Greetings,

I am delighted to share UC Santa Cruz’s first Office of Research Annual Report, which presents the key metrics related to research and technology commercialization at UC Santa Cruz for fiscal year 2018–2019.

Driven by our outstanding researchers, innovators, and entrepreneurs, the accomplishments herein represent our commitment to world-class research, scholarship, innovation, and technology commercialization for the betterment of our local community, the State of California, our nation, and the world.

To learn more about how the Office of Research supports research and technology commercialization, I encourage you to visit our website at officeofresearch.ucsc.edu.

Sincerely,

Scott Brandt
Vice Chancellor for Research
UC Santa Cruz
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FY19 At a Glance

$165.8M
extramural funding, all-time high

7.4%
increase in awards

26
issued US patents, all time high

$750,000
leveraged seed funds
17:1 Return on Investment (ROI)
UCSC received a record $165.8M in extramural funding in FY19, which was an all-time high.
FY19 Award Funding Source

Federal $105,715,493
Other $27,254,304
Foundation $10,786,685
State of California $16,704,825
Industry $5,389,986

Federal $105,715,493
Other $27,254,304
Foundation $10,786,685
State of California $16,704,825
Industry $5,389,986
## Funding Source Trends

<table>
<thead>
<tr>
<th></th>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
<th>FY18</th>
<th>FY19</th>
</tr>
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<tbody>
<tr>
<td>Federal</td>
<td>$122,025,175</td>
<td>$106,820,679</td>
<td>$71,279,870</td>
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<td>Foundation</td>
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<td>$16,673,716</td>
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<td>Other</td>
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<td>$5,160,342</td>
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<tr>
<td>State of California</td>
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<tr>
<td>Industry</td>
<td>$3,017,303</td>
<td>$2,920,812</td>
<td>$2,419,099</td>
<td>$2,926,414</td>
<td>$5,389,986</td>
</tr>
</tbody>
</table>

### Table of Contents

- Funding Source Trends
  - EXTRAMURAL FUNDING
## Awards by Funding Source

<table>
<thead>
<tr>
<th>Source</th>
<th>Direct</th>
<th>Indirect</th>
<th>2019 Total</th>
<th>2018 Total</th>
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<tr>
<td>Bureau of Ocean Energy Management, Regulation and Enforcement</td>
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<td>$45,039</td>
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<td>DHS</td>
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<td>$0</td>
<td>$5,012</td>
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<td>DoD</td>
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<td>$1,021,315</td>
<td>$4,712,816</td>
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<td>DOE</td>
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<td>$1,329,340</td>
<td>$5,919,574</td>
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<tr>
<td>Economic Development Administration - US Department of Commerce</td>
<td>$300,851</td>
<td>$78,221</td>
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<tr>
<td>Geological Survey - USGS</td>
<td>$832,163</td>
<td>$144,149</td>
<td>$976,312</td>
<td>$588,356</td>
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<tr>
<td>NASA</td>
<td>$5,357,654</td>
<td>$1,724,673</td>
<td>$7,082,327</td>
<td>$5,533,973</td>
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<tr>
<td>National Institute of Standard and Technology - NIST</td>
<td>$70,000</td>
<td>$37,800</td>
<td>$107,800</td>
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<td>NEH</td>
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<td>$24,379</td>
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<td>$174,641</td>
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<td>NIH</td>
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<td>$9,952,841</td>
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<td>NOAA</td>
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<td>$8,146,084</td>
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<tr>
<td>NSF</td>
<td>$2,095,742</td>
<td>$4,370,635</td>
<td>$25,366,377</td>
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<td>US Agency for International Development (USAID)</td>
<td>$85,662</td>
<td>$28,933</td>
<td>$114,595</td>
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<td>US Dept of Justice - Misc. Agencies</td>
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<td>USDA</td>
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<td>USDI</td>
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<td>Other Federal</td>
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<td>State of California</td>
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<tr>
<td>Industry</td>
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<td>Gordon and Betty Moore Foundation</td>
<td>$755,398</td>
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<td>$757,743</td>
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<td>Heising-Simons Foundation</td>
<td>$2,007,153</td>
<td>$260,778</td>
<td>$2,267,931</td>
<td>$275,000</td>
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<tr>
<td>Silicon Valley Community Foundation</td>
<td>$822,174</td>
<td>$123,326</td>
<td>$945,500</td>
<td>$2,952,876</td>
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<td>Simons Foundation</td>
<td>$466,894</td>
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<td>$552,816</td>
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<td>The Nature Conservancy</td>
<td>$440,603</td>
<td>$79,446</td>
<td>$520,049</td>
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<tr>
<td>TMT International Observatory LLC</td>
<td>$526,521</td>
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<td>$526,521</td>
<td>$465</td>
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<tr>
<td>Other Foundation</td>
<td>$3,970,785</td>
<td>$345,340</td>
<td>$5,316,125</td>
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<tr>
<td>Other</td>
<td>$22,673,585</td>
<td>$4,580,719</td>
<td>$27,254,304</td>
<td>$25,781,212</td>
</tr>
</tbody>
</table>

