OFFICE OF THE CHANCELLOR



# 2015–2016 INITIATIVES & PRIORITIES REPORT



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### Contents

Ι.	Introduction 4	
п.	Continuing Efforts to Improve Campus Climate7	
III.	Financing Public Higher Education Today 11	
	Fundraising 11	
IV. Academic Investments		
	Sustaining the Research Enterprise12	
	Advancing Undergraduate Education 16	
	Going Global 20	
	Celebrating and Integrating the Arts22	

# INTRODUCTION

By any measure, Berkeley's status as one of the world's greatest universities is unquestionable.

We represent the global gold standard for public higher education, and for good reason. In 2016, we remain the nation's #1 public university—as we've been for decades—and numerous rankings place us among the world's top research universities across all categories. Our ability to attract and retain some of the best faculty in the world in turn allows us to recruit graduate and undergraduate student bodies to match. We're the most selective public school in the country outside of the military academies, and I feel confident in saying that our current class is the most academically accomplished of any we've had in our history.

In addition to research and academic excellence, Berkeley continues to be what *The New York* Times calls a "social mobility machine," offering incredible opportunities to a huge number of lowerincome students. Berkeley enrolls nearly as many Pell Grant students as the entire Ivy League, and gives them access to a faculty which is every bit as distinguished.

That rare combination of academic excellence, access, and affordability is at the heart of our contribution to the greater good, and it is something we all feel immensely proud of and are dedicated to maintaining.

Of course, this is no time for complacency, and Berkeley is anything but. We continue to invest in improving the undergraduate experience for our students, both through curricular innovation and through greater integration of the academic sphere into students' residential life experience. Our schools and colleges are designing new classes and programs to prepare students for meaningful lives and careers in the 21st century. We remain committed to making Berkeley a welcoming and

inclusive place for all of our faculty, students, and staff, and directing resources towards campus climate initiatives remains a top priority. It has also been an exciting year for the arts at Berkeley, with the appointment of our first Associate Vice Chancellor for the Arts and Design as well as the opening of the newly built UC Berkeley Art Museum and Pacific Film Archive.

Amidst all these developments, Berkeley—like public universities throughout the countryis adjusting to a new financial reality. We are committed to strategically addressing our challenges and to maintaining our excellence as a public university, and we have plans underway to ensure that Berkeley remains Berkeley.

Our foundation is strong: The quality of our faculty, students, and staff, the wellspring of this university's strength, remains unsurpassed. And our public mission remains intact. Berkeley is not

#### **4** INITIATIVES & PRIORITIES REPORT

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a place that ever stands still, but all of the changes we're making, from investment in new academic programs to carrying out a strategic planning process, are in service of preserving our essential character as the leading university in the world across both our academic and our public missions. This is my highest responsibility as Berkeley's Chancellor, and the single most important metric in terms of the work that lies before us.

I hope you enjoy reading this year's campus update. Fiat Lux!

Mialury. A.

CHANCELLOR NICHOLAS B. DIRKS

6

## NOTABLE RANKINGS

# #1

U.S. public university and

#13

in the world in **Times Higher Education's World University Rankings**, which measures teaching, research, knowledge transfer, and international outlook.



in the world in **Times Higher Education's World Reputation Rankings**, based on academic peer assessment.



public university in the world and



overall in the **Academic Ranking of World Universities**, compiled by Shanghai Jiaotong University and focused on institutions' research performance.



U.S. public university and



in the world, according to the **Center for World University Rankings**, a comprehensive

measure focused on research, teaching, and student outcomes.





U.S. public university (for the 18th straight year) according to **U.S. News** & World Report's Best Colleges, a comprehensive measure of research, teaching, resources, cost, and student outcomes.



best public university according to *Kiplinger's Best College Values,* measuring quality and cost.



in **Money magazine's Best Colleges**, measuring quality of education, affordability, and student outcomes.

#7

in the **New York Times' College Access Index**, based on number of Pell Grant recipients, the graduation rate of those students, and overall price.



in Washington Monthly's National Universities Rankings, based on research, service, and the social mobility colleges provide.

## CONTINUING EFFORTS TO IMPROVE CAMPUS CLIMATE

A commitment to equity, inclusion, and diversity is part of Berkeley's public mission and crucial to the health and well-being of the campus community. Furthermore, the university can function effective only if it is a place where all people feel welcome and respected, regardless of their background, gender, race, ethnicity, religion, orientation, or any other identity.

This past year was marked by a significant expansion and deepening of campus efforts to support underrepresented populations, as well as by the development of new programming designer to ensure that Berkeley provides a safe and welcoming learning environment. Highlights include

#### New Vice Chancellor for Equity & Inclusion.

This past fall, former Vice Chancellor for Equity & Inclusion Gibor Basri stepped down after nearly a decade of service, and

Professor Na'ilah Suad Nasir was appointed to that post. Professor Nasir is a visionary leader with a passion for supporting equity

through institutional

change and a deep



commitment to collaboration and collective engagement with students, faculty, staff, and administrators. At Berkeley since 2008, Nasir has served as professor of Education and African American Studies, and has held the Birgeneau Cha in Educational Disparities and the Williams Chair of African American Studies. Professor Nasir's research examines the racialized and cultural natu of learning and schooling. A proud Berkeley alum, as Vice Chancellor, Nasir takes a holistic view of campus needs and opportunities. She looks forwat to building on the accomplishments of former Vice Chancellor Basri, as well as to advancing a variety new efforts and initiatives.

