

2012

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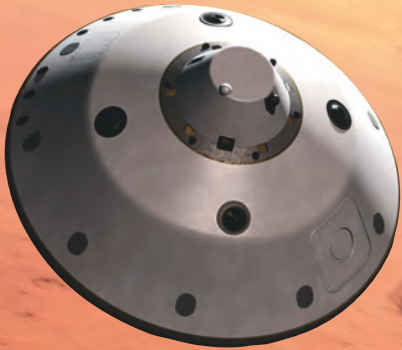
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FALL 2012

SANTA CLARA

FOR THE ALUMNI AND FRIENDS OF SANTA CLARA UNIVERSITY

MAGAZINE



Where will
SCU engineering
take us next?

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BY JEFF GIRE. Tackling big problems—like attracting more women to engineering and transferring mountains of data through the air.

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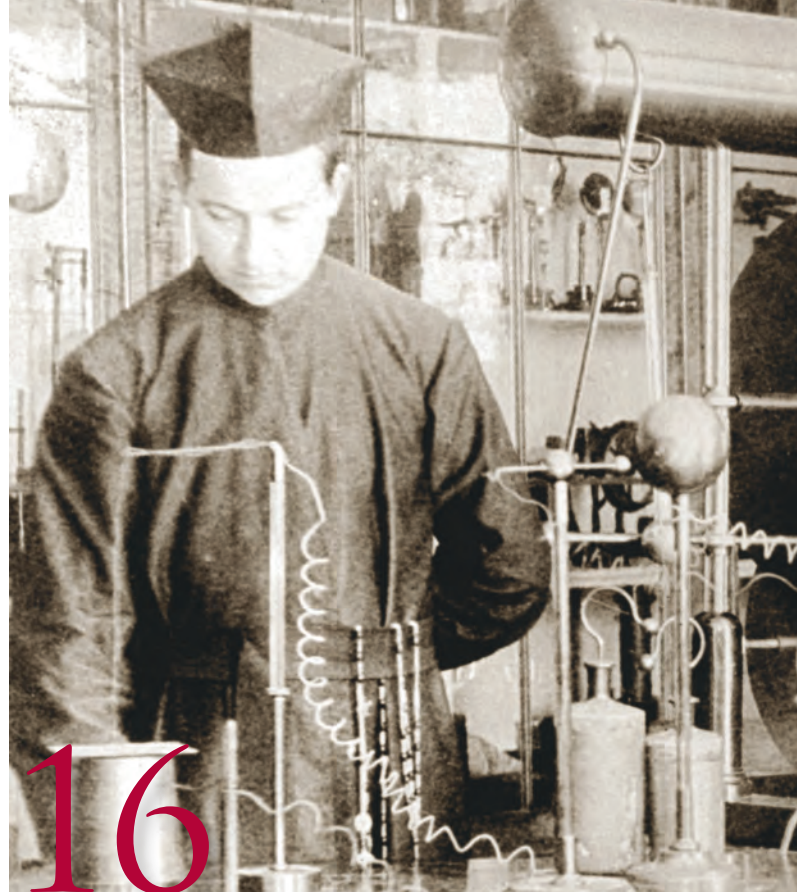
BY ERICA KLARREICH. Lessons in how to wedge more data into less space—and build a smarter energy grid.

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BY PAUL TOTAH '79. For a century, **John J. Montgomery** has been given short shrift when it comes to his role as an aviation pioneer. It's time to set things right.

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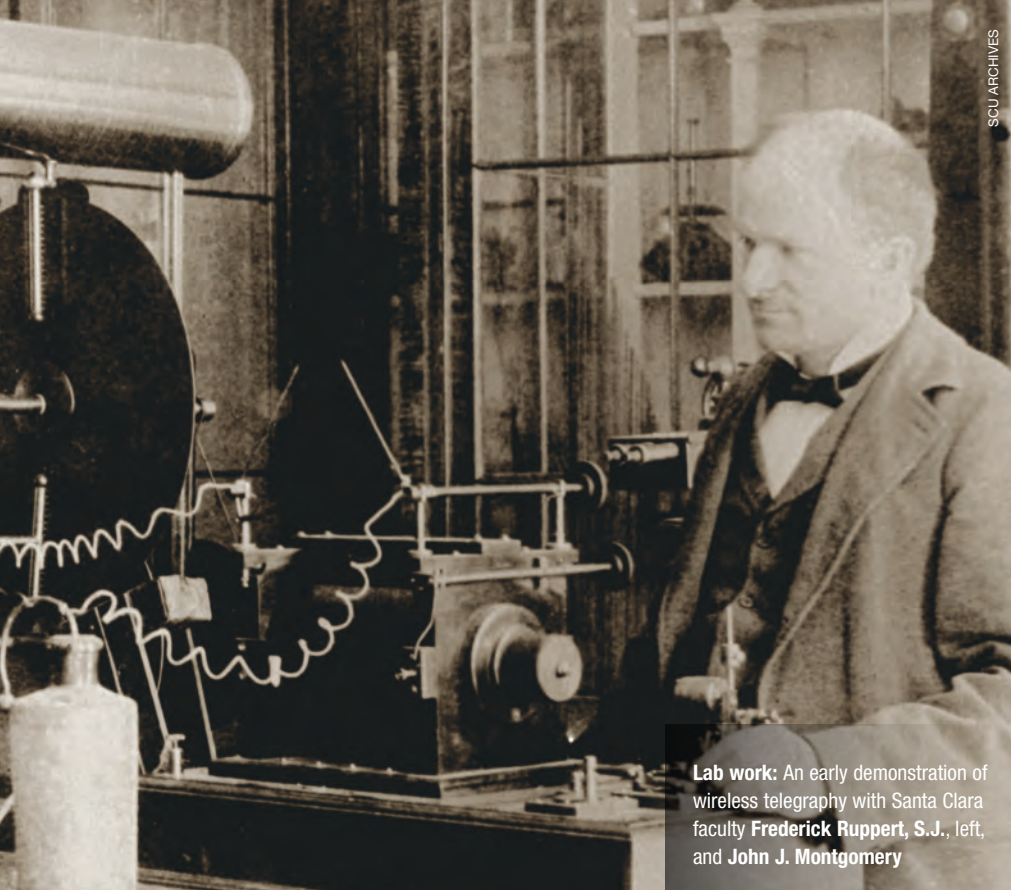
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WEB EXCLUSIVES

Santaclaramagazine.com carries new stories every week. Find video, slideshows, class notes, and much, much more, including ...



HANNAH JOHNSTON / GETTY IMAGES

Double bronzes in London for Crowley **Kelly Crowley '99** medaled twice in cycling in the Paralympics in August. It's her second Olympic appearance; she won a pair of golds in swimming in Athens in 2004.



CHARLES BARRY

"Muslim rage" in appearance and reality
An interview with **Reza Aslan '95**. Plus, see a video of Aslan's Oct. 11 talk from the President's Speaker Series.



NASA/JPL-CALTECH

Is there life on Mars?
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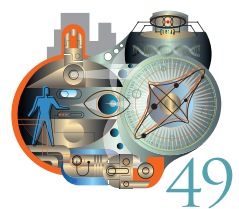
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ABOUT OUR COVER

Things are about to get very hot: But that's okay, because **Robin Beck '77** led a team of engineers that designed a heat shield that ensures the Mars *Curiosity* rover survives entry into the atmosphere. See p. 32 for more. Image courtesy NASA/JPL-Caltech.

NEWS

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FROM THE EDITOR

From the Mission to Mars



Start with a question you've heard a million times: *Why?* And the stories start to spin out from there, perhaps of fitting together plastic blocks as a boy, which is part of the answer: *Here's why I became an engineer.*

"All engineers love Legos," avers **Joe Burke '12**, who studied mechanical engineering. Together with **John O'Malley '12, M.S. '13**, he designed that miniature Mission Santa Clara de Asís to the left. The occasion: the SCU School of Engineering Centennial in 2011–12. The minifig Mission was their winning entry for a competition to produce a nifty centennial tchotchke. Simple and geometric, it pieces together history and geography and identity, as well as the notion that, at this University, *engineering with a mission* is more than a play on words.

Burke also likes trains. The senior design project that he and classmates **Charles Franz '12** (a rail industry veteran), **Keegan Wada '12**, and **Greg Method '12** tackled is a system that distributes braking pressure throughout the length of massive freight trains—think 100 cars or more. That, in turn, allows trains to stop more quickly and saves wear and tear on car couplings. The project won national recognition in a mechanical engineering competition; it is also the basis for their startup, Railwave Systems, bringing their idea from drawing board to steel wheel commerce.

Silicon Valley is where entrepreneurship and engineering intersect every day. It's also where taking risks comes naturally, Burke points out; as an engineering student, it became clear to him that it was important to try new ideas and explore areas he's not good at (yet), and that it was okay to fail.

Perhaps the moment that leads to *why?* is a tale truly epic—with tremendous risk, involving the journey of a six-wheeled robot named *Curiosity* to the planet Mars. A heat shield designed by a team led by **Robin Beck '77** got said rover through hot-enough-to-melt-titanium entry of the red planet's atmosphere in August. But the material that was originally supposed to protect *Curiosity* during entry was discovered to have its own problems during testing; "catastrophic failure" was how Beck has described it.

But then, as is sometimes the case: The solution lies elsewhere. Beck found that out as a student in different ways, including through an amusing but telling incident. She was one of two women in her graduating class studying engineering. During her sophomore year, she was taking two classes taught by **Gene Fisher '50**. When she was invited to a prom, she informed Fisher that she wouldn't be in class that Friday. *Why?* She sheepishly explained that to get ready for the dance, she'd need to have her hair in curlers all day and she didn't want to be seen on campus that way.

Fisher's alternative solution: "You wear curlers, I'll wear curlers."

So Beck, the future thermal protections systems engineer, walked into Fisher's class that Friday in curlers. "There he was," she recalled, "with his fairly long crew cut, with two pink curlers pinned to the top. He wore them the entire class."

And then Fisher's student went on to design the the largest single-piece heat shield ever flown in space.

Keep the faith,

Steven Boyd Saum
Editor



LETTERS

“I had no idea that the campus was teeming with such a wide variety of artistic expressions.”

The Makers and the museum

The feature article “The Makers” in your summer issue was both upbeat and highly informative. I had no idea that the campus was teeming with such a wide variety of artistic expressions, often intertwined with an overarching goal of inculcating, as the article read, “core skills and values to students.”

I was especially happy to see the de Saisset Museum credited with a pivotal role amid these artistic endeavors. It is a gem of a museum ably led by its innovative director, **Rebecca Schapp**. As a longtime volunteer curatorial assistant at my funky local museum, I can appreciate all the more the true professionalism of the de Saisset. This museum is accredited by the American Association of Museums, and to earn—and retain—this prized accreditation a museum has to jump through many strict curatorial and financial hoops. As an alumnus, I am so proud of it that I even feel impelled to pry loose money for an annual gift to its operations.

JOSEPH B. YOUNG '53
Alameda

Grazie, Victor Vari

Many folks shared memories and appreciation for Victor Vari as part of Ron Hansen’s “Bella vita” in the summer edition. Here are a few. At *santaclaramagazine.com* read many more—and contribute your own. —Ed.

Many thanks for the fine article on Dr. Vari, one of my favorite instructors at SCU. Some of my fondest memories of my undergraduate days are of that fine man reciting from memory poetry and passages from the treasures of Italian literature. If anyone truly loved the subject



that he was charged to teach, there was no better example than that of Vittorio Vari for Italian literature and

culture. I am honored to be among the many that he taught over his 66 years at Santa Clara.

Auguri, dottore, e grazie per tutto quello che ci ha insegnato, soprattutto la vostra umanità e l'amore per la "lingua pura"—l'Italiano. [Or, in English:] Best wishes, Doctor, and thank you for everything you taught us, especially for your humanity and love of “the pure language”—Italian.

MIKE MCDONELL '66
Hilton Head Island, S.C.

Dr. Vari greatly influenced my years at SCU as an Italian Studies major. He served as mentor, teacher, counselor, and guide. Dr. Vari would personally phone you if you missed class (how could he not notice?) and supported me during the time of my father’s death in my senior year. He had a profound impact on my life and for that I am grateful.

MONICA CROSETTI LALANNE '83
Aptos

Naturalmente, un uomo appassionato della cultura, Dr. Vari, mille grazie! Thank you to Dr. Vari for showing us the passion of the Italian culture. He took us from the sweet sounds and landscapes of Italy—from the streets of Venice to the sights in Tuscany while we studied the Italian language ... exposed us to the beautiful places our eyes had not yet seen.

MARISOL ESCALERA '02
San Jose

The first time I saw Dr. Vari was my freshman year, 1961, when he drove into the parking area between Nobili and O’Connor Hall. Out stepped this very dapper gentleman in a European suit and Italian shoes, a striking figure of elegance. I thought, as he parked his Jaguar XKE, “There is a man with flair.” He was probably 44 at the time, while I was 20. Little did I think that I would retire from teaching seven years before he did.

Dr. Vari changed my life. He gave me an appreciation for language and the cultures they reflected. His Spanish classes were inspiring and personal. He was instrumental in encouraging my studies with NYU in Madrid my junior year and my master’s program there. My life of Spanish and ESL/bilingual teaching was a direct result of his influence.

R. TERRY HANDLEY '65
Greenfield, Calif.

Dr. Vari helped me to navigate the complicated waters of academic life, but he also knew when to take a step back in order to allow me to make my own decisions. It was evident that he was born to teach, to encourage and to challenge all who crossed the threshold into his classroom, and because of him, we all went out into the world as better people.

Dr. Vari’s intellect and integrity, along with his dedication and compassion, have inspired generations of students at Santa Clara University. While I am a bit

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“If anyone truly loved the subject that he was charged to teach, there was no better example than that of Vittorio Vari for Italian literature and culture.”

saddened by the thought of his retirement, I am so pleased to hear of the Italian Studies Initiative because it means that his influence will be felt for generations to come.

LOREDANA HARRISON '83
North Andover, Mass.

Professor Vari: I wanted you to know how grateful I am for what you did that allowed me to graduate. After I left Santa Clara, I played professional football for eight years, then farmed in Northern California for 20 years—growing almonds, tomatoes, and other crops—and became involved in the food processing industry for another 20 years. I want to wish you the very best. I hope you have a long, healthy, and happy retirement.

GERN NAGLER '53
Portland, Ore.

Storybook season

I enjoyed Mark Purdy's article about the storybook season of the 1962 Bronco baseball team, and I was fortunate enough to see them honored at the basketball game in January 2012. As an avid baseball card collector in my youth, I have **John Boccabella's** cards from 1970 and 1971 when he was with the Expos. The back of his 1970 card says that in his first pro season, 1963, he was voted Pioneer League Rookie of the Year. His 1971 card says, "John hit .333 his sophomore year at Santa Clara and as a junior hit .357 in 47 games with 10 homers and 58 RBIs in helping lead team to 1961 California Interscholastic Federation

and NCAA District Eight championships."

I also attended St. Francis High School during **Ron Calcagno '64's** tenure there as a teacher and coach. Good to see that SCU team recognized for their accomplishment 50 years ago!

DAMIEN PALERMO '85
Mountain View

Women who've made a difference

Women's sports ["The sporting life," Summer *SCM*] has come a long way in 50 years because of women like **Marygrace Colby M.A. '91**. She fought hard and long to give women an opportunity like the men were enjoying. I am very proud of her being such a strong advocate for women. She still is today. As she enjoys retirement, she is helping young girls attend sport camps and sparking their interest in attending college in their future.

CATHY KITTERMAN
Gilroy

When I arrived on the Santa Clara campus in the fall of 1963, I was a 32-year-old high school P.E. teacher with little coaching experience, hired to "direct and instruct women students in various recreation and athletic pursuits." No parameters given, nor printed material on how to proceed, except that recreation was the emphasis. With the help of department secretaries

Kathy Ivers and Dolores Gisi, I began new programs and activities and hired qualified coaches for women students who wanted to be involved in intercollegiate athletics.

I have always admired those first female student-athlete pioneers at Santa Clara, who were provided with little in terms of finances, equipment, and qualified coaches.

In 1988, at the suggestion of **Lee Mahon** and **Jo Ann Vasquez**, the administrators of the counseling psychology and education administration graduate programs, I started attending classes at SCU. In 1991, I received my M.A. in educational administration. At the graduation ceremony, I was inducted into Alpha Sigma Nu, the National Honor Society of Jesuit Colleges and Universities. Awarded for distinguished achievements in scholarship, loyalty, and service, this honor made me a real believer in Santa Clara and all it stands for. Lee and Jo Ann became my mentors, not only while I was in their program, but also because of their special interest in equality for all of our female student-athletes.

For 32 years I gave a lot of my life to Santa Clara University and it has continued to give me a lot in return. Once a Bronco, always a Bronco!

MARYGRACE COLBY M.A. '91
Former Director of Women's Athletics at SCU



CORRECTIONS:

The lost decade: The print edition of "Why women professors?" in the Spring 2012 *SCM* said that Professor Emerita **Karen Fox**, the first woman to become tenured at the Leavey School of Business, began teaching at SCU in 1990. Wrong. She came to the Mission Campus in 1980. Fox writes that she was glad to see the photo of colleague **Nicole Sault** and students in Chiapas, Mexico, as part of the article—and she noted that she was the other faculty member along for that journey: "I ended up deciding to stay as a volunteer for over a month." She translated reports from indigenous people terrorized by the military so that their stories could be disseminated in English over the Internet.

While we're reeling in the years: The print edition of the Summer 2012 *SCM* misstated the grad year for our second Rhodes Scholar, runner and student of philosophy extraordinaire, **Noelle Lopez '09**, now working on her doctorate at Oxford. **SBS**

Santa Clara University is a comprehensive Jesuit, Catholic university located 40 miles south of San Francisco in California's Silicon Valley. Santa Clara offers its more than 8,800 students rigorous undergraduate programs in arts and sciences, business, and engineering, plus master's degrees in a number of professional fields, law degrees, and engineering and theology doctorates. Distinguished by one of the highest graduation rates among all U.S. master's universities, Santa Clara educates leaders of competence, conscience, and compassion grounded in faith-inspired values. Founded in 1851, Santa Clara is California's oldest operating institution of higher education. For more information, see www.scu.edu.



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Elemental—in paint and chocolate

It's been a pleasure to work with **Mark Alsterlind '76** for the last eight years and develop a friendship enriched by art, food, and wine. We look forward to many, many years to come.

JACKY AND MICHAEL RECCHIUTI

San Francisco

Living by Mark's side is a constant wonder. So sometimes, I ask: What drives Mark's endless energy to create? I have yet to come up with an answer to that question. If any of you knows what soft and secret madness drives artists' lives and choices, please let me know!

SÉVERINE GASPARI

Manosque, France

A vision for Jesuit education

Two areas that perhaps could be explored in future *SCM* articles: first, how the Ignatian Center for Jesuit Education, under **Mick McCarthy, S.J.**, will expand its activities in response to Fr. Adolfo Nicolas' "Challenges to Jesuit Higher Education Today" (*SCM*, Winter 2010), an address reflected in the Center's vision statement. Second: how the resources of the Jesuit School of Theology may be blended with University resources to "establish Santa Clara as a national and international leader in theological study and scholarship," in accord with the No. 1 priority in the 2011 Strategic Plan (*SCM*, Spring 2011). As a longtime reader, it has been with delight that I have seen *SCM* evolve into one of the most consistently

engaging publications I receive.

WILEY C. WILSON M.A. '68
Holland, Mich.



The stuntwoman

We are very proud of alumna **Tara Macken '08**. And we were pleased that she joined us on Oct. 5 as a participant in our department's annual workshop "The Business of This Business."

BARBARA MURRAY

Chair, SCU Dept. of Theatre and Dance

Educational innovation and collaboration

The mission [Sara Soledad Garcia has undertaken in Mexico] is so important in getting all the key players involved in what's happening to the environment and being able to teach how we can make it better. I love her work and am very supportive of it.

DAVID LUNA

Ventura, Calif.

What will you be?

A local group is in the midst of a feasibility study to determine if Silicon Valley can sustain a coed Cristo Rey High School [like the one profiled in your spring magazine] in East

San Jose. SCU Chancellor **William Rewak, S.J.**, is participating in this project. See cristoreysanjose.org for details and to help with jobs for these underserved children of the working poor.

DAVIDE VIEIRA '81

San Jose

Commencement memories

My little sister, **Jacqueline Taylor '12**, just graduated from SCU, along with my sister-in-law **Gina Guglielmi '12** and my first cousin **Stephanie Carmassi '12**.

This was a special graduation because we are the fifth generation to attend this fine university, yes, fifth. It dates back to **Adolph Gericke 1889**, followed by **Emile Maloney '26** and his brother **Harold Maloney '24**.

Emile's son and my uncle, **Richard Maloney '52**, is our grandmother's (Sheila Carmassi's) brother. Sheila

married **Herm Carmassi**, from the dynamic class of '56, and their son **Steve Carmassi '84** is Stephanie's father. I even attended his graduation in the Mission Garden back in the day.

To go a step further, my husband, **Tony Guglielmi '06**, and I were married by Father **Tony Sauer '56**, good friend and classmate of Herm Carmassi. Fr. Sauer also baptized a future Bronco: Giuliana. We took a photo at the picnic, which I hope to find, of three of the five generations who recently attended this warm ceremony last Saturday. They included my grandfather Herm, his son Steve, his daughter Stephanie, my brother **Ryan Taylor '10**, my sister Jacqueline, my husband Tony, and his sister Gina. We are so proud to be a part of this fine institution. Let the tradition continue.

BENTLY GUGLIELMI '06

San Carlos

FEATURE CONTRIBUTORS

John Deever ("We, robots") has covered science, business, and law for *SCM*. He collaborated on "Change the world," a feature on the Peace Corps, in the Fall 2011 magazine.

Melissae Fellet ("Building biomedical tests") has covered physical sciences and technology for *New Scientist*, *Ars Technica*, and others. This is her first contribution to *SCM*.

Justin Gerdes ("The long view") specializes in energy and the environment. His work has appeared in *Forbes.com*, *Chinadialogue*, and regularly in *SCM*.

Jeff Gire ("Sarah Kate Wilson vs. Godzilla") is a writer/editor for SCU's Office of Marketing and Communications.

Erica Klarreich ("Deluge and drought") is a mathematics and science writer based in Berkeley. This is her first piece for *SCM*.

Hank Osuna (illustrations for "Deluge and drought" and *AfterWords*) is an artist based in San Francisco.

Mark Purdy ("A rivalry like no other") is a sports columnist for the *San Jose Mercury News*. For the Summer 2012 *SCM* he contributed "Storybook season."

Steven Boyd Saum ("If you can't stand the heat," "The Boys of 50") is the editor of this magazine.

Sam Scott '96 ("Drago's gold") has covered satellites, sports, Internet security, and more for *SCM*, and has been recognized with national awards for his magazine and newspaper writing.

Paul Totah '79 ("Wings") is editor of *Genesis* magazine for St. Ignatius College Prep in San Francisco.

On behalf of many:
A message for those who
made this day possible



MISSION MATTERS



“Don’t ever do something just because it’s an assignment. You better believe there is some end goal that is good for the world.”

Steve Wozniak

COMMENCEMENT

Woz’s wisdom and the generosity that defines us

Undergrad commencement celebrates 100 years of engineering and 50 years of women on the Mission Campus

PHOTOS BY CHARLES BARRY

As Santa Clara University’s undergraduate class of 2012 celebrated earning their bachelor’s degrees, they also received some sound life advice from Apple co-founder Steve Wozniak—advice that is a little easier to follow now that they’re out of college: “Don’t ever do something just because it’s an assignment. You better believe there is some end goal that is good for the world.”

Some 1,200 students received degrees in Buck Shaw Stadium on a warm June 16 morning. They chanted “Woz! Woz!” in admiration of the

Silicon Valley legend, whom many credit with helping launch the personal computer industry. He asked the new grads to think about what makes a good life.

Currently chief scientist at Fusion-io, Woz is a longtime supporter of education, especially math, electronics, and science for children in the Bay Area. He said individuality, creativity, and the desire to do good led to his first computer invention nearly 35 years ago. His presence in June was especially fitting as the School of Engineering celebrated its 100th anniversary.

What life is about

Civil engineering major **Nathan Rogers** delivered the valedictory address. Rogers completed one of the many senior design projects targeting developing nations. He said that work—building a safe, sustainable, and affordable house for use in West Africa—yielded an important epiphany.

“For the first time I saw with stunning clarity: This is what life is about, this is what happiness is, and this is what it means to live a constructive life,” he said. He spoke of the systematic generosity that defines the University, and how “the greatest gift Santa Clara has given us is the realization that as educated people we have tremendous potential to generate meaningful change throughout the world.”

