavenged food for hungry chicks.

Volunteer climbers were sent scrambling up cliffs to switch falcon eggs with fake eggs that had been crafted by the UC Santa Cruz Art Department. Later, the climbers would return hatched chicks to the nest, often to the surprise of their winged parents.

One of those climbers was Yvon Chouinard, who scaled the North America Wall of El Capitan to collect eggs and insert chicks into a falcon nest in 1984. He would later go on to found Patagonia, a multimillion-dollar clothing and gear company with environmental underpinnings.

By 1999, the peregrine falcon, which had stood at less than a dozen birds in 1970, had

been removed from the federal endangered species list. Today there are an estimated 300 breeding pairs in California.

"People woke up to environmental issues because of the peregrine falcon," said retired Predatory Bird Research Group director Glenn Stewart, who was part of the original effort to save the birds. Watching the DDT-linked decline of these superhero-like predators—birds that can dive at speeds of 200 mph and have eyesight eight times better than a human—"made people realize something was really wrong out there," he said.

But if it was the peregrine falcon that was a symbol of the effects of DDT, it was scientist/author Rachel Carson who first gave lyric voice to the problem in her groundbreaking 1962 book *Silent Spring*.

Which makes it fitting that College Eight, where the effort to save the peregrine was born, has been named after the woman who sounded the dangers of the pesticide and launched an era of environmental awareness.

It also seems fitting that Rachel Carson College will be part of a campus whose long history of environmentalism ranges from figuring out how to commercially farm organic strawberries, to unearthing the cause of condor deaths, to finding ways to replenish groundwater supplies, to saving hundreds of island species from extinction. Santa Cruz was also the first in the UC system to offer a Ph.D. in environmental studies.

Marine institute emerges

Probably the first hint UC Santa Cruz would set its roots deep in the natural world came when Harvard-trained landscape architect Thomas Church placed his sturdy, lace-up boots on the Cowell Ranch property in 1962 and declared the beauty of the campus was so great, its buildings should be set among the redwoods where the towering trees would serve as an inspiration.

It wasn't long before the stunning campus was attracting professors like Norris who, fresh from helping author the 1972 Marine Mammal Protection Act, came to Santa Cruz to help biologist Bill Doyle and others establish what is now the Institute of Marine Sciences.

The institute, with world-class facilities serving faculty and researchers in six different departments, was "a big achievement and an important part of our environmental success," according to Paul Koch, dean of physical and biological sciences at UC Santa Cruz.

It was at Long Marine Lab, part of the Institute of Marine Sciences, that a couple of UC Santa Cruz research biologists and confessed seabird freaks named Don Croll and Bernie Tershy set out in the 1980s to rid a pair of tiny Mexican islands from feral cats that were obliterating Cassin's auklets, Scripps's murrelets, and black storm petrels.



California condors owe their survival in part to UC Santa Cruz researchers.

With the success of that first effort, the two men started a nonprofit called Island Conservation out of a rented office space on the coastal campus. Their goal was to continue their work on islands worldwide. Today, Island Conservation is an independent nonprofit that has saved 389 species from possible extinction on more than four dozen islands around the globe.

Faculty affiliated with the Institute of Marine Sciences also include Mark Carr and Pete Raimondi, both professors of ecology and evolutionary biology, who helped in the creation of 29 marine protected areas along the California coast as part of the state's Marine Life Protection Act of 1999. The reserves, which cover 204 square miles, are designed to protect sea life and foster biodiversity.

Fruitful efforts

About the same time Croll and Tershy were doing their conservation work in the waters off Mexico, an enthusiastic plant ecologist and farmer arrived at UC Santa Cruz from south of the border with a revolutionary idea in mind.

Hired to revive UC Santa Cruz's struggling 33-acre farm, Steve Gliessman decided its success rested on linking the plot to academics in a science he called agroecology. UC Santa Cruz not only became home to the first formal agroecology program in the world but also, working with a local strawberry grower, developed ways to make raising organic berries economically viable.

The success of that undertaking is visible in the shelves of organic fruits and vegetables in supermarkets across the country today.

Meanwhile, 20 miles south of the campus in the agriculture-rich Pajaro Valley, UC Santa Cruz Professor of Earth and Planetary Sciences Andrew Fisher could be found up to his ankles in mud.

The hydrologist came to the valley to study how runoff from even a single strong storm might be caught in infiltration ponds and then be allowed to percolate back into the ground instead of rushing out to sea.

His work on recharging a groundwater system depleted by over-pumping and starved by drought was so promising, a pilot program Fisher devised with the aid of local water agencies will begin in October, giving landowners rebates for collecting storm runoff in these types of ponds. It's a test case for how the state may deal with water conservation as snowmelt becomes more unreliable.

Global warning

But if Fisher's work included dealing with some of the effects of a changing climate, a number of researchers at UC Santa Cruz were striving to understand the phenomenon more deeply.

"UC Santa Cruz is really one of the leading institutions in the world in studying ancient greenhouse climates," said Physical and Biological Sciences Dean Koch.