**The African American Initiative.** In the fall of 2015, Berkeley launched a comprehensive new

s e ely y	initiative to address the underrepresentation of African American students, faculty, and staff at our university, and to improve the campus climate for those who are here now and all who will join our community in the future. The initiative brings together partners from Equity & Inclusion, Student Affairs, Admissions, and Financial Aid, along with African American student organizations, alumni, and current students to provide leadership and address longstanding challenges faced by African Americans
s ed	<ul> <li>on our campus. Key components include:</li> <li>Working with private, nonprofit organizations</li> </ul>
de:	to help raise a \$20 million endowed scholarship fund to support African American undergraduates.
κ ι	<ul> <li>Improving the recruitment efforts and yield of African American students.</li> </ul>
	<ul> <li>Boosting the social, personal, and academic support and engagement provided to current and future African American students.</li> </ul>
	<ul> <li>Improving the classroom climate, including providing training and pedagogical resources for faculty and graduate student instructors.</li> </ul>
	<ul> <li>Increasing faculty diversity more rapidly over the next 10 years.</li> </ul>
	<ul> <li>Continuing efforts to increase the racial and gender diversity of Berkeley's senior management.</li> </ul>
air	<b>Chancellor's Campus Climate Initiative.</b> Building on results from the recent campus
ard ce of	climate survey, the past year has seen the rollout of the Chancellor's Campus Climate Initiative, a multifaceted effort to help ensure all Berkeley students, faculty, and staff are respected, supported, and valued on campus. The initiative has already inspired a great deal of momentum, elevating awareness and action with projects such as:
	The Make the Most of Your Moment

Campaign, a campuswide public education



campaign to inspire dialogue and action for a healthier, fully inclusive campus. It features a series of posters, events, and opportunities for effort entails a review of Berkeley's culture and discussion designed to encourage members of disciplinary processes in the Berkeley community to consider different this area, new targeted points of view, to recognize that we don't often training and prevention know the full story of someone's experience, initiatives, the allocation of additional resources to the and to have conversations about strongly held beliefs, even if they are divergent. Office for the Prevention

- ► The Campus Climate Speaker Series. and Harassment, Initiated in fall of 2015, the Campus Climate implementation of a Speaker Series brings a range of popular new peer review-based system for determining scholars, cultural critics, and activists to Berkeley disciplinary actions, the formation of a Chancellor's to deepen awareness of issues of identity and Task Force on Sexual Violence and Sexual difference. Actress and activist Laverne Cox was Harassment, and more. Many of these efforts are the inaugural speaker in the series. Events will underway and took effect this spring, while others continue in fall of 2016. will be rolled out within the next six to eighteen Trainings and Discussions on Classroom months.
- **Climate for Faculty and GSIs.** In the new Ongoing projects to address campus sexual violence Faculty Dialogue Series on Inclusive Classrooms, and harassment this past year also include the which began in spring 2016, twelve faculty launch of sexual assault prevention trainings for all members are designing and leading a series incoming undergraduate and graduate students, of peer-led departmental dialogues on topics the hiring of new staff in the Confidential Care such as unconscious bias in the classroom Advocate's office, the training of members of the and faculty identity. In addition, beginning in University of California Police Department on fall 2015, all new graduate student instructors trauma-informed interview skills, a revamp of the attended a required GSI Training on Inclusive Care Advocate's website, and the implementation of Classroom Practices to appropriately intervene a new systemwide policy for reporting harassment in cases of acts of exclusion and learn how to and violence. better encourage diverse perspectives in the classroom. **Catalysts for Change: Showcasing Our Success.**
- Intergroup Facilitation and Dialogue **Courses.** Under the direction of Psychology Professor Rodolfo Mendoza-Denton, Berkeley's new intergroup dialogue series is training student facilitators to lead campus dialogues on identity, difference, and cross-group understanding for their peers. This spring, the campus ran a training course for student facilitators in the program, and the full course will open for all undergraduates in fall 2016.

#### Addressing Sexual Harassment and Sexual

**Community Center.** The Multicultural Community **Violence.** In the wake of several high profile cases of sexual harassment that came to light in 2015 and Center (MCC) moved into its permanent location in the newly renovated Martin Luther King, Jr. Student 2016, the campus accelerated efforts to promote a Union building in Fall 2015. This marks an important campus culture in which sexual harassment, sexual milestone, as it is the culmination of a sixteen-year violence, and abuses of power are neither tolerated effort to establish a permanent MCC on campus. The nor ignored, but rather proactively prevented. design of the new space directly reflects generations Currently led on an interim basis by Dean of Social

#### Sciences and Executive Dean of the College of Letters & Science Carla Hesse, this coordinated

of Discrimination



In December 2015, the Division of Equity & Inclusion released Catalysts for Change, a report and website detailing eight years of successes and learnings from the campus' Initiative for Equity, Inclusion, and Diversity. The report highlights nine case studies, examining new approaches to communityengaged curriculum and interdisciplinary research, inclusive programs for underrepresented student groups, and more. The full report is available at: catalystsforchange.berkeley.edu.