*EXTRAMURAL FUNDING*
FY19 saw an 84% growth in industry sponsored research, facilitated by Industry Alliances and Technology Commercialization (IATC).
FY19 Funding by Division

- Physical & Biological Sciences: $79.5M
- Engineering: $33.9M
- University Extension: $30M
- Other: $11.5M
- Social Sciences: $7.1M
- Lick Observatory: $2.3M
- Humanities: $1.08M
- Arts: $323K

Federal, State of California, Other
Top 5 Research Awards in FY19

$4,927,500
Benedict Paten (PI), David Haussler (Co-PI), Biomolecular Engineering
NIH/NHGRI
“The AnVIL data ecosystem”

$3,766,256
Nikolaos Sgourakis (PI), Chemistry & Biochemistry
NIH/NIAID
“Molecular mechanism of antigen editing by Class-I MHC Chaperones”

$3,504,915
Fitnat Yildiz (PI), Seth Rubin (Co-PI), Microbiology & Environmental Toxicology
NIH/NIAID
“Vibrio cholerae c-diGMP signaling: Motile to biofilm transition and transmission”

$3,002,223
Victoria Stone (PI), Scott Lokey (Co-PI), Phil Crews (Co-PI), John MacMillan (Co-PI), Microbiology & Environmental Toxicology
NIH/NIAID
“Development of validated probes for the bacterial type III secretion system”

$2,916,974
Eric Palkovacs, Institute of Marine Sciences
NOAA MARINE FISHERIES SERVICE
“CIMEC - Investigations in fisheries ecology 2018-2019”
## Top 5 Non-Research Awards in FY19

<table>
<thead>
<tr>
<th>Award Amount</th>
<th>PI/Department</th>
<th>Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>$7,732,000</strong></td>
<td>Maria Rocha-Ruiz (PI), Educational Partnership Center</td>
<td>DEPARTMENT OF EDUCATION “Creating access to college”</td>
</tr>
<tr>
<td><strong>$4,281,834</strong></td>
<td>Maria Rocha-Ruiz (PI), Educational Partnership Center</td>
<td>PAJARO VALLEY UNIFIED SCHOOL DISTRICT “PVUSD &amp; UCSC college centers”</td>
</tr>
<tr>
<td><strong>$642,082</strong></td>
<td>Lisa Hunter (PI), Institute for Scientist &amp; Engineer Educators</td>
<td>GORDON AND BETTY MOORE FOUNDATION “AstroTech instrumentation summer school”</td>
</tr>
<tr>
<td><strong>$599,820</strong></td>
<td>Daniel Press (PI), CASFS</td>
<td>USDA/NIFA/CSREES “Evaluation support and technical assistance EET for beginning farmer and rancher programs”</td>
</tr>
<tr>
<td><strong>$530,582</strong></td>
<td>Maria Rocha-Ruiz (PI), Educational Partnership Center</td>
<td>CAL STUDENT AID COMMISSION/CAL-SOAP “San Jose Cal-SOAP consortium 2018-2019 annual program plan”</td>
</tr>
</tbody>
</table>
The Arts Division doubled proposal numbers in FY19, with awards increasing by $900K.
Technology Commercialization
UCSC had 26 issued US patents in FY19, which was a record high.
Invention Disclosures in FY19