It was Koch and Professor of Earth and Planetary Sciences James Zachos who discovered early on that a global warming episode almost 56 million years ago called the Paleocene-Eocene Thermal Maximum or PETM, had caused a host of environmental changes not just in the sea but also on the land.

During the PETM, a massive amount of carbon was released into the atmosphere. This release was caused, at least in part, by a sudden thaw of methane ice on the ocean floor. Global temperatures rose, and the ocean became more acidic. It took more than 50,000 years for the excess carbon to be reabsorbed but, by then, there had been droughts, floods, and extinctions.

By examining the PETM, UC Santa Cruz's scientists hope to better understand the implications of the huge amounts of carbon humans are pumping into the atmosphere by burning fossil fuels. Zachos's latest research showed the current rate of carbon release is unprecedented in the last 66 million years. His work with Koch and emerita Professor of Earth and Planetary Sciences Lisa Sloan and Professor of Ocean Sciences Peggy Delaney has been groundbreaking.

Condor comeback

Meanwhile, the California condor, a prehistoric-looking bird with a 10-foot wingspan, owes its survival in part to UC Santa Cruz environmental toxicologists Myra Finkelstein and Donald Smith.

Over a long decade of work, the two researchers showed that condors—which numbered only 22 in the wild by 1982—were dying because they were ingesting lead bullet fragments when they feasted on carcasses such as felled game or gut piles.

The UC Santa Cruz team's work, including publication of a scientific consensus statement instituted by the two researchers, led Gov. Jerry Brown to sign a bill that will make it illegal to use lead ammunition for hunting. California is the first state in the nation to do so.

"I feel like it is a huge step forward for the conservation of condors and other species," said Finkelstein of the bill, who noted golden eagles, bald eagles, red-tailed hawks, and other scavenging animals also are affected by lead poisoning. "It's also important for the health of humans who eat game shot with lead-based ammunition."

Loving nature, shaping policy

It's that kind of applied science that UC Santa Cruz is known for, and that will be supplemented by a new master's program in coastal science and policy that will train students to go out and have an impact on the world almost immediately, according to Koch.

"I think it's part of the culture of the campus to be concerned about environmental issues, not only because we want to understand how the world works but also to make sure the world continues to work," he said.

It's the same drive that led Carson to write so powerfully about the natural world and also the reason Santa Cruz's eighth college has been named after her. ■

brink of extinction by the effects of DDT. (For more on the peregrine falcon and UC Santa Cruz's environmental legacy, see page 10.)

College Eight quickly established its reputation for excellence in environmentalism. Its alumni include some of the nation's leading environmental professionals.

A philanthropic commitment

With a strong focus on the environment and student experience, the Helen and Will Webster Foundation has supported multiple initiatives at UC Santa Cruz—including rebuilding the historic Hay Barn as a center for environmental programs and establishing five chairs, four with environmental focus.

The foundation's support for environmental programs at UC Santa Cruz has its roots in the experiences of Alec and Claudia Webster: Alec is an environmental studies alumnus (Rachel Carson College '02).

The Websters say that Carson, like UC Santa Cruz, epitomizes love of the natural world, ethical judgment based on sound scientific principles, and the persistence and courage to create change.

"With this gift, the Websters, working in collaboration with College Provost Ronnie Lipschutz, are again furthering our campus mission and demonstrating what makes UC Santa Cruz so unique. We are grateful for their support," said Chancellor Blumenthal. "The naming of College Eight for Rachel Carson shines a bright light on who we are and what we do, and it inspires us to launch the next generation of environmental leaders—the next generation of Rachel Carsons."

The Rachel Carson College Endowment will support environmental programs and initiatives that give students hands-on learning experiences and opportunities to examine policy and develop solutions that balance societal needs with protection and restoration of the environment.

Partnering with the Websters in establishing the two new chairs are Mark Headley (Stevenson '83, politics and economics) and Christina Pehl. "We are honored to join with the Websters to advance undergraduate education and provide opportunities for students to wrestle with today's challenges of social responsibility and the environment," said Headley.

The new chairs:

- The Robert Headley Presidential Chair for Integral Ecology and Environmental Justice will be based in the college. The chair honors Mark Headley's father, a longtime administrator at the UC Office of the President, and will be dedicated to educating students about the conceptual and applied aspects of environmental science and stewardship.

- The Science Communication Presidential Chair will be held by the director of the Science Communication Program. The graduate-level program established in 1981 has trained hundreds of professional science writers and journalists. It is the only such program in the U.S. that requires a degree in science and experience in research—the background that Carson herself had before she focused on writing.



ILLUSTRATION BY BRIAN REA

Helping hands for hunger

With 4 in 10 UC students unable to afford regular, nutritious meals, UC Santa Cruz takes a bite out of the problem with services ranging from free food pantries to help with signing up for state nutritional benefits

Sometimes, the only thing 20-year-old UC Santa Cruz sophomore Alexis Moreno had to eat all day was a bagel or a peanut butter and jelly sandwich.