#### **Permanent Home for the Multicultural**

of student input and advocacy. The space includes a large community area, dedicated library, art gallery space, two multipurpose rooms, student staff work space, private office, outdoor patio, and kitchen.

Food Security for Students. Through the leadership of the Centers for Education, Excellence and Equity (CE3), Berkeley is tackling food insecurity on its campus as well as becoming a leader in the development and implementation of food security models across the University of California system. In coordination with the administration, CE<sub>3</sub> has launched the first component of its three-part model, focusing on providing students with emergency relief from hunger. CE3 operates a food pantry, provides supplemental food assistance funding for financial aid recipients, holds monthly "Harvest Days" in partnership with local community organizations, and more. The next phase of the CE3 program will focus on nutrition, and the final phase on advocacy. Berkeley is also providing leadership across the UC system in research on college student hunger, assessment of current food security interventions, and the creation of a food security model for the UC system.

**Expanded Support for College and Graduate School Access.** The campus continues to grow its support for programs that encourage underrepresented high schoolers in their quest to attend college, and that help underrepresented Berkeley scholars pursue graduate school.

- Through the **Destination College Advising** Corps (DCAC) in the Center for Educational **Partnerships,** recent Berkeley graduates support the next generation of underserved high school students in realizing their college aspirations. The majority of DCAC advising fellows are from underrepresented backgrounds and the first in their families to attend college. As part of Berkeley's commitment to the 2014 White House College Pipeline Initiative, the university committed to expanding DCAC, and since that time the program has grown to 41 advising fellows serving over 40,000 students in 36 schools in 12 districts throughout California.
- Getting into Graduate School (GIGS), jointly sponsored by the Graduate Diversity Program and the Graduate Assembly, engages



As a student from an underserved high school, Tina Diep is taking advantage of all the opportunities her UC Berkeley scholarship has made possible. Freed from working to pay for college, she has immersed herself in her studies, developed her leadership skills by taking an active role in a student organization, and dedicated herself to helping others. She especially enjoys welcoming and supporting new Berkeley students from schools like hers. "Giving back is a gesture of thanks, for making college financially affordable. The enthusiasm, curiosity, and eagerness in new scholarship recipients is a yearly reminder of how fortunate I am to be at Cal, and why I treasure every moment here."

Berkeley graduate students in mentoring diverse undergraduates in their quest to attend graduate school. The scope of GIGS extends to UC Berkeley students writ large, but the program is dedicated to assisting first-generation and other historically underrepresented groups of students. Now in its fourth year, GIGS serves over 160 undergraduates with individualized mentorship provided by 75 current Berkeley graduate student mentors representing a wide range of academic and professional fields.

## FINANCING PUBLIC HIGHER EDUCATION TODAY

Public higher education in this country is at a crucial Fundraising and transitional time, as state funding for public universities continues to remain low. But rather than view the situation as a crisis, the Berkeley administration believes it represents an important appointed Julie M. Hooper opportunity: With greater strategic focus on in December 2015 as Vice resources and priorities, the institution will not only Chancellor for University find its way through current financial challenges, Development and Alumni but will also gain a greater degree of sustainability, Relations. Hooper joined UC will become less susceptible to short-term budget Berkeley in 2014, and had troubles brought on by ever-fluctuating levels of served as Interim Vice Chanstate support, and will develop greater control over cellor since October of 2015. the future direction of the institution.

Developing a comprehensive strategy that for transforming campus fundraising and in helping reinforces core strengths and commitments and invests in the university's long-term health is an improve the donor experience. extensive effort that involves the entire institution. Since the summer of 2015, in consultation with the Thanks in large part to generous alumni, Berkeley Academic Senate, Berkeley's administration has had another banner year for fundraising. In fiscal been engaged in a programmatic analysis intended year 2014-15, the fundraising total was \$462 million, to serve as a foundation for substantial changes compared to \$366 million in 2013-14, an astonto the campus. Many aspects of the university ishingly high number for a university without a have and are being examined, whether for possible medical school. The number of donors was 63,390, restructuring or for additional investment (for the highest on record. This fiscal year is similarly example, deepening fundraising capacity and proceeding at a record pace, and the second year of improving research administration to help generate the Big Give campaign was particularly successful: revenue in the long term). On November 19, 2015, the campus conducted its 24-hour fundraising blitz, raising \$5.5 million from Thanks to the work of the Campus Budget Office, 8,149 gifts, compared to \$5.3 million from 7,336 gifts the administration knew years ago that Berkeley in 2014.

would face an unsustainable future without regular tuition increases, and reserves were accumulated to stave off the need for hasty changes. Still, prudence requires that the campus move through this process with deliberate speed. Throughout the spring of 2016 and into the summer, the university has and will continue to consult with students, faculty, staff, and the broader Berkeley community about potential changes to units and offerings. Starting this summer through the following year, the campus will be producing detailed design plans. Finally, broad implementation of those plans will begin in phases starting in 2017.

