



Chair's Corner

Welcome to Economics in Action.





## Alumni Spotlight

Philip Rasori '02 MCT Executive Attributes Success to Economics at UC San Diego

## Faculty Spotlights

Simone Galperti

**David Lagakos** 

Alexis Akira Toda

**Johannes Wieland** 

## <u>Department Awards</u>

This year's awards honor undergraduates, graduate students and faculty.







Undergraduate Student Recipients » **Graduate Student Recipients »** Faculty Recipients »

## Benjamin C. Horne Memorial Prize

### Celebration of 25 Years of Impure **Altruism**

Honoring Jim Andreoni's groundbreaking work in charitable giving research.

## **Rising Leaders Program Welcomes Two More Students**

Announcement of the 2013-14 recipients and update on last year's recipients.

#### Faculty in the News

When The U.S. Cracks Down On Afghan Heroin, It Aids The Taliban

Voice of America Now! An Interview with Valerie Ramey discussing "Tiger Parents"

Parents hire personal trainers to give kids a leg up In male-dominated Indian society, sex discrimination begins in womb: study

In India, sex discrimination begins in womb

ISSUE 9: NOV 20, 2013

**Alumni Spotlight** Chair's Corner

**FACULTY SPOTLIGHT** Simone Galperti **David Lagakos** Alexis Akira Toda Johannes Wieland

**DEPARTMENT AWARDS Undergraduate Awards Graduate Awards Faculty Awards** 

### **FEATURE ARTICLES**

**Economic Development with No** Strings Attached

Benjamin C. Horne Memorial Prize Celebration of 25 Years of Impure

**Rising Leaders Program Welcomes** Two More Students

Past Issues

**SUBSCRIBE** 

Name:

Fmail:

give now

**Events** 

**FULL CALENDAR** 

In India, Discrimination Against Women Can Start In The Womb

Fewer young babies by smoking law [in Norwegian]

It works better in kind

Moving Up A Gear (video)

Moving Up A Gear-Update (video)

**Giving Kids Bikes Can Reduce Drop-Out Rates** 

Nov Founders' Day and 15 Hullabaloo

Jan

2014 ASSA Conference

3-5

in Stay Connected with LinkedIn

Published by the **Department of Economics** faculty and staff. Designed by UC San Diego Creative Services and Publications Questions, comments, complaints? Have a story idea? Email us!

UC San Diego, 9500 Gilman Dr., La Jolla, CA 92093 (858) 534-2230



Economics in Action is produced with the support of UCSD Alumni.



Copyright © 2008 Regents of the University of California. All rights reserved. Terms & Conditions | Feedback



IN ACTION

## Philip Rasori '02

ALUMNI SPOTLIGHT

## MCT Executive Attributes Success to Economics at UC San Diego

By Jenelle Dean



Philip Rasori graduated from UC San Diego's Marshall College in 2002 with a Bachelor of Science in economics with concentration in management science. Rasori is currently the chief operating officer of Mortgage Capital Trading (MCT). He is the founder of MCT's hedge model and runs the organization's trading operations. Rasori developed the mortgage pipeline hedging algorithms that form the foundation of MCT's HALO Program today. He has also pioneered several metrics that have become standard industry parlance, including "beta pull-through" factors. In addition to banking clients, Rasori has consulted with government-sponsored enterprise agencies and the U.S. government on hedging best practices for community banks.

Rasori has functionally led MCT operations since 2005 and ascended to his current role as COO in 2007. He attributes much of his success to the strong foundation he developed while a management science student at UC San

Diego. Rasori continues to see this talent in more recent graduates of the Department of Economics and has made it his mission to hire fellow Tritons. He currently has 10 alumni on staff at MCT.

Rasori is married to Tina Rasori, who holds a doctorate and two master's degrees from UC San Diego's Department of Education Studies.

## What were your experiences like in the Department of Economics? Which courses made an impact on you?

The management science program, and the Department of Economics in general, gave me the strong analytical foundation needed to study more formal statistical and econometric methods after graduation. The MCT Duration Matching Hedge Model that I have developed uses methods that I learned in econometrics, financial investments, financial insurance, operations research and linear algebra. Having hired more than a dozen UC San Diego graduates, I would say that, in general, their analytical foundation substantially put them ahead, compared to employees who graduated elsewhere.

## Describe your transition after graduation. How did UC San Diego prepare you for this transition?

As I mentioned, the management science program gave me a very strong analytical foundation. It took me about eight months to find a position. During this period I bought and read seven books on Excel and Visual Basic for Applications (there were less resources on the Internet back in 2002).

## What was your career trajectory?

I started as the first employee at MCT in early 2003. By the end of that year, the hedge model had been created and I had hired two traders, so my job title went from junior analyst to head trader. In 2005, I became vice president of trading operations, and in 2007 I became chief operating officer and one of two principal owners in the company. We currently have 52 employees, 35 of whom are in San Diego.

### What were you involved in while you were here on campus?

On campus I didn't play any formal sports, although I took a bunch of rec classes, played intramural flag football and spent a lot of time at RIMAC. I also did a bunch of trips through Outback and took a lot of classes at the Mission Bay Aquatics Center. Off campus, my main project was developing a borrower

ISSUE 9: NOV 20, 2013

Alumni Spotlight Chair's Corner

FACULTY SPOTLIGHT Simone Galperti

David Lagakos Alexis Akira Toda Johannes Wieland

DEPARTMENT AWARDS

Undergraduate Awards Graduate Awards

**Faculty Awards** 

FEATURE ARTICLES

**Economic Development with No Strings Attached** 

Benjamin C. Horne Memorial Prize Celebration of 25 Years of Impure Altruism

Rising Leaders Program Welcomes
Two More Students

Past Issues

SUBSCRIBE

Name:

Email:

## give now

#### **Events**

**FULL CALENDAR** 

Nov 15 Founders' Day and Hullabaloo

Jan 3-5

2014 ASSA Conference



repayment and accounting database for a newly formed microfinance organization called Village Hopecore International. VHI is a nongovernmental organization located in East Africa (Kenya) that specializes in microcredit and public health. As a board member, I fund a microenterprise fellowship program, which sends students for 6- to 12-month periods over to Kenya. This position has and will continue to be advertised to UC San Diego students.

### What are some of your favorite things about UC San Diego?

The analytical focus of education for which the school has always been known. While I realize that UC San Diego strives to provide students with a well-rounded education, writing a grammatically correct essay doesn't help my hedge model. Also, I absolutely love the campus.