It wasn't that she didn't want to eat more. She would have loved to grab lunch or go home to a nice dinner.

But the Kresge College psychology and sociology major faced a situation that, according to a July UC systemwide study, was shared by 4 out of 10 of her classmates.

Because of the high cost of living in Santa Cruz, tuition and other educational expenses, tight family resources, and the need for a part-time job besides her full load of classes, Moreno, who grew up outside of Fresno to a farmworker father and a receptionist mother, didn't always have the money or flexibility to eat like she should.

"If you were in that same situation, you would do the same thing," said Moreno, who put food as a low priority behind tuition, rent, and books. "As any other college student who is driven and has a goal, you would just do it."

The fact that cash-strapped college students might skip lunch or make a dinner out of ramen noodles is nothing new. What's surprising is the sheer number of UC students who do not have a consistent source of high-quality, nutritious food—a startling 42 percent, according to the UC Student Food Access and Security study.

Combating malnutrition

At UC Santa Cruz, the epicenter of the organic food movement, the problem has already spurred a number of programs that include

two free food pantries, budget cooking classes, affordable pop-up produce stands, emergency Safeway gift cards, and services that help eligible students sign up for the state's CalFresh program, known federally as SNAP and formerly called food stamps. Even more ambitious programs that will allow students to donate unused dining hall meals to their hungry colleagues and to expand the food pantries are in the works.

In addition, UC President Janet Napolitano pledged \$151,000 for each of UC's 10 campuses over the next two years to combat campus malnutrition. The funds are part of UC's Global Food Initiative, which is working to address the issue of providing sustainable and healthy food for a growing population.

"What's important for those working on the ground level is

ensuring the problem doesn't become the focus rather than how we approach solutions to meet the growing student need," said Tim Galarneau, a research and education specialist for the Center for Agroecology & Sustainable Food Systems who is co-chairing the Food Access and Security Subcommittee for the systemwide Global Food Initiative.

For Moreno, the solution included emergency \$50 Safeway vouchers from the Slug Support program that allowed her to buy healthy snacks that got her through a full day of classes and also purchase fresh produce to eat at her apartment.

'Mighty problem'

According to the UC study, which may be the biggest look at food insecurity on college campuses, 19 percent of students reported they sometimes had gone hungry in the past year. Another 23 percent said they had limited access to a variety of good-quality food because of a lack of money.

In California, according to the U.S. Department of Agriculture, 14 percent of households face food insecurity.

"It's a mighty problem," said Lorrene Ritchie, director of UC's Nutrition Policy Institute and principal investigator of the UC study, which also showed 25 percent of food-insecure students had to choose between paying for food or educational or housing expenses, and that nearly a third of those in need said they had trouble studying because of hunger and a lack of money for food.

The reasons behind the worrisome findings, said those who have studied the problem, vary from the aftereffects of the Great Recession to increased tuition and a high cost of living and, sometimes, to poor budgetary decisions the students make themselves.

Roughly 42 percent of UC students receive Pell Grants, federal financial aid for students from low-income families, and more than half of UC students pay no tuition because of financial aid. UC also enrolls students from all educational backgrounds—44 percent of the system's undergraduate populations are first-generation college students.

But one only has to glance through Craigslist to find one of the biggest problems facing UC Santa Cruz students. A one-bedroom cottage a few miles from campus was recently being offered for \$2,400 a month while a humble-looking studio apartment near downtown had a price tag of \$1,500 a month. The high cost is no surprise, considering Santa Cruz is one of the five most expensive rental areas in California, according to the National Low Income Housing Coalition.

Great Recession's aftermath

UC Santa Cruz Interim Dean of Students Lucy Rojas has seen the effects of the financial squeeze firsthand.

Every day, students walk into the campus Slug Support office needing help because they've exhausted their resources and have no money to buy food, or it's the end of the quarter and their financial aid has run out, Rojas said.

The office provides a free food pantry, emergency Safeway gift cards, and help for students who want to sign up for CalFresh.

"I think it's a significant problem," said Rojas, whose office helped 281 qualified students sign up for CalFresh benefits during the last academic year and has plans to install refrigeration in the current food pantry so students in need can get more than pasta, cereal, beans, peanut butter, and canned goods.



Bryan Montes, a second-year Kresge student studying computer science, is among the students working to set up one of UC Santa Cruz's food pantries for the academic year.

Another food pantry at Family Student Housing provided 25,632 meals last year during its twice-a-month distributions, according to Sue Matthews, associate vice chancellor for colleges, housing, and educational services on campus. Some 500 households were served.

About two-thirds of the students who come to Slug Support for help receive some kind of financial aid for college, Rojas said, but the problem is that these students often have trouble coming up with the "self-help" portion of their aid.

In what may be a reflection of the economic hit experienced by families during the Great Recession, the percentage of UC Santa Cruz students awarded Pell

students have their backs against the wall.