It is clearer than ever that fundraising efforts will be essential to ensuring Berkeley's long-term financial health. Following a nationwide search, the campus



She has played a critical role in defining principles to lead campus working groups develop solutions to

### New endowed faculty chairs established in the last year include:

- ► The Carmel P. Friesen Chair
- ► The Henry and Joyce Miedema Chair in Civil Engineering
- ► The Bita Daryabari Presidential Chair in Iranian Studies
- ► The Eugene Commins Fund in Experimental Physics
- The Ted Van Duzer Endowed Professorship

- The Ed & Diane Wilson Presidential Chair in Structural Engineering
- ► The Wallace, Fillmore, Cholfin, Haff and Appell Chair
- ► The Paul R. Gray Distinguished Chair

## ACADEMIC ENDEAVORS

Berkeley continues to make progress in the below four key academic areas.

### **1** Sustaining the Research Enterprise

This past year was another exciting one for research at UC Berkeley. In March, **Paul Alivisatos** — a longtime Berkeley professor as well as renowned chemist, entrepreneur, and advocate for basic

science research — took up the position of Vice Chancellor for Research after seven years as director of the Department of Energy's Lawrence Berkeley National Laboratory. Professor Alivisatos takes the helm of a research community that made



all manner of discoveries and began thousands of projects this past year—far too many to report in full here. Some of the highlights include:

**Precision Medicine.** The "DNA scissors" employed by the CRISPR/Cas9 gene-editing technique and discovered by Professor Jennifer Doudna continue to be recognized as one of the most important scientific developments of recent years. The journal *Science* chose the CRISPR genome-editing technology as the "2015 Breakthrough of the Year." Professor Doudna is pursuing her research through UC Berkeley's Innovative Genomics Initiative established at the campus' Li Ka Shing Center for Genomic Engineering in early 2014 with a generous gift from the Li Ka Shing Foundation. Doudna is also helping to lead the conversation about the ethical use of the technology in an effort to codify international consensus on editing DNA. **Climate and Energy.** This past year the campus won several large research awards in the areas of climate and energy. The Department of Energy selected UC Berkeley to lead a multimillion-dollar U.S.-China research consortium focused on the energy-water nexus. The U.S.-China Clean Energy Research Center for Water-Energy Technologies will focus on new technologies to reduce industrial water use, yield hydroelectric power, and treat water more efficiently. At the center of this \$64 million effort is DOE funding to Berkeley and its partners, and Chinese government funding to research institutions in that country.

A new \$6.4 million award was made to researchers in Plant and Microbial Biology to investigate the control of drought response in sorghum. The Energy Institute at the Haas School of Business received a \$5 million award for work on industrial energy efficiency through optimized energy systems from the California Energy Commission. Another \$5 million award to the Berkeley Energy and Climate Institute will support research on California's Fourth Climate Change Assessment.

Many prominent UC Berkeley faculty and other campus researchers participated in the November 2015 global climate summit in Paris, several participating in a delegation led by California Governor Jerry Brown. Mitigation and adaptation in the local community is the focus of the recently established Climate Readiness Institute that is developing the cutting-edge climate science, adaptation strategies, and mitigation tools needed to ensure a resilient, low-carbon Bay Area.

Nanoscience. The campus established the Kavli Energy NanoSciences Institute with significant support from the Kavli Foundation and additional funding from the Heising-Simons and Philomathia Foundations. Researchers affiliated with the institute explore the basic science of how to capture and channel energy on the molecular or nanoscale, with the potential for discovering new ways of generating energy for human use. The institute's prominent researchers include Professor Peidong Yang (who received a MacArthur "genius award" for his work on nanowires in 2015) and Professor Omar Yaghi who, along with his colleague Professor Christopher Chang, recently developed a powerful new method for removing greenhouse gases from power plant emissions.

**Global Change Biology.** The National Science Foundation awarded a multimillion-dollar grant to faculty affiliated with the Berkeley Initiative in Global Change Biology to further enhance the digitization of biodiversity collections. In addition, the initiative received a \$3 million grant to further develop a set of software tools fostering open and transparent scientific practices across the research community. The Initiative in Global Change Biology was established several years ago with a seed grant from the campus, and has since generated \$20 million in support from federal and private sources.

**Data Science.** Beginning this past fall, UC Berkeley researchers led a National Science Foundation Big Data Regional Innovation Hub to facilitate large, multi-sector collaborations that will accelerate advances in data science. UC Berkeley is co-leading the West Big Data Innovation Hub with UC San Diego and the University of Washington. The effort builds on the strong foundations provided by the Simons Institute for the Theory of Computing, the Berkeley Institute for Data Science (BIDS), the Algorithms, People and Machines (AMP) Lab, and others.

**Space Sciences.** Scientists at the Space Sciences Laboratory designed and built the *in situ* instrumentation for the Mars MAVEN mission, which recently discovered that Mars loses a major portion of its atmosphere directly to space.