- Engineering: 34
- Physical & Biological Sciences: 17
- Other: 12
- Information Technology Services (ITS): 3
- Social Sciences: 1
24 startup companies were enabled in FY19, doubling the FY18 number.
## FY19 Startup Companies Enabled

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ANAPP TECHNOLOGIES</strong></td>
<td>Smaller form-factor semiconductor chipset and software</td>
</tr>
<tr>
<td><strong>ANKR</strong></td>
<td>Accessible, instantly distributed global cloud computing</td>
</tr>
<tr>
<td><strong>CONFIA SYSTEMS</strong></td>
<td>Mobile interaction and commerce platform for connected devices</td>
</tr>
<tr>
<td><strong>DESCENT</strong></td>
<td>Genetic manipulation to control sweat &amp; body odor</td>
</tr>
<tr>
<td><strong>GOLFINCH</strong></td>
<td>Mobile golf swing analysis and training tool</td>
</tr>
<tr>
<td><strong>I2CHAIN, INC.</strong></td>
<td>Cybersecurity company; secures information and identity using blockchain and cognitive science algorithms</td>
</tr>
<tr>
<td><strong>NIGHT FLOW INC.</strong></td>
<td>Cybersecurity company based on a unique encryption technology and an Artificial Intelligence platform</td>
</tr>
<tr>
<td><strong>OPTIMAL ASSET MANAGEMENT</strong></td>
<td>SEC-registered investment advisor application; factor-based investing and technology</td>
</tr>
<tr>
<td><strong>OPTION QUANT INC.</strong></td>
<td>AI proprietary streaming; cloud and OS analytics for both OTC and exchange traded global derivatives</td>
</tr>
<tr>
<td><strong>PREDICTA, INC.</strong></td>
<td>AI company maximizing product sales and profits by identifying key insights throughout the lifecycle</td>
</tr>
<tr>
<td><strong>SENSFIX</strong></td>
<td>Infrastructure asset management; machines automatically schedule and manage their own repair and maintenance</td>
</tr>
<tr>
<td><strong>SMART BUMPER STICKER</strong></td>
<td>One-click auto insurance claim app, automatically recording collision data with the tap of a smartphone</td>
</tr>
<tr>
<td><strong>SNDRGO</strong></td>
<td>CyberSecurity platform for law enforcement organizations and financial institutions</td>
</tr>
<tr>
<td><strong>STARTUPWIND, INC</strong></td>
<td>Innovation network platform for universities, corporate entrepreneurship and small business (SME) development programs</td>
</tr>
<tr>
<td><strong>STEM-AWAY INC.</strong></td>
<td>Democratizes opportunities for students entering STEM careers</td>
</tr>
<tr>
<td><strong>SURFWRITER</strong></td>
<td>Third party apps to support users of Salesforce.com</td>
</tr>
<tr>
<td><strong>TAGNOS</strong></td>
<td>AI company providing clinical logistics solutions for improved healthcare delivery</td>
</tr>
<tr>
<td><strong>URBAVORE</strong></td>
<td>Sustainably engineered, smart home garden systems</td>
</tr>
<tr>
<td><strong>VIDEOTAP INC.</strong></td>
<td>Interactive smart video platform delivering personalized viewing experiences</td>
</tr>
<tr>
<td><strong>VYBION</strong></td>
<td>Antibodies innovation</td>
</tr>
<tr>
<td><strong>YA DOGGIE</strong></td>
<td>Dog food subscription service and technology scoop</td>
</tr>
<tr>
<td><strong>ZANSKAR</strong></td>
<td>Geothermal electricity to support the mining industry</td>
</tr>
<tr>
<td><strong>ZENSPACE</strong></td>
<td>Fully automated, on-demand, technology-enabled meeting spaces</td>
</tr>
<tr>
<td><strong>ZEMPLEE (ENFAVR INC)</strong></td>
<td>Reinventing elder living with Smart AI Technology</td>
</tr>
</tbody>
</table>