#### What are your future professional goals?

When I have the time, I would like to go back and get a doctorate in economics.

### Any advice for economics students?

Learn Microsoft Excel thoroughly. This includes Visual Basic for Applications, which is a very simple yet powerful programming language that can automate complex tasks.

Published by the **Department of Economics** faculty and staff.

Designed by **UC San Diego Creative Services and Publications**Questions, comments, complaints? Have a story idea? **Email us!** 



Economics in Action is produced with the support of UCSD Alumni.

UC San Diego, 9500 Gilman Dr., La Jolla, CA 92093 (858) 534-2230

Copyright © 2008 Regents of the University of California. All rights reserved.





IN ACTION

## **Chair's Corner**

Welcome to this edition of *Economics in Action*, which reports on an amazing range of activities and accomplishments by faculty, students and alumni. In our lead article, Paul Niehaus explains why giving a man a fish is just as good as teaching him to fish after all, and we also celebrate Jim Andreoni's research on why we want to give in the first place. We introduce our four new assistant professors, and describe our efforts to memorialize our tragically departed graduate student, Ben Horne. In our Alumni Spotlight is Philip Rasori, who graduated with a management science degree in 2002 and is now the chief operating officer of Mortgage Capital Trading.



The department bids a fond farewell this fall to Michael Bacci, our longest-serving staff member. Mike originally came to the department in the early 1990s to assist our econometrics group, and stayed on to help us manage our physical plant. We wish him and his wife a very enjoyable retirement.

### **Defying Gravity**

Economists are obsessed with rankings: What is the ranking of my department? What is the ranking of the journal in which I published my latest paper? In the academic job market, this obsession creates a strong expectation that a department will hire new Ph.D.s from higher-ranked departments. For a graduate student to move from a Ph.D. in a lower-ranked department to a job in a higher-ranked department is akin to swimming upstream or defying gravity. Recently, however, a significant number of UC San Diego Department of Economics graduate students have been doing just that.

A review of our graduate student job placement over the past ten years revealed that, in the period 2009-13, nine of our students have been hired at departments ranked comparable to or higher than ours, compared to only one student during the period 2004-08. This is additional evidence for the tremendous improvement in our graduate program noted in our recent external review (see *Economics in Action*, fall 2012). The improvement in job placement is above all a tribute to our graduate students themselves, and also to the efforts of our faculty to train and place them. Together we will continue our "antigravity" efforts!

### **Undergraduate Program**

The last issue of *Economics in Action* included "The Effect of Housing and Real Estate Wealth on Retirement Timing in the U.S.," an article by our undergraduate student Anqi "Angie" Chen, who described her research. With the encouragement of Professor Irina Telyukova, Angie submitted her work to the ninth annual EconSources.com **Best Undergraduate Paper Competition** that is sponsored by the **International Atlantic Economic Society**. We are delighted to report that Angie's paper was selected as one of the four finalists out of approximately 50 entries from eight different countries. The papers – with names, university and country affiliations removed – were judged by a blind panel of 16 judges from Canada, France, India, Korea, Portugal, Romania, Turkey and the United States.

### Faculty Research Influences Policy, at Home and Abroad

Even though the UC San Diego Department of Economics lies as far as one can get in the continental United States from the Northeast "corridor of power," the strength of our faculty research still manages to influence government policy. Three of Kate Antonovics' papers have been cited in amicus briefs filed with the U.S. Supreme Court in *Schuette v. Coalition to Defend Affirmative Action*, which centers around whether Michigan's 2006 voter-approved initiative to amend the state constitution to prohibit race-based preferences in public education violates the Equal Protection Clause. Among other things, the outcome of the case could have implications for a number of state-level bans on the use of race-based preferences in public education (including California's).

Around the world in the other direction, Karthik Muralidharan traveled to New Delhi to conduct a three-

ISSUE 9: NOV 20, 2013

Alumni Spotlight Chair's Corner

FACULTY SPOTLIGHT Simone Galperti David Lagakos Alexis Akira Toda Johannes Wieland

DEPARTMENT AWARDS
Undergraduate Awards
Graduate Awards
Faculty Awards

FEATURE ARTICLES

Economic Development with No

Strings Attached
Benjamin C. Horne Memorial Prize
Celebration of 25 Years of Impure
Altruism

Rising Leaders Program Welcomes Two More Students

Past Issues

SUBSCRIBE

Name:

Email:

## give now

#### **Events**

**FULL CALENDAR** 

Nov 15 Founders' Day and Hullabaloo

Jan **3-5** 

2014 ASSA Conference



hour workshop on evidence-based policy making in primary education for the education minister of India and other top officials working on primary education policy. The workshop was based on a recent review paper written for the government of India's 12th Five-Year Plan by Professor Muralidharan, summarizing a decade of high-quality research on primary education in India. Several points and suggestions in this review paper have been incorporated into the official 12th Plan document, and this workshop was designed to help the government of India implement cost-effective strategies for meeting the goals outlined for education in the 12th Plan.

Of course, our faculty continue to pile up honors in the world of academia. Vince Crawford was elected a member of the Council of the Royal Economic Society. Gordon Hanson gave the World Economy lecture at the University of Nottingham in September. Congratulations to both of them!

#### **Outreach and Alumni**

More than 100 researchers from across California came to UC San Diego in September to attend the seventh annual All-California Labor Economics Conference. With an even mix of faculty and graduate students, attendance at the conference was a record high. The two-day conference featured nine presentations by leading researchers on topics as diverse as unemployment insurance during the great recession, cash transfers and child health, and racial preference formation. There was also a graduate student poster session with more than 30 participants. This was UC San Diego's first time hosting the event, and it was organized jointly by three faculty within the department: Gordon Dahl, Prashant Bharadwaj and Julie Cullen. A link to the conference webpage can be found at <a href="http://economics.ucsd.edu/events/conferences/2013ACLEC/index.html">http://economics.ucsd.edu/events/conferences/2013ACLEC/index.html</a>.

In October, John Williams, president of the Federal Reserve Bank of San Francisco, gave a fantastic speech to a sold-out Economics Roundtable. **His speech** is available from the Federal Reserve Bank of San Francisco's website. The 2014 lineup for the Roundtable series will be available soon!