Our first alumna

The first woman to graduate with a bachelor’s degree from Santa Clara is **Mary Somers Edmunds ’62**, who earned her sheepskin 50 years ago. This June she was honored with an honorary doctorate, in recognition of the important milestone—when Santa Clara became California’s first coed Catholic university—and the courage it took to be a pioneering student.



Improve our world: Martha J. Kanter

Graduate commencement: Do more, be more

Graduate commencement took place the evening of Friday, June 15, at the University’s Leavey Center. Martha J. Kanter, the U.S. Under Secretary of Education, reminded SCU’s new recipients of advanced degrees in engineering, business, education and counseling psychology, and pastoral ministries that they are among a select few, since less than 8 percent of the U.S. population holds graduate degrees. Kanter encouraged: “You can do more, you can be more, you can lift others, and you can change and improve our world.”

The Jesuit School of Theology held commencement exercises on Saturday, May 19, at the University Christian

Church of Berkeley. While graduates were only four dozen in number, they hail from all over the world: from Burkina Faso to Vietnam, India to Lebanon, Poland to Cameroon, as well as North America. A leading African Jesuit, Agbonkhianmeghe E. Orobator, S.J., delivered a commencement address that delved into the importance of respecting cultural context in theology.

“In the midst of a rampant globalization ... theology does not float above culture and context,” he said. He spoke of “the demands of faith for daily living” and the unique challenges awaiting today’s theologians, including how rapid information flow “stirs up endless questions of theological import in fields and disciplines as farflung as business ethics, medical and bioethics, developmental economics, war, migration, technology, terrorism, ecology, family, sexuality, and cosmology.”

Deborah Lohse and Marika Krause 



W E B EXCLUSIVES

At santaclaramagazine.com read a profile of Nathan Rogers and his valedictory address, watch Woz’s speech, and see many a photo.



These seniors done good: On left, **Jose Dorador**, winner of the Peter-Hans Kolvenbach, S.J. Award, followed by **Drew Hodun**, winner of the Nobili Medal, and **Tanya Schmidt**, winner of the St. Clare Medal.

Rose-colored glasses? For marketing major **Briana Knight**, right, that would be a definite yes.

LAW

Case not closed

The 2012 Alexander Law Prize recognizes the work by human rights attorney Almodena Bernabeu to bring to justice those responsible for the killing of the Jesuits in El Salvador.

Early in the morning on Nov. 16, 1989, a military hit squad entered the campus of the University of Central America (UCA) in El Salvador and took six Jesuit priests—including university rector Ignacio Ellacuría, S.J.—from their quarters and murdered them on the lawn outside. Soldiers also killed the Jesuits' cook, Julia Elba Ramos, and her daughter, Celina.

At Santa Clara, the killings hit close to home—and the Mission Campus became refuge for the one Jesuit from the UCA, Jon Sobrino, who was away from El Salvador when the killings took place. The murders provoked international outrage. But those responsible were never brought to justice.

There was a trial, of sorts—but the men who confessed to pulling the triggers were acquitted, since they were just following orders. Two officers were convicted, but they were released within 15 months following a blanket amnesty in 1993.

In May 2011, though, a new chapter in this tragic tale began: Arrest warrants were issued by a Spanish judge for top

leaders of El Salvador's military during the civil war, accusing them of orchestrating the crime. The lead private prosecutor is Almodena Bernabeu, attorney with the Center for Justice & Accountability (CJA), a not-for-profit human rights law firm based in San Francisco. Bernabeu has new evidence and witnesses who have not testified before.

Arrest warrants have been issued for 20 men. Two of the former Salvadoran officers indicted are in the United States: Lt. Hector Ulises Cuenca Ocampo, who was in the Bay Area working for the Transportation Security Administration but went into hiding; and Col. Inocente Orland Montano, who resides in Massachusetts and on Sept. 11, 2012, pled guilty to charges of lying on U.S. immigration forms. That could lead to him being extradited to Spain.


As an attorney, Bernabeu has spent 15 years pursuing justice for victims of human rights abuses across Latin America, Africa, and the world. For that work she was recognized with the law school's Katharine and George Alexander Law Prize, presented at a ceremony on campus in March.



JAVIER ZURITA

Tenacious: Almodena Bernabeu has pursued crimes in El Salvador across continents and decades.

Bernabeu is also lead private prosecutor on a case in Spain representing survivors of the Guatemalan genocide (including Nobel laureate Rigoberta Menchú Tum). She and her team's exhausting and exhaustive work to find new evidence is featured in the 2011 documentary *Granito: How to Nail a Dictator*.

Prior to her work at the Center, Bernabeu worked with two NGOs affiliated with the United Nations High Commission for Refugees, helping with asylum and refugee clients from Latin America, North and Central Africa, and the Balkans. She has also worked pro bono for Amnesty International—Spain and was an investigator for the European Court of Human Rights in Strasbourg, France. **Deborah Lohse and Steven Boyd Saum** 

LAW

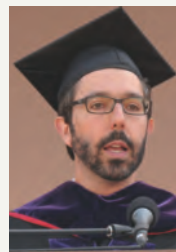
Use your powers for good

Commencement advice on human rights at home and abroad

Some 300 law grads gathered in the Mission Gardens on May 19 and received, along with their degrees, wisdom shared by **Paul van Zyl**, a key architect of South Africa's Truth and Reconciliation Commission.

"I believe how a country treats the weakest and the worst offers a telling window into its soul," van Zyl said, "and that legitimizing the erosion of fundamental rights opens a Pandora's box. Once the violations begin, they set a precedent, diminish moral outrage, and are seldom confined to that infinitely malleable definition of 'the enemy.'"


Van Zyl, who received an honorary doctorate of laws, is the former executive secretary of the Truth and Reconciliation Commission. From 1995 to 1998 he helped develop the structure,



Paul van Zyl

CHARLES BARRY

modus operandi, and operations of the commission, which was charged with investigating and reconciling victims and perpetrators of South Africa's apartheid-era crimes.

In 2011, the law school honored van Zyl with the Alexander Law Prize, awarded to top lawyers who have used their legal careers to combat injustice and inequity. Van Zyl is now the CEO of Maiyet, a "double-bottom line" company known for pioneering new approaches to human rights protection. In 2001 van Zyl co-founded the International Center for Transitional Justice (ICTJ), advising countries including Colombia, Morocco, East Timor, and Bosnia-Herzegovina on how to recover from mass atrocity. **Deborah Lohse** 

TRUSTEES

New to the Board

Five highly experienced new trustees were elected to Santa Clara's Board of Trustees in June, bringing to 45 the number of members of the governing body that helps steer strategies and priorities of the University. All hold undergraduate or graduate degrees from SCU.



Kristi M. Bowers '90, MBA '97, is sales and marketing director for King Mountain Vineyards in Woodside, and a director for The BASIC

Fund, which has awarded \$55 million in scholarships to more than 17,000 children throughout the past 14 years. Since 1999 Bowers has served as an advisory board member for SCU's Markkula Center for Applied Ethics. She is also director of the Markkula Foundation.



Howard S. Charney MBA '73, J.D. '77 is an engineer, serial entrepreneur, patent law attorney, and a 35-year veteran of Silicon Valley's high-tech

industry. Now a senior vice president at Cisco Systems, he was one of the four founders of 3Com Corporation, and the founder of Grand Junction Networks, which invented Fast Ethernet and low-cost switching. In addition to Charney's SCU degrees, he received a bachelor's and a master's degree in mechanical engineering from Massachusetts Institute of Technology.



Mary Mathews-Stevens '84 and her husband, Mark, a former partner in the venture-capital firm Sequoia Capital, have been active in education

philanthropy with their support of

numerous educational organizations in California. Earlier in her career, Mathews-Stevens spent 14 years in the commercial real estate industry in Silicon Valley. In a gesture to honor the late former president of Santa Clara University, in 2008 the couple donated \$7 million for the Paul L. Locatelli, S.J. Student Activities Center.



Jeffrey A. Miller '73, MBA '76 has more than 35 years of high-tech experience in semiconductor, hardware, and software companies.

Prior to establishing the business-consulting firm JAMM Ventures, Miller was a venture partner with Redpoint Ventures, mentoring CEOs of portfolio companies. He spent the early years of his career at Fairchild Semiconductor and Intel, and he serves or has served on the boards of Lithium, MarkLogic, McAfee, and others. Miller was previously co-managing director of SCU's Center for Science, Technology, and Society.



Betsy S. Rafael '83 is the former vice president and corporate controller, and principal accounting officer for Apple. She previously worked at

Cisco Systems in the roles of vice president, corporate finance; corporate controller; and principal accounting officer. Before Cisco, Rafael worked in senior finance, executive, or management positions at Aspect Communications, Escalate, Silicon Graphics, and Sun Microsystems.

Deborah Lohse SCU

ATHLETICS



SCU ATHLETICS MEDIA RELATIONS

Player of the Year

Computer engineering major **Katie Le '14** becomes the first Bronco to battle in the NCAA women's singles tourney.

Her first year at Santa Clara, Katie Le garnered acclaim as West Coast Conference freshman of the year. Instead of serving up a sophomore slump, her second year on the courts was a season of smashing firsts.

In the season that ended last May, the Milpitas native played every match at the No. 1 singles spot for the Broncos and finished with an 18-5 record. Her hard work—and a 10-match winning streak—earned her recognition as the West Coast Conference player of the year. And, in one Santa Clara first, she won All-WCC First Team honors for both her singles and doubles play.

But wait, it gets better: In another Santa Clara first, Le took her game to Athens, Ga., in May, when she became the first Bronco in history to play in the NCAA Women's Singles Championship Match. In that lovely, humid weather that the Peach State delivers—80 degrees with 60 percent humidity—Le won one set against Georgia State's Abigail Tere-Apisah, who was ranked in the top 40 in the country, but ultimately lost in three.

There are analog tasks ahead; facing tough competition shows her what she needs to work on. Plus there's computer engineering coursework to tackle—and an impressive 3.81 GPA to tend to. **Steven Boyd Saum** SCU

A grand new gateway

Step inside the Patricia A. and Stephen C. Schott Admission and Enrollment Services Building.

PHOTOS BY CHARLES BARRY



2

The doors are officially open on a building sure to welcome visitors to the Mission Campus like never before. Just inside the University's main entrance on Palm Drive, the Patricia A. and Stephen C. Schott Admission and Enrollment Services Building was dedicated on Oct. 10. It's the crowning piece of a master plan for campus improvement rolled out in 2001.

A generous gift from Patricia and **Stephen Schott '60** made the building possible, with additional gifts donated by other members of the Class of 1960.

Built with prospective students and their families in mind (with parking right next door), the Mission-style building also provides an enrollment hub for current students, who can

check financial aid, enroll for classes, and pay bills under one roof. The design incorporates the latest in sustainable technologies. But it's inside where the real surprise awaits.

The lobby is home to a dazzling array of images and technologies that invite: "See yourself at Santa Clara." Stories old and new are displayed through panoramic portraits of Broncos past and present, videos, interactive kiosks, and a reflective sphere that offers to make that metaphoric invitation literal. (Think a much smaller scale version of the mirror-surfaced sculpture in Chicago's Millennium Park, affectionately known as The Bean.) The whole package is designed to involve and inspire visitors, and to illustrate the University's Jesuit mission.

Quick Building Facts

25,000 square feet.

2 floors accommodate admission, financial aid, plus course registration and tuition services.

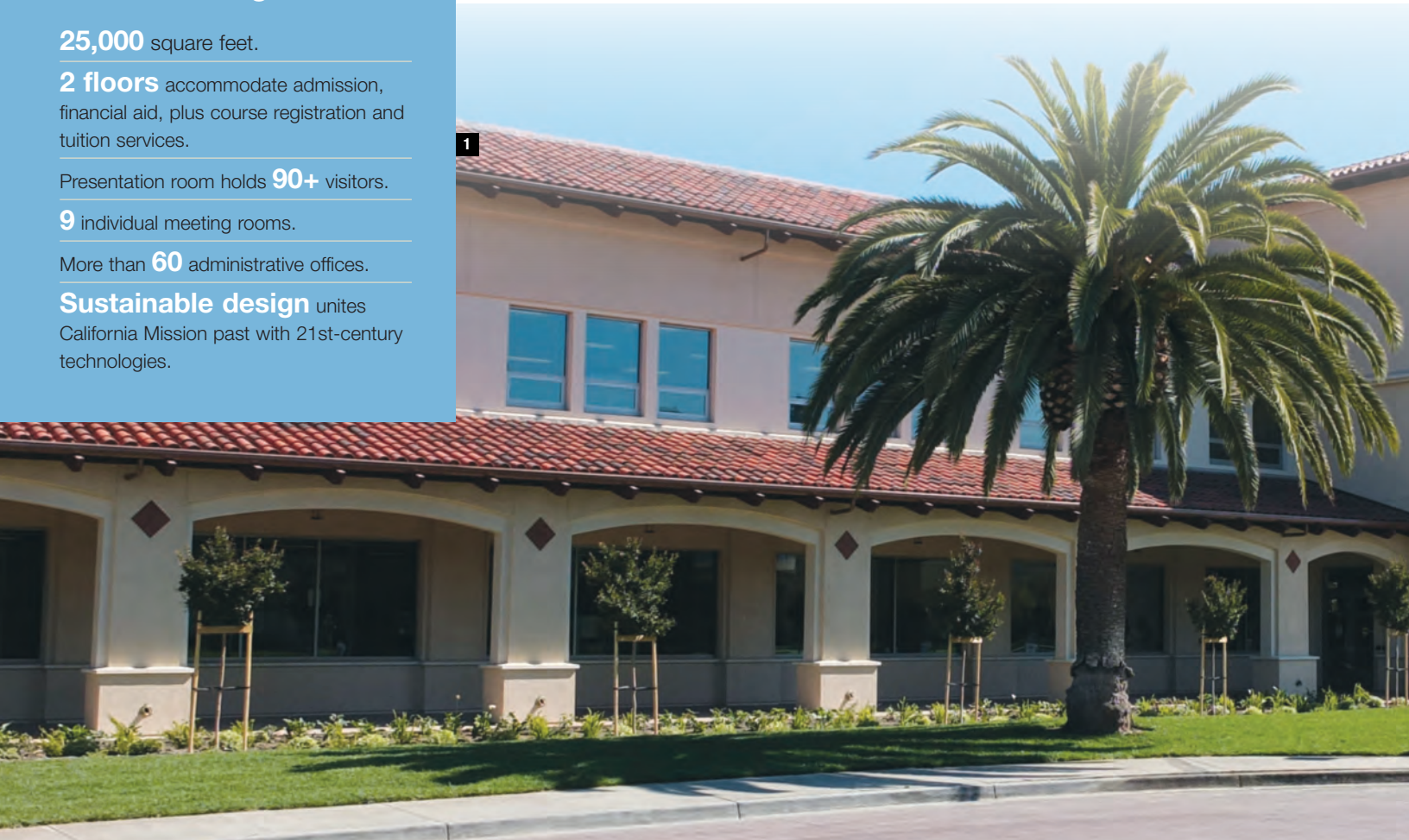
Presentation room holds **90+** visitors.

9 individual meeting rooms.

More than **60** administrative offices.

Sustainable design unites California Mission past with 21st-century technologies.


1





Above the metallic sphere hangs a cylindrical panorama of photos that includes images of recent grads and alumni who make the headlines—from **Leon Panetta '60**, **J.D. '63** to **Brandi Chastain '91** and **Steve Nash '96**. And on the back wall, opposite the main entrance, hangs an expansive golden-colored map of Silicon Valley,

dotted with companies that extend key opportunities for internships and careers. **Hannah Watanabe '10** was thrilled to find her profile on the map. Currently a social media marketing specialist for Silicon Valley software giant Synopsys, Watanabe arrived at that position through a Santa Clara internship. “When I was applying to

SCU and touring the campus,” she says, “all I really wanted to know was ‘What is life like after graduation? Are students successful? Where do they end up?’” Now, as one of the University’s Silicon Valley success stories, she helps answer that question for prospective students. **Dona LeyVa** 



See yourself here: 1 The front door. 2 The lobby. 3 The grand opening celebration. 4 Broncos all: From left, **Danae Stahlnecker '15**, **Nick Carrillo '12**, **Delia Cuellar '15**, and **Ela Zutshi '13**.

CAMPUS

A new Graham



Home suite home: The new Graham has a little of the old—including the roof tiles. And, of course, that Bronco spirit.

In 1963 a group of women undergraduates walked through the gates of Graham Hall and were greeted by all the best amenities the times had to offer. Now, nearly 50 years later, freshmen and sophomore students have just set foot in a new Graham Hall, where 21st-century comforts welcome them.


True, there won't be a pool to greet today's Broncos. Instead, Graham Hall 2.0 features roomy suites and many green-design highlights.

Located across from the Harrington Learning Commons, Sobrato Technology Center, and Orradre Library—on the same patch of campus as the old residence hall—the new Graham is 125,000 square feet. Among the major new improvements are the 96 mini-suites, each designed for four students, who will share two rooms and a bathroom.

Keeping with the feel of the old Graham, the building still features four distinct resident “neighborhoods” and a spacious center courtyard.

However, each eight-room neighborhood has received a makeover and now features a lounge, full kitchen, and laundry facilities.

The Pipestage, a club that became the stuff of legend, was another fondly remembered piece of Graham Hall's history. While the new Graham may not host such headliners as Steve Martin, it will feature a small theater as well as two classrooms in its common areas.

In fact, there's a lot of the old Graham in the new building. Ninety percent of the demolition waste, including concrete and the roof tiles from the old hall, was recycled or reused. Not only that, but according to **Joe Sugg**, assistant vice president of University Operations, the buildings will use “about 40 percent less energy than the strictest standard in California. SCU has submitted the new Graham for gold certification—the highest certification offered by LEED (Leadership in Energy and Environmental Design).” **Jeff Gire** 





FILM

Pride: Might be rabid, might be conflicted.

A rivalry like no other

It's only a game, right? Not if we're talking soccer and USA vs. Mexico.

We all know that sports are a metaphor for real life. But in soccer—or *fútbol*, as it's known in Mexico—the metaphor is especially fervent, particularly where relations with the United States are concerned. That rivalry is the heart and soul (and roar) of *Gringos at the Gate*, the latest documentary from Santa Clara's **Michael Whalen**.

Whalen co-wrote, co-directed, edited, and co-produced the project with a team of film (and soccer-filming) veterans. *Gringos* premiered at the Kicking + Screening festival in New York this summer, with showings in Los Angeles, Portland, and Santa Clara since. It has its Mexican premiere at the Oaxaca Film Festival in November. The fifth film for Whalen—an associate professor of communication—it's his first to feature Mexican soccer fans chanting obscenities about American soccer fans.

Most Americans are quite aware of the conflict that festers between the United States and Mexico over such hot-button issues as immigration and drug trafficking. Far fewer of us stateside understand the zealous distaste and, in many cases, outright loathing that Mexican fans feel when it comes to the U.S. national team.



This animosity, outlined well by Whalen and his fellow filmmakers, has been gurgling with more intensity because of Mexico's eroding soccer dominance in the western hemisphere. Now Brazil and Argentina dominate.

What's more, from 1934 to 1993, Mexico's national team lost just three times to the USA in 31 meetings. Since 1994, the "Gringos" have won 14 of 29 games between the two teams. But Mexico always won against USA at home—until this August, that is, when Team USA beat Mexico 1–0 at Azteca Stadium. To be fair, that was just after

the 2012 Olympics—which marked the occurrence of another first worth celebrating in Mexico City: They brought home the gold in soccer.

They can't say that yet

If *Gringos at the Gate* has a centerpiece personality, it is Herculez Gomez, a Mexican-American player who grew up in Las Vegas, has played pro soccer in the Mexican League, and is a member of the USA national team. Gomez speaks about his immigrant father's torn allegiances in deciding which team to follow and about the abuse he receives from both Mexicans and Americans, depending on where he's playing.

Other incisive remarks come from coaches, university professors, and soccer executives—and probably too many drunken fans. Yet as with every good documentary, visuals tell the story better than sound bites. The *Gringos* crew journeys to Mexico City for a World Cup qualifier involving the USA, and they capture the home team's waves of obsessive fans clogging the roads and sidewalks. The filmmakers then travel to Ohio for another Mexico-USA matchup—and discover that most folks on the rainy streets of downtown Columbus have no idea that the game is even being played in their fair city.

Gringos also drops hints that attitudinal change is afoot. *Los Angeles Times* columnist Hector Tobar notes that many Mexican-American fathers in Southern California would secretly be proud to have their sons play for the USA national team, but the fathers "can't say that yet" publicly.

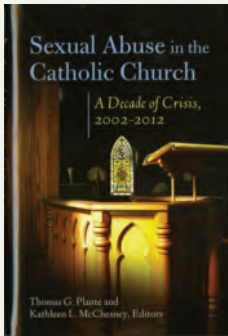
One question, however, is posed but left unanswered. And it has real-world ramifications: Would a consistently dominant USA soccer team convince more Mexican-Americans to assimilate in terms of allegiance to their adopted country in all ways? After watching *Gringos*, anyone who laughs off that question as being a trivial sports concern will stop chuckling. **Mark Purdy**



WEB

EXCLUSIVES

At santaclaramagazine.com see a trailer of the film and more.



A CAUTIONARY TALE

The Catholic Church is not the only institution to have been accused of harboring and hiding clergy who have sexually abused children. Clerics in all denominations have been accused of child abuse, and available data suggests that the percentage of clerics who have violated children is not proportionally higher in the Catholic Church than in other non-Catholic denominations. But the crisis for the Church, which began in January 2002 with reports in the *Boston Globe* that Fr. John Geoghan had been charged with sexually molesting 138 minors over many years (while superiors shifted him from parish to parish to avoid the consequences), cascaded nationally and internationally from there, generating so much media attention, justifiable outrage, and, finally, institutional reform, that it could turn out to be a watershed event.

That, in a sense, is the overarching storyline explored in ***Sexual Abuse in the Catholic Church: A Decade of Crisis, 2002–2012*** (Praeger, 2011), a fascinating, intellectually compelling, and very readable collection of 20 essays organized and edited by Santa Clara University psychology professor **Thomas G. Plante** and Kathleen L. McChesney, the first executive director of the protective agency established by U.S. Conference of Catholic Bishops (USCCB) to deal with the crisis. Following the book’s release, Santa Clara University hosted in May a national conference on what the past decade has taught us about the abuse, the abusers, the role of the Church, and the work that remains.

The question posed in the introductory essay is “How well has the Church dealt with the distressing problem of sexual abuse of minors?” Not surprising, given the complexity of individual and institutional behaviors, the results are mixed. But think about that for a moment: A book like this could easily have been an institutional whitewash or an angry harangue. Instead, McChesney and Plante have recruited contributions from a broad spectrum of knowledgeable people—critics and apologists, academics and psychologists—to produce a reflective, nuanced volume that should be of great value to Church leaders, the laity, and, arguably, to other organizations struggling to recover from similar scandals. Quite simply, the book gets a lot of things right.

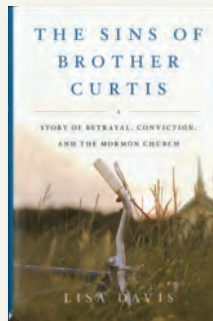
First, it acknowledges the suffering of the victims as being the central experience in this crisis, something that a defensive Church hierarchy was slow to do as the scandal erupted. The book opens with a prefatory essay by an unnamed woman who was abused by a priest starting when she was 14 years old. A devout Catholic, she writes not just about her physical and psychological suffering but about

the spiritual anguish she experienced as a result of her abuse. The harm to the faithful, the loss of trust, and its consequences is a theme—a cautionary tale—that recurs throughout the essays.

Second, at the outset, the book presents a factual baseline on the scope of the problem of clerical sexual abuse, drawn from a study commissioned by the USCCB and conducted by scholars at John Jay College. Its results are fascinating and in many ways counterintuitive. A crucial conclusion of this study is that it is imperative for the Church to educate would-be priests in a way that provides them with the emotional resources to deal with an unclastered, consumer culture. The topic of screening and educating priests is examined in depth in a series of essays near the end of the volume, offering concrete recommendations that inspire hope for the future.

Third, the book grapples extensively with difficult questions about Church leadership during this crisis: Was the USCCB’s 2002 response—the “Dallas Charter”—enough? Is something fundamentally wrong with Church culture? This discussion of organizational psychology and behavior should resonate widely, because it is in many ways a conversation about institutional power.

Power corrupts even our most hallowed institutions. The antidote to this darkness is light. *Sexual Abuse in the Catholic Church* offers both light and enlightenment. **Alden Mudge**



An account that offers hope for justice arrived through an airing of the truth.