In 2015, UC Berkeley cosmologists also expanded programs related to the study of the early universe. The NSF provided new support for the Simons Array, a new system of three powerful telescopes. Led by scientists from UC Berkeley and other institutions, the Simons Array will search for the signature of cosmic inflation — the rapid expansion of the early universe after the Big Bang.

UC Berkeley researchers are also leading enhancements in the search for extraterrestrial intelligence with generous support from the Breakthrough Prize Foundation and its founder, investor Yuri Milner. The foundation recently committed \$100 million over 10 years to UC Berkeley and other institutions.

**Neuroscience.** The first research grants of President Obama's BRAIN Initiative included three awards to UC Berkeley researchers, totaling \$7.2 million, to improve advanced brain imaging tools, compile a complete catalog of brain neurons, and construct probes of neuron signaling that can be switched on or off with light. UC Berkeley also has a new \$5.6 million collaboration with Carl Zeiss Microscopy to fast-track microscopy development for new neuro-technologies. In spring 2015, the Helen Wills Neuroscience Institute celebrated the grand opening of the Zeiss Berkeley Brain Microscopy Innovation Center, a campus resource that will generate commercially available microscopy tools optimized for use with emerging neuro-technologies.

- Jacobs Institute of Design. Opened in August
   2015, Jacobs Hall is a new campus hub for engineers, artists, and game-changers of all kinds who work at the intersection of design and technology. Light-filled studios provide flexible
   space with access to tools for prototyping, iteration, and fabrication. The project was made possible by a \$20 million gift from the Paul and Stacy Jacobs Foundation.
- Maternal and Child Health. The School of Public Health announced the establishment of the Wallace Maternal and Child Health Center in March 2015.
   The new Center will complement the school's existing maternal and child health (MCH) program — one of the preeminent MCH leadership training programs in the nation — and the Bixby Center for Population, Health and Sustainability. The new Center was established with a bequest valued at more than \$13 million from former professor and doctor Helen Wallace.

#### Faculty Prizes & Awards

This past year, Berkeley faculty were the recipients of many distinguished and coveted prizes and awards. Among these were:

- Paul Alivisatos, Professor of Chemistry and Vice Chancellor for Research, received the National Medal of Science.
- Chenming Hu, Professor Emeritus in the Department of Electrical Engineering and Computer Sciences won the National Medal of Technology and Innovation.
- The Breakthrough Prize was awarded to lan Agol, Professor of Mathematics, and Kam-Biu Luk, Professor of Physics, for their pioneering discoveries in mathematics and elementary particle physics, respectively.

- Peidong Yang, Professor of Chemistry, received the Ernest Orlando Lawrence Award from the Department of Energy and a MacArthur "genius award" for his work on nanowires and his efforts to capture carbon dioxide from the air and turn it into a sustainable transportation fuel.
- Professor Emeritus of Chemistry and former director of Lawrence Berkeley National Laboratory Charles Shank was one of two scientists to receive the Enrico Fermi Award, one of the federal government's most prestigious awards for scientific achievement.
- Christopher J. Chang, Professor of Chemistry and Molecular and Cellular Biology, was honored with a Blavatnik National Award for Young Scientists for discoveries in chemistry that span both neuroscience and energy science.
- Jennifer Doudna, Professor of Molecular and Cell Biology, received one of the 2016 L'Oréal-UNESCO for Women in Science Awards in the field of life sciences. She was also included in Time magazine's 2015 list of the 100 most influential people in the world for her DNAediting technique CRISPR-Cas9.
- The Lasker Foundation awarded its 2015 Lasker-DeBakey Clinical Medical Research Award to James Allison, an immunologist who conducted groundbreaking research in UC Berkeley's Cancer Research Laboratory in the 1990s that led to a new way to harness the immune system to treat cancer.
- ► The United Kingdom's Institute of Physics awarded its prestigious Isaac Newton Medal and Prize to Eli Yablonovitch, Professor of Electrical Engineering and Computer Sciences and a pioneer in the field of optoelectronics and nanophotonics.
- ► The National Humanities Center awarded a fellowship to Colleen Lye, Professor of English.
- ▶ Niklaus Largier, Professor of German and Comparative Literature, was named a winner of the Anneliese Maier Research Award for work that "repeatedly breaks the bounds of disciplines" by the Alexander von Humboldt Foundation.

The following faculty received prestigious Guggenheim Fellowships:

- Novelist Vikram Chandra, who teaches creative writing in the English Department.
- Andrew F. Jones, who holds the Louis B. Agassiz Chair in Chinese in the Department of East Asian Languages and Cultures and recently published "Developmental Fairy Tales: Evolutionary Thinking and Modern Chinese Culture."
- ▶ Nicholas D. Paige, Professor of French and the author of "Before Fiction: The Ancient Régime of the Novel."