The Allied Social Sciences Association conference will be held in Philadelphia on Jan. 3-5, 2014. We look forward to seeing many of our doctoral alumni there – especially at our cocktail party, which will be held on Saturday, Jan. 4, from 6:30 to 8:30 p.m. at the Philadelphia Marriott Downtown.

Sincerely,



James Rauch

Published by the **Department of Economics** faculty and staff.

Designed by **UC San Diego Creative Services and Publications**Questions, comments, complaints? Have a story idea? **Email us!** 



Economics in Action is produced with the support of UCSD Alumni.

UC San Diego, 9500 Gilman Dr., La Jolla, CA 92093 (858) 534-2230

Copyright © 2008 Regents of the University of California. All rights reserved





IN ACTION

## Simone Galperti

## FACULTY SPOTLIGHT

## **Behavioral Biases and Economic Institutions**



Simone Galperti was born in Lecco, a small city on Lake Como in northern Italy. He earned his bachelor's degree in business administration and his master's degree in economics from Bocconi University in Milan, Italy. He then earned his doctorate in economics from Northwestern University in 2013.

### **Research: Behavioral Economics and Contract Theory**

Simone's primary research interests focus, from a theoretical point of view, on several areas of economics: decision-making, incentives and the design of contracts and economic institutions such as markets.

Simone's primary emphasis is on exploring how systematic biases and irrationalities in human behavior can be modeled and explained. Moreover, he is interested in understanding how biases and

irrationalities interact with economic incentives, thus affecting performance and design of economic institutions. This work addresses questions such as how to design savings accounts to help people adequately save for retirement when they often struggle with self-control (leading them to spend too much). Examples of such devices include Christmas clubs, individual retirement accounts and 401(k) plans.

Another important question is whether we can reasonably expect that markets will provide people with commitment devices (like savings accounts) that take care of their self-control problems. Simone's research highlights two important aspects of these markets: (1) people's different degrees of self-control create a demand for different devices; and (2) the providers of such devices – whether it is a private company or a public authority – cannot observe people's self-control, and therefore have to induce individuals to select voluntarily the device that best fits their needs.

Simone's research shows that, due to people's heterogeneity, private companies are likely to provide commitment devices inefficiently: They actually meet the demand for commitment only for a potentially small share of the population. Besides thoroughly explaining the economic source and nature of these inefficiencies, the work also investigates policies aimed at fostering efficiency.

Simone also studies strategic situations in which several parties (called principals) simultaneously and noncooperatively try to influence the decisions of a common agent. Examples of such situations include several interest groups lobbying a politician, several phone operators buying frequencies from a government authority, or several wholesalers marketing their products through a common retailer. Simone's work focuses on situations in which each principal privately knows some aspects of the situation that matter for all participants. For example, each lobbyist privately knows how the politician's decisions affect their interest group, and hence how intensely they are willing to lobby. This work ultimately addresses two fundamental questions: How does the competition among informed principals shape the agent's decisions? Do the agent's decisions fully incorporate the information originally dispersed among the principals?

## Research and Teaching at UC San Diego

Among the many reasons why Simone decided to join UC San Diego, perhaps the most important is the outstanding colleagues with whom he plans to work over the years to come, in particular, the microeconomic theorists, both junior and senior, who work on topics close to his interests. Simone also looks forward to contributing to the educational mission of UC San Diego with his teaching and mentoring services, leveraging his specific experience and studies at Northwestern.

ISSUE 9: NOV 20, 2013

Alumni Spotlight Chair's Corner

FACULTY SPOTLIGHT

Simone Galperti David Lagakos Alexis Akira Toda Johannes Wieland

DEPARTMENT AWARDS
Undergraduate Awards
Graduate Awards
Faculty Awards

FEATURE ARTICLES

**Economic Development with No Strings Attached** 

Benjamin C. Horne Memorial Prize Celebration of 25 Years of Impure Altruism

Rising Leaders Program Welcomes
Two More Students

Past Issues

SUBSCRIBE

Name:

Email:

## give now

#### **Events**

**FULL CALENDAR** 

Nov 15 Founders' Day and Hullabaloo

3-5

2014 ASSA Conference



 $Economics\ in\ Action: Issue\ 9: Nov\ 20,\ 2013: Faculty\ Spotlight:\ Simone\ Galperti$ 

Simone will be teaching microeconomic theory at the undergraduate and graduate level as he settles into his first year in the department.

Published by the **Department of Economics** faculty and staff.

Designed by **UC San Diego Creative Services and Publications**Questions, comments, complaints? Have a story idea? **Email us!** 



Economics in Action is produced with the support of UCSD Alumni.

UC San Diego, 9500 Gilman Dr., La Jolla, CA 92093 (858) 534-2230

Copyright © 2008 Regents of the University of California. All rights reserved.





IN ACTION

FACULTY SPOTLIGHT

## **David Lagakos**

## Enthusiastic Student and Teacher



David Lagakos grew up in the Boston area and was introduced to economics as an undergraduate at the University of Rochester. Originally a math major, he switched to economics at the end of his freshman year after taking Steve Landsburg's course in price theory. Landsburg's course lasted only a semester but planted the seeds of most of the big economic ideas that fascinate David to this day (and fill his lectures.) Most memorable of these insights was the power of the market to deliver the efficient amount of "bread and beer" to consumers even if the nation's bakers and brewers cared only about their own interests. (Being a vegetarian, David always leaves the butcher out of this example.)

David went on to learn a lot of economics before graduating. He remained, however, almost entirely ignorant about macroeconomics (his current field). It was just easier to put himself in the shoes of a brewer and ask what he would do if beer prices should rise than to

ask himself what the aggregate unemployment rate would do if inflation should rise. To David, macroeconomics remained simply "up-down economics" (in the words of Paul Krugman), in which aggregate quantities had a life of their own and moved up and down according to some simple rules that everyone except David seemed to understand.

After graduating with his bachelor's degree in 2001, David worked as a research assistant at the Federal Reserve Bank of New York. There, he got to work on a broad set of economic research projects ranging from heterogeneity in inflation rates experienced by U.S. households to neighborhood revitalization in New York City. He learned about doing original research in economics and about working with large data sets. Encouraged by his mentors there at the Fed – especially Bart Hobijn – David decided to apply to graduate school in economics to pursue a career in research.