CONVICTION AND BETRAYAL

While individual stories about child abuse and sexual predation are, sadly, all too common, most of us would, understandably, prefer to slide by them without really looking or listening. But there is much to recommend ***The Sins of Brother Curtis: A Story of Betrayal, Conviction, and the Mormon Church*** (Scribner, 2011) by **Lisa Davis**. Davis is a lecturer in SCU’s Department of Communication. Here she delivers a fascinating, meticulous account of the carnage wrought by Frank Curtis, a grandfatherly Mormon elder who preyed upon young boys in a downtrodden neighborhood of Portland, Ore., known as “Felony Flats.”

But Frank Curtis is not at the center of this narrative. He is a malevolent presence of course, and a mysterious one at that. But Davis shrewdly avoids a common fault of the true-life crime genre, which is to give the devil more than his due. As her narrative unfolds, Davis provides just enough details of Curtis’ crimes to horrify us but not enough to titillate us. In fact, Curtis has been dead almost two years when the central story of *The Sins of Brother Curtis* begins.

That story is a David versus Goliath tale of a small-time lawyer named Tim Kosnoff hired by one of Curtis’ victims to sue the Mormon church for, as it would turn out, knowingly allowing Curtis to return again and again to work with young boys, even after his pattern of abuse had been reported to church officials. The church in turn adopted an outrageous and hugely expensive scorched-earth legal strategy to thwart or delay each and every move by an increasingly obsessed Kosnoff and his associates.

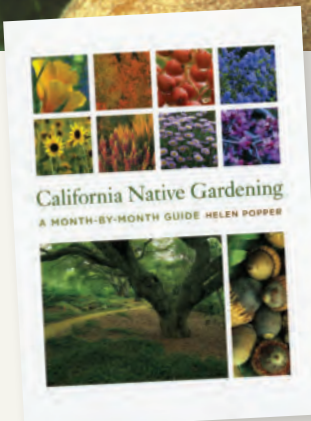
In Davis’ telling, the story of the lawsuit becomes a surprisingly compelling legal drama. Along the way, Davis manages to deftly illuminate the important constitutional issues at play in the case. And she explains some of the Mormon practices—a laudable

belief in redemption that allows the faithful to repent after excommunication and be rebaptized into the faith, for example—that abetted Curtis’ long career of sexual predation. Since many Mormon practices are known only to initiates, this is an especially interesting aspect of the book.

In the end, Davis’ account offers both hope for justice arrived at through a full airing of the truth and a reminder that the devastating effects of abuse last a lifetime. **AM**



STEPHEN INGRAM



TO EVERYTHING THERE IS A SEASON

What sets apart those who work with native plants from those who don't is the ability, conscious or not, to home in on the rhythms of a real ecosystem. Even if that ecosystem is a small plot of land behind your home, implies Associate Professor of Economics **Helen Popper**, whose *California Native Gardening* (University of California Press, 2012) is an indispensable guide for starting and maintaining a garden using only flora indigenous to the Golden State.

solarizing a lawn are sprinkled throughout. The book begins with October, when California's rainy season typically begins, and traces the state's rhythms the entire year, allowing gardeners of any experience to dip in and out as needed. In fact, the structure of the book encourages it, since Popper is keenly aware that California's diverse geography and various microclimates might mean that it's "May" in one area but "July" in another. While that might make for a confusing read in another book, the very approachable chapters make it easy for someone in the arid foothills to happily read concurrently with someone pruning on a misty coastline. A short section on garden styles reveals that not all native gardens need be "wild."

Marisa Solis SCU

Before coming to Santa Clara, Popper worked at the Federal Reserve Board in Washington, D.C., where she regularly briefed the board on international economic and financial developments. Here she sticks closer to home—organizing the chapters by month and covering tasks from watering to propagating to controlling

pests; practical tips; and a rundown of what's in bloom. Reasons behind many of the chores are explained in an easy, nontechnical manner, so that Popper's experience and wisdom in the garden gently inform and guide the reader at every turn. Timely topics such as celebrating Arbor Day, harvesting berries, and

Santa Clara Snapshot: 1912



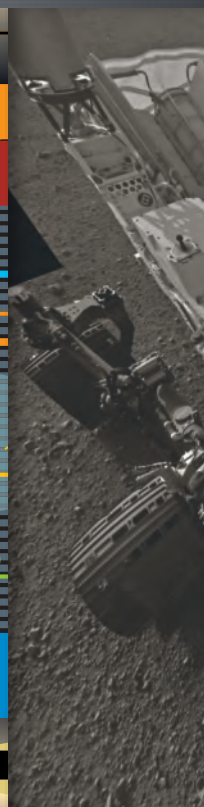
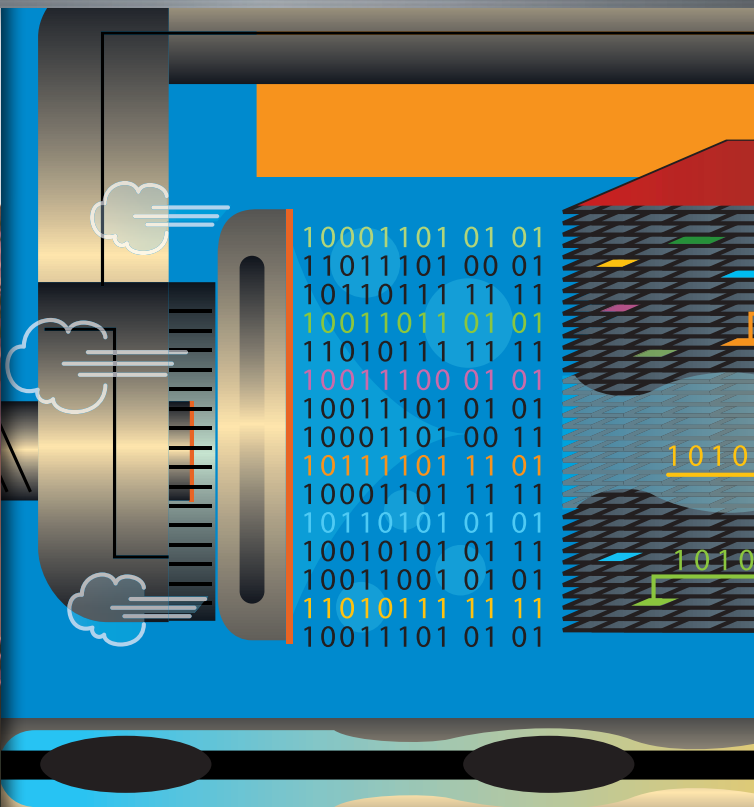
SCU ARCHIVES

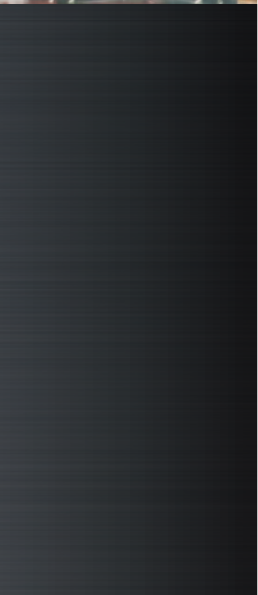
Universitas Sancta Clarae: With the addition of courses in engineering, architecture, and law, the college becomes a university—and the celebration in June draws tens of thousands.

- 1** billiard room, 8 large classrooms, and accommodations for 120 senior students in the just-completed O'Connor Hall.
- 3** degree programs offered in the new College of Engineering: civil, mechanical, and electrical.
- 30** cents for a dozen Eastern oysters to take home at the Santa Clara Restaurant and Oyster House. (California oysters are a much better buy, at 50 cents for 100.)
- 121** runners participate in San Francisco's inaugural Cross City Race—now known as Bay to Breakers.
- 35,000** people attend the celebration on June 16—and 10,000 of them march in a parade—marking the transformation of Santa Clara College into the University of Santa Clara. Archbishop P.W. Riordan of San Francisco presides at commencement.
- 10,091,550** square miles of the sun will be affected by a "great solar disturbance" the first week in June, predicts **J.S. Ricard, S.J.**, who is director of the college observatory and known as "Padre of the Rains."
- Holly Hanbury-Brown '12**



Engineering with a Mission





T

here's something wonderfully appropriate—at least in terms of metaphor—about the fact that the first engineering lab at Santa Clara opened in 1912 in an old seed warehouse. Plans and ideas and ambitions planted and nurtured have yielded remarkable fruit in their first hundred years—including work today in fields such as bioengineering and nanotechnology that were entirely the stuff of imagination a century ago.

The President of Santa Clara at the time, **James P. Morrissey, S.J.**, saw the opening of a college of engineering as instrumental to building “a great Catholic University.” Indeed, the same year the program in engineering was inaugurated, Santa Clara College officially became a university.

The first dean of engineering, **George L. Sullivan**, guided programs for 43 years and, in 1936, earned it accreditation for programs in civil, electrical, and mechanical engineering—making it the first Catholic university west of the Mississippi with accredited engineering programs. After World War II, those programs put seasoned veterans who were coming back to school on the GI Bill in the classroom alongside fresh-faced 18-year-olds. And, as the Santa Clara Valley was transformed from the Valley of Heart's Delight to Silicon Valley, new programs and technology and a spirit of entrepreneurship kept Santa Clara abreast of the changes. The arrival of a 7-foot-tall, 200-square-foot mainframe computer in 1960 was big news for the local press.

But the grounding of engineering at a Jesuit university means that more than know-how comes into play in teaching and learning. For example, the 1970s saw the creation of the Department of Engineering Management and Leadership, and amid the energy crisis Professor **Dick Pefley** led groundbreaking research in alternative fuels.

In recent years, Santa Clara has found itself on the world stage through programs that include graduate studies in sustainable energy and projects like the Department of Energy's International Solar Decathlon, in which teams from Santa Clara competed in 2007 and 2009—and, with two third-place finishes to date, are at it again for 2013—to build and operate an energy-efficient, functional,

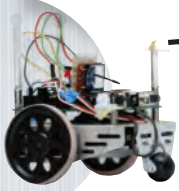
and livable solar-powered house.

Recently the school has also teamed up with the Center for Science, Technology, and Society on the Frugal Innovation initiative, which focuses on designing and building projects to help the developing world. That certainly fits with the engineering school's declared mission: “Be known and treasured, in Silicon Valley and beyond, for the impact of its graduates and faculty on improving the human condition through engineering education, practice, and scholarship.”

The past several years, Santa Clara's engineering program has earned a few special distinctions. Among them: In terms of the percentage of women on its engineering faculty, it's tops in the nation. And this past February, Dean **Godfrey Mungal** was invited to the White House to meet with President Barack Obama. The occasion, which included a handful of deans from other engineering schools: recognition for Santa Clara's commitment to retain and graduate more engineering students, since this serves not just the community but the nation and the world at large. The four-year graduation rate for engineering students at SCU is about 66 percent, compared with 22 percent nationally at public schools, and 45 percent at private institutions.

Where do we go from here? On the pages that follow, explore a few fields that illuminate some of the trajectories of where engineering is headed—with a couple glances of where it's been: soaring over California fields with an early pioneer of heavier-than-air flight, carrying men to the Moon in a Saturn V rocket, and landing the heaviest, most complex interplanetary robot ever built by NASA on the surface of Mars.

Steven Boyd Saum and Heidi Williams '06



We, robots

Adventures with the Robotics Systems Laboratory by land, sea, and sky. And in orbit.

On the third floor of the Bannan Engineering building, an undergrad facing several giant screens monitors a NASA satellite that's circling the globe. Down the hall, his classmates are designing and building wheeled, flying, and marine robots, which a master's degree engineer will experiment with for her thesis. A few steps away, Ph.D. candidates working on their dissertations under professor **Chris Kitts** develop advanced software and control techniques, allowing multiple robots to operate autonomously in complex formations.

"We've got everything up here," Kitts says, "from research desks to a more traditional lab room with soldering irons and electronics all over the place. Up on the roof is our tracking antenna for the spacecraft." The Robotics Systems Laboratory (RSL) even includes a robot graveyard students use to "cannibalize older robots for parts."

In the RSL, the coolness factor is never in short supply. Nor is a sense of how this work might apply: The National Academy of Engineering recently recognized Santa Clara's field robotics program as one of the top "real-world" engineering programs in the nation.

A few projects the robotics teams are running these days: a robotic boat called *Sea Wasp*, a handful of large underwater robots, and a flotilla of robot kayaks—not to mention wheeled robots, robot arms, and a new squadron of quadrotors (four-bladed helicopters).

Kitts credits the breadth and depth of the program to a lot of mentoring by folks in the Silicon Valley aerospace community—NASA Ames, Lockheed Martin, and others—plus grants, contracts, and collaborative projects. Students can take equipment into the corporate setting and put it through tests. "But the design engineering all happens at Santa Clara," Kitts says.

Most projects are not designated undergrad or graduate student only. Undergraduates might design, build, and learn how to operate a system. Graduate students help with the more sophisticated design challenges, and they also use the robots as experimental platforms to demonstrate their own research techniques.

Up the road at the NASA Ames center at Moffett Field, Kitts secured an unused warehouse (a former home and garden center, to be precise) with a large shop floor and high ceilings that's ideal for projects like flying those quadrotors around in formations that require complex autopilot software. Wheeled rovers zip around the shop floor, undergoing tests with tracking systems that allow students to perform controlled experiments. And the tethers of the underwater robots—a thousand feet long—can be unrolled and inspected.

Sea Wasp and the robot kayaks

Then there's Lake Tahoe. Every May, Kitts and the *Sea Wasp* team head for the lovely alpine lake for some deepwater robotic research. Partnering with geologists from the U.S. Geological Survey and the University of Nevada, Reno, students map Tahoe's underwater geology, photograph fault lines and features, and collect samples. The geologists bring questions—perhaps about volcanic flows and

Quadrotor control:
Tracking work with, from left, Anne Mahacek M.S. '13, Christian Zempel '11, M.S. '13, and Alicia Sherban '12, M.S. '13





Deep blue: The *Triton* robot explores the lakebed of Tahoe with a little help from Giovanni Minelli '06, M.S. '11.

“It all comes back to this idea of getting more than one robot to work together,” Kitts says.

“The application for this technology is ultimately to help people or the environment—that’s the direction we try to go with a lot of our projects.”

earthquakes in the distant past; Kitts brings robots and operator know-how to collect the data that answers these questions.

The *SeaWasp* vehicle automatically sails back and forth throughout a section of the lake where the geologists hope to see something. The robot maps lake bed topography to a half meter, revealing any major geologic features. “Afterward, the geologists look at the map and say, ‘Oh, there—that looks interesting. Let’s go look at that,’ then we’ll use an underwater robot to take a look,” Kitts says. Discoveries in recent years have included evidence of an earthquake and landslide-induced tsunami within Lake Tahoe.

The latest RSL project has been to “robotify” kayaks. Student teams acquire a standard kayak hull, affix a trolling motor like the kind you might buy for a rowboat, then add electronics, computers, and the necessary communications equipment.

Repeat a few times, and you’ve got a robotic kayak flotilla—which also ties in with Kitts’ research on multi-robot systems: finding ways to get robots to work together to accomplish tasks more precisely or more cost-effectively. “There are some things that you don’t see robots doing at all that this new technology will enable,” Kitts says. “We have a new technique that allows us to do cost-effective environmental sensing. We can use a group of robots to rapidly ‘sniff out’ the high or low point of a pollutant.”

The practical implications for robot kayaks are manifold. Beyond tracking problems such as oil spills, they can follow algal blooms and find oxygen-depleted regions caused by fertilizer runoff—which lead to “dead” regions of estuaries such as those in the San Francisco Bay Area. Nitrogen or oxygen sensors on the kayaks would allow the fleet to drive straight to a source instead of mapping the whole area to find the highest concentration of a contaminant. Deployed quickly enough, they could pinpoint the problem and even help prevent a massive die-off of marine life.

Rogue robot!

What happens when robots go bad?


“We joke that we build a lot of systems that have failures,” Kitts says, “which is great, since fault diagnosis is one of our research areas!”

Multiple robots offer redundancy in case something goes wrong. But low-level safety precautions are built in as well. If the team loses the wireless link to a kayak that’s traveled out of range, the robot will turn off its motors automatically. “With a wheeled robot, it just stops,” Kitts explains. “It’s not gonna go anywhere. But with a kayak, it’ll stop, but the wind may still blow it away or the current may take it. We always bring an extra kayak along so that we can go out and manually retrieve something and bring it back.”

As with the kayaks, the quadrotor robot helicopters require a software architecture that allows them to operate cooperatively.

“You can command things like, ‘I want this cluster of robots to go over here,’” Kitts says. “As an example, we have the Frisbee maneuver, which is: Get in a circle, go in that direction, and spin while you do it. From an individual robot point of view, it’s a very complicated maneuver. But the technique we have allows you to say that very simply, and then the automated control system takes care of all the details.”

This past year has seen increasing talk (and concern about) flying drones being deployed domestically in the United States. While the RSL began experimenting with large radio-controlled planes some years back, that program has been mothballed since the Federal Aviation Administration put a moratorium on autopiloted planes without a human in the loop. But by 2015, the FAA is expected to have guidelines for flying autopiloted aerial vehicles.

Meanwhile, the formations of quadrotors can be flown indoors and out at NASA Ames. When the FAA issues its new guidelines, expect a proliferation of those machines. And when that time comes, Kitts and the RSL want to be ready—with all systems go. 



Sarah Kate Wilson vs. Godzilla

An engineering professor tackles big problems—like attracting more women to her field and transferring mountains of data through the air.

Imagine replacing your Internet router at home with a lamp. Instead of radio frequencies, data would zip between your laptop and any source of illumination at the speed of, well, light.

Sarah Kate Wilson has spent her career devising ways to send heaps of ones and zeros through the air. She contributed to LTE (short for long-term evolution) research, which is widely known as 4G and has quickly become standard for high-speed wireless communication between mobile devices and data terminals.

But one of the “fun problems” that has drawn more of her attention of late is optical wireless—the use of LED lights to send information by blinking at nanosecond speed. While this flickering would be too quick for the human eye to perceive, a computer could decode these blinks. Unlike Wi-Fi, “Wi-Li” would only extend as far as the light reached, which makes it much more secure. Also, lighting is ubiquitous in buildings, making the use of this necessity for data transmission a sustainable two-for-one deal.

Wilson is quick to note that Wi-Li has been under consideration since the 1980s. It was initially rejected because radio seemed more practical, and radio could handle the speed requirements. Now with streaming movies, high-res photos, and all the other strains placed on data networks—plus improvements in devices like LEDs and detectors—optical wireless is getting another look.

“A lot like a puzzle”

When she explains her research, Wilson’s hands trace the undulating shape of radio waves, and her eyes light up behind her round glasses. She is an animated speaker, quick to smile, and eager to lead someone,



CHARLES BARRY

New adventures in wi-li:
Sarah Kate Wilson

who might be well
over his head, into

the wonkiest areas of her research. In the way that the best teachers do, she exudes an *It’s OK, you got this* disposition.

What exactly are “fun problems”?

“For me, that means getting lost in the math and equations. A fun problem is a lot like a puzzle.”

For Wilson, this was the initial appeal of engineering. As an undergrad at Bryn Mawr College, she found herself most looking forward to her math homework. The summer after she graduated, Wilson sold shoes. That job ended as soon as a classmate told Wilson she had an in for a computer programming job.

Wilson had never touched a punch card before accepting the job, but she found she had a knack for

the logic behind programming. A couple years after she moved to Palo Alto—to excise the long-distance aspect of a relationship with “a wonderful guy who is now my husband”—she took another leap, into the graduate electrical engineering program at Stanford.

A colleague where she worked at SRI told her, “Don’t bother applying. I didn’t get in and I went to Berkeley. You went to a school I’ve never heard of.” Wilson remembers thinking, “That was all the motivation I needed.”

At Stanford, Wilson was often the only woman in her classes. She recalls feelings of doubt that would wash over her. “Making mistakes is a big part of engineering.” She also says, “I had a lot of nice guy mentors. But there were some not-so-nice guys as well.”

This experience greatly influenced an idea she still champions today—the need for more women engineers. This year she helped organize the first Women’s Workshop on Communications and Signal Processing. Partially funded by the Institute of Electrical and Electronics Engineers, the meeting addressed the underrepresentation of women in senior leadership positions in engineering.

This is an important step for Wilson. If more students see women teaching classes, then the idea of entering the field becomes less daunting to women students. How important is this? Attracting women to the field will be just as important as any technological breakthroughs for engineering, she says.

“First, there’s the practical benefit: We need more engineers, period. And this would expand the pool of potential engineers.”

Wilson also points to studies that show differences in problem solving among male and female engineers. One particular study looked at the differences in playgrounds designed by male and female students. While many of the playgrounds shared common features—slides, monkey bars—there were areas where the designs did not overlap.


“If you added all those ideas together, you end up with a great playground,” she says.

Attracting women to the field will be just as important as any technological breakthroughs for engineering, Wilson says.

The search for Godzilla

This year, Wilson will be leading a pair of senior engineering students on a search for Godzilla. Inside her office.

While this isn’t the skyscraper-sized lizard, Wilson is talking about an equally disruptive force when it comes to optical wireless. This Godzilla comes in the form of ambient light: If Wilson were to replace her fluorescent lighting with the rapidly blinking LEDs in order to transmit data to her computer, how many other light sources would this system compete with?

Her students will be charged with “finding Godzilla” this year so that Wilson will know exactly what she’s up against in order to make optical wireless work. **Derrick Breska ’13** and **Brian Gallagher-Howard ’12** will be using silicon detectors that measure light intensity to study signal-to-noise ratio, signal-to-interference ratio, and dispersion effects of optical lighting for communications. Then with that data in hand, the fun is sure to begin. 



Deluge and drought

Lessons in how to wedge more data into smaller spaces. And build a smarter energy grid.

In 2010 alone, humans generated enough new data on our digital devices—from photos on Facebook and Flickr to movies streaming on Netflix—to fill more than 75 billion iPads. As more and more people join the global conversation, this flood of data will only rise. Which is why, for years, the work of Professor of Computer Engineering **Ahmed Amer** has focused on developing techniques to manage the mind-boggling (and growing) amount of data being stored on computers, whether locally or across the cloud.

That might be enough to keep him busy. But since arriving at Santa Clara University in 2009, Amer has also sought to bring the same techniques he has been developing to handle this data deluge to bear on a different kind of scarcity: the energy in the physical world that powers not just server farms but everything on the planet that's part of a power grid.

In both these settings, Amer focuses on the level of the operating system—the interface between a programmer's instructions and the computer hardware (or grid of energy resources) that is to carry them out. Operating systems handle the nitty-gritty of the underlying devices, allowing programmers to think on a higher, more intuitive level. When he gets wound up talking about his research, Amer's courtly, formal tone takes on a breathy quality—as if we're embarking on a big climb together. He's set his sights on a higher goal than just making programmers' lives easier, however. He aims to design operating system software that overcomes the underlying system's physical limitations, to make it more efficient, robust, and easily scalable.

A clever trick

Amer's recent work includes developing software techniques for a next-generation data storage technology known as “shingled magnetic recording.” Ordinary magnetic memory devices—of the kind whirring away inside most computers or stacked up in big data storage centers—have managed to fit more data into less space with every passing year. Now, though, the technology is approaching its fundamental physical limit—if the tiny magnetic bits (ones and zeros) that encode the data were to get much smaller, the natural motion of their individual molecules would be enough to destabilize and erase the bits.

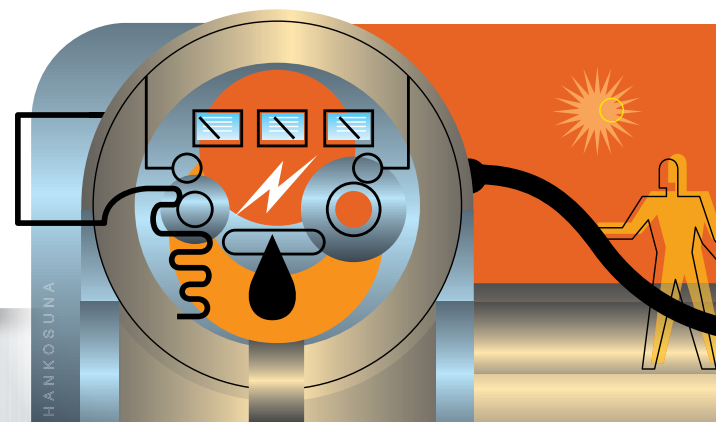
Shingled magnetic memory squeezes extra bits of data into a given amount of memory real estate by employing a clever trick. It structures the bits like a shingled roof: Only a tiny sliver of a given sequence of bits peeks out from underneath the subsequent bits “shingled” over it. Current shingled magnetic recording prototypes are expected to fit in twice as much data as ordinary magnetic memory, and that number may

“Operating systems are wonderful and useful liars.”

ultimately grow considerably, Amer says. But this data density comes at a price: There is often no way to change a bit's value without also erasing the values of the bits shingled over it.