"I don't think people really understand until you've lived it what it's like not to know where your next cent is coming from and if you'll be able to eat next week," said Ella Goldberg, 24, a Kresge history and psychology major with a literature minor.

Goldberg is a member of the Smith Renaissance Society, a program offering a pathway to admission to UC Santa Cruz for foster youths and other independent students such as wards of the court, homeless youth, and orphans.

Like fellow Smith scholars who don't have the traditional family support other students might, Goldberg has learned to get by. She's found scholarships, taken out loans that also covered her meal plans on campus, and gotten help from Slug Support. She's been resourceful, scoping out campus events that offer free food and taking advantage of the CalFresh program in order to buy groceries.

In her case, she said, it's the constant stress over the uncertainty of where her next meal might come from and not hunger, per se, that makes it hard for her to study.

The effects of food insecurity

Studies, meanwhile, have shown that students who are food insecure are more likely to report feelings of depression, anxiety, and stress, said Suzanna Martinez, a researcher with the Nutrition Policy Institute in UC's Division of Agriculture and Natural Resources. The UC study also showed students who

were food insecure had a slightly lower GPA than their less hungry counterparts, and were also more likely than food-secure students to report that they had to suspend studies due to financial hardship (10 percent vs. 3 percent).

Sitting in his cramped Oakes College office, Galarneau ticks off the pantries and food programs offered at UC Santa Cruz, including weekly pop-up produce stands that accept CalFresh cards and provide low-cost fruits and vegetables, along with provisioning workshops that teach students how to prepare nutritious meals on a tight budget.

One of the UC student food access survey's findings was that 57 percent of hungry students were experiencing food insecurity for the first time in their lives, suggesting they might be helped not only by workshops like those offered by UC Santa Cruz but also by ones that teach financial literacy.

Starting in 2016–17, UC Santa Cruz will begin to offer a Swipe for Slugs program that will allow students with meal plans to donate unused meal credits to their hungry cohorts.

The key to success, said Galarneau, is not only setting up programs but also letting students know what help is available for them.

As for the UC system, the Global Food Initiative Food Access and Security Subcommittee suggested adding food preparation and storage space into new student housing construction and design, setting up access to mobile kitchens, and providing more communication about housing and food costs to incoming students among possible solutions. ■

Donations to the UC Santa Cruz Student Assistance Emergency Fund offered by the Slug Support program can be made online at giving.ucsc.edu.

PHOTO BY C. LAGATTUTA

COLLISION VISION

The architect who built UC Santa Cruz's acclaimed Science & Engineering Library recently sat down for a conversation with his son—a 2014 graduate—on the evolving use of the library as plans shape up for changes to the iconic space

RENOVATION IS IN THE AIR ON SCIENCE HILL.

Big changes are coming to UC Santa Cruz's award-winning Science & Engineering Library, with plans in the works to evolve the space into even more of a community hub for students and faculty by adding new resources for study, collaboration, and research.

The library, designed by the architectural firm Esherick Homsey Dodge & Davis (EHDD)—which has designed and built buildings on many UC campuses—is acclaimed for its eco-sensitive layout, its abundance of natural light, and the way the spacious-yet-intimate building blends with its natural surroundings.

The renovation of the 57,000-square-foot library, which opened in 1991, will play to these existing strengths while increasing the number and quality of study rooms and collaborative workspaces. Patrons will also have access to a café, an "information commons," and a laptop bar, among other amenities.

These changes will be privately funded. In fact, the Science & Engineering

Library renovation is a key initiative of the Campaign for UC Santa Cruz, an ongoing \$300 million comprehensive fundraising effort. (See page 8 for a campaign update.)

These improvements are bound to make the library more vital and interactive than ever, University Librarian Elizabeth Cowell said.

The library will shift from a space that encourages quiet, individual contemplation to widespread collaboration—"collision space," in modern library lingo. It will be a "wired" hub, but it will also foster face-to-face meetings and classroom learning.

Along with workstations and the café, these changes will transform the library, though it will continue to have abundant space for quiet individual study, reading, and preparing for finals.

The principal architect in charge of the original library design was Chuck Davis, who is now retired. Nodding to continuity and campus history, UC Santa Cruz has hired EHDD to "design" the renovation.

In a fun twist of fate, Davis has a son who became a Slug. Hayden Davis, (College Nine '14, MCD biology), studied for hours—years—in the very building his father's firm designed almost 30 years ago. (Amazingly, Hayden Davis also lived in a dorm designed by his father and EHDD—College Nine.)

In the course of his studies, Hayden complained good-naturedly to his dad that there weren't enough electrical outlets in the building for students to plug in their laptops, tablets, mobile phones, and other devices. In doing so, he started an ongoing, friendly, and funny conversation with his father about the evolving use of the library.

On a cool summer afternoon, *UC Santa Cruz Magazine* sat down for a freewheeling, far-ranging conversation with Chuck and Hayden Davis about the past, present, and future of "Sci-Li." The father-and-son chat took place in the library Chuck Davis helped design.