#### **Graduate Training and Beyond**

David started his doctorate at UCLA in 2003 and soon realized why people were fascinated by macroeconomics: The frontier of research in macroeconomics was *microfounded*, meaning that aggregates were built up from the behavior of individual consumers and firms. In other words, macroeconomists got to work on all the big important questions in economics, and got to do so using microeconomic insights that actually made sense. David learned as much macroeconomics as he could over the next five years from the dynamic faculty at UCLA, in particular Matthias Doepke, with whom David worked as a research assistant, and Lee Ohanian, who served as chair of David's dissertation committee.

Since finishing his doctorate in 2008, David has held two positions: research economist at the Federal Reserve Bank of Minneapolis, and assistant professor of economics at Arizona State University. At both places, David felt more like a student than a faculty member and learned continuously about economics from his great group of co-workers. At ASU, David enjoyed regular interactions with his senior colleagues Richard Rogerson, Ed Prescott and Berthold Herrendorf, all of whose work inspired David's research at the intersection of macroeconomics and economic development. He also learned a lot through his lectures and by collaborating with numerous students on research projects. During this period, David also benefited by participating regularly in the Economic Growth group of the National Bureau of Economic Research run by Chad Jones and Pete Klenow (both of Stanford University).

#### Research and Teaching at UC San Diego

An enthusiastic lecturer, David is thrilled to start teaching the outstanding undergraduates and graduate

ISSUE 9: NOV 20, 2013

Alumni Spotlight Chair's Corner

FACULTY SPOTLIGHT

Simone Galperti David Lagakos Alexis Akira Toda Johannes Wieland

DEPARTMENT AWARDS
Undergraduate Awards
Graduate Awards
Faculty Awards

FEATURE ARTICLES

Economic Development with No Strings Attached Benjamin C. Horne Memorial Prize

Celebration of 25 Years of Impure Altruism

Rising Leaders Program Welcomes Two More Students

Past Issues

SUBSCRIBE

Name:

Email:

## give now

#### **Events**

**FULL CALENDAR** 

Nov 15 Founders' Day and Hullabaloo

Jan **3-5** 

2014 ASSA Conference



students at UC San Diego. David is also excited about learning from such a great group of colleagues working on applied issues in macroeconomics, development and microeconomics. The only challenge David sees is that there will be more interesting seminars each week than he can actually attend.

Published by the Department of Economics faculty and staff.

Designed by UC San Diego Creative Services and Publications

Questions, comments, complaints? Have a story idea? Email us!



*Economics in Action* is produced with the support of UCSD Alumni.

UC San Diego, 9500 Gilman Dr., La Jolla, CA 92093 (858) 534-2230 Copyright © 2008 Regents of the University of California. All rights reserved.





IN ACTION

## Alexis Akira Toda

## FACULTY SPOTLIGHT

### A Doctor of Economics



Alexis Akira Toda was born in Montreal, Canada, and moved to Tokyo, Japan, when he was 4 years old. From an early age, he was attracted to mathematics. In high school, he proved a few theorems in elementary geometry such as "the sum of the reciprocals of the radii of three exscribed circles to a triangle equals the reciprocal of the radius of the inscribed circle" and generalized the result to higher dimensional spaces.

#### From Math to Medicine

Despite his love of mathematics, Alexis became a medical student at the University of Tokyo while the Japanese economy stagnated and job insecurity rose in the 1990s (and continues to this day). However, the "cookbook" approach of medicine did not suit Alexis, who was trained in abstract and logical reasoning. His life changed when he attended a one-hour class on health economics as part of a

course in public health. He was exposed to microeconomic principles such as demand, supply, and consumer's surplus, and decided that economics was the way to go since it is a highly mathematical subject that is also relevant to social issues.

Alexis kept his options open, finishing medical school in 2004 while teaching himself economics. He chose to complete his residency in northern Japan, where the cool summer and harsh winter reminded him of Canada, and where he was offered a high salary because of the shortage of doctors in the rural areas (a true economist, he went after the best deal). It was at this hospital that he met his future wife, Junko.

#### From Medicine to Economics

Upon completing his residency, Alexis studied graduate-level economics at the University of Tokyo while working part-time as an anesthesiologist. He came to the United States in 2008 and received his doctorate in economics in 2013 from Yale University, where he was fascinated by general equilibrium theory and interacted with prominent researchers such as Truman Bewley, Donald Brown, and John Geanakoplos. His primary interests are finance, mathematical economics and macroeconomics, particularly the theoretical study of financial and economic models that consist of many interacting agents. His dissertation examined the impact of financial intermediation (asset-backed securities) on efficiency, inequality and economic growth from a mathematical perspective.

Alexis joined the UC San Diego Department of Economics in July 2013. Settling in San Diego was a natural choice: availability of Asian food, beautiful beaches and a cool summer (he's had enough of hot and humid summers after spending 22 years in Tokyo and 5 years in New Haven, Connecticut).

Published by the **Department of Economics** faculty and staff.

Designed by **UC San Diego Creative Services and Publications**Questions, comments, complaints? Have a story idea? **Email us!** 



*Economics in Action* is produced with the support of UCSD Alumni.

ISSUE 9: NOV 20, 2013

Alumni Spotlight Chair's Corner

FACULTY SPOTLIGHT

Simone Galperti David Lagakos Alexis Akira Toda Johannes Wieland

DEPARTMENT AWARDS
Undergraduate Awards
Graduate Awards
Faculty Awards

FEATURE ARTICLES

Economic Development with No Strings Attached Benjamin C. Horne Memorial Prize Celebration of 25 Years of Impure

Rising Leaders Program Welcomes
Two More Students

Past Issues

**Altruism** 

SUBSCRIBE

Name:

Email:

## give now

#### Events

**FULL CALENDAR** 

Nov **15** 

Founders' Day and Hullabaloo

Jan **3-5** 

2014 ASSA Conference



Stay Connected with LinkedIn

UC San Diego, 9500 Gilman Dr., La Jolla, CA 92093 (858) 534-2230 Copyright © 2008 Regents of the University of California. All rights reserved.





IN ACTION

## Johannes Wieland

FACULTY SPOTLIGHT

Having just received his doctorate from UC Berkeley, Johannes Wieland is delighted to join the UC San Diego Department of Economics. His family is originally from Germany but moved to Luxembourg where he was born and raised. He subsequently earned a B.A. at Cambridge University and an M.Phil. from Oxford University before moving to the United States for doctoral studies.