Five Berkeley scientists were elected to the National Academies of Science:

- ▶ Martin Head-Gordon, the Kenneth S. Pitzer Distinguished Professor of Chemistry
- ► Jitendra Malik, the Arthur J. Chick Professor of **Electrical Engineering and Computer Sciences**
- ► Daniel Neumark, the Joel Hildebrand Distinguished Professor of Chemistry and chair of the Department of Chemistry
- ► Eva Nogales, Professor of Molecular and Cell **Biology and Howard Hughes Medical Institute** investigator
- ► Jeremy Thorner, Professor of Molecular and Cell Biology

Two faculty members were elected to the National Academy of Engineers:

- **Jonathan Bray**, a Faculty Chair in Earthquake Engineering Excellence in Civil and **Environmental Engineering**
- ► Clayton Radke, Professor of Chemical Engineering

The National Academy of Inventors elected three UC Berkeley faculty members to its ranks in honor of their innovation and creativity leading to patented inventions that have made a tangible impact on society:

- ► Jasper Rine, Professor of Molecular and Cell Biology
- Chenming Hu, Professor of Electrical **Engineering and Computer Science**
- ▶ Paul Wright, the A. Martin Berlin Chair in Mechanical Engineering





#### Total Awards = \$691.1M

Calculated on the basis of project period

Figure 1, above, displays the extramural research totals awarded in 2014/15, broken down by external sponsor, and Figure 2, below, provides a year to year comparison of awards received over the past decade.

#### Research Funding at UC Berkeley, 2006–2015



### **Research and Funding**

Each year, the UC Berkeley campus receives well over half a billion dollars in research support from external sources. In the fiscal year ending June 30, 2015, UC Berkeley attracted \$691.1 million in new research funding. Many of these research awards fund multi-year projects and support expenditures that will be reflected in subsequent years. The federal government provided 56 percent of these sponsored research funds, and California state agencies and other government sources, industry, and the nonprofit sector supplied the rest. Of the research funding provided by the U.S. government, the largest contributors are the National Aeronautics and Space Administration, the National Institutes of Health, and the National Science Foundation.

Accompanying the campus' ongoing success are significant headwinds in terms of research funding. Federal support from the National Science Foundation, National Institutes of Health, Department of Energy, and other major funders is not only flat or in decline, but is also



increasingly concentrated among established research teams at leading research universities. This means remaining at the apex of the research university hierarchy is more important than ever. It also means that Berkeley researchers will be increasingly relying on philanthropy, funding from nonprofits, and corporate partners.

# 2 Advancing Undergraduate Education

Undergraduate enrollment at Berkeley passed a record 27,000 students this year, and will continue to grow as the institution enrolls an additional 750 Californian students as part of its next class. This growth allows the campus to better serve its public mission, but comes with a continued responsibility to improve undergraduate academic support and student services. This past year, Berkeley put forth several programs and policies designed to ensure that the leading public university provides an oustanding academic and residential experience for its undergraduates.

#### The Undergraduate Initiative

During 2015, a faculty steering committee developed a vision for the Undergraduate Initiative: to make UC Berkeley as renowned for its undergraduate education as it is for its faculty research and graduate programs. The committee's vision statement outlines a broad and holistic reenvisioning of undergraduate education for the 21st century. The initiative will enhance an already vigorous program of undergraduate education and will make the special opportunities of studying at a world-class research university a signature feature of the undergraduate experience at Berkeley. It calls for enhancements to curricular, co-curricular, and residential life.

A newly established council comprised of deans of all colleges and schools conferring undergraduate degrees (known as the Council of College Deans), together with the Vice Chancellor for Undergraduate Education, has been charged with development, implementation, and governance of the Undergraduate Initiative. In order to realize its ambition, Berkeley will transform its largest

### Alejandra Lopez, Class of 2015 Double Major in Sociology and Social Welfare



As a daughter of farmworkers in California's Central Valley, Alejandra Lopez has firsthand experience of the many barriers that lowincome people and their children face. Her experiences are what have fueled her passion to attend Berkeley and motivated her to pursue service opportunities, like participating in Alternative Breaks (Alt Breaks) through the Public Service Center (PSC). While participating in Alt Breaks, she received a scholarship that enabled her to participate in a community-building service trip in New Orleans. Through this she learned the value of truly listening to understand people and has now set her future on working to provide people with resources and tools for selfempowerment and self-liberation. Alejandra had never imagined a space like the PSC, which, she says, "Taught me that community wisdom is perhaps the most important type of wisdom. It's given me an alternative way of learning."

undergraduate college—the College of Letters & Science—and reconceive L&S undergraduate programs as a four-year liberal arts "College for Berkeley." A Berkeley curriculum, that begins with an excellent lower-division instructional experience and prepares students for advanced study across all

#### INITIATIVES & PRIORITIES REPORT 17



undergraduate programs, will be a centerpiece of the Undergraduate Initiative. Outside of academics, a key aspect of the initiative will be ensuring that, from the day that students arrive at Berkeley, they receive the support and guidance needed to thrive in the campus environment. Such a holistic transformation of undergraduate life will require a significant increase in residential opportunities and student learning services, as well as enhancement of social and learning spaces designed to facilitate the full integration of non-residential students into campus life. The goals are to: 1) create stronger communities among students and to more deeply integrate academic and residential experiences, enhancing advising and support, 2) roll out a combined Cal Student Orientation Welcome Week experience for all freshmen and transfers by fall 2017, and 3) develop a 10-year master plan for housing that aims to improve residential life by increasing the number of beds and reducing the student/resident assistant ratio, among other things.