You can listen to the full conversation by visiting *UC Santa Cruz Magazine* online at magazine.ucsc.edu.

Celebrating the library of the future

This year's UC Santa Cruz Founders Celebration, on October 22 at the Science & Engineering Library, will be a look into the library as a "collision space" where technology, information, and ideas collide to create new knowledge and support dynamic exploration.

OUTLET DEFICIT

Dan White: Could you talk about your original vision for the building?

Chuck Davis: We had an incredible site. I was determined to save as many trees as we could. We wound up cutting down only 11 trees on a heavily wooded site. The building has this kind of stepped profile that weaves in and out through the trees. Over the years I had been walking through the woods and saw what it meant to have large windows (looking out at) trees and fog. Mostly I wanted to make the library a very comfortable space.

Dan White: Hayden, what was it like to spend so much time in a space your father designed?

Hayden Davis: This building is where I studied for all my tests. It was weird at first, but it makes you appreciate his art a lot more... Certainly, I think it is a beautiful building. That helps a lot. I was the kind of person who always sat by the windows. If I have to study and cram into one of those cubicles all night, I don't want to just be able to see my computer screen. I want to look out the window into the forest and see the redwoods that helped me stay sane when I was here until 2 a.m. But when a building ages, there become things that don't work as well, and I butted up against those too.... As I spent more time here, I grew more openly bold in critiquing (my father's) work.

Dan White: The building was completed in 1991, but enormous changes in technology and communication happened only a few years afterward.

Chuck Davis: When we did this building, everyone was talking about tower-type computers. That was the state of art. Then the 1990s came on and the laptop computer revolution. We thought to put computer outlets



Chuck Davis (left), the principal architect in charge of the original Science & Engineering Library design, takes a break at the library with son Hayden Davis (College Nine '14, MCD biology), who studied in the library his dad helped build.

around the general floor space but never envisioned that everybody would have a laptop. Hayden has always told me there were practically fistfights on the floors in finals time because everyone had not only a laptop but an iPad and a printer and this and that....

Hayden Davis: And a phone charger!

Chuck Davis: So everybody would gang up and they would bring plug strips and then there would be fights over the outlets for the plug strips.

Hayden Davis: And on the bottom floor of the library, you would notice the tables that didn't have outlets by them; people just didn't sit at them. They knew they could sit there for an hour but after that, they're out of juice. I used to get here at 9 a.m.

knowing full well that if I came here at 1 p.m. that there would be zero outlets available.

Dan White: How did you first broach this topic to your dad?

Hayden Davis: Pretty bluntly! He used (my comments) as feedback. In a weird way, I'm a client in this situation.

Dan White: And this feedback was given affectionately, of course.

Hayden Davis: Yes, fully affectionate.

DESIGNED FOR QUIET

Dan White: What do the renovation and future changes mean do you?

Chuck Davis: Heightening interaction.

Hayden Davis: Something this library lacked that McHenry had—you would go onto the ground floor (at McHenry) and see so much open collaboration, with the café right there and people talking. Then you'd go to the other floors and you'd have the library for reflection. But with the Science Library, when you walked in, it was like walking into a funeral or something.

Chuck Davis: There's some feedback! Put that down. "The library felt like a funeral parlor."

Hayden Davis: It was a different vibe.

Chuck Davis: To be fair to the building, (the renovated version) will have a café on the bottom floor. ... And part of the original design strategy was to make the place really quiet. The carpet was heavy duty. It had acoustic tiles. That meant "funeral parlor" in (Hayden's) lexicon.

Hayden Davis: But that was designed before everybody had headphones. For me, I could get into that solo study zone because I could throw on headphones so I never needed that dead-quiet space. I could just make my own.

Chuck Davis: But that was also an excuse to go to Best Buy and buy the \$250 Bose super-enclosed noise-canceling headphones.

Dan White: But it sounds like the "funereal" aspect was more of a question of function than design.

Hayden Davis: It definitely was, amongst my people. It was considered the "serious" library. If you really had to get down (to business) by yourself and study and get into your own space, people went to the Science & Engineering Library. If you had collaborative stuff with a big group of people, you went to McHenry.

INSIDE CHANGES, BONES ENDURE

Dan White: The library will preserve quiet study space on the upper floor, but it will add in the collaborative learning experience while maintaining some of the high-demand quiet space. What is it like for both of you to see this family creation get reconfigured?

Chuck Davis: Change is inexorable in a university. If you design university facilities, and you are thinking you are designing the memorial to Chuck Davis or anyone or anything, you are in the wrong business. That is just the way the university works. That is why I like to work for the university. You're working with incredibly bright people, very creative, always probing the edges.

Hayden Davis: To see the library change is exciting for me. Just walking into (the Science & Engineering Library) two years after graduating, it's already different in a way that I like. I see more people sitting on the ground floor today in the middle of the summer than there would be in the middle of the year when I was here. It's more of a community space.