#### Research

Johannes' passion for economics developed rather unexpectedly. He had to declare his major on his college application, as is typical in Europe, and he decided to pursue an economics major primarily because it felt more applicable to the real world than other degrees, and it left many career options open. But he was soon fascinated by how economics uses simple models to analyze real-world situations in a consistent and structured way. In particular, the notion that one could condense the complexity of the macroeconomy into a much simpler system of equations piqued his interest. By stripping away all the superfluous complexity, these models can show why economies suffer from downturns and what can be done to mitigate them.

As the world is only just recovering from the largest recession since the Great Depression, it is clear that there is still much to be learned in the field of macroeconomics. Johannes' goal is to better understand these downturns and how macroeconomic policies can be used to fight them. His current work focuses on how economies behave when central banks have exhausted their ammunition after lowering interest rates all the way to zero. He has also been analyzing the recent Japanese monetary experiment that attempts to lift the Japanese economy out of its decade-long recession.

#### At UC San Diego

What drew Johannes to UC San Diego was first and foremost the outstanding quality of the department. There are many natural synergies with the faculty, and Johannes is looking forward to continue to learn in areas that he wasn't exposed to as much as a graduate student. He is also excited to spend more time in California. At Berkeley he was once told that many graduating doctoral students have trouble adjusting to the weather elsewhere. Johannes is happy to report that he hasn't had that problem.

ISSUE 9: NOV 20, 2013

Alumni Spotlight Chair's Corner

FACULTY SPOTLIGHT

Simone Galperti David Lagakos Alexis Akira Toda Johannes Wieland

**DEPARTMENT AWARDS** 

Undergraduate Awards Graduate Awards Faculty Awards

FEATURE ARTICLES

**Economic Development with No Strings Attached** 

Benjamin C. Horne Memorial Prize Celebration of 25 Years of Impure Altruism

Rising Leaders Program Welcomes Two More Students

Past Issues

SUBSCRIBE

Name:

Email:

## give now

#### **Events**

**FULL CALENDAR** 

Nov **15** 

Founders' Day and Hullabaloo

Jan **3-5**  2014 ASSA Conference

Stay Connected with LinkedIn

Published by the Department of Economics faculty and staff.

Designed by UC San Diego Creative Services and Publications

Questions, comments, complaints? Have a story idea? Email us!



Economics in Action is produced with the support of UCSD Alumni.

UC San Diego, 9500 Gilman Dr., La Jolla, CA 92093 (858) 534-2230 Copyright © 2008 Regents of the University of California. All rights reserved.





IN ACTION

## **Department Awards**

Each year the Department of Economics honors students and faculty with awards for scholarship and teaching. Please join us in congratulating the 2012-13 winners.

## **Undergraduate Students**

The Department of Economics grants one annual award to the top graduating senior from each of our three undergraduate majors: economics, management science and joint mathematics-economics. Recipients are chosen by faculty vote from a pool of top students in the graduating class of each major. The award is mentioned at their college commencement ceremonies, and awardees receive a total cash award of \$500. For more information on these annual awards, email economics@ucsd.edu.

## Seymour Harris Award for Excellence in Economics Recipient: Thomas Chew



This award commemorates Seymour E. Harris, a prominent government advisor from the 1940s through the 1960s. He was a noted member of the Harvard University Department of Economics faculty and the founding chair of the UC San Diego's Department of Economics.

## Joel Dean Award for Excellence in Management Science Recipients: Camille Briat and Ellen Bruno



This award commemorates Joel Dean, a prominent management scientist who was also a noted faculty member of the business school at Columbia University. He was a visiting professor at UC San Diego's Department of Economics throughout the 1970s and was one of the pioneers of our management science major.

## Award for Excellence in Joint Mathematics-Economics Recipient: Yihuan Xu

This award was established in 2008 and is granted to our most outstanding joint mathematics-economics student.

## **Graduate Students**

### Walter Heller Memorial Prize (Best Third-Year Paper)

This award is given annually in memory of **Dr. Walter Perrin Heller** (1942-2001). Dr. Heller was a leading 20th-century economic theorist and an early member of the UC San Diego faculty. He joined the department in 1974 and remained active until his death in 2001. This award formally recognizes our graduate students who have shown the most promise in their future careers in research.

First Prize (tie)
Zheng Fang

First Prize (tie)
Igor Vaynman

ISSUE 9: NOV 20, 2013

Alumni Spotlight Chair's Corner

FACULTY SPOTLIGHT

Simone Galperti David Lagakos Alexis Akira Toda Johannes Wieland

DEPARTMENT AWARDS

Undergraduate Awards Graduate Awards Faculty Awards

FEATURE ARTICLES

Economic Development with No Strings Attached

Benjamin C. Horne Memorial Prize Celebration of 25 Years of Impure Altruism

Rising Leaders Program Welcomes Two More Students

Past Issues

SUBSCRIBE

Name:

Email:

## give now

#### **Events**

**FULL CALENDAR** 

Nov 15 Founders' Day and Hullabaloo

Jan **3-5**  2014 ASSA Conference



PHOTO UNAVAILABLE

"Restore Bootstrap Consistency with Nonsmooth Functionals"



"Asymptotics of the Variance Targeting Estimator for (GARCH (p, q)) Process with Infinite Kurtosis"

PHOTO UNAVAILABLE

Runner-up
Jamie Mullins

"Curves and Thresholds in Firm Emissions Reductions"

#### **Best Graduate Student Research Seminar Presentation**

Graduate Student Research Seminars are organized by the students for the students to encourage presentation of early research in order to receive feedback from peers and to keep projects on track. This award is designed to encourage graduate students to present research projects at all stages of development, especially projects that have not yet been presented. The best presentation at the Graduate Student Research Seminars is selected annually by a committee of peers.



Matthew Goldman

"Live by the Three, Die by the Three?"

### **Teaching Assistance Excellence**

Annually the department recognizes graduate students who demonstrate great efforts in their teaching, as emphasized by glowing teaching evaluations from undergraduates, graduate peers and their faculty supervisors. Nominations are solicited from the faculty and awards are made by the graduate committee. Each of these recipients for the 2012-13 academic year showed clear commitment to the teaching mission of UC San Diego.



Andrew Brownback
Undergraduate teaching



Andrew Chamberlain
Undergraduate teaching



Michael Kuhn
Undergraduate teaching



Michael Levy
Undergraduate teaching



Benjamin Miller
Undergraduate teaching



Igor Vaynman
Undergraduate teaching

### Clive Granger Research Fellowship

Six fellowships, named after Nobel Prize winner and longtime Department of Economics faculty member Sir Clive Granger, are awarded each year for the most promising graduate student research.