Startup companies received $55,741,000 in follow-on private startup funding in FY19.
Office of Research Highlights
Research Development (RD) helps researchers identify funding opportunities and works with them to build and submit competitive, complete and successful proposals. Support includes: aligning research interests/capabilities with funding opportunities, providing support for early career researchers, enhancing research opportunities for UCSC graduate programs, and facilitating development of large scale initiatives and new centers.

**FY19 HIGHLIGHTS**

- Assisted with the preparation of contract and grant proposals, including significant support to junior faculty on first proposals
- Advised or engaged faculty and staff with a wide variety of research development activities, including identification of funding opportunities, edited proposal, interacted with collaborators and provided templates
- Conducted 14 presentations in the areas of grantsmanship and tools to engage with program officers
- Supported the preparation of large training grants and instrument proposals
Industry Alliances & Technology Commercialization (IATC)

Industry Alliances and Technology Commercialization (IATC) manages agreements with and funding received from industry partners; finds and manages intellectual property owned by UCSC; and licenses intellectual property to for-profit companies, who in turn develop that intellectual property into new products and services.

FY19 HIGHLIGHTS

- 67 new invention disclosures—record high; previous best was 61 in FY18
- 26 issued US Patents—record high; previous best was 20 in FY16
- $5.3M funding from Industry Sponsored Research Agreements (ISRAs), which was an 84% increase from FY18
- $532,000 in patent and copyright licensing revenue
- 14 trainings and seminar lectures held on campus
Research Administration & Compliance (RAC)

RAC is the administrative office responsible for facilitating and ensuring campus compliance with federal, state, and university regulations pertaining to research administration, including policies governing contracts and administration, research animal care and use, human research subjects protection, and financial conflict of interest in research.

FY19 HIGHLIGHTS

- Conducted an extensive Electronic Research Administration System search
- Appointed an Export Control Officer
- Underwent a comprehensive internal assessment of our export control compliance program that included experts from other UC campuses
- Rolled out new SOPs and forms to support the implementation of the new Common Rule required for federal grants involving human subject research
- Created/revised 29 Institutional Review Board (IRB) policies in preparation for Consortium for Applied Research Ethics Quality (CARE-Q) certification review
- Created completeness check process for Institutional Animal Care and Use Committee (IACUC) submissions
- Prepared for upcoming site visit for continued accreditation by Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC), a private, nonprofit organization that promotes the humane treatment of animals in science
- Implemented new online tool for semi-annual IACUC inspections
Highlighted Research Units
UC Lick Observatory (UCO/Lick)

Claire Max, Director, UC Observatories; Bachmann Professor of Astronomy and Astrophysics, UC Santa Cruz

VISION STATEMENT

The University of California Observatories (UCO) is a multi-campus astronomy research unit, with headquarters on the UC Santa Cruz campus. The mission of UCO is to provide UC astronomers with continuing access to outstanding optical and infrared telescope facilities. These facilities support graduate and undergraduate teaching, the training of astronomy Ph.D.s, and faculty research for the eight UC campuses that have astronomy programs. UCO operates the Lick Observatory on Mount Hamilton, technical labs at UCSC and UCLA, and is a managing partner of the W. M. Keck Observatory in Hawaii and the center for the UC participation in the Thirty-Meter Telescope (TMT) project.

FY19 HIGHLIGHTS

● UC astronomers revealed a cold super-Earth around Barnard’s star, the second closest stellar system to the Earth, using high precision instruments including Keck’s HIRES spectrograph and Lick’s Automated Planet Finder telescope.

● UC astronomers played a key role in finding the first optical transient created by a merger of two neutron stars. A small team led by Ryan Foley, an assistant professor of astronomy and astrophysics at UC Santa Cruz, was the first to find the source of the gravitational waves, located in a galaxy 130 million light-years away.