Chuck Davis: The original design allows for flexibility.

Hayden Davis: One thing my father always told me about university buildings is, you are designing the bones. The inside of it is going to change all the time, as technology advances, as the need for something disappears and other needs arise. But the outside of this beautiful building, the views into the forest—that is the part that is never going to change. ■

For more information about the Science & Engineering Library renovation, visit campaign.ucsc.edu/priorities/divisions/library.

PHOTO BY C. LAGATTUTA

WHY DON'T WE SAY

UC Santa Cruz linguists and students are putting research to work for Silicon Valley tech companies making devices that can decode the subtleties of human language

WHAT WE MEAN?

How do you say what you mean—without saying what you mean?

That question is more crucial to technological communication these days than you might imagine—particularly in a world where talking with your smartphone, your television, your car, and your house becomes a more commonplace experience every day.

“A lot of talk is fragments—it’s the kind of thing we understand reflexively as human beings, but it’s much harder for machines,” notes Jim McCloskey,

professor of linguistics at UC Santa Cruz. “Linguistic theory teaches us what kind of structures there are in our mind, but how to make sense of these fragments is also a nuanced engineering problem.”

This problem is one that appeals to a researcher like McCloskey, who has dedicated his work to understanding language, and now Silicon Valley tech companies that are seeking to make mobile devices—phones, tablets, and more—that can understand and decode the subtleties of human language.



ILLUSTRATIONS BY BRIAN REA



Clara Sherley-Appel (master's '15, linguistics) works at Google as a user experience writer.

And in the search for solutions, UC Santa Cruz students helping with this research have found they are able to apply their knowledge and research skills after graduating as analytical linguists for tech companies big and small.

Jay Z called, Beyoncé didn't

Asking your phone questions and receiving the correct information can seem astonishing—until the virtual assistant stumbles and doesn't appear to understand a slightly more complex request.

McCloskey notes that speakers and writers often leave out informationally redundant grammatical material—such as when the verb “call” is omitted in “Jay Z called, but Beyoncé didn't.” This process, known as ellipsis, is widespread across the languages of the world, and is particularly common in informal language and dialogue.

Among the many varieties of ellipsis is “sluicing,” where what is omitted is not a verb, but an entire sentence. For example, a speaker may leave out the understood sentence “he called” after “why” in a sentence like: “He called, but I don't know why [he called].”

Ellipsis creates challenging scientific and engineering problems. Although research over the past 50 years has shown that the principles permitting ellipsis involve many different types of information (grammatical structure, context, real-world knowledge), the precise mix of these principles and their interaction is still an open question.

Progress to date has been delayed by the lack of one crucial resource: databases that are large enough to validate theories and rich enough to form the basis for machine learning.

At UC Santa Cruz, McCloskey is collaborating with faculty and students in the language sciences to develop that resource—a richly annotated database of naturally occurring ellipsis, which will be freely available to researchers around the globe who are trying to understand what their implications might be for our understanding of the nature of human language.

Sluice sleuthing

The project, which began with backing from UC Santa Cruz's Institute for Humanities Research in 2013, is now funded by a three-year grant from the National Science Foundation (NSF) running through the end of 2018.

They are creating their open, searchable database on sluicing using thousands of articles from the *New York Times* from the 1990s.

Rachelle Boyson (Stevenson '15, linguistics) was hired as a student as one of the database's first annotators.

Her job was to search articles for examples of sluicing and then break the sentences down into their components. She'd mark antecedents, correlates, predicates, and sluices, and interpret the sluice.

“You'd feel like a detective sometimes,” Boyson said.

By the end of summer 2015, Boyson and her coworkers had completed some 4,000 annotations, and Boyson had gone on to help co-write a training manual for the seven undergrad researchers who are continuing the

annotation project this year.

Boyson now works at Yahoo!, doing analysis and annotation. She also still works for McCloskey and UC Santa Cruz linguistics professor Pranav Anand on the sluicing project, going back to review annotations done last year and making sure they align with the current annotation guidelines.

Anand, principal investigator on the grant, noted that the reputation of the campus's undergraduate program in linguistics was a primary reason they received the NSF grant.

“They knew we have this army of sophisticated undergraduates who can do the work,” said Anand. “We're very hands-on and workshop-oriented. We don't use textbooks; instead we say, ‘here's a problem, let's collaborate.’”

“Even after a few courses, the students are able to do sophisticated annotations,” he added. “They are able and up to the task. We hope to collect 30,000 samples minimum over the three years of the NSF grant.”

Pipeline to Silicon Valley

Although the UC Santa Cruz program is focused on theoretical linguistics, Anand said it is also driven by the needs and curiosities of the undergraduate students, who are learning new relevant skills working on this project.

“We are currently heavily recruiting students for sophisticated annotations,” he noted. “There's a pipeline—students get doctorates and are now working in Silicon Valley.”

“We first noticed it three years ago,” added McCloskey. “We realized with our graduate program that students were not going into

academic jobs, but rather to Silicon Valley. Their training in statistics and computational design is what new managers say helped prepare them for the job.”