#### **Office of Undergraduate Admissions.**

UC Berkeley received a record number of applications for undergraduate admission in 2015. Staff reviewed 101,655 total applications: 82,539 freshmen applications, a 4.7 percent increase over last year, and 19,116 transfer student applications, an 11 percent increase. The total number of applications is up from about 96,000 the year prior. Newly implemented in fall 2015 was a pilot program that gave a selection of freshman applicants the option to submit up to two letters of recommendation, with at least one coming from a teacher, alongside their applications. This allowed applicants to bring additional information about the unique qualities that make them outstanding candidates.

ASUC Student Union Ribbon Cutting. This fall, the ASUC Student Union opened the longawaited remodeled Martin Luther King Jr. Student Union building and new Eshleman Hall. Part of a reimagined Lower Sproul, these buildings provide a space on campus for student learning, development, and community building.

#### Financial Aid and Scholarships Office. In

addition to disbursing over \$675 million of student financial support in 2014-15, the Financial Aid and Scholarships Office recruited a record number

of Regents' and Chancellor's scholars, including Berkeley's highest percentage of underrepresented scholars to date.

The Student Information Systems (SIS) project team, in collaboration with UC Berkeley students and campus partners, is consolidating and modernizing over 100 existing information systems into one integrated campuswide solution and transforming how the Berkeley community accesses crucial student information, including admissions, financial aid, registration, enrollment, course management, advising, billing and payment, records, and more.

ASUC: Women in Leadership. The election of this past year's all-female ASUC executive team served as a milestone for equality and inclusion on the UC Berkeley campus. President Yordanos Dejen, and Vice Presidents Lavanya Jawaharlal, Marium Navid, and Melissa Hsu, are committed to enhancing the student experience at UC Berkeley through revitalizing student life, transforming campus climate, and promoting student wellness.

ASC's Career Development Program. The Chancellor's Task Force on Academics & Athletics concluded in 2014 with a renewed focus on more integration of and support for student-athletes. The Athletic Study Center's (ASC) programs and resources focus on the holistic development of all student-athletes. Opportunities include community engagement, character and leadership development, and career coaching. This year saw the launch of the Career Development Program—a newly integrated effort between the ASC, Intercollegiate Athletics, and other campus partners designed to ensure that student-athletes are well-positioned for postgraduate employment.

Data Science Education Program (DSEP). Under the leadership of a multidisciplinary faculty group, the Data Science Education Program launched in fall 2015 with a set of pilot courses. This exciting new program recognizes the need to prepare undergraduate students, regardless of their discipline, to enter into a world that will require them to collect, analyze, and make key decisions based on data. These innovative new courses bring together students in various majors, many of whom would not traditionally be exposed to computer science skills, and gives them an opportunity to



connect their interests in fields including history, public health, physics, and environmental studies with practical skills in the realms of data collection, processing, and analysis. DSEP has been praised on campus and off as a model for how the traditional liberal arts curriculum can be blended and modified to position students for success in the digital age.

Advancing Practice. The Advising Council, in coordination with the Center for Teaching and Learning, and Talent and Organizational Performance (TOP), launched a new two-year professional development program for advisors called Advancing Practice in August 2014. Holding eight workshops in 2015, this innovative professional development program earned national recognition with an award from the National Academic Advising Association for outstanding advising program.



Berkeley continued to prove its commitment to expanding its global footprint through several major campus initiatives and collaborations with institutions around the world.

**Global Alliance with Cambridge and the** National University of Singapore. In October 2015, Berkeley Chancellor Nicholas Dirks and the leaders of the University of Cambridge and the National University of Singapore announced their intention to collaborate on a new global alliance that will bring together their combined educational and research excellence. That intention was solidified in January 2016 with the signing of a Memorandum of Understanding. This alliance will commit to developing both research and graduate level educational programs focused on understanding

and alleviating the world's toughest challenges, including global health, climate change, data science, and precision medicine. Leaders of all three universities have continued to meet to establish a governance structure and research and educational priorities. Faculty at the top of these fields have met over the spring to begin planning programs that will capitalize on their combined strengths.

#### Berkeley Global Campus (BGC) at Richmond

Bay. Site planning, university and private partnership-building, and fundraising for the Berkeley Global Campus have all made steady progress since the idea of the BGC was first introduced to the campus in late 2014. Over the past several months, members of a Community Working Group consisting of Berkeley representatives as well as community leaders and residents from the City of Richmond met to develop recommendations for how the BGC can both meet Berkeley's goals as well as serve the needs of the Working Group will help guide the direction of activities on the BGC, including research enterprises, housing, and educational programs.