To tackle this problem, Amer and collaborators are designing a novel storage system that essentially lies to the programmer—for his or her own good, of course—about how much memory it possesses and where it is writing the programmer's bits.

Their operating system software essentially sets aside a portion of the memory that it keeps secret from



the programmer. Then, if the programmer asks the operating system to change the value of a bit that has other bits shingled over it, the system instead stores the new value, using part of the hidden memory. If the programmer asks for the value of this bit later on, the operating system retrieves it from the new location, leaving the programmer none the wiser that it was not in his or her specified location.

“I like to tell my students that operating systems are wonderful and useful liars,” Amer says.

Better. Stronger. Faster.

This approach to data storage technology is emblematic of Amer’s overall strategy: Create operating system software that works beneath the programmer’s level of awareness, acting as a benevolent dictator in order to make the best use of the underlying physical resources. He is quick to point out that this is the basic line of thought behind much, if not all, systems software “written by much brighter people than myself.” But Amer has turned this mindset on a wide variety of computational challenges. For example, he is currently studying how operating system software can work behind the scenes to manage the layout of data in large data centers like Amazon’s corner of the cloud. His goal is to reduce the risk of massive outages, such as the storm-related breakdown that took out Netflix, Instagram, and Pinterest (all of which store their data on Amazon’s cloud) for several hours on June 29, 2012.

“A lot of the techniques we currently have for making systems more robust don’t scale up well to big data storage systems,” Amer says.

In the past few years, Amer has also started turning the power of his approach on new territory: the problem of improving the robustness and efficiency of the energy grid.

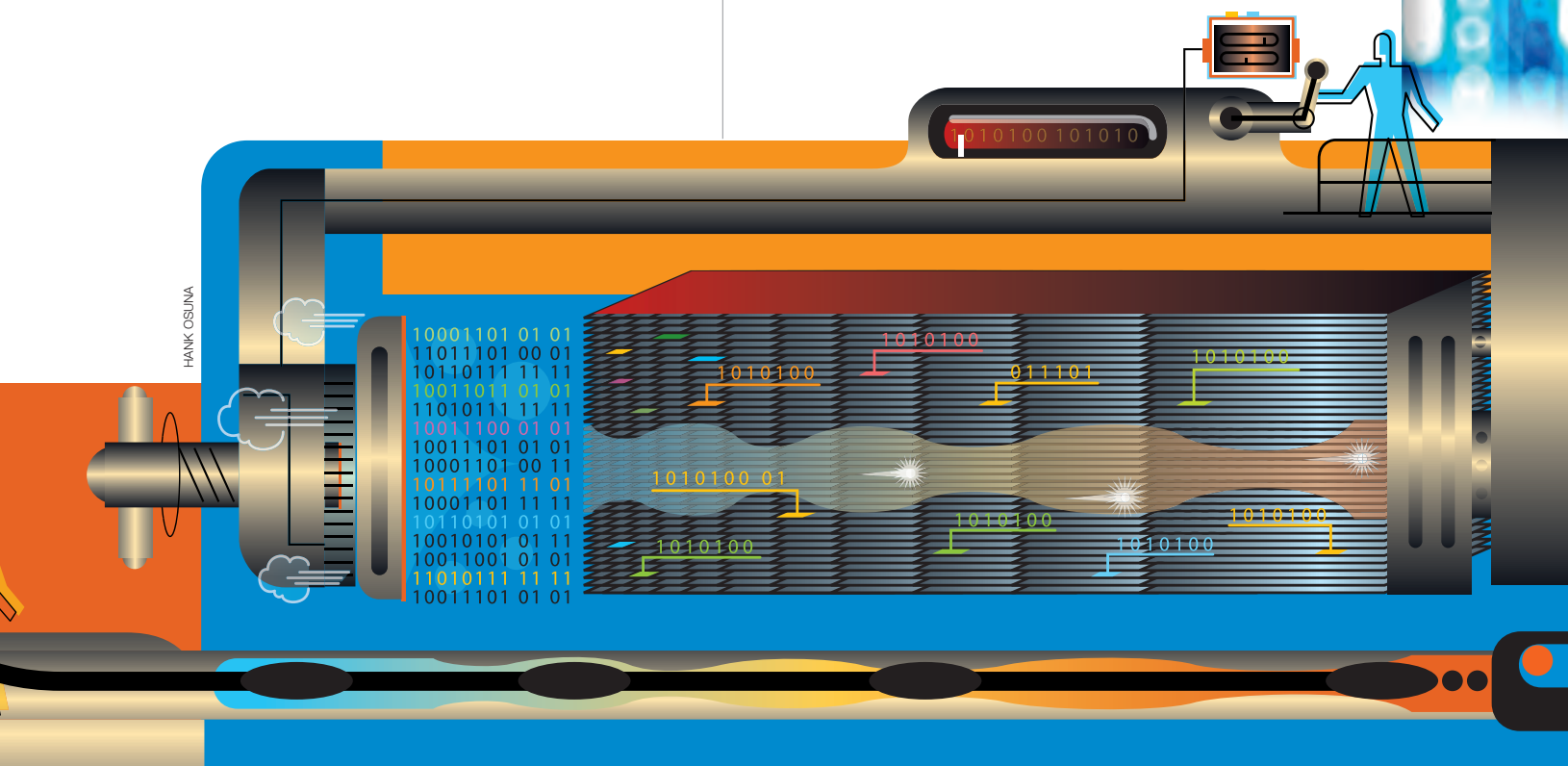
The energy grid has become considerably more complex in recent years. In the past, with power supplied by large, centralized sources, managing the energy grid was a comparatively straightforward task of sending energy downstream to a collection of end users. Today, by contrast, the process is evolving into an intricate dance of different energy resources, some renewable and some not, including home energy devices such as solar panels and electric car batteries that could allow homeowners to store energy for later use or even send it to the grid. So far, however, the choreography of this dance is mired in the past.

“Right now, the energy grid control centers tend to be centralized and hierarchical—there’s some guy in a control room looking at the world and making decisions,” Amer says.

Currently Amer is working on designing an energy grid operating system that could allocate energy resources in a more distributed manner, allowing give-and-take between all the players in the grid and “making smarter decisions than any human could do in real time,” he says. Such a system could improve the grid’s robustness and efficiency, he argues. What’s more, it could benefit the environment, since its reliability could reduce the need to use quick-start sources for power generators, which typically are less clean and efficient.

“This is a project that I’m particularly passionate about, because it has a huge potential impact for good,” Amer says.

He adds that he has been inspired by Santa Clara’s commitment to research on sustainability. “In the School of Engineering, we like to say that we are ‘Engineering with a Mission,’” he says, in punning reference to the Mission Church at the heart of the campus. “But it’s really not a joke—it’s something genuine that you feel in all the faculty, staff, and students.” SCU





Building biomedical tests

Where engineering meets biology, the work ranges from diagnosing voice disorders to tracking toxicity in the brain.

As a mechanical engineer, **Yuling Yan** analyzed machine vibrations to find clues that a bearing or gear might fail. She was in the midst of this research as a faculty member at the University of Wisconsin, Madison, when she met an ear, nose, and throat doctor from Malaysia who had come to the United States for graduate school. Yan and her friend, Kartini Ahmad, chatted about their work, one talking about mechanical systems, the other explaining how our voices work. Through these conversations, Yan realized that the same concepts she used to study mechanical vibration also applied to our vocal cord vibrations.

Yan then turned her engineering mind toward biological questions. Now an associate professor of engineering at SCU, she works with Ahmad and other collaborators, developing new ways to image the structure and movement of human vocal cords.

Biomedical engineers apply the principles of physics, biology, and engineering to solve biomedical problems, often to improve human health.

They build human tissue in a dish, design better materials for use in joint replacements, and develop techniques to capture high-resolution pictures of the organs in our bodies. They also bring an engineer's sense of function and efficiency to the innate curiosity of scientists uncovering biological causes of a particular disease.

The growing Department of Bioengineering at Santa Clara reflects the increasing role of bioengineering as part of health care overall. What started as 27 undergraduate students specializing in bioengineering as

part of a general engineering degree in 2008 has now expanded into an official department with about 150 students, including graduate students in a new master's program. Yan chairs the department.

Imaging vibrating vocal cords

Yan develops methods to image the vibrations of human vocal cords. She hopes these tools can help doctors diagnose a variety of voice disorders, including tremors that could be an early indication of Parkinson's disease.

Without special training, doctors may not be able to recognize vocal tremors by listening to a patient speak. Taking pictures of vocal cord tissue may not help them diagnose a problem, either; often, damaged vocal cords look normal in the pictures, as the problem lies in their function, not structure.

Instead, doctors specializing in vocal disorders visualize the vibrations of the vocal cords using a stroboscope. This instrument has a tiny camera with a flashing light on the end, essentially creating a trippy dance club effect for vocal cords. The flashing strobe lights make the vocal cords' vibration appear in slow motion.

But slow motion is not the same as capturing every one of the 100 to 400 vibrations of our vocal cords each second. So Yan is developing an imaging system using a high-speed camera to capture those true vibrations.

The camera peers down a patient's throat like the stroboscope, snapping 2,000 pictures a second. A computer program tracks the movement of the vocal cords in each image and converts that movement into a wave pattern that represents the vibrations.

Buried in that wave pattern are clues to possible voice disorders. These clues include changes in pitch or volume, as well as patterns that tell doctors how the cords open and close. Yan's software provides data archiving and image processing, and it analyzes the vibration patterns, searching for

information that might help a doctor diagnose a problem.

"There are a lot of engineering methods involved to take care of this vast amount of data," Yan says. "It doesn't mean anything to a clinician unless you process it, analyze it, and deliver some useful parameters."

This new imaging method is still in development, so it's not widely used in clinics yet. Yan collects high-speed images from patients with voice disorders who visit Krzysztof Izdebski, a doctor in San Francisco who

Often, damaged vocal cords look normal in pictures, as the problem lies in their function, not structure.

collaborates on the project and serves on the advisory board for SCU's bioengineering department. Now Yan is comparing those images to pictures of normal vibrations from healthy volunteers. The differences between the two sets of vibrations help Yan identify signatures for particular voice disorders.

Tracing toxicity

Prashanth Asuri, an assistant professor who joined the bioengineering department last year, wants to improve human health by understanding what makes us sick, specifically which chemicals harm brain development. He's pulling together methods from past research experience at universities and a startup company to develop toxicity tests using "realistic" chunks of brain tissue—that is, brain tissue re-created outside of human body that realistically predicts response. If successful, his tests could replace animal testing to identify chemicals that affect brain development.

A preliminary list of chemicals that affect brain development from the U.S. Environmental Protection Agency includes lead, nicotine in tobacco, and the artificial sweetener aspartame. Lead, for example, can lead to a shortened attention span as well as impaired memory and language skills. Since wide recognition of these effects in the United States in the 1970s, lead has been largely eliminated from gasoline and paint.

But only a small percentage of the thousands of chemicals used in industry have been tested for human neurotoxicity. Even fewer are known to affect developing brain tissue. That's partly because animal testing—the way neurotoxicity has typically been determined—is time consuming and expensive. It also bumps up against ethical objections. As a consequence, representatives of 15 U.S. federal regulatory and research agencies formed a committee known as ICCVAM with a goal to find alternatives to animal testing. And yet there's a recognized need to increase testing of industrial chemicals' effect on human health and the environment; five years ago the European Union's REACH directive went into effect, with more substances being tested each year.

For two years Asuri worked with Solidus Biosciences, creating microarray biochips that encapsulate liver enzymes. Drug makers dose the cells with medicines in development and determine if they damage tissue function.

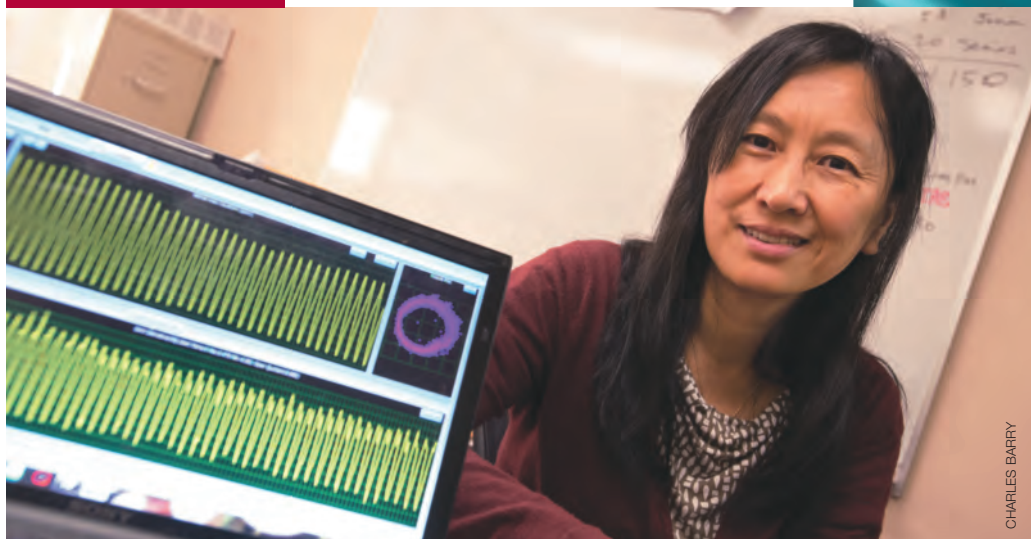
But those tests, and others in development, use cells programmed to continuously divide—not exactly like the tissue in our bodies. So Asuri plans to develop similar toxicity tests using engineered tissues that resemble those in our bodies: three-dimensional chunks of tissue grown from human neural stem cells.

These stem cells, however, have one special trick. They glow red or green when they reach particular stages of development.


Asuri and his students begin toxicity tests by triggering neuronal development using a few chemical cues. Then they squirt in a potentially toxic chemical. The cells grow enough to glow, and a machine counts the cells based on the brightness of the glow. A decreased cell count means the chemical either killed the cells or halted their development; the test also allows Asuri to identify particular developmental stages affected by the chemicals.

These tests with engineered tissue could help researchers screen several chemicals simultaneously. That means Asuri might be able to test many of the unknown chemicals for toxicity. Neurodegenerative diseases like Parkinson's and Alzheimer's disease may have connections to chemical exposure. If so, Asuri's tests could lead to steps to prevent the neuronal damage.

Visualize: Wave patterns of vocal cords' movement filmed by Yuling Yan



Asuri develops these tests using known methods in tissue engineering and cell function testing. He's just adapting the methods for a new purpose. "In that sense, I'm an engineer, not a biologist," Asuri says. "I look at what has been done and use that in a way that's readily applicable."

He's also incorporating these tests into a laboratory course for undergraduate students. Thus the next generation of bioengineers begins to develop solutions to medical problems that may affect us as we age. 



The long view

Build it safer and stronger—sustainably.

Mark Aschheim and **Tonya Nilsson** believe in complementary goals when it comes to construction: Make a building structurally sound so that it can withstand an earthquake that may never come. And build it with materials that won't deplete natural resources or harm the environment.

Aschheim chairs SCU's Department of Civil Engineering, where Nilsson is a lecturer. With assistance from undergraduate and graduate students, they're testing the use of innovative building materials and systems that tread lightly on the earth, while ensuring that buildings and their inhabitants can survive tremors.

Mighty bamboo

Aschheim pioneered the use of bamboo in structural I-beams in SCU's 2007 Solar Decathlon house. He and Nilsson are quick to extol the many sustainability

and structural advantages of bamboo compared to conventional alternatives. "It grows rapidly and it sequesters carbon very rapidly. This carbon stays sequestered, assuming we don't burn the building down. And the bamboo does not decay at the end of the useful life of the building."

Nilsson notes that bamboo can first be harvested after only four to six years; after that, you can re-harvest every three to four.

"It's a grass: You chop it down and it grows like your lawn. The root system stays intact," Aschheim adds. "It sprouts new shoots and continues growing; whereas with trees it's 30 to 50-plus years before you can harvest, and when you cut it down, it's done."

Bamboo is also strong for its weight—three to four times stronger than softwoods typically used in construction. One advantage is shape: Bamboo is hollow, "inherently optimal from a structural point of view," Aschheim says. "Anything you can do with softwood you can do with bamboo. That includes load-bearing walls, shear walls, floor joists, and plywood on top of floors."

But there's a catch: In order for bamboo

Structures solutions:

From left, **Tonya Nilsson**, **Jake Echeverria '11**, and Berkeley-based engineer **Henri Mannik**



CHARLES BARRY

to become a mainstream building material, building codes must be updated and code enforcement officials persuaded to permit the use of the emerging technology. Aschheim and his collaborators have developed “acceptance criteria” for bamboo I-joists so that building code officials recognize its use; now the engineers are working on criteria for other bamboo components. This process will require time and patience—starting small, getting projects approved at the local level on a case-by-case basis. “At some point demand will come, and if building officials see it more and more, then it does push code development,” says Nilsson.

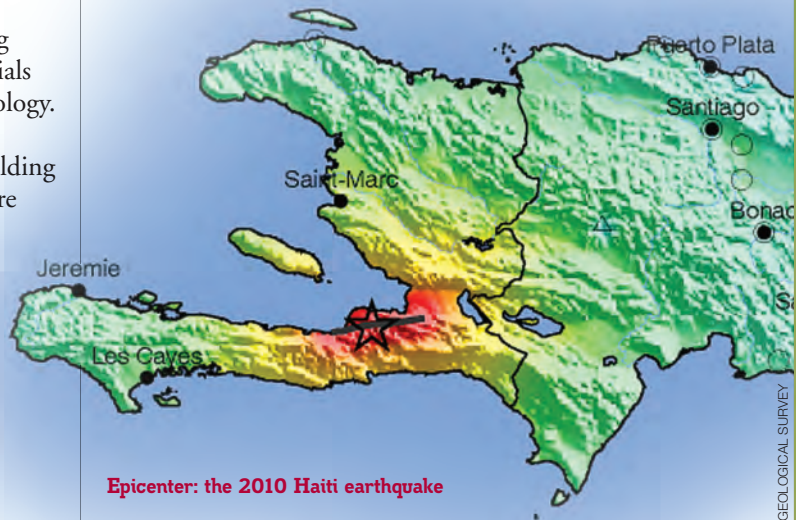
Aschheim and Nilsson hope that work under way in the School of Engineering’s new Structures Lab can hasten the deployment of bamboo and straw bale, another less common but environmentally sensible building material.

The greatest promise—and need

The earthquake that struck Haiti in January 2010 took a heavy toll in human life for several reasons; one factor was poorly constructed buildings in densely populated Port-au-Prince. A safer but cost-effective approach to construction could save lives in the future. Aschheim, Nilsson, and their students have tested pieces of the building systems they would like to deploy in Haiti.

“The idea is to tread very lightly on the environment, using local materials, preferably recycled materials, as much as possible,” says Aschheim.

The new building system was developed in conjunction with the Ecological Building Network. It begins with a 3-foot-high wall of concrete block made using a low-cement mix and recycled concrete rubble. A bamboo framing system is anchored atop the wall. To attach the bamboo, a length of rebar is set into the concrete block wall, with one part sticking up out of the wall. The bamboo frame is set over the rebar, taking advantage of the bamboo’s hollow shape, and held in place with mortar. This connects the elements. Care must be taken, however, that the bamboo column does not touch the concrete block, because moisture could infiltrate the column. To create the necessary distance, the column is raised an inch or so off the block, which exposes a small section of rebar. The bar is flexible and ductile; during an earthquake, that protects the frame from damage. However, the rebar, if left exposed to the elements, will eventually rust. An easy solution to this problem is to protect the bar with a bottle top from a plastic Coke bottle. The bottom of the plastic bottle top is set into mortar along the top of the concrete block wall, and the top of the bottle top is inserted into the bamboo column, to keep in place the mortar that bonds the rebar to the bamboo column.




Epicenter: the 2010 Haiti earthquake

Damage assessment and paradigm shift

Aschheim witnessed firsthand the life-or-death importance of sound earthquake engineering on a tour of Japan after the magnitude 9.0 Tōhoku earthquake, in March 2011. Aschheim joined a National Science Foundation–funded reconnaissance team for five days in the field, inspecting the shaking damage resulting from the quake and aftershocks.

The experience prompted Aschheim to ask if engineers need to re-evaluate the conventional wisdom that prioritizes the avoidance of structural damage in buildings. “Earthquakes occur so rarely that it’s very expensive to design buildings not to be damaged at all, because the forces are quite high. The paradigm has been to design buildings that are ductile, because ductile systems can be designed at lower cost to withstand earthquake demands. Even while this approach provides for life safety, the problem is that this ensures structural damage will occur even in moderate earthquakes,” he says. “At some point you have to ask: ‘Is this serving society very well?’” After all, it does a community little good if a hospital survives a quake but is so badly damaged that it cannot treat injuries in the aftermath.

“We know how to approach this problem,” Aschheim says, “and considering different structural systems and possibly making buildings that are stronger can reduce the damage—and the larger social and economic consequences.” Building retrofits that increased stiffness, such as installing concrete shear walls or steel braced frames, were effective. Other technologies, such as buckling-restrained braced frames and base isolation, which couples rubber pads with steel plates, also have a place.

But that, too, would need to be reflected in building codes. 

CHARLES BARRY

PROFILE

Drago's gold

From an Olympic water polo medal to designing systems for the rocket that put men on the Moon: the life and work of engineering professor Dragoslav Siljak

Dragoslav Siljak should be so lucky to write another book with the staying power of one of his earlier efforts. In 1991, he published a mathematical bible for those trying to understand, control, and predict the kind of vast decentralized systems that increasingly rule modern life—such as electric power systems, communication networks, and mobile robot formations. Two decades later, that landmark guide, *Decentralized Control of Complex Systems*, had fallen out of print, but it still topped Amazon's best-seller lists in two technical categories, with used copies selling for \$800. The title was republished earlier this year.

"I hit the gold mine," says Siljak, the former Benjamin and Mae Swig Professor of Electrical Engineering. He retired from teaching in June. His life's work has been dedicated to bringing control and understanding to highly complex systems, some with thousands of variables. "It's a perpetual topic."

Now as Siljak, the author of four books and hundreds of papers, enters retirement after nearly 50 years at the University, his thoughts have turned to a different kind

of writing—his memoirs for his grandchildren to read. He may not conjure another best-seller, but Siljak—a man with a shock of white hair, square jaw, and a *you've got to hear this* intensity—definitely has tales to tell.

Inside water

Born in Belgrade in 1933, Siljak was just a small boy when Nazi planes began a bombardment that killed thousands in the city and engulfed in flames the apartment house across the street from his family's home. To survive the ensuing occupation, bombings, hunger, and cold, his family often escaped to the countryside to stay with relatives.

The war instilled in him a hatred for the occupying Nazi army that spread death and destruction over his homeland. "Occupation is bad. I remember when my mother and I were taken to be shot by Nazi soldiers for no apparent reason. The people who occupy consider the people they occupy as subhuman, and show no mercy for the

land they occupy."

The end of the war brought a return of normalcy, including regular schooling for virtually the first time in Siljak's life. But the rise of communism in Yugoslavia brought its own problems. His father, like his grandfather, was an ordained Orthodox priest, a stain in the eyes of the new regime. A teacher for the blind, Siljak's father was barred from working with children.

Young Dragoslav, however, found a different path—one writ in water. During his junior year of high school he emerged as a water polo star, a distinction that allowed him to travel and receive much-needed stipends that helped him and his family. In 1952, Siljak—then only 18 years old—made the national team and traveled to the Olympics in Helsinki. There Yugoslavia was undefeated going into the final match against Hungary for the gold. The match ended in a draw; with the winner determined by cumulative goal ratio, the Yugoslav team was awarded the silver. The following year the team won the World Cup in the Netherlands, beating Hungary in the finals, avenging the loss of the gold medal.

For the 1956 Olympics in Melbourne, with the games just weeks after Soviet troops crushed the Hungarian Revolution, Siljak wasn't there for the show. He'd broken his hand in a national championship game and had to stay home. But he was back with the team for the 1960



Olympic silver: At Helsinki in 1952

Olympics in Rome. Alas, Yugoslavia finished fourth—no medal.

Even so, in a country where water polo was king, Siljak appeared set for life: He was all but assured of several more years playing at the top level. But after the 1960 Games, Siljak walked away from the pool for his other passion: mathematics and engineering.

Competitive equilibrium

Siljak had always been as ambitious a student as he was an athlete. At the university, he sought out books by Russian mathematical maestros like Lyapunov, Pontryagin, and Krasovskii. And, in a country where the supply of basic goods and services sometimes made something as simple as putting together multiple copies of an article draft into a monumental task, Siljak managed—as a graduate student at the University of Belgrade—to get papers published in the top U.S. journal in control engineering.