For example, about six months after completing a master's degree thesis about Turkish language patterns, 2014 UC Santa Cruz graduate Brianna Kaufman, 25, was an analytical linguist, helping engineers place quality ads in the right place for tech giant Google.

Jesse Saba Kirchner, 34, who graduated in 2010 with a doctorate in linguistics, is another analytical linguist at Google, where he focuses on the field of natural language processing, the broad area of human-computer interaction.

And Clara Sherley-Appel, 32, who holds a master's degree in linguistics from UC Santa Cruz, first worked at a small Silicon Valley tech startup where she used language to help people understand and enjoy products. In June, she joined her fellow UC Santa Cruz linguists at Google as a user experience writer.

But Anand noted that the UC Santa Cruz Linguistics Department is still theoretically based. The pipeline to Silicon Valley is a fortuitous by-product of shared interests.

“You become an expert,” he explained. “(Students) are doing case after case, so they're seeing all the patterns, and they discover new forms of fragments. The students are actually producing and creating new knowledge with their work.” ■

Peggy Townsend and Jennifer Pittman (Kresge '87, community studies) contributed to this story.

View our special report on linguistics, with expanded stories and video, at reports.news.ucsc.edu/linguistics.



Jesse Saba Kirchner (Ph.D. '10, linguistics), is an analytical linguist at Google, where he focuses on the field of natural language processing.

PHOTOS BY C. LAGATTUTA

MAGAZINE.UCSC.EDU



Shakina Nayfack: Creating change

When transgender actress Shakina Nayfack heard that producers and composers of *Wicked* and *West Side Story* weren't allowing their shows to be performed in North Carolina in protest of the state's so-called bathroom law, she went into full activist mode.

"I thought it was terrible to strip people of their rights and then strip them of their meaningful entertainment," says the 35-year-old New Yorker.

So she packed her bags and marched straight into enemy territory with her glam-rock musical, *Manifest Pussy*, which centers on her life before and after gender confirmation surgery. Audiences, she says, were delighted.

For more, visit [Shakina.nyc](#) and [@shakeenz](#).

"I always said that when the revolution comes I want to be out on the front lines entertaining the troops," says Nayfack, who traces her social activism to UC Santa Cruz, where she graduated in 2001 with a bachelor's degree in community studies and a minor in theater arts. "I create change through art, and through the way I live my life."

Nayfack is creating a lot of change these days—not only through her one-woman shows and her theater company, the Musical Theatre Factory, but also through her new role as the transgender Lola in Hulu's hit show *Difficult People*, which is co-executive produced by comedian Amy Poehler.

Created for the show's second season, Nayfack's character, Lola, is obsessed with 9/11 conspiracy theories and gender privilege issues, and doesn't fit the usual sympathetic roles often

assigned to subjugated people on TV, Nayfack says.

"She is funny and narcissistic and confrontational and doesn't have a sympathetic bone in her body, so it's refreshing to play a trans character that is just a character," Nayfack says.

On the phone, Nayfack is funny, poignant, and honest.

She describes herself as a "glamazon" (she is 6-foot-2 with long, blond hair) and tells of being 6 years old at a Super Bowl party and seeing the chagrin of her mother and other party guests when she donned one of the dresses intended to entertain the girls while the boys watched football.

"The first time I felt pretty was the first time I felt shame," she said.

She tells of coming out as gay in high school because it was the only way she knew to identify herself, then being taunted and bullied, then

institutionalized "because no one knew what to do with me."

She talks of the first time she used the term "transgender" to identify herself after a show-stopping performance at Porter College's Queer Fashion Show, then of her 2014 crowdfunded gender confirmation surgery in Thailand.

With filming wrapped for her *Difficult People* season and a performance schedule ahead of her, Nayfack, who won a 2015 Lilly Award that recognizes women's contributions to theater, is committed to continuing her work and advocacy.

"I dreamed big, but I never dreamed this big," she says about her *Difficult People* role.

"So much," she says, "has changed."

By Peggy Townsend



Rafael López: Commitment to community

Slug buzz

Catch a cup of java and support a fellow alum at the same time! Check out our online exclusive feature, Pop-Up, featuring different alumni food and drink ventures each issue. This time we look at Slug coffee businesses.

magazine.ucsc.edu

PHOTOS: NAYFACK BY MAYUMI ANDO; LÓPEZ COURTESY U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

A few years ago, as Rafael López, then a White House senior policy adviser, addressed an early-education and high-tech crowd in Silicon Valley, he realized the land on which he stood was where his mother and grandfather had once picked fruits and vegetables as farmworkers.

It was, he says, a powerful moment, even for a man whose life story reads like a Cinderella tale of grit and transformation: a boy born into a family that struggled, a man who became a city council member in his hometown, the first in his family to graduate not just from college but from high school, and the oldest son who once protected his mother and siblings from an abusive, alcoholic father and who now heads a \$10 billion federal agency that administers, as part of its mission, the nation's domestic violence prevention programs.