**Berkeley Collaborating with Leverhulme Centre** Richmond community. Input from the Community for the Future of Intelligence. UC Berkeley faculty will be part of a multi-university team engaging in the newly launched Leverhulme Centre for the Future of Intelligence at the University Global Edge. A new program called Global Edge of Cambridge. This center will bring together offers incoming freshmen the chance to study leading researchers in the hard and soft sciences abroad during their first fall semester at UC to consider the questions that artificial intelligence Berkeley. This past summer, 57 freshmen began surfaces as well as examine the effects that AI will their studies at Berkeley and then traveled as a have on an increasingly global human society. cohort to study at the UC Education Abroad Center Tsinghua-Berkeley Shenzhen Institute (TBSI). in London in the fall. Global Edge is part of a larger On October 20, 2015, the campus inaugurated the goal for every student to expand their global new Tsinghua-Berkeley Shenzhen Institute (TBSI) understanding and experiences before graduation, in Shenzhen, China. The joint research institute and will grow to include sites in Rome and Madrid in provides a platform for innovative research and fall 2016. Berkeley is the first in the UC system, and graduate student education to fuel economic one of the first state institutions, to offer a program growth, to solve global problems, and to train of this kind. industry leaders. The establishment of TBSI builds Berkeley Engages with China to Address

on strong ties between Berkeley and Tsinghua and **Climate Change.** In December 2015, Lawrence was led by the College of Engineering, which has Berkeley National Laboratory and UC Berkeley a strong history of faciltating individual faculty signed a Memorandum of Understanding partnering collaborations between the universities as well as with Tsinghua University to form the Berkeleya five-year collaboration in an entrepreneurship Tsinghua Joint Research Center on Energy and education program for Tsinghua graduate Climate Change, a center that will aim to develop engineers. TBSI's research programs will enable scientifically based clean energy solutions and Berkeley and Tsinghua graduate students to spend the next generation of leaders to champion those time at the partner institution for up to one year of solutions. UC Berkeley's contributions will be led research or study. by the Berkeley Energy & Climate Institute. The core activity of the new Center will be conducting



scientific research and analysis on clean energy solutions for China, focusing on areas offering the greatest impact, such as low-carbon cities, carbon markets, and clean energy system planning and integration.

### **Celebrating and** Integrating the Arts

This past year saw the appointment of Berkeley's very first Associate Vice Chancellor for Arts and Design, **Professor Shannon Jackson**. A faculty member in Rhetoric as well as Theater, Dance and Performance Studies (TDPS),



Jackson directs the campus' Arts Research Center and serves on the boards of Cal Performances and the Berkeley Art Museum.

The establishment of this new arts-focused leadership position extends Berkeley's longstanding commitment to the creative fields. It also aims to help better and more broadly integrate the practices of studying art, experiencing art, and making art into the fabric of student life, allowing students to develop creative and critical skills in group collaboration and self-expression.

In her first year as Associate Vice Chancellor and as leader of the Arts + Design Initiative, Jackson has sought new ways to feature and fortify arts and design departments, centers, museums, labs, and performance organizations. She created a new Big Ideas course and public lecture series, "Thinking through the Arts and Design at Berkeley," that exposed students of all majors as well as the larger public to a wealth of creative campus venues, and is currently working with leaders of the Undergraduate Initiative to expand arts and design offerings within the academic curriculum. Other projects include the creation of a website to integrate and publicize the work of all arts and design units on campus, the creation of a "culture pass" that will subsidize student participation in local art and cultural activities, and the renovation of a historic John Galen Howard building, the Dwinelle Annex, to serve as a creative commons and cross-disciplinary incubation space for faculty, students, and visiting artists.

On January 31, 2016, the **UC Berkeley Art Museum** and Pacific Film Archive (BAMPFA) opened its new facility at the corner of Oxford and Center streets. At this prime location—directly opposite the main entrance to campus and just a block from the BART station—BAMPFA's collections, exhibitions, film screenings, and public programs are more accessible than ever before. The new building, which was designed by the renowned firm Diller Scofidio + Renfro, includes versatile exhibition galleries, three film screens, a drop-in art-making space, reading room, performance amphitheater, café, and four art and film study centers. BAMPFA, where exhibitions are always free to UC Berkeley students, faculty, and staff, is contributing to the positive transformation of downtown Berkeley while serving as a dynamic meeting point between the campus and diverse communities near and far.

At **Cal Performances**, the launch in September 2015 of Berkeley RADICAL (Research and Development Initiative in Creativity, Arts and Learning) committed the organization to three defining principles: programming of excellence, relevance, and context; artistic literacy as a key part of all education and community programs; and a pledge to document and disseminate Cal Performances activities. Berkeley RADICAL was launched with an historic performance of Beethoven's Ninth Symphony at the Hearst Greek Theatre featuring an international cast of soloists, a chorus of Berkeley students and Bay Area youth choirs, and the Simón Bolívar Symphony Orchestra of Venezuela conducted by Gustavo Dudamel. That September evening—livestreamed globally —was the culmination of a multi-day campus and community residency featuring performances, academic symposia, masterclasses, and other activities designed to explore the power of music making through the works of Beethoven.

Throughout the 2015-16 season, many other Berkeley RADICAL programs took place at Cal Performances, bringing the very best in the performing arts to the broader Berkeley community as well as enhancing student life and learning. As Berkeley's Zellerbach Hall approaches its 50th anniversary in 2018, the organization is beginning to plan for the celebration with a re-creation —on Sunday October 9, 2016—of the venue's original opening performance.



INITIATIVES & PRIORITIES REPORT 23





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