Some 300 people crowded the hall to see him defend his doctoral dissertation, “Control System Synthesis by Conditional Optimization of the Squared Error.” Thousands more read about it in the national newspapers. But brilliance could only get him so far, because Siljak was not a member of the Communist Party.

His published papers, however, caught the attention of U.S. academics, including **G.J. Thaler**, a lecturer at Santa Clara who convinced Dean of Engineering **Robert Parden** to extend an invitation to Siljak. He arrived on the Mission Campus in 1964 to teach and conduct research.

His work on control systems quickly earned him more notice stateside. After hearing Siljak lecture on new control methods for larger booster rockets, an attending NASA scientist invited him to the Marshall Space Center in Alabama, where he soon began work on control design for the Saturn V, the rocket that powered Apollo astronauts to the Moon. The Saturn program was overseen by Wernher von Braun, whose undeniable brilliance couldn’t obscure his Nazi past in Siljak’s mind.

“His knowledge about rocket engineering, including control, was unbelievable,” Siljak says of von Braun. “But [when] I shook hands with him, it crossed my mind that he shook hands with Hitler. These were mixed emotions.”

Yugoslavia was officially neutral in the Cold War, but the socialist nation was still allied with the Communist bloc. Von Braun told Siljak that he was the only person with a “red” (communist) passport to work on the Saturn V. So if Siljak wanted to use the bathroom, he had to do so with the stall door open and a police officer standing guard.

After having to deal with that once, Siljak says, “On my future visits I decided to make sure I didn’t have to go to the bathroom.”

“We don’t want to know just what the world is, we want to know what the world can become!”

biology to the arms race to gene regulation. That includes a solution to the stability versus complexity problem of model ecosystems, published in the journal *Nature*.

“When we study these models, we don’t want to know just what the world is, we want to know what the world can become,” Siljak says.

His ideas brought a stream of scientists and engineers from around the world to Santa Clara to study complex dynamic systems. In 2001,

he became a life fellow of the Institute of Electrical and Electronics Engineers. In 2010, he published his most recent book, co-authored with colleague **Aleksandar I. Zecevic**, *Control of Complex Systems: Structural Constraints and Uncertainty*. He also

received the Bellman Control Heritage Award, the highest distinction for U.S. control systems engineers and scientists. It was, he told colleagues when he was presented with the award in Baltimore, like winning the gold.

“Drago Siljak is an icon in the field of stability and control,” Engineering Dean **Godfrey Mungal** said after Siljak was named the Bellman winner. “Past winners of the award have come from mostly [large research universities], so it is even more impressive that he has been recognized from an institution which carries a high teaching load.”

Nearing 80, Siljak says retirement is recognition that “teaching is a performing art.” But while he will be spending more time with his four grandchildren, he has no intention of abandoning research on mathematical aspects of multi-agent systems, which remains as fascinating as ever.

“It’s why a musician doesn’t stop playing music,” he says. “There is this high you get when you’re doing it.”

As for the pool, he hasn’t fully abandoned that, either. Early evenings this summer, you’d find him in the water at the Sullivan Aquatic Center, swimming laps. Afterward, if you had a few minutes to listen, he had some stories to tell. And he had a few questions. **SCU**

Models and matrices

As the Apollo program ended, Siljak moved on to work on the Large Space Telescope, Skylab, and other NASA projects while broadening his research

into complex systems ranging from population





SCU ARCHIVES

PROFILE

Wings

For a century, John J. Montgomery has been given short shrift when it comes to his role as an aviation pioneer. It's time to set things right.

Ask any schoolchild who invented the airplane, and you'll hear a chorus of Wright answers. But that's wrong—not just the answer, but the question. Better to ask “Who made heavier-than-air controlled flight possible?” In that case, **John J. Montgomery**, a professor at Santa Clara from 1898 to 1911 who started work in heavier-than-air flight when most people thought it impossible, flies higher than any other aviation pioneer.

Making that case is *Quest for Flight: John J. Montgomery and the Dawn of Aviation in the West* by Craig Harwood (a descendant of Montgomery's brother, James) and Gary Fogel, just published by the University of Oklahoma Press. The work draws on sources in the SCU archives and the Library of Congress, as well as court records and century-old newspaper archives. It also provides a “history of technology and aviation in the American West, one that happened primarily in the Bay Area,” Harwood says.

Montgomery's interest in flying started when, as a boy of 10, he saw the demonstration of a lighter-than-air craft

in Millbrae in 1869. High school brought him to Santa Clara, where he attended the preparatory division before studying at St. Ignatius College (now University of San Francisco). He returned to the family farm in the Otay Valley near San Diego, where he worked as foreman; there he also studied the shape and movement of birds' wings in flight and used a solar microscope to examine insect wings. He calculated how the curved surface of a bird's wing gave it the lift needed for flight. He built a wind tunnel to test his theories. But he did this work quietly; after all, most folks thought someone trying to build a flying machine must be a little light in the head.

A little run and a jump

Montgomery's ideas truly took wing one morning in

1884 (or 1883, according to other accounts), when he and brother James loaded their disassembled 38-pound wood and fabric glider into a hay wagon and drove to Otay Mesa, on the edge of the farm. In case anyone came upon them and asked what they were up to, they brought along a pair of rifles. They could say they were hunting.

At the edge of the mesa they assembled the gull-winged glider (later named *The Gull*) and waited for the wind to pick up. When it did, James positioned himself a dozen feet below the glider, holding on to a rope attached to its front, and John, at all of 130 pounds, sat inside the glider. “Now!” John cried. James ran, and John rose 15 feet into the air. He soared 600 feet, steering with the controls he'd designed.

This wasn't the first glider flight ever, but it was a major advance in control and stability. Montgomery built two more working gliders during the next several years and, in 1893, he spoke about his work at a convention in Chicago organized by aviation pioneer Octave Chanute. But Montgomery put aside his study of controlled flight for a time to work on other inventions and to teach at a Jesuit college in Humboldt County and, starting in 1898, at Santa Clara.

He returned to his gliding experiments in 1903 when a former circus performer, Thomas Baldwin,



The Hiller Aviation Museum and Institute in San Carlos houses several replicas of Montgomery's gliders. At santaclaramagazine.com see an extensive slideshow of archival photos and an interview with Craig Harwood.

suggested that a hot-air balloon could lift a glider, which upon release would perform aerial acrobatics and then land in front of a crowd. Montgomery began new experiments with small gliders, just months before the Wright Brothers flew 120 feet in 12 seconds at Kitty Hawk. However, the Wrights' powered airplane lacked the stability and controllability of Montgomery's gliders, Harwood argues.

One of Montgomery's gliders, the *Santa Clara*, first took flight on the Mission Campus in 1905: Piloted by "aeronaut" and parachutist Daniel John Maloney, it was lifted by hot-air balloon to 4,000 feet and then released. Maloney piloted the craft back to earth before a crowd of 1,000. Montgomery filed for a patent, issued in 1906, for "Aeroplane." That filing became the basis of lawsuits stretching for years. But the flights of aeronaut Maloney in the *Santa Clara* came to a tragic end much sooner—just three months after the maiden voyage—when a tangled cable broke a strut that led to a fatal crash.

Montgomery continued experimenting with models in wind tunnels, trying to perfect wing design and controls. Those experiments led to a monoplane glider, *The Evergreen*, which Montgomery began testing with plans to install an engine for powered flight. But on Oct. 31, 1911, with Montgomery himself at the controls, *The Evergreen* was launched from a rail for greater speed, then was caught in a whirlwind and crashed. A stove-bolt in the fuselage impacted Montgomery's head behind the ear. He died before help could arrive.

Where credit is due

Montgomery's widow, Regina, failed in her lawsuits to seek compensation for her late husband's 1905 patent. For his part, Orville Wright dismissed Montgomery's accomplishments as "mere aeroplane hobbies" and spread misinformation about the glider designs, as *Quest for Flight* tells it.

But some recognized Montgomery's achievements. *Gallant Journey*, starring Glenn Ford, brought Montgomery's story to the silver screen in 1946. Santa Clara erected a monument in his honor that same year: an obelisk in the Mission Gardens, in front of Ricard Observatory. The obelisk, which includes a quotation from Alexander Graham Bell that "all subsequent

attempts in aviation must begin with the Montgomery machine," sparked the curiosity of **John Burdick '65** when he was a student. He sought out SCU archivist **Arthur Dunning Spearman, S.J.**, who was in the midst of writing *John Joseph Montgomery: Father of Basic Flying*, published in 1967. The encounter launched Burdick's own 50-year fascination with Montgomery.

Service in Vietnam took Burdick on a detour (and yielded a self-published memoir, *A Sphinx: The Memoirs of a Reluctant Spy in Vietnam*), but his career brought Montgomery back into the picture: 25 years ago, Burdick led students at Watsonville High School to build a replica of the *Santa Clara*. Earlier this year he gave a talk at SCU as part of the School of Engineering's centennial celebrations. And he's teamed up with cousin **Bernard Burdick '63**, who holds a doctorate in physics, for work on a book-length project they're calling *The First American Pilot*.

"Montgomery was the only designer of 'aeroplanes' at the time who was well educated and did fundamental research in the nascent field of aeronautics," Bernard Burdick assesses. "Montgomery was most concerned with stability and control prior to adding a motor. All the other builders were just guessing. Today, all modern airplanes possess many of the features of Montgomery's early aeroplanes, such as cambered and tapered wings, tandem wings or canards on some, advanced flight controls, ailerons (flaps) on the wings, and control surfaces at the rear."

The Burdicks argue that giving Montgomery due credit won't diminish the achievements of the revered Wright Brothers. But it will give an early aviation pioneer the place he deserves in the sky. **SCU**

Montgomery the polymath

John J. Montgomery designed an electric

telegraphic typewriter and played a part in the establishment of California's first state park at Big Basin. "He was a polymath, involved in such diverse fields as electricity, wireless telegraphy, astronomy, recycling, and gold recovery," says Bernard Burdick. "His patent on 'rectifying electric currents' was a highly efficient means for recharging storage batteries and was sold to the San Francisco Gas and Electric Company for \$500,000." At Santa Clara he provided technical assistance to **Richard Bell, S.J.**, in his improvements to Marconi's wireless invention—the radio—and helped "Padre of the Rains" **Jerome Ricard, S.J.**, in setting up and calibrating his telescopes. **PT**



SCU ARCHIVES

PROFILE



Can you stand the heat?

NASA/JPL-CALTECH

It took months of space flight for the *Curiosity* rover to reach Mars. And, to survive the heat of entry, it took a shield that a team led by Robin Beck '77 designed.

It's just after 10 p.m. Pacific Time on Aug. 5, 2012, and the moment of truth for *Curiosity*—or, as it's better known, the Seven Minutes of Terror—is about to arrive. It's been about eight months since NASA launched the Mars-bound craft—the biggest, most complex robot the agency has tried to land on another planet.

Curiosity enters the atmosphere at 13,200 mph and things start to heat up. The craft's shape helps slow descent to Mach 2. But that means for two and a half minutes, friction brings the temperature on the heat shield to 2,100 degrees Celsius—past the melting point of titanium.

Back on Earth, millions are watching. Among the scores of engineers waiting anxiously at the Jet Propulsion Laboratory in Pasadena is **Robin Beck '77**. She's cognizant engineer for the Mars Science Laboratory thermal protection systems—the one in charge of making sure *Curiosity* doesn't burn up during entry, and the one

who'll be answering questions if it does.

Tonight, every signal that pings back from Mars brings good news. But when Beck was brought onto the project in 2007, the heat shield news wasn't good at all.

Catastrophic failure

The original plan was for *Curiosity* to fly what's flown on every craft NASA has sent to Mars since the 1970s: a honeycomb structure filled with an ablator—a heat-resistant, glass-filled material—called SLA-561V. But the size and mass of the *Curiosity* posed challenges: The shield had to be nearly 15 feet across; and the craft was too heavy for drag alone to slow its descent significantly in the low-density atmosphere of Mars. Plus, flying in at an angle would create turbulent flow—resulting in high heating and shear forces pushing on the leeside surface.

Even so, the initial high-temperature arc jet tests on SLA-561V went fine. As in the past, when the ablator was subjected to these tests, a melt layer formed on the surface and remained in place. But when the material was tested in combined high temperature and high shear, the glassy material flowed along the surface, and gouging of the material resulted. That was a problem. At this point, Beck was brought in—with the understanding that these concerns needed to be addressed *now*.

The team pushed testing to further extremes, turning up the shear forces but keeping them within flight parameters. The (very surprising) result: catastrophic failure of the material—way beyond melt and flow. Basically, it disappeared from the honeycomb. “The filler was gone in three seconds,” Beck says.

Additional tests resulted in continued unpredictable catastrophic failure. Beck asked: “How could we fly with this material?”

The craft *could* fly with it if the flight plan were changed dramatically to include a much shallower angle of entry. But that wasn't an option; a long, slow entry would compromise communications with the vehicle. So there they were, in October 2007—less than two years away from scheduled launch—without a shield. Which



meant they had 18 months to develop, design, test, qualify, manufacture, and assemble something that worked.

“There are cracks.”

The heat shield team also had to work backward: Build to a weight limit of 200 kg, no more. Enter PICA (Phenolic Impregnated Carbon Ablator), developed at NASA Ames in the 1980s and used in a single piece on the *Stardust* craft that took samples from asteroid Annefrank in 2006. PICA was also being considered in a tiled format for the *Orion* craft that will carry humans into space. Benefiting from more than 100 tests already done on PICA by *Orion* engineers, Beck's team began testing how PICA would perform when shaped into tiles fit onto the *Curiosity* aeroshell and sealed with gap-filler.

The results were good. Even better, given the lightweight nature of PICA, the team was able to build a shield 1.25 inches thick while keeping within the weight limit. That gave an extra 25 percent margin of thickness, they calculated. It also provided some ballast that *Curiosity* needed anyway.

With a month to spare in spring 2009, the shield was completed. Into storage it went—where it sat for longer than initially planned, because the launch date was moved from 2009 to 2011 (not because of the heat shield, though). Meanwhile, attention and funding priorities turned to other unfinished matters—including the avionics, the software that would tell the rover how to land and where to go.

Turn the calendar to May 2010. A piece of the PICA shell that underwent testing in 2008 is sitting out on an engineer's desk at Lockheed's Denver facility. Papers are piled up around it; perhaps it's been knocked off the desk occasionally. A colleague walks by, admires the piece of shell—but then she sees something unexpected: “There are cracks in this material.”

Beck gets the news in California and feels a pit in her stomach. But other pieces of PICA shell that were tested have been carefully bagged and put in storage; under exam, these check out fine. The heat shield itself comes out from storage. An exam reveals micro-cracking on the surface to a depth of about .016 inches. But during arc jet testing, Beck's team had looked at the effects of gouges three times deeper; they'd also experimented with intentional dings in the material, even cracking pieces of it apart and putting them back together. Beck is sure that, micro-cracks notwithstanding, the heat shield will do fine.

And so it is, on Aug. 5, 2012, when *Curiosity* begins its descent: two and a half minutes of roaring down through



CHARLES BARRY

After catastrophic failure of the heat shield material, Beck asked, “How could we fly with this material?”

Mars' atmosphere. The craft ejects six 25-kilo masses to rebalance itself—a move known as SUFR, for “straighten up and fly right.” A mortar fires and a 51-foot-diameter parachute deploys. It's time to eject the heat shield; its job is done.

In about 30 seconds, *Curiosity* has slowed enough that it's time to release the back shell and begin the final stage of descent: Retro-rockets fire and slow the craft further, a sky crane gently sets down the rover on the surface and flies away. *Curiosity's* first photo is transmitted back from the surface of Mars. At JPL, there are whoops and hugs. The moment is like Neil Armstrong setting foot on the Moon.

Banner years

The summer of *Apollo 11*, a San Jose girl by the name of Robin Senigaglia was about to enter high school. Math and science were her strengths. Engineering wasn't

yet on her radar. That changed in college, after her first year at Santa Clara—and after a family friend helped her find a summer position as an engineering aide with GE Nuclear in San Jose. At the end of that summer, she changed her major to mechanical engineering.

Only one other woman was studying engineering in that class—**Kristen Walsh '77**, who now also works in aerospace. But professors were very encouraging, as were the male students—for the most part. But there were enough bumps that for her senior yearbook profile, Robin Senigaglia mentioned (along with all she was grateful for) that she wasn't sorry for “intruding” on the male-dominated field.

These days, through her position at NASA Ames, Robin Beck carries a banner for women in engineering: “Use your gifts and brains,” she says. It's a familiar role. At Santa Clara, she literally carried the engineering banner when it was first created: for an academic procession as part of the 125th anniversary of the founding the University.

This August, getting *Curiosity* safely through the atmosphere of Mars wasn't the only big item on Robin Beck's calendar. Two weeks after the heat shield did its job, she and her husband, **John Beck '78**, celebrated their daughter's wedding.

Beck is currently working to make improvements on PICA. “It's quite brittle,” she says. To build a big craft that can carry humans to Mars, a more flexible ablator is needed. And to be on track for a mission around 2035, “We have to be getting the materials ready now.”

The million-dollar Leavey Challenge

SCU can receive a major grant—but needs gifts from 9,000 undergraduate alumni to make it happen.

BY JEFF GIRE

The Thomas and Dorothy Leavey Foundation, a longtime supporter of the University, has issued the Leavey Challenge to SCU: a \$1 million grant on the condition that 9,000 alumni make a gift of any size to SCU before June 30, 2013.

In approving the grant, Kathleen McCarthy, head of the Leavey Foundation Board, praised the “long, meaningful relationship with Santa Clara.” Why leverage this with a participation grant? “Consistent financial giving by an increasing percentage of alumni speaks effectively to those looking at the University from outside who possess the ability to help—and it becomes contagious among alumni over time,” she says.

News media and foundations use alumni giving as a measurement of overall alumni satisfaction. This plays a role

in determining both university rankings as well as support from corporations and foundations.

Last year, alumni giving at Santa Clara reached 8,145 undergraduate alumni—or 21.42 percent. The Challenge asks SCU to top that record by 855 gifts this year and to reach a participation rate of 23 percent—the highest mark for SCU since 2003. If the Challenge is met, the \$1 million will go toward the Santa Clara Fund, which helps current students through scholarships, providing student research opportunities, supporting study abroad, and more.

SCU trustee and Leavey Foundation board member **Lou Castruccio '60** added, “Alumni happy with their experience who want to help continue SCU’s tradition of quality education can provide tangible evidence of that desire with any amount of financial support. It certainly isn’t the only form of support, but it is a widely recognizable and important one.”

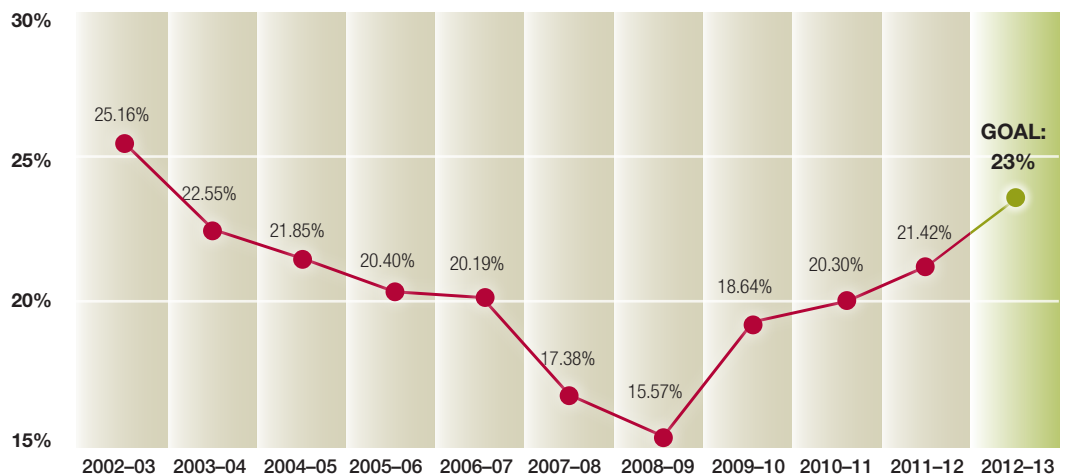
While alumni may be familiar with the Leavey name from the business school and event center on campus, the Leavey Foundation has a long history with the University that dates back to **Thomas Leavey '22** and his days as an undergraduate student. Following his time at Santa Clara, Leavey graduated from the Georgetown University School of Law.

He proved that the Jesuit ideals he surrounded himself with in school could translate to the business world when he co-founded a company based on a square deal. The premise: Rural car drivers got into fewer accidents than those in the city, and should have lower car insurance rates. The company: Farmers Insurance. In 1952, Thomas and his wife Dorothy Risley Leavey created the Leavey Foundation. **SCU**



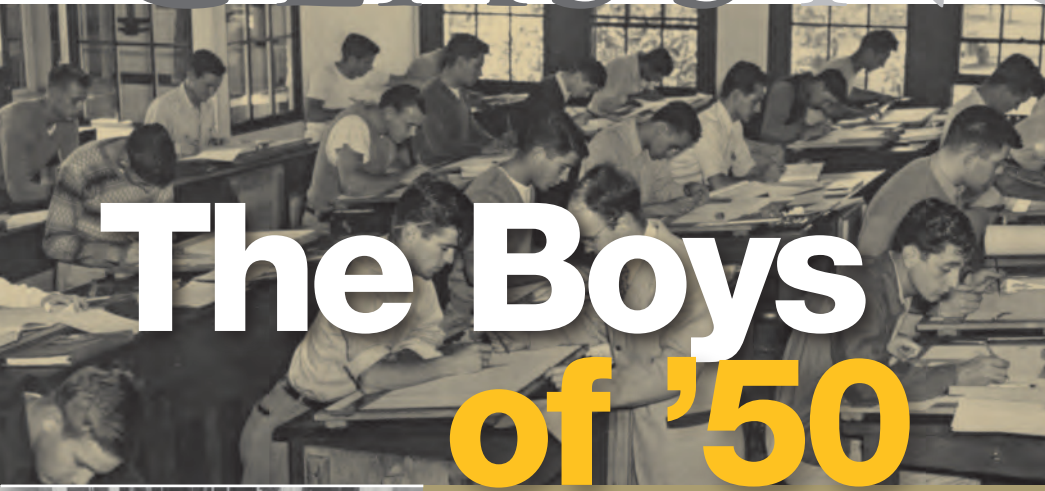
SCU Alumni Giving Participation

The percentage is up in recent years—and the University hopes that this year will be even better.



CLASS NOTES

The Boys of '50



An engineering class like no other

BY STEVEN BOYD SAUM

It was the biggest class yet for the School of Engineering. When they entered as freshmen in 1946, there were more than 130 of them, their average age 22. More than half were veterans, studying at Santa Clara courtesy of the GI Bill. Some were married, some with kids, living in a newly constructed community of surplus Quonset huts christened Veteran's Village.

Then there were the young men just out of high school. This was the type who the Jesuits and scholastics (Jesuits in training) were used to dealing with. The combination made for an interesting mix, to say the least. These guys lived in Kenna, O'Connor, and Nobili.

Bill Veale '50 served on a destroyer in the Pacific during World War II and became a civil engineer. To make good concrete, he says, you've got to have good, strong aggregate—an apt metaphor. Of his classmates, he says he doesn't know a fathead in the bunch. That, and they sure worked hard—at least those who stayed did.

After the first semester, many dropped out or transferred to other programs. Only about half ultimately graduated, with about 25 each in electrical, mechanical, and civil engineering. Even if you'd fought at the Battle of the Bulge, as **Tom Clark '50** did, the academic rigors were a different kind of challenge.

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Work and play: Veterans swelled the ranks of classes at SCU after World War II. For the engineers, there was a time for slide rules or capacitors, and there was a time to go for an inside straight. Every autumn since graduation, the engineering grads of 1950 have held a reunion. There was even a group that got together in 1951 in Korea (right), where a number of grads were serving. Photos from SCU Archives, *The Redwood*, and Vince DiTomaso.





At santaclaramagazine.com see pics and read more about the Boys of '50.

Continued from page 35



THE REDWOOD

Electric trio: From left, James Elam '50, Edwin Anderson '50, Vince DiTomaso '50

The result: "Santa Clara was never the same after our class got through," says **Vince DiTomaso '50**, an electrical engineer who founded DiTomaso and Associates. Straight out of Loyola High School in Los Angeles, DiTomaso was one of the fresh-faced lads, though he was old enough to remember the Great Depression. Like many of his classmates who didn't serve in World War II, he served in the military right after graduation in June 1950. The war in Korea started in July.

The bonds forged among the 77 grads (and their wives) are so solid that, every autumn starting in 1950, they've held their own reunion. This October, they gathered in South San Francisco for an afternoon of seeing friends and family, and of sharing stories old and new.