"Sometimes when I'm being introduced at some event, I think, 'Here's this kid from Watsonville

who has the honor and privilege of representing President Barack Obama's administration,'" says López (Oakes '94, American studies), now commissioner of the Administration on Children, Youth and Families in Washington, D.C. "I've never lost the goosebumps at those moments, and never lost that commitment to my community."

Born in the farming community of Watsonville to a woman who started working as a domestic at the age of 7, López remembers how "violence shaped every fiber" of his family's life and how, at his final meeting with his late father, he had him arrested. "That was my last meaningful interaction with him," López says.

It wasn't until his 7th-grade summer when he visited UC Santa Cruz for a week-long enrichment program that he had a glimpse of a bigger world—and not just the stunning view of the bay from the classrooms where he sat.

"A judge came in and gave a presentation about justice, and, at that moment, I thought, 'I want to be a lawyer,'" says López. "A light switch turned on."

That light switch sent him to Vassar College, UC Santa Cruz, and eventually to Harvard University, where he got his master's degree in public administration.

In 1999, at the age of 28, he became Watsonville's youngest city council member. He won a second term while also working as founding executive director of First 5 Santa Cruz County, which helps families get health care, learn parenting skills, and enhance education for their young children.

Eventually, López's path led him to the White House, where, as a senior policy adviser, he worked on a number of domestic initiatives, including President Obama's "My Brother's Keeper" program, designed to help young men of color overcome barriers to success.

Now part of the Health and Human Services Department, López has labored to update antiquated rules, improve technology, and support new legislation for programs that provide aid to families and youth in crisis. He and his wife, Rosa Ramírez-López (Oakes '05, women's studies), live in Washington, D.C., with their sons Adán Miguel and Mateo Gabriel.

Ask López how his past links to his present and he'll tell the story of sitting with a group of preschoolers in a program for domestic violence survivors.

"I was sitting on the carpet reading to them, and I thought: I know exactly what they are thinking because I had been there," he says. "Behind those smiles were children who were scared but with hopes and dreams just like everybody else."

By Peggy Townsend

'89 **Gayle (BRUNO) Weyman** (Crown) and her husband, **Ryan**, celebrated their 25th wedding anniversary on January 12, 2016! They met and fell in love at UC Santa Cruz in 1989.

Want more Slug updates? See all of this issue's Alumni Notes at magazine.ucsc.edu.



Liquid alchemy

As a practicing studio artist and teacher, I approach new subjects by placing them within their greater context. To this end, imagine a technological “boom” that changes everything all over the world, almost at once—a revolution in communication, social media, data storage, augmented human intelligence, computers, advanced calculation, transportation, globalization, tools, art, and technology.

This was the level of radical change at the dawn of the Bronze Age, a “disruptive” period about 5,000 years ago that nearly simultaneously saw the invention of the wheel, the first written languages, sailing, the abacus, year-round agriculture (allowing urban civilization and an intellectual class), and its namesake: the first alloyed metallurgy on a broad scale.

Here at UC Santa Cruz, we’re still practicing the ancient art of bronze casting. Much like UC Santa Cruz itself, discovery and the blending of innovative technologies form the foundation of the only bronze art program in the UC system, begun in the late ‘60s by Art Professor Doyle Foreman.

Students at UC Santa Cruz have an opportunity through the foundry program to explore the expression of their ideas in tangible form through proper technique, fire, and brute force.

I have the pleasure of witnessing students grasp the possibilities of new processes, discern the best methods to employ in each step toward realizing a concept, and identify ways to transfer skills and ideas to other artistic media.

Our class bronze pours—500 pounds of 2,150°F molten metal—are open to the public every fall and spring quarter.

Sean M. Monaghan, M.F.A. (Kresge '83), is a lecturer at UC Santa Cruz and adjunct faculty at Cabrillo College. He owns the Bronze Works art foundry in Santa Cruz, which he opened in 1992. He recently completed “Pearl Diver,” a large bronze fountain at 49 Municipal Wharf, Santa Cruz.

PHOTOS: C. LAGATTUTA

Mary Wells

is a UC Santa Cruz retiree who continues her extraordinary service to the campus. One way she’s doing that is by transferring money tax-free from her IRA to fund a scholarship for staff and their dependents.

Mary and fellow retirees launched the **Silver Slug Award**, which, when fully funded, will support staff and their dependents pursuing a degree at UC Santa Cruz.

She’s using the **IRA Charitable Rollover**, which allows individuals age 70½ and older to transfer funds directly from their IRA to charity tax-free.

Mary invites others to join her in supporting UC Santa Cruz through this **win-win option**.

Make it happen

Contact Bonnie McLeskey at (831) 502-7112 or gift.planning@ucsc.edu to learn about the IRA Charitable Rollover or the Silver Slug Award.

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Giving back, helping staff



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**Mark your calendar for
Alumni Weekend, April 28–30, 2017
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