The fellowship carries a small stipend and allows the student to make more rapid dissertation progress by minimizing work obligations for a quarter. Nominations are made by the faculty running the thesis workshops (in consultation with their colleagues) and awards are made by the Graduate Committee.



**Denise Clayton** 

**Zheng Fang** 



Michael Kuhn



PHOTO UNAVAILABLE

Myungkyu Shim



**Igor Vaynman** 



Fan "Dora" Xia

## **Faculty**

### **Undergraduate and Graduate Teaching Awards**

In recognition of faculty and graduate students who demonstrate great effort in teaching, the department awards annual prizes for the best undergraduate and graduate teaching. Awards for undergraduate teaching are given to the best faculty member(s), lecturer(s) and associate-in(s) teaching undergraduate courses. Recipients of undergraduate teaching awards are selected by a committee composed of the department chair and past faculty awardees who review undergraduate student evaluations. Awards for graduate teaching are given to the best core course instructor(s) and the best elective course instructor(s). Recipients of the graduate teaching award are selected by current doctoral students.



Prashant Bharadwaj, Ph.D.

Undergraduate teaching Faculty



Skip Foster, Ph.D.

Undergraduate teaching Lecturer



Stephen Morris

Undergraduate teaching Associate-in



Nageeb Ali, Ph.D.

Advanced elective course teaching Faculty



Advanced elective course teaching

Jeffrey Clemens, Ph.D.

Advanced elective course teaching



Faculty



Honorable Mention Faculty



James D. Hamilton, Ph.D.
Graduate core course teaching
Faculty



Andres Santos, Ph.D.
Graduate core course teaching
Faculty

Published by the **Department of Economics** faculty and staff.

Designed by **UC San Diego Creative Services and Publications**Questions, comments, complaints? Have a story idea? **Email us!** 



Economics in Action is produced with the support of UCSD Alumni.

UC San Diego, 9500 Gilman Dr., La Jolla, CA 92093 (858) 534-2230 Copyright © 2008 Regents of the University of California. All rights reserved.





IN ACTION



On a recent trip to Pakistan, I spoke with a woman – call her Basima – living in an extremely poor fishing community on the outskirts of Karachi. It was a short conversation because talking isn't easy for Basima: She is dying of tuberculosis. With adequate care, her condition is treatable. But of course, being poor means she can't afford adequate care.

Part of Basima's tragedy is that Pakistan has a social safety net, the Benazir Income Support Program, that could have helped. Like a growing number of anti-poverty programs worldwide, BISP helps the poor in the simplest possible way: by giving them money. Such "cash transfer" programs have the great advantage of letting each person put money toward their own priorities and opportunities. In Basima's case, she could have sought medical care. But access to BISP payments in her community is not guaranteed. Basima received one payment in 2009 when the program launched, and then payments stopped. Her neighbors told us that the only way to restart payments was to negotiate a deal with power brokers in the office of a local political party.

Basima's story reminds me of two lessons that development economics has taught us over the past decade. The first is that cash transfers are a powerful tool for fighting poverty. Yes, giving away money. Across dozens of studies, multiple contexts and continents, a series of rigorous impact evaluations have shown that giving money to the poor enables them to make sizeable and sustainable improvements in their lives. To take a recent example, **Blattman, Fiali and Martinez (2013)** recently found that one-time grants to youths in Northern Uganda increased incomes by 40 percent after four years. Returns like that are tough to beat.

The second lesson is that corruption can ravage an otherwise promising program. In India, for example, Sandip Sukhanktar of Dartmouth College and I audited the country's flagship poverty-alleviation scheme, which costs 1 percent of gross domestic product and covers 11 percent of the world's population. What we found was sobering: In the areas we studied, an estimated 75 percent of program expenditures were being siphoned off. Studies from other countries confirm that it's not just an Indian problem. Some progress has been made – Sandip, Karthik Muralidharan and I have seen positive results, for example, from a follow-up impact evaluation using biometric identification. But governments innovate slowly, and even the best-intentioned bureaucrat typically has only a few policy levers at his disposal.

This is one reason I'm excited about **GiveDirectly**. GiveDirectly is a nonprofit organization that I cofounded with friends during graduate school with a simple mission: to provide a transparent and efficient platform for anyone who wanted to give money to the poor. For a charity, this is about as unorthodox as it gets. Yet GiveDirectly has grown in just two years from nothing to the **No. 2 ranked U.S. nonprofit**. Along the way it has sparked vigorous debate about whether the old, top-down models with their layers of overhead and subcontracting are still needed. Recently, Innovations for Poverty Action released **long-awaited results** from an impact evaluation showing that GiveDirectly transfers are an effective means for simulating investment and raising incomes. The results are already being debated on **NPR**, in **The New York Times** and in **The Economist** – evidence of the shift toward evidence-based giving. As **This American Life** put it, "**philanthropy is getting nerdier**."

ISSUE 9: NOV 20, 2013

Alumni Spotlight Chair's Corner

FACULTY SPOTLIGHT Simone Galperti David Lagakos Alexis Akira Toda Johannes Wieland

DEPARTMENT AWARDS
Undergraduate Awards
Graduate Awards
Faculty Awards

FEATURE ARTICLES

Economic Development with No Strings Attached Benjamin C. Horne Memorial Prize Celebration of 25 Years of Impure

Rising Leaders Program Welcomes Two More Students

Past Issues

SUBSCRIBE

Name:

Email:

## give now

#### **Events**

FULL CALENDAR

Nov 15 Founders' Day and Hullabaloo

Jan **3-5** 

2014 ASSA Conference



All good things. Yet for all the buzz, the most exciting progress has been behind the scenes and on the ground in Western Kenya. There, with help from technology-oriented funders like **Google Giving**, we're busy reengineering fieldwork for the digital era. Our field teams use Android-based data collection tools to collect detailed time- and location-stamped information on each recipient. These data flow to management, who use them to hold field staff accountable, and also into the cloud where we use Mechanical Turk to connect to workers from around the world to audit our data. The Turkers check satellite imagery, for example, to verify that each recipient lives in a house roofed with thatch.



Eligible Ineligible

These images show a 15-meter radius around the GPS coordinates of two candidate recipients – the eligible contains a thatch roof while the ineligible one does not.