● UCO launched ‘La Noche de las Estrellas’ which brings more than 100 Spanish-speaking students from seven regional high schools to Lick Observatory to learn about astronomy and have a hands-on experience led by Spanish-speaking experts.

FY19 TOP RESEARCH AWARDS

$365,368
Kevin Bundy (PI)
GORDON AND BETTY MOORE FOUNDATION
“WFOS conceptual design, phase 1”

$278,515
Kevin Bundy (PI)
NSF; “Red geysers and the suppression of star formation”

FIRST-TIME GRANT AWARDEES

Renate Kupke
R. Stelter

UC Santa Cruz has received a gift of $1 million to establish the William Wallace Campbell Director’s Fund for Lick Observatory in the University of California Observatories (UCO).
Institute of Marine Sciences (IMS)

Daniel Costa, Director; Distinguished Professor - Dept of Ecology & Evolutionary Biology

VISION STATEMENT

IMS aims to be a leader of innovative resources that cross research boundaries in marine science and coastal sustainability. Our vision is focused on centralized research themes aimed at understanding the processes that drive climate, ocean circulation, and biogeochemical processes in marine ecosystems. We function as a catalyst that not only keeps UCSC at the forefront of marine research and education, but propels us into unprecedented relevance in the area of marine sustainability.

FY19 HIGHLIGHTS

- Biologist Daniel Costa was appointed director of the Institute of Marine Sciences. Costa is an internationally recognized expert on the physiology, ecology, and behavior of marine mammals, with work founded on a deep understanding of oceanography and Earth history. He has been a pioneer in the development and use of electronic tags to track the movements and behavior of marine mammals and to gather oceanographic data.
- IMS researcher Adina Paytan conducted a NSF funded study of brine discharge from a desalination plant that highlighted environmental impacts and provided valuable information and recommendations for planners considering where to locate future desalination plants and what discharge technologies to use.
- Mike Beck, IMS researcher, co-authored a paper illustrating the flood protection coral barrier reefs provide to more than 18,000 coastal citizens and $1.8 billion worth of coastal infrastructure in the United States and its trust territories. The study, funded by the USGS and the US Department of the Interior’s Office of Insular Affairs, will help managers take effective actions to reduce the risk of flooding and other hazards and increase the resiliency of coastal communities on the US mainland and islands.

FY19 TOP RESEARCH AWARDS

$2,916,974
Eric Palkovacs (PI)
NOAA MARINE FISHERIES SERVICE; “CIMEC - Investigations in fisheries ecology 2018-2019”

$2,776,460
Eric Danner (PI), Steve Lindley (Co-PI)
USDI / BUREAU OF RECLAMATION, “Chinook life cycle model”

FIRST-TIME GRANT Awardees

Jeff Davis
Andrew Hein
Cyril Michel
Siddharth Narayan
Borja Gonzalez Reguero
Genomics Institute

David Haussler, Scientific Director; Benedict Paten, Josh Stuart, Beth Shapiro, Associate Directors; Ann Pace, Director of Research Development & Finance; Rob Currie, Chief Technology Officer; Isabel Bjork, Executive Director

VISION STATEMENT
The UC Santa Cruz Genomics Institute is focusing the power of genomics—collaboratively, openly and ethically—for the benefit of both the individual and the planet. Our platforms, technologies, and scientists unite global communities to create and deploy data-driven, life-saving treatments and innovative environmental and conservation efforts. We openly and responsibly share what we learn and create. We are dedicated to creating a healthier world.

FY19 HIGHLIGHTS

● The Schmidt Futures Organization awarded $10M over four years for organoid research to a UCSC-led Braingeneers team in collaboration with UCSF. Their project was entitled “New architecture of the human brain.”

● Awards totaling $19.8M in new funding increments were received for Genomic Institute core projects, including funding by the Chan Zuckerberg Initiative in support of the Human Cell Atlas (HCA), an international project to create comprehensive reference maps of all human cells.