Odds are, their tales have been told many times among this group. Some recall memories of struggling to make ends meet, some recount high jinks as they dodged curfews and other rules laid down by the Jesuits.

Rope tricks and baptismal rites

Gene Ravizza '50 is the founder of Cupertino Electric and was honored with the Engineering Centennial Award this year. As a student he was a "day dog," commuting to campus each day from the family ranch—which meant he wasn't subject to the same curfew that students like **Art Philbert '50** were, living as they did in Kenna Hall.

"On Friday night, they would lock you in and you couldn't get out until Saturday morning," Ravizza says. But Philbert wanted to visit his home in San Francisco on weekends. So Ravizza brought a length of rope from the ranch. "Art would tie that rope around the radiator in his room, then go down the side of Kenna. His roommate would drop the rope, and he'd drop that in my dad's truck."

The scheme worked fine, until one day two Jesuits strolling through the gardens looked up and saw footprints leading up the wall. So much for the rope escapades.

Ken Schwarz '50 came to Santa Clara after a year in the Army. He says he's a firm believer in reaffirming baptismal rites, something he practiced while living on the third floor of O'Connor Hall. In the room below him was **Dennis Rosaia '50**, who'd served in the Merchant Marine during World War II and had a penchant for leaning out the open window, "arms outside, addressing the multitude below ... holding forth like he was Il Duce," Schwarz says. The temptation was too much for Schwarz. He fetched a pail of water, blessed it, and doused the orator below.

Sadly, Rosaia wasn't at the reunion this year; he died this spring. But his widow (and hometown sweetheart), Lillian, was there; she's long been a part of this group. They were wed when he was a student and they lived in Veteran's Village. She worked in San Francisco at the time, and she recalls having to get up at 4 a.m. to catch the train north.

Father Stretch

The priest in charge of discipline was **Edward Stretch, S.J.** Just about everyone has a story about Fr. Stretch. A few anecdotes involve him leading a raid on one of the local watering holes on St. Patrick's Day. "Black robes!" somebody shouted. The underage students scurried out the back. The older vets stayed put. The priests confiscated student ID cards all around. The next day the vets got theirs right back.

DiTomaso thought he had a right to be in the bar, so he didn't run with the rest; Fr. Stretch thought otherwise. He "campused" the 20-year-old for the rest of the academic year.

Or there was the student who'd flown 25 missions over Germany during the war and missed class one day because he was sick. The scholastic who was teaching that class told the student, who lived off campus, that the rules were that he needed to bring a written excuse from a parent. The surly reply: "Father, it'll be a cold day in hell when that happens."

The vets changed other traditions at the University, says **Walter Heintz '50**, who served almost a year in the Navy before enrolling as a student. "When the sophomores tried to haze the freshmen that year, it didn't work." Heintz followed in the footsteps of his father, **Jacob E. Heintz '23**, in attending Santa Clara and running University Electric, which the elder Heintz founded in 1919.

The GI Bill that enabled many veterans to attend Santa Clara has long been understood to have changed not just higher education but to have had a tremendous economic impact: a \$350 billion return—about a seven-fold yield—if reckoned in today's dollars.

Jack DeRegt '50 served as co-host for this year's reunion. He describes the experience on a simpler, more personal level: "All these veterans got together with some high school kids and we formed a family. It's really been an incredible deal."

Emily Elrod-Cardenas '05 and Carol Blitzer contributed to this article.

CLASSNOTES

UNDERGRADUATE

1950 Cornelius Buckley, S.J., celebrated his golden jubilee of priesthood in March. To honor his life of service, family and friends established a scholarship fund in his name at Thomas Aquinas College, where he is the head chaplain and assistant dean for religious affairs. Buckley has spent much of his academic career in Jesuit institutions—earning multiple degrees, teaching, and serving in administrative positions. His publications include *When Jesuits Were Giants and Your Word, O Lord... Meditations for College Students and Anyone Else*.

1951 Frank Helfrich received a commendation in May from the Menlo Park Historical Association for 30 years of volunteer service. The 83-year-old historian and Menlo Park native helped to shepherd the nonprofit organization almost from day one, archiving the town's memories, which he still does.

1954 James Rowe writes: "Just moved to Pasadena Country Club Monterey."

1957 Lawrence G. Desmond's biography, *Yucatan Through Her Eyes: Alice Dixon Le Plongeon, Writer and Expeditionary Photographer*, is now available on Kindle. He writes, "I just published a memoir: *Blue Water and Rocky Lights: My Life in the U.S. Coast Guard, 1957-1960*. It includes a chapter on **Bernard R. Hubbard, S.J.**, who convinced me to join the Coast Guard, and is loaded with my photos of life on the ships, rescues, huge waves(!), and the St. George Reef lighthouse." At santaclaramagazine.com/classnotes, follow a link to a preview.

1962 Ronald C. Diebel writes: "Living in San Jose with 'significant other' Nancy and three cats. I have been practicing medicine for over 40 years."

1963 REUNION
OCTOBER 10-13, 2013



FROM THE SCU ALUMNI ASSOCIATION

Two Bills and me

Learning from a pair of passionate Broncos and extraordinary human beings

As the School of Engineering centennial comes to a close, I can't help but reflect on two Engineering Broncos who made an indelible mark on their university, their school, and me personally.

For **Bill Adams '37**, senior year at Santa Clara was full of milestones. In October 1936, Bill toured the construction site of the not-yet-completed Golden Gate Bridge, compliments of **George L. Sullivan**, then dean of engineering. A few months later, his parents scraped up enough money to send him on the train with the Bronco football team to New Orleans. On Jan. 1, 1937, Bill witnessed Santa Clara defeating Louisiana State University 21-14 in the first of two consecutive Sugar Bowl victories. Then, at his spring commencement,

Bill was awarded the Nobili Medal, given to the male graduate judged outstanding in academic performance, personal character, school activities, and constructive contribution to the University.

With a degree in mechanical engineering, Bill began a long and distinguished career at companies that included General Electric and FMC. In his spare time, he was active in his local community and at Santa Clara University. Bill served as the national president of the Alumni Association, president of the Engineering Alumni Board, and a member of the Board of Regents. He and his wife also established the William and Marijane Adams Jr. Endowed Mechanical Engineering Fund, which helps mechanical engineering students each year with financial support and research fellowships. At age 95, Bill is still active on campus attending lectures, Alumni Board meetings, musical performances, and impromptu discussions with the School of Engineering dean. He visits the Donohoe Alumni House often and frequently provides me advice and opinions about the state of the University and the direction of the Alumni Association.

Then there's **Wilmot "Bill" Nicholson '36**. Raised on the family pear ranch in Alviso, Calif., Bill graduated from Santa Clara as a civil engineer. In 1948, he founded the W. J. Nicholson Company—a construction, management, and consulting firm that built many Silicon Valley landmarks. This company also built The Charles H. Graham Residence for Women in 1963, just two years after Santa Clara first admitted women as undergraduate students.

Bill held numerous community leadership positions, including mayor of the City of Santa Clara. As a lifelong

supporter of the University, he also taught for 20 years in the Civil Engineering department. He served on the Civil Engineering Advisory Board, Pastoral Ministries Advisory Board, Engineering Alumni Board, Board of Fellows, and the Board of Regents. In 2003, Bill and his children donated the St. Clare Garden to the University in memory of Bill's wife of 64 years, Ruth.

Bill was an engineer by trade, a Bronco at heart, and a rancher by blood. He was active in agriculture throughout his long career and was herding cattle and riding horses in Montana three weeks before his death in 2007.

As a marketing major who is admittedly not strong in math or science, I often marvel that two engineering majors 50 years my senior would have such a profound effect on my life. Both Bills were frequent visitors to the University and I relished every encounter. Their unwavering

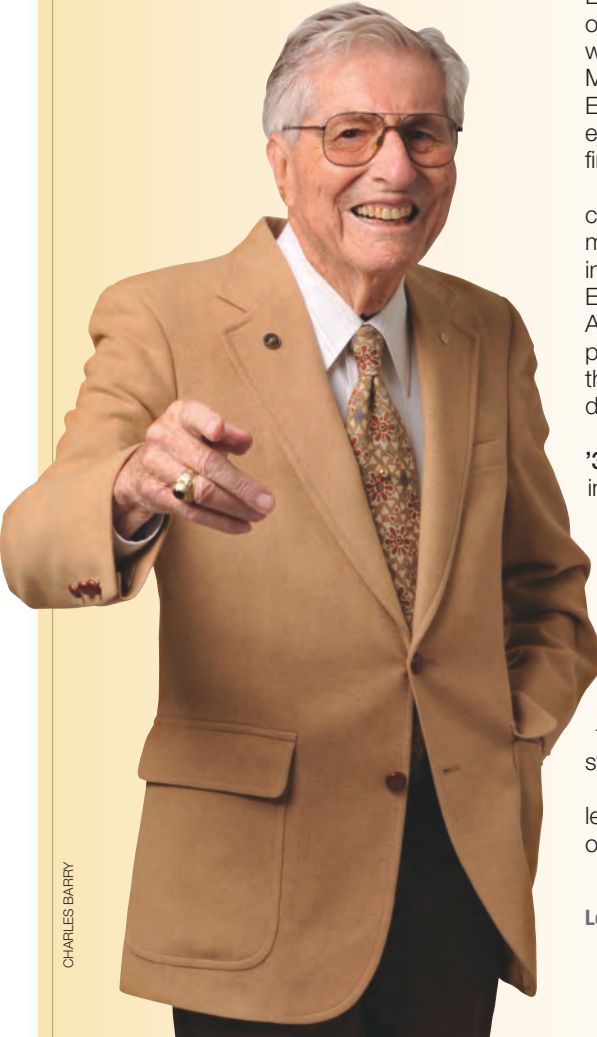
support for Santa Clara taught me what it means to be a Bronco for life. Their charming personalities and quick wits left everyone they met feeling enriched, uplifted, and committed to making a difference. With their words and their actions, both Bills challenged me to be a better leader, and I am truly grateful for the deep imprint both left on me—personally and professionally.

Our University Mission is to educate citizens and leaders of competence, conscience, and compassion and cultivate knowledge and faith to build a more humane, just, and sustainable world. Bill Adams and Bill Nicholson lived this mission every day of their lives; two amazing men, two passionate Broncos, and two extraordinary human beings. I know I am a better citizen, leader, and person today because I've had the privilege of knowing these Two Bills.



CHARLES BARRY

Bronco by heart: Bill Nicholson '36



CHARLES BARRY

Peace,

Kathy

Kathryn Kale '86
Assistant Vice President
for Alumni Relations



Looking at you, kid: Bill Adams '37

1964 Charlie Barca writes: "Joyful first-time grandfather of Libby Rose McGrillen (born October '09), the daughter of **Sarah Barca '95**. 'Nonno' gets to nanny twice weekly while Sarah owns and operates Funky Door Yoga in the Haight. Her family lives in Bernal Heights."

Clarence Sullivan writes: "My granddad taught the Commercial Course in 1911. My parents and four grandparents are buried at the University Cemetery, and my daughter, **Kieran Sullivan**, is a professor in psychology now."

John Turner M.A. '72 writes that he currently lives in downtown San Jose after living in Los Gatos for three decades. He retired in 2004 after teaching high school English for 35 years. He enjoys volunteering and serving on two boards.

1965 Paul L. Peterson retired in 2007 after nine years as founder and CEO of Aurum Consulting Engineers, a professional electrical engineering consulting business in Monterey, Calif.

Joan Schirle starred as Mary Jane in *Mary Jane: The Musical* at Dell'Arte's Mad River Festival. Schirle is founding artistic director of Dell'Arte International (www.dellarte.com) and lives in Blue Lake, Calif.

1966 John Cody was named a Top 1,000 Financial Advisor by *Barron's Magazine* this year. Cody has spent more than 40 years helping clients at Merrill Lynch achieve their financial goals. He is married to **Victoria Cody '66**, and works with his sons Brian and Patrick in the Century City branch of Merrill Lynch.

Don Gomes teaches at University of Alaska, Anchorage and serves on the Anchorage Arts Advisory Commission. He and wife Ann Holt are staff to their Aussie "Bear."

James "Jim" Wiechers is in his fifth year as men's golf coach at Napa Valley College. This fall he also started his fourth year as women's golf coach. He spent 13 years on the PGA Tour and has been the principal golf instructor at

Chardonnay GC and, presently, at Eagle Vines GC.

1967 Kathleen (Meehan) Thuner writes: "Director, North County Fire Protection District; director, Mission Resource Conservation District; director, American National Standards Institute."

1968 REUNION OCTOBER 10-13, 2013

1969 Michael Murphy is solutions developer for Acxiom Corp.

1970 Dennis Awtrey writes: "After several years of retirement, my wife, Peggy, and I have opened a bed-and-breakfast on the north Oregon coast in Manzanita."

Lisa Sowle Cahill was recognized with an honorary degree from College of the Holy Cross, in Worcester, Mass., this year. She is a theological ethicist at Boston College.

Ed Northup joined CooperVision as president of the Asia Pacific Region. He has extensive international and general management experience in the medical device industry.

1971 Mike Friedrich received a certificate of ministry studies from the Pacific School of Religion in Berkeley, where he is enrolled in the Master of Theological Studies program. Recently DC Comics reprinted in the hardcover collection *Justice League*, vol. 10, the comic book scripts that Friedrich wrote during his senior year at Santa Clara. Keen eyes will spot the SCU references in the backgrounds.

1972 Jeanne English retired after 26 years at the California DMV, where she conducted driving tests, specializing in big rigs.

Esau Herrera J.D. '76 is proud to report that his daughter, **Kiara '12**, recently graduated from SCU and promptly joined AmeriCorps to "save the world." Herrera is serving as president of the school board at Alum Rock School District in East San Jose, the same district that he attended as a child.

Anna Likos writes: "I am living in Morocco, working for the CDC as the resident advisor to the Ministry of Health. After two and

a half years in Haiti and two years on the Ivory Coast, Moroccan life is wonderful! I expect, though, to return soon to the United States, to which my husband and I are looking forward."

Tom MacManus currently resides in Rancho Santa Fe in San Diego County, where he runs his own real estate appraisal company.

Diane Petroni-Newhouse M.A. '78 has been in private practice at the Almaden Institute for more than 30 years.

Kayte Sherman Russell writes: "I have been a GrandmaBear for almost eight years. I have been a teacher for 34 years and teach 7th and 8th grades in Chula Vista, Calif. I am passionate about learning and teaching about the Holocaust, tolerance, American history, English, and morality. I taught **Mike Beresky '69's** daughter; I have the son of one of my former 5th grade students, **Jose Vizcaino Jr. '16**, going to SCU this year!"

John G. Schroeder and **Silvia R. Schroeder '75** have been married 38 years and have two children, **Michael '10** and Steven. After 18 years in the private practice of law, John started working at the Superior Court as a commissioner with the county of Santa Clara. Silvia is a retired elementary-school teacher. John, Silvia, and Steven live in Santa Cruz; Michael lives in Los Angeles, working in the film industry with some other SCU grads.

Ken Tepe retired after more than 40 years in the retail industry. Last December, he and his wife, Carol, celebrated their 40th anniversary. They have two children living in the Seattle area and two grandsons. Tepe lives in Fresno, Calif., but plans to return to Washington state when his wife retires.

Steven Tramz writes: "I retired from making films in 2010 and decided to spend the rest of my life as a photographer. I travel the country on short and long trips from coast to coast, stopping and photographing whatever interests me. I have been married to **Marie Snodgrass '74** since 1984, and we have one daughter."

1973 REUNION OCTOBER 10-13, 2013

1974 Patrice (Koda) Coyle is serving her second term as chair of the Dignity Health Sacramento Service Area Board and was honored to meet President Obama, White House senior staff, and congressional leaders in February. She continues to serve on the boards of Cristo Rey High School and Mercy Foundation and joined the California Hospital Association's Governance Forum in 2011.

Dave Scott J.D. '77 writes: "Retired in 2002 from Silicon Valley. Spending time doing volunteer work for Norcal USTA, traveling around Europe, and splitting time between our homes in California and Colorado. Married, no kids, but friends all over."

1975 Florian Rothbrust writes: "We are expecting our second grandchild in December 2012."

1977 Bill Quiseng is resort manager at Marriott's Ko Olina Beach Club on Oahu, Hawaii.

Jack Treacy, S.J., MST '90, writes: "I'm in my seventh year serving as director of campus ministry at SCU. I love being back here, contributing to a university community that was so important in my own growth. It's a privilege to lead our students in prayer, to speak with them about life questions and faith issues, to enjoy happy times and share challenging moments with them."

Fran Warmerdam lives in the East Bay and works as the director of counseling at Bishop O'Dowd High School. As an MFT, she also works as a therapist in a private practice in Castro Valley. She writes: "Working with teens is still the most fun and invigorating job in the world!"

1978 REUNION OCTOBER 10-13, 2013

1979 L. Michael Bogert, former regional administrator for the U.S. Environmental Protection Agency's Region 10 office in Seattle and former counselor to the secretary of the Department of the Interior, has joined Parsons Behle & Latimer's Boise office as a

shareholder. Bogert will lead the firm's environmental law practice in Idaho. He has advised on matters such as the implementation of the Endangered Species Act and Indian water-rights settlements.

Joanne Formato Schnuckel is living in Manhattan Beach, Calif., with husband Brian and their three children: Greg, Lauren, and Michael. She is currently working at NBC/Universal.

1980 Christine Canelo M.A. '85 is working as a marriage and family therapist at Kaiser Permanente Adult Psychiatry in Campbell, Calif.

Tracy (Stempel) Hogan writes that she is working at Dominican University of California in San Rafael as director of external relations and director of alumni relations. She has two sons, ages 24 and 27, and is married to Bill.

Gordon Stitt has joined the board of advisors at TAM Technologies. He has more than 30 years of experience and entrepreneurial success in the information technology industry, including co-founding Extreme Networks and Network Peripherals Inc. Stitt also serves as chair of the Industry Advisory Board for the computer engineering department at SCU.

1981 Kirk M. Sanfilippo retired to Roseburg, Ore., in May 2010 with his wife, Jody. In June, he came out of retirement and was hired as the chief of police for Sutherlin, Ore. The couple resides in Douglas County.

1982 Pete Dunbar retired at the end of September as Pleasant Hill police chief after 30 years in law enforcement, beginning in Oakland as a patrol officer. The Medal of Merit recipient teaches courses through the San Diego Regional Training Center and the California Police Chiefs Association. He plans to spend most of his time in Evergreen, Colo., where he and his wife own a house.

Larry Murnane joined Breakwater Equity Partners as a senior strategist. Murnane has more than 20 years of extensive practical experience in commercial real estate transactions and litigation

involving purchasing, selling, leasing, financing, and loan restructuring. Prior, Murnane was a principal at one of San Diego's oldest and most respected real estate law firms. More recent, he founded and managed a commercial real estate investments firm.

Tom Squeri J.D. '85, longtime VP and general counsel of Granite Rock Co., was named the company's president and CEO. Prior, Squeri worked for two private law firms in the Bay Area that specialized in construction litigation: San Francisco's Pettit and Martin, where he became a partner in 1993, and the San Jose office of Coudert Brothers.

Peter Verbica J.D. '99 joined the Global Wealth Management Group at Merrill Lynch's Silicon Valley Complex. He is the proud dad of four talented daughters: His oldest is an IT petty officer aboard an aircraft carrier; his second, a ballerina, just graduated from Walnut Hill School for the Arts near Boston, Mass.; his third is on the varsity tennis team at Fountain Valley School in Colorado; and his youngest is an avid long-distance runner.

1983 REUNION
OCTOBER 10-13, 2013

1985 Joe Allanson was appointed to the board of regents of his high school alma mater, St. Ignatius College Preparatory, where his son attends, in San Francisco. Allanson works as the corporate controller of Salesforce.com, where has been for nine years, helping grow the company from 400 employees to more than 8,500 today.

Gordon Brion writes: "SCU gave me the option in life to pursue a near lifelong dream: becoming a physician. It is a remarkable honor that people trust me with their lives. Also, my patients have helped me over the years, an unforeseen and unexpected benefit. I am grateful to have been in such an inspirational environment and met such great friends along the way."

1986 Andrea Bacigalupo received an MFA from the California College of the Arts in San Francisco. She lives in

Oakland with her husband, Robert Lee, and their two boys, Teddy, 8, and Hampton, 5.

Patricia Murphy is VP of EMEA Professional Services at McAfee Inc., and she is based in Paris.

1987 Scot Asher and **Sheila (Ward) Asher '86** have lived in Scottsdale, Ariz., since 1997 with their two daughters. Scot is the director of Global Alliances for First Advantage Corp., where he has worked since 2000. They are looking forward to being back on campus this fall, when their daughter **Maggie '16** will be joining the Bronco family.

1988 REUNION
OCTOBER 10-13, 2013

Bob Krakauer MBA '93 has been appointed executive VP and CFO for Aspect Software, where he will provide strategic financial direction. His experience spans more than 20 years in managing technology-related companies and raising debt and equity capital. He is a member of the advisory board at the Leavey School of Business.

1991 Kaela (Kozlovsky) Bernal J.D. '94 has been working as a legal and special projects associate at Montalvo Arts Center in Saratoga, Calif., since October 2009 and continues to serve as an arts commissioner for the City of San Jose.

1992 Allison (Clinton) Rak writes: "I'm living in San Carlos, Calif., and am married to Adam Rak—we recently celebrated our 15th wedding anniversary. We have three daughters, ages 10, 7, and 5. I own a boutique consulting firm, Vatoqa Partners, specializing in consumer insight and innovation."

1993 REUNION
OCTOBER 10-13, 2013

1994 Monica Makiewicz was named principal of Glendale High School in Southern California. She previously served as an assistant and associate principal at the school.

Steven B. McLaughlin writes: "Currently serving in the Army Reserve. I was accepted to

the U.S. Army War College in a two-year program for a master's in strategic studies."

1997 Kristen Weaver writes that she received her M.A. in education in 1999 from Stanford; volunteered in the U.S. Peace Corps 2002-2005 as a curriculum development specialist in Nouakchott, Mauritania; and got married in 2010 in Addis Ababa, Ethiopia. Weaver is employed by the U.S. Department of State, and she and her husband, Natnael, live in Saudi Arabia.

1998 REUNION
OCTOBER 10-13, 2013

1999 Nicole (Moscini) Soluri was appointed by Gov. Brown to serve as chief counsel to the California State Lottery. She and husband Patrick Soluri also welcomed a baby boy, Connor, on Feb. 24, 2012. The family lives in Sacramento.

2000 Tyler Luiten received a Ph.D. in German in August 2011 from the University of Wisconsin, Madison. He is currently a visiting assistant professor at Marquette University.

Jaime Neilson is a licensed structural engineer working for Thornton Tomasetti in Oakland, Calif. He and his wife welcomed twins in September 2010 and reside in Fremont.

2002 Cameron J. Collins is co-founder of Saku Collins Entertainment & Media Law Group. He recently became an adjunct professor at Seattle University School of Law and co-founded The ProEquality Project, dedicated to diversifying the arts communities.

2003 REUNION
OCTOBER 10-13, 2013

Christine Travis recently opened a Pilates studio in Bakersfield. Travis and her co-owner are also instructors at Poise Pilates and Barre.

2004 Bryce Davidson has joined the staff of Davidson Insurance in Vancouver, Wash. He previously worked as a manager at Ernst and Young in San Francisco.

2005 Elizabeth Budd is in her second year of the doctoral program at the Brown School



LIVES JOINED

Kathleen (Mitchell) Simpson '87, M.A. '90 and Robert Simpson on Oct. 2, 2010. Kathleen's father, Alfred H. Mitchell, walked the bride down the aisle. SCU alums in attendance were bridesmaid **Christine Fierro '88, Wes Bliven '88, Brendan Lewis '88, Michelle Matsumoto '88, Diane Ziliotto '88, John Scardamaglia J.D. '09, and Jim Mitchell '81.** Friends since second grade, the newlyweds reside in Brentwood, Calif.

Elizabeth Thompson '00 and Shyam Krishnan on June 10. The ceremony was presided by **Ashley Cronin '00.** Additional SCU grads in attendance: **John Thompson J.D. '01, Erica (Cervantes) Rodriguez '99, Kara (Hartz) Yushikawa '00, Adam Rausch '01, Deepa Duvvuru '00, M.S. '03, Christy Souhrada '00, Elspeth Rossetti '75, M.A. '96, John Ryan '62, MBA '66, and Joanie (Colby) Bronzini '96.**

Kelly (Brown) Wissolik '00 and Michael Wissolik on Jan. 15, 2012.

Rebecca Eisenman Subity '00 was a bridesmaid. The couple lives in Los Gatos.