Meanwhile our call centers contact 99.94 percent of recipients by phone to learn everything from whether someone asked them for a bribe to what they think we should be doing differently. Finally, recipients who clear our audits receive money using innovative payment systems like M-Pesa, which works over mobile phone and slashes the costs of wiring money to remote parts of Africa to just 3 percent. All told these systems give us unparalleled control – and give me as a donor confidence that my money will stick where I want it to, in the hands of the poor.

The next step is to use these technologies to better serve people like Basima. The Department for International Development has estimated that globally there are more than 1 billion like her: citizens of developing countries due to receive transfers from their governments. Will their payments arrive? I'm a skeptic at heart, but increasingly dare to hope the answer may be yes.

Published by the Department of Economics faculty and staff.

Designed by UC San Diego Creative Services and Publications

Questions, comments, complaints? Have a story idea? Email us!



Economics in Action is produced with the support of UCSD Alumni.

UC San Diego, 9500 Gilman Dr., La Jolla, CA 92093 (858) 534-2230 Copyright © 2008 Regents of the University of California. All rights reserved.





IN ACTION

## **Benjamin C. Horne Memorial Prize**

By the Department of Economics

Benjamin Christopher Horne was a student in our doctoral program in economics when he passed away on July 13, 2012, during the summer before he defended his thesis and entered the job market.

Ben's primary research was microeconomic theory. He applied his studies to gain a better understanding of conflict resolution, writing several papers that contributed to the formal understanding of topics such as why and how mediation works in practice, how a mediator can reduce inefficiencies in conflict resolution, and how unrecognized states are able to persist and evaluate paths to the settlement of conflicts. As an academic, Ben wanted his research to make a difference. Thanks to the effort put forth by his advisor, friends and colleagues, Ben's dissertation research was submitted, and he was awarded a posthumous doctorate in economics from UC San Diego in 2013.

Not only did Ben want to make a difference with his research, he also wanted to have a positive influence on those around him and on the environment. He often brought disparate groups of people together to enjoy sports and nature, organizing outdoor adventures in the hopes of helping his family, friends and acquaintances lead healthy lives and to foster a spirit of environmentalism.



Benjamin C. Horne

Ben was also an avid traveler who visited and sought to learn from many countries around the world. Using a style he referred to as "power traveling," a combination of minimizing gear while maximizing exposure to the diversity of a locale, he would accomplish in a day what many would need a week to do. His travels and how he traveled reflected how keen he was to understand how the world actually works. He strongly believed that to change the world he had to study it.

#### Support the Memorial Prize Endowment

Although Ben lost his life doing what he loved – climbing the Palcaraju Oeste mountain in Peru – he continues to inspire all who knew him. To this end, his friends and colleagues in the Department of Economics at UC San Diego have honored him by creating the Benjamin C. Horne Memorial Prize to support graduate student research in conflict resolution, development or environmental economics. The goal is to raise \$25,000 in funds to create an endowment. The endowment will generate an annual payout that will be awarded each year to graduate students in economics at UC San Diego who have the potential to advance the causes about which Ben felt passionate. To create an endowment, \$25,000 must be raised by December 31, 2017. However, if the minimum is not met, the money raised will remain expendable for the same purposes, and the gifted amounts will be spent in their entirety.

If you are interested in donating to this fund, you can **make a gift online** or mail a check to UC San Diego, Division of Social Sciences, 9500 Gilman Drive # 0502, La Jolla, CA 92093-0502. Please make the check payable to the UC San Diego Foundation, and indicate "Benjamin C. Horne Memorial Prize."

The first awardee of the Benjamin C. Horne Memorial Prize is **Stephie Fried** for her work on environmental economics. Like Ben, Stephie was inspired by her travels abroad, especially when she taught high school math in Pohnpei, Micronesia. We are certain that Ben would be pleased to know he has helped Stephie with her research.

ISSUE 9: NOV 20, 2013

Alumni Spotlight Chair's Corner

FACULTY SPOTLIGHT

Simone Galperti David Lagakos Alexis Akira Toda Johannes Wieland

DEPARTMENT AWARDS
Undergraduate Awards
Graduate Awards
Faculty Awards

FEATURE ARTICLES

Economic Development with No Strings Attached Benjamin C. Horne Memorial Prize

Celebration of 25 Years of Impure Altruism

Rising Leaders Program Welcomes Two More Students

Past Issues

SUBSCRIBE

Name:

Email:

## give now

#### **Events**

**FULL CALENDAR** 

Nov **15** 

Founders' Day and Hullabaloo

Jan **3-5** 

2014 ASSA Conference



Published by the **Department of Economics** faculty and staff.

Designed by **UC San Diego Creative Services and Publications**Questions, comments, complaints? Have a story idea? **Email us!** 



*Economics in Action* is produced with the support of UCSD Alumni.

UC San Diego, 9500 Gilman Dr., La Jolla, CA 92093 (858) 534-2230 Copyright © 2008 Regents of the University of California. All rights reserved.





IN ACTION

## **Celebration of 25 Years of Impure Altruism**

By the Department of Economics

Professional friends, students and collaborators often gather for a conference and then publish a festschrift containing selected articles from the conference to present to its honoree. These conferences are typically held around the time of the honoree's retirement or 75th birthday. In January 2013, the Rady School of Management at UC San Diego hosted a conference of this kind. It was the 25th birthday party for an *idea*: impure altruism. Altruism is "impure" when individuals prefer to fund a public good (such as a park) by giving a voluntary contribution rather than paying the same amount in taxes because they enjoy the "warm glow" from charitable giving.



Presentation of "Warm-Glow" tapestry to Jim Andreoni

At the center of attention was Department of Economics professor James (Jim) Andreoni, who introduced the idea of impure altruism in pathbreaking articles published in the *Economic Journal* and the *Journal of Political Economy*. Andreoni wrote these papers before he turned 30, so unlike most people who receive festschrifts, he is far from retirement and is still producing top-quality research.

Jim showed that impure rather than pure altruism changes economic behavior ranging from the effect of taxation on charitable donations to the stimulus impact of debt-financed government spending. The influence of these papers on public

economics, experimental economics and the study of charitable behavior has been tremendous.

The conference contained presentations on impure altruism and related topics by some of the world's leading experimental, policy-oriented and theoretical economists. Participants included several of Jim's students and the co-chairs of his dissertation committee.