● The Genomic Institute entered into two new sponsored research agreements with Silicon Valley tech companies: Western Digital Technologies and Seagate Technology.

FY19 TOP RESEARCH AWARDS

$4,927,500
Benedict Paten (PI), David Haussler (Co-PI)
Biomolecular Engineering
NIH/NHGRI; “The AnVIL data ecosystem”

$2,741,258
Sofie Salama (PI), Biomolecular Engineering
NIH/NHGRI; “Evolution of new regulatory networks via genetic arms races between KRAB zinc finger proteins and retrotransposons”

FIRST-TIME GRANT Awardees

Karen Miga
**Santa Cruz Institute for Particle Physics (SCIPP)**

Steven Ritz, *Director*; Jason Nielsen, *Associate Director*; Stefano Profumo, *Deputy Director for Theory*; Sarah Thorne, *Assistant Director for Administration and Finance*

**VISION STATEMENT**

SCIPP plays world-leading roles in experimental and theoretical particle physics and astrophysics, including the development of cutting-edge technologies—from sensors and electronics, through analysis and computational methods—with additional applications to other fields, such as neuroscience and biomedicine. With prominence in the most important international activities in these fields, and the cross-cutting nature of our work, opportunities are created for students at all levels to learn and make connections. In all our work, we are committed to fostering a welcoming and supportive climate for all members of our diverse community.

**FY19 HIGHLIGHTS**

- The three-year, $6.9M, base grant from the Department of Energy, along with multiple other grants, continued to support SCIPP’s many world-leading activities.
- ATLAS experiment at the CERN Large Hadron Collider detected Higgs boson decays to bottom quarks, one of several important results with SCIPPers playing leading roles. SCIPP also played a leading role in the upgrades to the ATLAS particle detector.
- SCIPP PI Bruce Schumm was selected as part of a UC-funded consortium dedicated to the development of advanced detector diagnostics for accelerator R&D over three years.
- The Fermi Gamma-ray Space Telescope celebrated 10 years in FY19. Additionally, the Dark Energy Spectroscopic Instrument (DESI) saw its first light, with SCIPPers leading the commissioning.
- SCIPP participated in the International Particle Physics Masterclasses, in which high school students became particle physicists for a day.

**FY19 TOP RESEARCH AWARDS**

<table>
<thead>
<tr>
<th>Award Amount</th>
<th>PI(s)</th>
<th>Funding Agency</th>
<th>Project Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>$609,433</td>
<td>Abraham Seiden (PI), Vitaliy Fadeyev (Co-PI)</td>
<td>DEPT OF ENERGY</td>
<td>“ATLAS strip modules”</td>
</tr>
<tr>
<td>$386,620</td>
<td>Robert Johnson (PI)</td>
<td>NASA SHARED SERVICES CENTER</td>
<td>“Nature of interplanetary low energy electrons and positrons”</td>
</tr>
</tbody>
</table>
Divisional Highlights
The Arts Division is renowned for its socially engaged artists and scholars who bring original thinking and aesthetics to their research and creative endeavors.

**TOP ACHIEVEMENTS**

- B. Ruby Rich was invited to join the Academy of Motion Picture Arts and Sciences, becoming a member of one of the most prestigious cinematic institutes.
- Film by Irene Lusztig entitled *Yours in Sisterhood* premiered at the prestigious Berlin International Film Festival.
- Marianne Weems premiered her digital media-enhanced theatrical production *Strange Window: Turn of the Screw* to great acclaim at the Brooklyn Academy of Music.
- Isaac Julien premiered *Lessons of the Hour* at the University of Rochester Museum Art Gallery before opening at Metro Pictures in New York.
- Dee Hibbert-Jones was awarded the highly selective Creative Capital Award to develop *Run With It*, an animated documentary on the crisis in the US criminal justice system.