Michael MacKinnon '02 and Melissa Ebner on April 28, 2012. Melissa is a nurse practitioner and Michael is a computer software engineer in Denver, Colo.

Xiomara Vielman '02 and **Jason Saldana '02** on May 18, 2012. Friends who joined them were **Mary Rodriguez Stavn '02, Sylvia Anguiano '02, Gloria Yu '02, and Sam Ritchey '01.** The couple lives in Sunnyvale.

Chris Paetsch '03 and **Erin Tackney '02** on July 9, 2011. **Monika Kunz '02** served as a

maid of honor, **Katy Dormer '02** as a bridesmaid, **Michael Neumann '03** as a groomsman, and **Christian Kurpiewski '02** as an usher. Also in attendance: **Greg Raih '02, Ian Johnstone '02, Jen Hernandez '03, Megan (Young) Chatterji '02, M.A. '08, Alex Keil '03, Marcy Swiatek '03, and Cori Wang '09.** The couple resides in Cambridge, Mass.

Michael Pittman '04, J.D. '08 and **Alexandra Perazzelli '05, M.A. '09** on July 9, 2011. The wedding party included fellow Broncos **Josh Griffin '03, Ryan Aufferberg '03, Justin Little '06, Christopher Garber '04, Bruce Martinez '04, Greg Flanagan '03, John Hinman '06, Jessica Frank '05, Katy Shumm Tuttle '05, Kristin Belanger '05, Tara Bussiere Salcido '04, and Katie Carlson '03.** They live in Long Beach, Calif.

Greg Mohrman '05 and **Tracy Flecky '07** are engaged. They live in their hometown, Denver, Colo. The wedding will be in fall 2013.

Sara Brown '06 and **Ryan Kennedy '05** on June 2, 2012.

Brady Harter '07 and **Francesca Budelli** on June 30. The wedding party included alumni **Colin Harter '04, Darren Harter '11, Mark Litchman '07, Thomas Knowles '07, Daniel Soares '07, Laura Harter '04, Nicole Mendez '07, and Elizabeth Weeker '07.** **Ann Harter '73** and **Dennis Harter '73** are parents of the groom, and **Robert Franceschini '52** is the grandfather of the bride.

Stuart Poulter '08 and **Kristina Chiapella '09** on June 30, 2012. They celebrated with fellow

SCU alumni **Ashley Gardner '09, Katelyn (Schlereth) Wood '08, Michael Wood '07, Michelle Pesce '09, Chad Dupic '09, Elizabeth Storelli '09, Stephen Smoker '09, Bethany Elias Jenner '08, Catherine Waite '08, Elizabeth Czaplak '08, Lindsay Mohundro '10, Samantha Go '08, Lauren Roon '08, Kaitlin Thompson '09, Adam Boriotti '08, Deborah Thurtle '08, Krystal Wu '09, and Sam Baker '08.**

Brian Koziel '09 and **Ashley Wells '09** on July 14, 2012. The wedding party included **Joseph Wattoo '09, Ellis Fenske '09, Lauren Backes '09, Christina Harris '09, Tanner Diggs '09, and Adam Seppala '09,** as well as current SCU student and brother of the groom, **Kevin Koziel '14.** More SCU alumni were in attendance.

Bobby Lorenzen '09 and **Julienne Syme '10** on July 14. The wedding party included fellow Broncos **William Syme '08, John Lorenzen '11, Riley Coon '09, Adrienne Syme '12, and Alexandra Hagerty '08;** more than 60 additional alumni were in attendance. The newlyweds live in San Francisco.

Lauren Leier J.D. '10 and Christopher Mayer on Nov. 6, 2011.

Jenna Torosian '10 and **Nicholas Fabino** on July 7, 2012. Included in the wedding party were maid of honor **Kelly Torosian '14** and bridesmaids **Kathryn Leahy '10** (current MBA student) and **Laura Skinner '10.** Jenna recently joined the global wealth management group at Merrill Lynch, and Nick is a global sourcing engineer with Moss Motors. They live in Santa Barbara, Calif.

of Social Work at Washington University in St. Louis. She studies nutrition and physical activity among youth and adolescents.

2006 Lindsey Bacolini joined HUB International Limited, an insurance brokerage firm, as an account executive in the employee benefits consulting division in Mountain View. Bacolini will be responsible for servicing HUB's Northern California middle-market corporate clients.

Christina Fialho J.D. '12 was named a 2012 Echoing Green Fellow for Social Change. Echoing Green provides more than \$2 million in seed support for social entrepreneurs every year. Fialho will be co-launching Community Initiatives for Visiting Immigrants in Confinement, a national network of immigration detention visitation groups with a mission to end the isolation and abuse of persons in immigration detention.

2008 REUNION OCTOBER 10-13, 2013

Andrew Engel writes: "After two incredible years (2008–2010) in the Peace Corps in Tanzania, where I taught secondary-level biology, I settled in Portland, Ore., and found a job as a preschool teacher for a year. I'm currently studying for an M.A. in science teaching at Teachers College, Columbia University, and will be teaching in a New York City public high school come September as a Peace Corps Fellow."

Maira Groh graduated from the University of Nebraska Medical Center College of Dentistry in May with a doctorate of dental surgery degree. She has accepted a dental residency position at Brookdale University Hospital and Medical Center in Brooklyn, N.Y.

2009 Joseph "Joey" Brennan has been accepted to the Yale School of Drama class of 2015 as an MFA candidate in the Technical Design and Production department, after three years working as the assistant technical director for the College of Lake County near Chicago, Ill.

Cherie Motobu earned her Pupil Personnel Services credentials from the state of California in May 2012, which certified her as a school psychologist. She accepted a full-time position on the school psychology staff of the San Mateo-Foster City School District for the 2012–13 school year.

2010 Brittany Luckham earned a master's in clinical psychology, with an emphasis in family psychology, from Azusa Pacific University in July 2012. She will continue her studies toward a Psy.D.

2011 Dru Atkison writes: "Working hard in the Big Apple!"

Emily Burke has been a volunteer coach with the Bronco volleyball team, working primarily on camp and office tasks, and with practice planning. She has also worked at Santa Clara summer camps for the past four years.

Christopher Noller writes: "My daughter, Hazel Anne Noller, just turned 3 and she loves her new ballet dance classes at the YMCA."

2013 REUNION OCTOBER 10-13, 2013

GRADUATE

1972 Phillip Nielsen J.D. writes: "My son, Jeffrey Nielsen, passed the California Bar Exam and now practices with me in San Jose. Our practice emphasizes estate planning, trust and probate administration, and business transactions."

1974 Greg Lamb MBA is a principal at EnergyOurWay.com LLC, an energy services consulting company. Lamb has 30 years of experience in the process and energy sectors. He and his wife, Pam, are enjoying their four grandchildren and live in the Salt Lake City area.

1976 Pat Badia-Johnson M.A. writes: "Retired from counseling. Just took youngest granddaughter to Italy. Actively

Read more (and see photos) at santaclaramagazine.com



BIRTHS AND ADOPTIONS

involved in church community volunteering. Thirteen great-grandchildren. Taking Italian at PSU."

Candace Forbes MBA, an entrepreneur-philanthropist, received an honorary doctor of science degree during Cal Poly's 2012 spring commencement ceremonies, along with her husband, Bert, and fellow SCU alumnus **Peter Oppenheimer MBA '87**, senior VP and CFO for Apple. The Forbeses co-founded Ziatech in 1976, which was acquired by Intel in 2000; Candace leveraged the success of Ziatech to expand educational opportunities for children.

1977 Gene Ogden M.S. retired Oct. 1 after 45-plus years at Lockheed Martin Space Systems in Sunnyvale.

1979 William F. Abrams J.D. was hired by Atlanta-based King & Spalding LLP for its IP practice. Abrams joins from Boston's Bingham McCutchen LLP, where he was the former co-chair of the IP practice group.

James S. Greene MBA was appointed to Umpqua Holdings Corporation's board of directors. Greene is VP at Cisco Systems in the global services organization. He began his career at Accenture, where, for 20 years, he grew its global financial services business and rose to senior partner.

Kate Leonard MBA, a partner at Hutchinson and Bloodgood LLP, was appointed as honorary consul general of Japan in San Diego—an appointment recognized by the U.S. Department of State. Leonard has been active in the Japanese business community and has worked with several international organizations.

1980 Philip S. Camilleri J.D. is an educational psychologist for San Benito County Office of Education. He evaluates students with educational needs, does administration in special education, and has knowledge in special education law.

Jeffrey H. Cooper MBA was appointed CFO at KaloBios

Pharmaceuticals. Cooper has more than 25 years of experience in the life sciences industry and was previously senior VP and CFO of BioMarin Pharmaceuticals.

1982 Albie B. Jachimowicz J.D. writes: "Would love to see how young everyone looks [at the reunion], but my son **Josh J.D. '11** is getting married the same weekend to **Caitlin Robinett J.D. '10**. See you at the 60th reunion!"

1983 Pat Conroy, S.J., M.Div. is the chaplain for the U.S. House of Representatives. In a recent interview with *The Oregonian* he was quoted as saying, "I am chaplain to a room full of true believers who are invested in what they stand for and what they are trying to do. A lot of members are quite faith-filled. Some are convicted, and they don't have crises of faith. Others hope they are being faithful. It's fascinating to watch."

Teri Graf-Pulvino MBA and husband Kenneth have founded and funded the John Muir Geotourism Center in Coulterville, Calif. It is a nonprofit educational center following the writings of John Muir directly from the natural context he observed in the area in the 1860s.

1984 Tom Douglas MBA has joined the executive team at AM General as senior VP, Business Development and Strategy, responsible for the oversight and strategic direction of the company's military business development and program management from the Washington, D.C., office.

1985 Susan Mauriello J.D., of Aptos, has been appointed to the California Board of State and Community Corrections by Gov. **Jerry Brown '59**. Mauriello has been the county administrative officer for Santa Cruz County since 1989.

Frankie Wong M.S. joined Brinks Hofer Gilson & Lione in Chicago as a patent agent with a particular focus on

Joe Clark '66 and Cathy—the adoption of their grandson Owen Michael Clark on June 1, 2012.

Scott Olsen '92 and **Barbara (Hehir) Olsen J.D. '96**—Mark Edward on June 30, 2011. He joins brother William (4), and sister Morgan (9). The family resides in San Jose, Calif.

Joe Greenspan '95 and Marla—their second child, Ryan Matthew, on June 1, 2012. He joins brother Evan (5) in the family's Phoenix home.

Lauren Gallagher '96 and Don Reiersen—Fiona Jane Reiersen on June 28, 2012. She joins sister Adelyn Mae (2). The family lives in Los Gatos. Lauren is the controller at Humane Society Silicon Valley.

Rick Loayza '96 and Cristina Loayza—Derek Joshua Loayza on Nov. 18, 2011. He joins brother Jacob (7) and sister Alexis (5). The family lives in Nashville, Tenn.

Garrett Wade '96 and Lisa—their second daughter, Madison Riley Wade, on June 4, 2012.

Aaron '98 and **Eileen (Briggs) Brinker '98**—Tyler Lynn Brinker on March 6, 2012. He joins siblings Mia (6), Reese (3½), and Andrew (1½).

Jill Cardoza Painter '98 and **Al Painter '95**—Lilly Hannah Painter on Aug. 17, 2011.

Kenneth Chung M.S. '99 and Triffany—their firstborn, Audrey, in December 2010.

Gianna I. Franzia '99 and Michael A. Gambatese—Giuliana Franzia Gambatese on April 27, 2012. She joins sister Giada (4) and brother Luca (2). The family resides in Chicago.

Melissa Amaral '00 and Nick Anastassatos—their first child, Tiago George, on April 27, 2012. The family lives in Reno, Nev.

Katie (Pursley) Busch '00 and Dave Busch—their first child, Tyler David, on June 23, 2012. The family lives in Highlands Ranch, Colo.

Judiana (Somilleda) Viruet '00 and Jose Luis Viruet—their first child, Annabella Viruet, on Feb. 19, 2012. The family resides in Houston, Texas.

Kimberly (Bush) Flowers '01 and Claude—John Michael "Mickey" Walden on April 30, 2012. Mickey is adored by sister Clara Louise (4) and celebrated in Heaven by brother Theodore "Teddy" Charles Martin. The family lives in Olympia, Wash.

Karin Olefsky Hargrove '01 and **Thomas Hargrove '01**—their third boy, Benjamin, in April 2012.

Jessica (Keller) Leahy '01 and Luke—Amos James on Dec. 13, 2011. He joins brother Isaac (3½).

Danielle (Martinez) Sempek '01—Kathryn McCullough Sempek on Jan. 10, 2011, and Noah James Sempek on April 2, 2012. Danielle is married and working as a registered nurse in Tallahassee, Fla.

Joe Tone '01 and Melissa—Jonah Tone on Feb. 29, 2012. They live in Dallas, Texas.

Julia M. Wei J.D. '01 and **Ken Leung '89, M.S. '93**—their second son, Jet Leung, in May 2011. In Palo Alto, Julia continues to practice real estate litigation, and Ken is a technology executive at an analytics company.

Jennifer (Magpayo) Alderete '02, husband Chris, and brother CJ (2) welcomed Kailee Aralina "Kaya" on April 21, 2012.

Lauren (Sexton) Formo '02 and **Jason Formo '02**—daughter Dylan Makenzie Formo on April 17, 2012. The family resides in Seattle, Wash. **Mike Sexton**, SCU's vice president for enrollment management, is a proud grandfather.

Lindsey (Wylie) Kouvaris '02 and **Nick Kouvaris MBA '07**—their first child, Emilia Sharon, on June 12, 2012.

Matthew Wood '03, M.S. '06 and Jennifer Wood—twins Emma and Bingham on June 5, 2012. In Atlanta, Matthew is practicing engineering in accident reconstruction, and Jennifer is an HR business partner with the Bank of New York Mellon.

Carin (Posedel) Causey '04 and Dave—their first child, Owen William, on Nov. 10, 2011.

Cristina (Guzman) Fierro '05 and **Mark Fierro '05**—their second child, Mark Enrique Fierro, on Feb. 5, 2012. The family resides in St. Louis, where Mark is a fourth-year resident in OB/GYN. Cristina is a registered nurse and a recent DAISY Award recipient.

Brian Hurd '05 and **Kristin (Goltz) Hurd '05**—their second daughter, Clara Stephane, on May 13, 2012.

Michael Spencer MBA '06 and Elizabeth—their third son, Matthew Collins Spencer, on May 23, 2012. The family lives in Fresno.

Amy Richardson M.Div. '09 and Jed—Maya Marie Richardson on May 2, 2012. They live in the Madison, Wis., area.

Kumar Sathanarayanan Raju M.S. '11—a girl on Dec. 16, 2011. Kumar is working on a developing a mobile app inspired by his daughter.

patent prosecution in wireless and network communications and the computer arts. Wong has prosecuted more than 230 patent applications in 3G and 4G wired and wireless communication systems.

1986 Lori Pegg J.D. has been named acting county counsel by the Santa Clara County Board of Supervisors, making her the county's chief legal advisor. The veteran government lawyer has been a deputy in the county counsel's office and has specialized in labor, education, and government law.

1988 Taryn Hook J.D. has published her short story "Pluto Rising" in the literary journal *TheWritingDisorder.com's Anthology, Volume II*. The anthology presents the best short fiction published by the website in 2011. Hook is an author and private investigator in the South Bay.

1990 Joe DiNunno MBA is the manager of research at FiduciaryVest, an institutional investment consulting firm based in Atlanta. DiNunno lives in Peachtree Corners, Ga.

Krista Meade M.A. writes: "After a successful 15-year career in geriatric social work, I am beginning my third career as a writer/editor. I hope to work for a nonprofit or foundation serving the needs of older adults, women and children, social justice, or the environment."

Rita Neal J.D. took on responsibilities as county counsel for San Luis Obispo. She began her employment with the county office in 1998 as deputy county counsel, was promoted to chief deputy county counsel, and later assistant county counsel.

Paul Russell M.S. was appointed senior VP of engineering at ArrayPower, a Silicon Valley-based power electronics company. Russell has spent more than 25 years in technology development for companies in the solar, aerospace, and defense industries.

Alice Marcarelli Valenzuela MBA was awarded the 2012 Sorooptimist Ruby Award in Phoenix, Ariz., for her tireless work on behalf of women in Sonora, Mexico, where she founded a women's cooperative that operates an electronics recycling business to create employment in the impoverished rural area.

1992 Saleel Awsare M.S. was named VP and GM at Conexant Systems. With more than 25 years' experience, he will head its audio, embedded modem, and fax businesses. He has five patents and has written for multiple publications.

Jonathan Rende MBA joined Appcelerator, a mobile platform company, as VP of products. Previously, he was VP and GM for HP software's application lifecycle management business.

1993 Mark Pitchford MBA was named managing director of sales and service at Esurance, in the San Francisco headquarters.

1994 Malcolm J. Carruthers M.S. was appointed manager of customer support for Comtech Xicom Technology Inc., a leader in satellite communications amplifiers, in Santa Clara.

Lisa Tatum J.D. writes: "Dear Broncos, thank you for your support and positive vibes and prayers. I have just been elected 2012-2013 State Bar of Texas President-Elect. In 2013-2014, when I step into office as president, I will be the first African American to hold the position. What a blessing!"

1995 Lisa A. Cesario M.A. is the new superintendent at the Las Lomitas School District, leaving her six-year post as an assistant superintendent of the Santa Clara Unified School District.

Heidi Keefe J.D. was named to the Top Women Lawyers list by *The Daily Journal*. Keefe is a Palo Alto-based intellectual property partner at

Cooley LLP. Notable clients include Facebook, HTC, Microsoft, eBay, Nike, and LinkedIn, which she represents in patent trials.

1997 Leigh Burnside J.D., an attorney with Dowling Aaron of Fresno, received an "AV Preeminent" rating in the Martindale-Hubbell Peer Review Ratings—the highest possible professional rating.

1998 Brian Crowley MBA has joined MotionDSP, a company that develops advanced, real-time image processing software for video enhancement and analytics, as director, Federal Solutions. Prior, Crowley led sales efforts throughout the U.S. Intelligence Community and U.S. Air Force for EMC and NetApp.

2002 Gary Adler M.A. completed a Ph.D. at the University of Arizona. His research focuses on transnational immersion/solidarity trips, as well as the political activities and moral boundaries of congregations. He is the director of research at the Institute for Advanced Catholic Studies at USC.

Maria Quintero J.D. is a senior attorney at Hinshaw & Culbertson LLP in San Francisco, handling civil litigation defense and appellate matters.

Kimberly Rodriguez J.D. writes: "My husband and I recently started a small business renting margarita machines. If you are an SCU alumni living or working in the greater Sacramento area and interested in renting our machines for your personal or corporate events, please contact me."

Joseph Thannickal M.A. writes that his book, *Gifted*

Journey, has been published in India by Pauline Media. "It deals with finding meaning in life and enriching our spirituality. Some people have found it a good bridge between Viktor Frankl's contribution of meaning in life and Catholic spirituality."

2004 Christine Peek J.D. was named a Northern California Super Lawyers 2012 Edition—Rising Star, which recognizes up-and-coming attorneys. Peek maintains a general civil litigation practice, focusing on constitutional law and lawsuits against government entities.

2007 Shubhasheesh Anand MBA is leading the solutions team at InsightsOne, a B2C predictive analytics startup in the big-data space.

2008 Samir Kaji MBA joined First Republic Bank in Menlo Park. Kaji, who has 13 years of banking experience, works with venture capital and private equity clients in Silicon Valley.

Niamh (Doherty) Radhakrishnan J.D. is now a trial attorney for the U.S. Department of Labor, based in the Los Angeles office.

2009 Brenda Carrillo M.A., coordinator of student health and safety for the Santa Clara County Office of Education since 2010, was nominated to become Palo Alto's coordinator of student services by Superintendent Kevin Skelly.

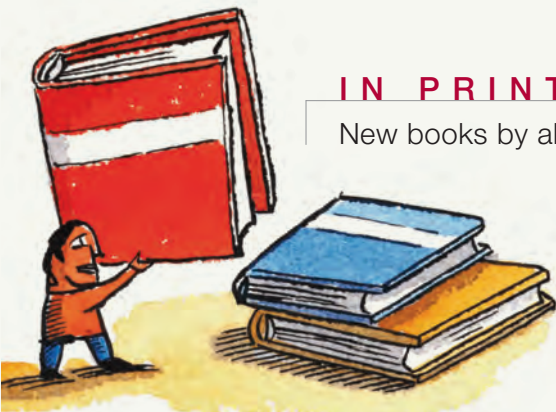
2011 Justin Porter MBA has been elected to the board of directors for COMMON, the world's largest group of IBM and IBM-compatible information technology users. Porter is the director of technology for Westside Produce in Firebaugh, Calif.



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IN PRINT

New books by alumni

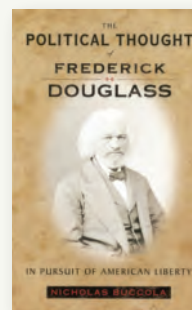
MAKE IT BETTER

Anyone who suffers from diabetes knows that the disease can seem to overwhelm every moment of their lives. Managing it becomes a full-time job with little room for error. But in ***The Book of Better: Life With Diabetes Can't Be Perfect. Make it Better*** (Random House, 2011), author **Chuck Eichten '84** makes the case that diabetics should let go of an unachievable goal. Rather, he wants diabetics to reframe their challenge in a light that focuses on the things they can achieve and improvements they can make.

Eichten is not a doctor or researcher. His chief qualification for writing this book is that he has had diabetes for decades—including his years as a student at Santa Clara. His day job is as design director at

Nike DNA, where Nike collects and tells its stories from the archive (e.g., the first shoe born of a waffle iron). And the book's message is delivered in a highly visual style that mixes text and graphics more like carefully crafted posters than a painstaking educational tome about the disease.

Still, it would be a mistake to dismiss *The Book of Better* as lightweight. Indeed, it makes a worthy read for both diabetics as well as friends and family seeking to better understand what it means to live with the disease. Among his advice, Eichten offers strong advocacy for insulin pumps, devoting a large portion of the middle of the book to the technology. He cites his own use of an insulin pump as having brought him the "better" elements in life, such as not having to worry as much about when he eats. But Eichten also notes that because such pumps remain expensive and out of reach of many around the globe, he calls on manufacturers to create lower-cost versions—and for diabetics to request them. Not a cure, certainly, but a step forward that would deliver the better lives that Eichten argues are within reach. **Chris O'Brien**



DOUGLASS THE AGITATOR

Both progressive Supreme Court Justice Thurgood Marshall and conservative Justice Clarence Thomas have seen themselves as heirs to the political thought of the great abolitionist

orator Frederick Douglass. How that can be—and what are the true dimensions of Douglass' political philosophy—are the tantalizing questions **Nicholas Buccola '01**, assistant professor of political science at Linfield College, tackles in ***The Political Thought of Frederick Douglass*** (New York University Press, 2012).

Douglass was born into slavery in 1818, escaped when he was 20, and went on to become not only one of most persuasive opponents of slavery but also an ardent champion of women's suffrage, equal rights for immigrants, and universal public education. But a systematic political thinker he was not. So Buccola's project is to uncover "the core commitments of Douglass' political philosophy," which, Buccola contends, were "remarkably consistent over time."

In Buccola's opinion neither Justice Thomas nor Justice Marshall gets Douglass quite right. Yes, Douglass promoted an idea of "self ownership" that can be read as a sort of up-by-your-bootstraps notion of personal responsibility. But from his experiences of slavery, Douglass also knew that such self-reliance can only work when there is fair play—which "meant that government had to play an important role in order to ensure that the social and economic rules were not rigged in favor of or against any particular group."

Douglass seems to have been a much more thoughtful, nuanced political thinker and "agitator," as he sometimes called himself, than we are used to today. He offered vibrant political and moral arguments, not sound bites. Buccola helps us understand how and why those arguments proved to be so powerful. **Alden Mudge**



CHUCK EICHTEN



ALUMNI AWARDS

Follow your compass

From the classroom to the clinic, from California farm communities to Haiti and Tanzania, these Broncos have made a difference. They were recognized at the 2012 Alumni Association Awards, presented April 28.

BY SARAH STANEK

FRANCISCO JIMÉNEZ '66

PAUL L. LOCATELLI, S.J. AWARD

“Santa Clara was the compass by which I set the course for my life,” Francisco Jiménez said. That life has been spent promoting education and opening doors to historically underrepresented students, and it has earned Jiménez recognition as an exemplary leader in higher education.



Reaching out: Francisco Jiménez and Christina Dolores '05.

Today Jiménez is a scholar, author, mentor, and the Fay Boyle Professor of Modern Languages and Literatures at SCU. In the late 1940s, when he was a boy, he and his family emigrated to the United States from Mexico. Young Jiménez worked in the fields to help support his family; at the same time, he excelled at school, even serving as student body president at Santa Maria High School on California's Central Coast.