The papers presented at the conference will be published next year in a special issue of the *Journal of Public Economics* edited by Erzo Luttmer, Charlie Sprenger (Jim's former UC San Diego student, now at Stanford University) and Lise Vesterlund.

ISSUE 9: NOV 20, 2013

Alumni Spotlight Chair's Corner

FACULTY SPOTLIGHT

Simone Galperti David Lagakos Alexis Akira Toda Johannes Wieland

**DEPARTMENT AWARDS** 

Undergraduate Awards Graduate Awards Faculty Awards

\_\_\_\_\_

FEATURE ARTICLES

Economic Development with No

**Strings Attached** 

Benjamin C. Horne Memorial Prize Celebration of 25 Years of Impure

Rising Leaders Program Welcomes Two More Students

Past Issues

SUBSCRIBE

Name:

Email:

## give now

#### **Events**

**FULL CALENDAR** 

Nov 15 Founders' Day and Hullabaloo

Jan **3-5** 

2014 ASSA Conference

Stay Connected with LinkedIn

Published by the Department of Economics faculty and staff.

Designed by UC San Diego Creative Services and Publications

Questions, comments, complaints? Have a story idea? Email us!



Economics in Action is produced with the support of UCSD Alumni.

UC San Diego, 9500 Gilman Dr., La Jolla, CA 92093 (858) 534-2230 Copyright © 2008 Regents of the University of California. All rights reserved.

Terms & Conditions | Feedback

₹UCSanDiego



IN ACTION

## Rising Leaders Program Welcomes Two More Students

By the Department of Economics

The Department of Economics is proud to announce that Patricia Mou and Yelaine Wang have been selected as Rising Leaders for 2013-14. The Rising Leaders are considered top of the class in their majors, have prior business experience, and are deemed "business-ready" by the alumni executives on our **Economics Leadership Council**. Through the program and with support from the ELC, these students will receive a \$1,500 scholarship as well as assistance in obtaining internships at leading finance, consulting, hedge fund and accounting firms.

## 2013-14 Rising Leader Cohort



International Studies-Economics
Patricia Mou has held internships in internal consulting for major technology companies; this past summer she interned with

Salesforce.com. She is

seeking a challenging career in management

consulting.

Patricia Mou

Yelaine Wang
International StudiesEconomics
Yelaine Wang is looking
forward to building upon
her experience in
investment
management. She is
also very interested in
management consulting.

To request a student's portfolio, please contact Jennifer Beauchamp, Rising Leaders Program Coordinator, at <a href="mailto:ibeauchamp@ucsd.edu">ibeauchamp@ucsd.edu</a>.

## Where are they now? Update on 2012-13 Rising Leader Cohort



Albert Koh

**Economics** 

Over the summer, Albert Koh was an investment banking summer analyst in Credit Suisse's San Francisco healthcare group, focusing on biopharmaceuticals. He had a great summer there and learned a lot about the industry, but wanted to cover technology after graduation, so he accepted a full-time offer with Barclays' Technology Investment Banking group in Menlo Park.

Albert thanks the ELC and the Rising Leaders program for providing a scholarship and valuable resources that allowed him to speak and network with UC San Diego alumni in finance and investment banking: "Coming from a non-target school, this was an absolutely wonderful opportunity and I would definitely recommend all economics majors to apply for it."

**Chris Kwok** 

ISSUE 9: NOV 20, 2013

Alumni Spotlight Chair's Corner

FACULTY SPOTLIGHT

Simone Galperti
David Lagakos
Alexis Akira Toda
Johannes Wieland

**DEPARTMENT AWARDS** 

Undergraduate Awards Graduate Awards Faculty Awards

FEATURE ARTICLES

Economic Development with No Strings Attached Benjamin C. Horne Memorial Prize

Celebration of 25 Years of Impure

Rising Leaders Program Welcomes Two More Students

Past Issues

SUBSCRIBE

Name:

Email:

## give now

#### **Events**

**FULL CALENDAR** 

Nov 15 Founders' Day and Hullabaloo

Jan **3-5** 

2014 ASSA Conference





Joint Mathematics-Economics

Over the summer, Chris Kwok worked for Integris Capital Group, a distressed fund. He examined various investment opportunities within the distressed space, including fixed income, REIT and real estate. The most interesting task was performing due diligence on an REIT for its past financial performance, lawsuits and properties information, and helping to uncover distressed opportunities of the REIT's assets. Chris looks forward to exploring employment opportunities in the distressed space later in his career, as entry levels positions usually require some experience in the financial industry. He would like to work at an investment management firm of a larger platform in a challenging environment.

Chris is thankful for the scholarship and the Rising Leaders program, which connects students with outstanding alumni and is the first step in creating a stronger finance/business program at UC San Diego: "I am very honored to have received the award and I hope that the Department of Economics and the ELC will continue working together to form a stronger presence for UC San Diego in the finance world."



### **Edward Youn**

Joint Mathematics-Economics

This past summer, Edward Youn interned in Citigroup's Investment Banking Division in New York City. He was in the Industrials Group, working with clients in the industrials sector. Previously he had spoken to countless individuals about the job description, expectations and rigorous lifestyle; however, it was not the same as experiencing it. He learned that there are many driven professionals who are intelligent and hardworking, and was inspired to work harder and really raise the bar for his goals and expectations. Edward enjoyed his summer and will be returning to Citigroup upon graduation. Beyond investment banking, he has a growing interest in private equity as well as in obtaining his M.B.A.

Edward's scholarship helped him to continue his education as well as prepare for his internship. He went on two trips to New York City for one week each time to expand his network in hopes of getting an interview. The scholarship was immensely helpful, as he had planned to fund these trips himself. As Edward emphasized, "It is with your help, contribution and continued support that students such as myself can take the steps beyond what is expected to achieve their career goals. You are changing lives."



**Maximillian Chua** 

Management Science
Max Chua is interning at
the Bank of Singapore
through fall quarter. He
has enjoyed his
experience so far. We
can't wait to hear more
upon his return!



**Thomas Wilson** 

Management Science Thomas Wilson has transferred to another university. We wish him the best of luck in his future endeavors!

Published by the Department of Economics faculty and staff.

Designed by UC San Diego Creative Services and Publications

Questions, comments, complaints? Have a story idea? Email us!



Economics in Action is produced with the support of UCSD Alumni.

UC San Diego, 9500 Gilman Dr., La Jolla, CA 92093 (858) 534-2230 Copyright © 2008 Regents of the University of California. All rights reserved.