At Santa Clara the values he had grown up with were nourished, and he was encouraged to use his talents to make a difference in the world. He earned graduate degrees from

Columbia University and secured a teaching position there. But when an opportunity arose at his alma mater, Jiménez came back to what he really wanted: a university deeply committed to educating the whole person.

In 2002, Jiménez was selected U.S. Professor of the Year by the Carnegie Foundation for the Advancement of Teaching and the Council for Advancement

and Support of Education. He is the author of a series of award-winning autobiographical works for young people, including: *The Circuit*, *Breaking Through*, *Reaching Out*, and *La Mariposa*.

Through his work with many state and regional boards and commissions, his teaching and scholarship, his writing, and his personal outreach to communities across the nation, Jiménez has always strived to improve educational experiences for all students, from all backgrounds, ensuring they are well prepared to succeed in a diverse world.

ROBERT DOWNEY '92

IGNATIAN AWARD

Thanks to Bob Downey, for the past decade some of the poorest people in Haiti and Tanzania have received compassionate, competent medical care. While a student at Santa Clara, Downey studied economics and supported himself by working in labs and blood centers in the area. That combination of training led to a



Diagnostics and compassion: Bob Downey at work

successful career in medical diagnostics and laboratory services—which also allowed him to follow a call to use his talents to help others.

His first job with Abbott Laboratories took him to Tanzania, where he helped train staff and modernize lab facilities at hospitals. Wanting to do more, he joined with the Seattle-King County Disaster Team, a nonprofit that has run a medical clinic in Haiti continuously since 1998. His first volunteer medical mission was in 2004 to a remote mountain clinic in the community of Leon. He's made more than 16 visits, returning two to three times a year with the all-volunteer staff of medical professionals.

In Haiti, many necessary tests and diagnoses require lab services that aren't available anywhere else but at the Leon clinic. So volunteers work nonstop, with no electricity, to provide care to more than 1,000 patients a week, many of whom have walked more than six hours to be seen. With assistance from the local Catholic parish, the clinic promotes good public health practices and provides integrated, consistent care. Downey also recruits and trains other volunteers in the laboratory, coordinates donations, manages supply purchases, and serves on the Disaster Team's Board of Directors.

All of this is in addition to Downey's

The Awards

Ignatian Award—recognizes alumni who live the ideals of competence, conscience, and compassion through outstanding service to humanity.

Louis I. Bannan, S.J. Award—honors alumni for distinguished service to the Alumni Association and University.

Paul L. Locatelli, S.J. Award—honors SCU faculty or staff for outstanding service to the Alumni Association and University.

regular job, now at Sysmex America. Combined responsibilities have meant many long days, weeks, and months—including a yearlong stretch that saw him traveling from Africa to Haiti and back again, with only a few days at home in between. But he knows, particularly as Haiti recovers from the devastating 2010 earthquake, how much work remains to be done.

LARRY MCDONALD '66
IGNATIUS AWARD

A testament to the power of a Jesuit and Catholic education in instilling values for a life of service, Larry McDonald was recruited as a pitcher for the Broncos—fresh off the team's trip to the College World Series. For him, there was fun on the field—the team played exhibition games against the San Francisco Giants—as well as off, especially with friends who became known as the “Rodents.”

At Santa Clara, McDonald also met his future wife, **Karen '67**. They wed and moved to Seattle, where he took a job with his father-in-law in the family's commercial bakery. He moved into management, first with the bakery and later a specialty coffee company. The McDonalds raised two children and were active in their parish. For Santa Clara, McDonald served on the Board of Regents and Bronco Bench Foundation; he and Karen created the McDonald Family Endowed Scholarship to ensure the foundational experiences of a Catholic education could be available to future students.

With his family raised and daily life a little quieter, McDonald embarked on the path to become a deacon in the



From pitcher to deacon: Larry McDonald

Catholic Church. Ordained in 2007, he was presented with a challenge from the Seattle archdiocese: Create a new spiritual home for Catholics and others in downtown Seattle, in a 100-year-old building that had once been a hotel. Skills in business and leadership came into play—as did faith and perseverance: Christ Our Hope Parish celebrated its opening in summer 2010. McDonald says he is proudest of the way their work to restore the building has lifted the spirits of the people from all walks of life who live and pray there.



Agent for change: Dori Rose Inda

DORI ROSE INDA, J.D. '00
IGNATIUS AWARD

A native of Watsonville, Calif., Dori Rose Inda began her career as a social worker in Monterey and Santa Cruz Counties. She sensed she could be a more powerful agent for change armed with a law degree. At Santa Clara she found encouragement from classmates and faculty; she also found inspiration while working at the Katharine and George Alexander Community Law Center—which provides pro bono legal representation to low-income individuals.

Inda wanted to bring that same crucial assistance to people in her community who couldn't possibly make the 100-mile round-trip to the South Bay—as she did to attend classes, while at the same time raising two young children. With help of SCU faculty and advisors, she was able to secure a grant to plan and establish a center that serves largely low-income and agricultural communities. The Watsonville Law Center opened in 2002 with a team of two. A decade later, the center boasts 12 staff and

dozens of volunteers, plus attorneys who offer pro bono assistance. Last year, they helped more than 2,500 people with issues regarding health care, fair wages, workers' compensation, consumer protection, and child custody and visitation.

NICK LIVAK '59, J.D. '63
LOUIS I. BANNAN, S.J. AWARD

For more than 50 years, Nick Livak has been a model for alumni involvement, also nurturing the community that fostered his talents and shaped his career. It was in law school that he met the fellow students who became his partners in a law firm just blocks from the Mission Campus. He's given back to the neighborhood he cares so much about, for decades assisting organizations like Via Rehab, the Bill Wilson Center, and Santa Clara's Parks and Recreation Committee.

One of Livak's first teachers at Santa Clara was **Lou Bannan, S.J.**—who spent more than 40 years as a champion of the Alumni Association and inspired that same commitment in Livak. A lifelong sports fan, Livak serves as a trustee for the Bronco Bench Foundation, raising scholarship funds for student-athletes and cheering them on. When admission letters go out, he helps congratulate and encourage prospective Broncos as part of the New Student Calling Program. His wife, Mary Ellen, serves on the Board of Fellows. More than a dozen extended family members are now alumni, with the third generation part of the Class of 2015. [SCU](#)



Bronco red: Livak, left, with former SCU men's basketball coach Carroll Williams

Below are obituaries of Santa Clara alumni. At santaclaramagazine.com/obituaries you'll find obituaries published in their entirety. There, family members may also submit obituaries for publication online and in print.

OBITUARIES

1949 Donald E. Sullivan, July 7, 2012. Born in 1928, in Richmond, Calif. He earned a medical degree and joined the Navy Medical Corps, earned several commendations and medals, and was discharged a lieutenant senior grade. For more than 50 years he worked as a family practitioner, caring for generations of families in

the Gridley-Biggs-Live Oak area, and has a medical clinic named after him.

1950 Dennis H. Rosaia, May 20, 2012. A native of South San Francisco, he served in the Merchant Marine and established D&M Liquors in 1954; later he ran a second location with his three sons. He was a respected community leader, parishioner, and SCU reunion-goer. He shared a rich family life with his wife, Lillian, his sweetheart for 63 of his 87 years.

1951 Bernard "Bernie" J. Vogel Jr. J.D. '56, May 5, 2012. Born in Piedmont, Calif., Vogel was a lawyer and "gentleman among gentlemen" and raised his family in Saratoga. At SCU he scored the last touchdown in the 1950 Orange Bowl against Kentucky. Survivors include son **Bernie III J.D. '83**.

1953 Duane Louis, July 15, 2012. The Alameda native studied history at SCU and quarterbacked the Bronco football team, earning a tryout with the San Francisco 49ers. After serving in the Army, he earned a master's degree, then served as an administrator and coached football and baseball teams at Las Lomas and Acalanes high schools. Survivors include his wife of almost 59 years, Annette, as well as their children, 21 grandchildren, and five great-grandchildren.

Robert Edward "Bob" Monroe, March 24, 2012. Born in 1931 in Los Angeles, the successful businessman started his career with the purchase of a small grocery store on the SCU campus in the early 1950s. After serving in the Army, he worked for Mobil Oil, then launched an auto parts distribution business, working there until his retirement in 1992. Survivors include son **Michael Monroe '78** and grandson **Danny Monroe '12**.

Stanley A. Seneker, June 28, 2012. Born in Bristol, Tenn., the former SCU swimmer joined Ford in 1957 as a cost analyst at the company's San Jose, Calif., assembly plant. He retired in 1994 as executive vice president and chief financial officer, having held the latter position since 1987. He lived with his wife and five children in Michigan, where he was active in his community, before retiring to Florida. He was 81.

1954 Douglas Michael Lowell, May 28, 2012. A developer and builder in Portland, Ore., where he was born, in 1963 he purchased a cattle ranch on the Oregon coast. The Nature Conservancy absorbed most of the property into its land preserves, and he developed the remaining acres into Cascade Head Ranch, which is also home to the Sitka Center for Art and Ecology.

1955 F. Richard "Dick" Lucas, June 26, 2012. Born in Alameda, Calif., in 1933, the former 1st lieutenant enjoyed a 50-year legal career, from a deputy attorney general in Sacramento to a practice with his son and with Kendall Hillman in Solano County. The father of three lived in Fairfield and was active in many legal associations, including as president and director of the Solano County Bar Association.

1956 Clarence Machado '56, May 4, 2012. Raised on his family's ranch in Byron, Calif., he practiced dentistry in Stockton for 30 years and managed his family's ranch. He will be remembered for his devotion to his family, his love of farming, and his passion for hunting and fishing. Survivors include son **Patrick Machado '86**.

1958 George E. Davis Jr., June 20, 2012. Born in Texas in 1936, he grew up in Southern California. The former naval aviator spent 31 years with Allied Signal Aerospace Co. (now Honeywell) in Arizona, last serving as director of Product Safety and Integrity.

1960 Richard "Buzz" O. Kwopil, April 18, 2012. A lawyer, world traveler, philanthropist, devout Catholic, and bon vivant, he was a member of the Woodburn and Wedge law firm in Reno, Nev., from 1963 to 2005. He was honored with the Pro Ecclesia et Pontifice award, a rare token of recognition for a life of exemplary service to the Catholic Church and the public. He was also a Knight of the Order of the Holy Sepulchre. He was 73.

M. Joseph "Joe" Hester, May 29, 2012. Born in Oakland, he was drafted into the Army then transitioned straight into his life's work at McGuire and Hester, where he stayed for more than 50 years. He was proud of all things Catholic, Irish, and Oakland, and was passionate about his family, his work, and education; he was especially generous in support of Catholic education.

1963 Andrew Mark Crabtree MBA, Dec. 12, 2011. He was born in 1925 and raised in Kansas. His service in the Air Force and civilian work as an

2012/13

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WHOLE PERSON:
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STILL TO COME:



Amy Tan

*The Opposite of Fate:
Memories of a Writing Life*

January 17, 2013



David A. Kessler

The End of Overeating

THE GERALD AND
SALLY DENARDO LECTURESHIP
April 9, 2013

All events will be held in the Louis B. Mayer Theatre, beginning at 7:30 p.m., followed by a book signing.

Tickets are required. For more information or to order tickets, visit www.scu.edu/speakerseries

This series is co-sponsored by SCU Center of Performing Arts.

industrial engineer brought him much personal satisfaction. His final years in Issaquah, Wash., were marked with numerous health problems, but throughout it all he maintained a cheerful and optimistic outlook on life.

1965 Robert B. Kavale MBA, May 17, 2012. He was born in Czechoslovakia in 1926. Known for his quick wit and good sense of humor, the resident of Manteca worked in Silicon Valley for more than 30 years in the industrial engineering field, helping companies reduce waste, cut costs, and improve productivity.

1966 Lawrence Cronin MBA '67, May 30, 2012. He owned an insurance brokerage in Menlo Park and belonged to the Menlo Circus Club. He was the father of **Kathleen Cronin '96**.

Gene Joseph Antonides M.S. '66, Ph.D. '72, May 13, 2012. Born in 1935 in Pensacola, Fla., he lived in many places before moving to Saratoga to work as an engineer for Lockheed Martin. He and his wife, Sally Parker, raised three children. He loved running, coaching Little League, gardening, and tutoring his kids in math and physics. Survivors include son **David Antonides '84**.

1967 Allen DeNegri MBA, March 13, 2012. He was born in 1930, in Passaic, N.J. The former division officer aboard the *USS Los Angeles*, and instructor at the U.S. Naval Academy, worked at Westinghouse, in Sunnyvale, for 33 years, including on the *Polaris*, *Poseidon*, and *Trident* Missile programs. He was an Eagle Maker, raised two children, and had a love of history.

1969 William "Bill" Francis Bearden M.S., March 25, 2012. Born in 1936, Bearden was a loving husband, father, and grandfather. He served as a lieutenant in the Navy and spent more than 40 years as an engineer in Silicon Valley. The Sunnyvale resident enjoyed photography, table tennis, and fixing and building electronics. He took up woodworking late in life, calling it "making sawdust."

1971 Rodney J. Blonien J.D. '71, March 13, 2012. A loving family man, philanthropist, dynamic human being, and

proud American, he was born in 1946 in Wisconsin Rapids, Wis. A former captain in the National Guard, he served as assistant legal affairs secretary to Calif. Gov. Ronald Reagan, senior assistant (and later legislative secretary) to Calif. Attorney General George Deukmejian, and under secretary of the Youth and Adult Correctional Agency. Later he worked as a lobbyist representing California horse racing, card club owners, and others. Survivors include children **Jessica N. Blonien J.D. '96** and **Jarhett P. Blonien '06**.

1973 Michael E. Stephens, March 3, 2012. He was 60 years old.

1974 Alexander Metcalf Wert, April 25, 2012. Born in 1950, he owned a general contracting business on the Peninsula and remodeled and built homes for 30 years. After retiring in 2009, he devoted himself full time to radio controlled helicopters. A true entrepreneur, he founded Starwood Scale Models, an internationally recognized model business. The father of two spent his days enjoying the redwood forest surrounding the home he designed and built in Woodside.

1976 Gene Mackey, April 22, 2012. Born in San Francisco in 1952, he began a 35-year career in the real estate and mortgage industry with Security Pacific and Better Homes, then opened his own real estate mortgage company, Bay Pacific Realty, with his wife, Mary. Later the Danville resident managed several major bank loan centers, including Bank of America Home Loans.

1977 Carol Sue Moore M.A., May 21, 2012. Born in Colton, Calif., in 1938, the former cosmetologist taught at Live Oak High School in Morgan Hill for 28 years; she was a mentor teacher, department chair, and lead teacher. After retirement in 1996, the mother of three moved to Sun Lakes, Ariz., and volunteered at an immunization clinic and through her church, and was active in social organizations.

Richard F. Lee J.D., Jan. 9, 2012. Born in San Francisco and raised in Millbrae, the



Bronco Brothers: Robert Lautze, right, with brother Richard and former SCU President **Paul L. Locatelli, S.J. '60**—whom the Lautze brothers hired for his first job out of college.

Robert Frederick Lautze '39 came into this world 18 minutes ahead of his identical twin, **Richard '39**, in San Francisco in 1917. Their lives were closely entwined for the next 88 years. The twins traveled with the SCU basketball team, whose victories earned them the title "Magicians of the Maplewood." After Rob served as lieutenant commander in the Pacific theatre on the *USS Argonne*, the brothers joined George J. Kasch's accounting firm, which became Lautze & Lautze in 1956, with offices still in San Francisco and San Jose. While raising a family in San Carlos, volunteering for civic organizations, and serving his parish, Rob remained a devoted Bronco, serving on the Board of Regents and Board of Trustees, and as president of the Alumni Association 1971–72. He also was a recipient of the Ignatian Award and the 2004 SCU Regent Emeritus Award. Recognized for his "affable charm," Rob was known to say, "If you have to pay taxes, be happy; it means you are making money." He counted his blessings often and out loud. He died May 8, 2012. His survivors include children **Karen Cleary '68**, **Mary Garland '70**, and **Susie Savino '72**. His twin, Richard, died in 2006.

Emma Rita Shane Anderson was an active partner and accountant in her husband's business, Globe Printing Company on South First Street in San Jose, for more than 50 years. She was also a generous friend of the University and a member of the Catala Club. When her husband passed away in 1989, she continued operating Globe until 1997. She was 92.

Richard W. Degnon, born in 1928, was a reporter for the *L.A. Times*, *Glendale News-Press*, and *San Jose Mercury News* and was SCU's athletics news director from 1962 to 1981. While in the Air Force, he edited *Ladd Field*, Alaska's, "farthest north newspaper in the world."

consummate jokester and family man was a senior partner at Schramm & Raddue in Santa Barbara. Later, he opened his own office and then, in 2007, joined Reicker, Pfau, Pyle & McRoy LLP, where he practiced until 2010. He had a passion for correcting injustices through both legal work and leadership roles in many civic organizations.

1981 Bruce E. Lowery, Aug. 30, 2011.

1983 Carl W. Langdon MBA, April 16, 2012. He worked in the computer industry for almost 28 years as a programmer and manager. In 1994 he switched careers and became a financial advisor. He was 68 and living in Palo Alto.

1990 Donald Edward Dalton M.S., March 26, 2012. Born in Little Rock, Ark., in

1963, he received two degrees from the University of Arkansas in Fayetteville before coming to SCU. He was an active member of Cross Pointe Community Church in Tontitown and was a computer engineer with Hewlett-Packard. He lived in Springdale.

2006 Alice Joy, May 18, 2012, in a motorcycle accident. She studied journalism at SCU and worked as a reporter and communications consultant. She was 27 years old.

2011 Octave Ugirashebuja, S.J., on May 18, 2012, in Kigali, Rwanda. Fr. Octave studied at the Jesuit School of Theology in 2011 and served the Society of Jesus in the Rwanda and Burundi region. He was in his seventies and will be particularly missed by his Jesuit brothers.



For details, reservation instructions,
and additional events:

www.scu.edu/alumni/eventcalendar

Questions? Call 408-554-6800



November

- 10 **East Bay AFO** Food Packing at St. Vincent de Paul
- 14 **Los Angeles** Bronco Night at the Counter
- 15 **Central Coast** 39th Annual Fall Dinner
- 15 **Los Angeles AFO** Tutoring Project

29

Peninsula
Holiday
Wine
Tasting



December

- 2 **Chicano-Latino** Virgen de Guadalupe Celebration Mass & Brunch
- 6 **Austin** Third Annual Holiday Happy Hour
- 6 **Sacramento** Annual Christmas Reception
- 7 **Alumni Association** First Friday Mass and Lunch
- 8 **San Francisco AFO** Toys for Tots

- 8 **Los Angeles AFO** Tutoring Project
- 12 **New York** Third Annual Holiday Reception
- 13 **Santa Clara Valley AFO** Holiday Party for Home Safe
- 15 **Stockton/Modesto** Men's Basketball Game & Reception
- 18 **Hawaii** Alumni/Student Networking Reception

January

- 4 **Alumni Association** First Friday Mass and Lunch
- 10 **Los Angeles** Men's Basketball Game & Reception
- 26 **San Diego** Men's Basketball Game & Reception
- 27 **Young Alumni** Reception after 6 p.m. Mass

February

- 1 **Alumni Association** First Friday Mass and Lunch

7

Men's Basketball
Watch Parties

Boston, Seattle,
Dallas, and on the
Peninsula



- 16 **Alumni Association** Pasta Feed and Bronco Legends Night
- 20 **Spokane** Men's Basketball Game & Reception
- 23 **Portland** Men's Basketball Game & Reception
- 24 **Alumni Association** Women's Spirituality Luncheon with SCU authors
- 24 **Young Alumni** Reception after 6 p.m. Mass

Join us at one of our
upcoming events!

North to Alaska

Travel in the footsteps
of Santa Clara's own
Fr. Hubbard—the Glacier
Priest—with the Alumni
Association trip to Alaska,
July 29 – August 7, 2013.

Reserve your spot today:
www.scu.edu/alumni/travel



Dream harder

What idea do you expect to see—or would you like to see—built to scale as we begin the second century of engineering at Santa Clara?

EDITED BY HEIDI WILLIAMS '06
AND STEVEN BOYD SAUM

We asked that question of a few engineering faculty at Santa Clara—letting them know that we were open to pie-in-the-sky ideas and inventions they realistically expect to see in the next decade.

Clean, limitless, nonpolluting energy

for the benefit of all of humanity. It is not obvious where this will come from, what breakthrough will enable this, or if it will ever happen in the next 10 or 20 years. Fusion energy always seems to be just over the horizon. Fossil fuels are finite and pollute. Wind and solar, while renewable, do not seem able to meet future demands at current performance levels. Energy usage drives our quality of life as a society and the state of life on the planet, and we and future generations can use a major advance.

GODFREY MUNGAL, *Dean, School of Engineering*

A personal genome blueprint:

The cost of sequencing your genome will soon drop to \$100, roughly the same charge as a common test for blood cholesterol. Analysis of genomes and age-related changes therein will make personalized medicine a reality and help physicians target specific drugs and determine specific dosages. A physician might be able to recommend corrective treatments many years prior to onset of disease.

The vast amount of data required by personalized genomic medicine will trigger a new bioinformatics industry; the growth of search management

companies such as Google will be mirrored in the management and analysis of genomic data.

YULING YAN, *Chair, Department of Bioengineering*

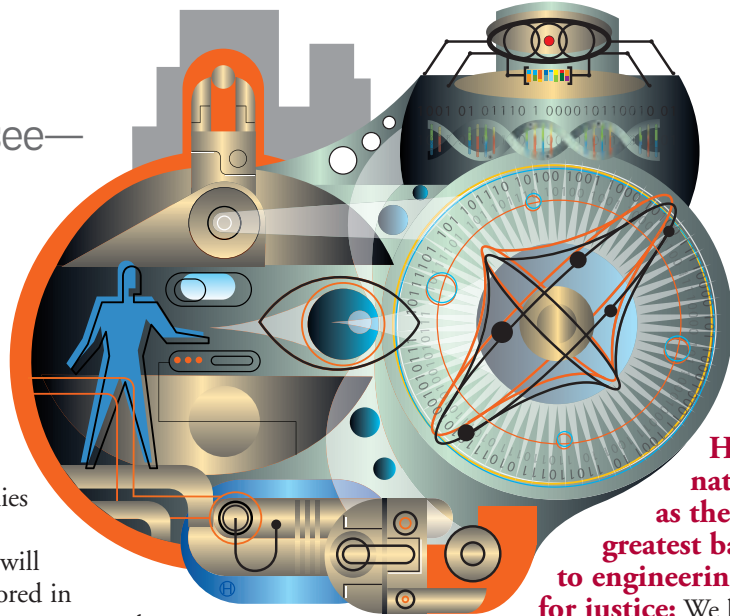
The mini, the maxi, and the multi:

The “mini” is miniaturization—credible advancements in micro/nanotechnology—from concepts such as nanomaterials, which have incredible applications, like nanobots injected into your bloodstream.

The “maxi” means truly large-scale, complex, and often highly interdisciplinary systems. Examples include the large hadron collider, Burj Khalifa (the tallest human-made structure), and the Mars *Curiosity* rover. These challenge not just our technology but also our ability to manage and orchestrate such systems, given the interplay of disciplines and the budgets and development time they require.

“Multi” refers to the collective work of numerous engineering systems—sometimes called “systems of systems” technology. Examples include clusters of robots that work together to perform revolutionary capabilities (an area of research in our lab at SCU), complementary software services linked through the Internet, intelligent highway transportation systems, and many homeland security and national defense systems.

CHRISTOPHER KITTS, *Director, Robotics Systems Laboratory*



HANK OSUNA

Human nature as the greatest barrier to engineering for justice: We have

all the technology we need to live comfortably in a world without hunger, human-caused global warming, or mass extinctions. We lack the will to solve these (and maybe settle with a standard of living that is more spartan). And if I have learned anything at SCU, it is that engineering students are eager and enthusiastic about solving the world's pressing problems. If we could shape a society that unleashed them into the world with the resources and political support they deserve for this effort, we'd be in good hands.

EDWIN MAURER, *Robert W. Peters Professor of Civil Engineering*

A new way of teaching and learning:

The next 10 years will see an explosion in the use of the Internet and other communications media in engineering education. Media will deliver content, facilitate understanding of the content, and give it real-world meaning. This does not mean the end of the teacher, but it does mean a new role for the teacher. It will mean less lecturing and more guiding.

TIM HEALY, *Professor of Electrical Engineering*



WEB

EXCLUSIVES

At santaclaramagazine.com read and dream more—then share your ideas for what you'd like to see engineers tackle.



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The Jesuit University in Silicon Valley

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