**FY19 TOP RESEARCH AWARDS**

$67,500
Jennifer Parker, Art
UCOP MRPI; “California art + design consortium”

$44,539
Gaby Greenlee (Carolyn Dean, Ph.D. Advisor, History of Art & Visual Culture)
FULBRIGHT-HAYS DOCTORAL DISSERTATION RESEARCH ABROAD FELLOWSHIP
“Indigenous textiles in the colonial Andes: plotting landscape, place, and border space in woven fabric”

**FIRST-TIME GRANT Awardees**

T.J. Demos, History of Art & Visual Culture
TOP ACHIEVEMENTS

The Humanities Institute (THI) at UC Santa Cruz continued to serve as a hub for research within the division of the Humanities in FY19 for new directions in research and teaching, cross-discipline collaboration, and public engagement. THI’s activities included seven research centers, five research clusters, and seven projects with faculty and students from across campus. Some of the highlights:

- The Center for Middle East and North Africa was launched and received $370,000 from a private donor to support center’s activities and instruction in Arabic and in Persian.
- Museums: Humanities in the Public Sphere received an NEH Non-Research award of $200,000.
- Okinawa Memories Initiative received a gift from a donor in the amount of $150,000.
- THI’s Data and Democracy Initiative included events with Jaron Lanier, author of Ten Arguments for Deleting Your Social Media Account Right Now; a public conversation at the Kuumbwa Jazz Center in our annual Questions That Matter series; and an event at the Computer History Museum in Mountain View, co-hosted by the Center for Jewish Studies on Anti-Semitism and the Internet.
- THI and Bookshop Santa Cruz presented an evening with Madeleine Albright, the United States’ first female Secretary of State, who spoke about her book, Fascism: A Warning. The event drew 3,000 people from our campus and local community.

FY19 TOP RESEARCH AWARDS

$248,532
Junko Ito (PI), Armin Mester (Co-PI), Linguistics
NSF; “Syntax–prosody in optimality theory”

$50,000
Marc Matera (PI), History
ACLS; “The African grounds of race relations in Britain”

FIRST-TIME GRANT AWARDEES

Alma Heckman, History
Jennifer Kelly, Feminist Studies
Marc Matera, History
Massimiliano Tomba, History of Consciousness
Division of Physical & Biological Sciences

TOP ACHIEVEMENTS

- Michael Dine (Physics) and Susan Strome (Molecular, Cell, & Developmental Bio) were elected to the US National Academy of Sciences (NAS). Election as a member of the NAS is one of the highest honors a US scientist can receive.
- NSF funded a powerful new supercomputer for UC Santa Cruz researchers; the new high-performance computer system will support research in theoretical astrophysics, climate science, materials science, and other fields.
- A novel catalyst outperformed platinum in hydrogen production; the ruthenium-based catalyst developed by chemist Shaowei Chen and colleagues has potential applications in sustainable hydrogen production for clean energy and in industrial processes.
- Basic research on fruit flies led to a potential drug that could treat river blindness and other neglected tropical diseases caused by filarial worms; the drug, which resulted from research conducted by Bill Sullivan (MCD Bio) and colleagues, is now in preclinical development.

FIRST-TIME GRANT Awardees

- Joshua Arribere, Molecular, Cell, & Developmental Bio
- Alexander Ayzner, Chemistry & Biochemistry
- Natalie Batalha, Astronomy & Astrophysics
- Yuan Ping, Chemistry & Biochemistry
- Olena Vaske, Molecular, Cell, & Developmental Bio
- Margaret Zimmer, Earth & Planetary Sciences

FY19 TOP RESEARCH AWARDS

$3,776,256
Nikolaos Sgourakis, Chemistry & Biochemistry
NIH/NIAID; “Molecular mechanism of antigen editing by Class-I MHC Chaperones”

$3,504,915
Fitnat Yildiz (PI), Seth Rubin (Co-PI), Microbiology & Environmental Toxicology
NIH/NIAID; “Vibrio cholerae c-diGMP signaling: Motile to biofilm transition and transmission”
The Division of Social Sciences supports diverse, community-engaged research collaborations that address pressing global challenges, including climate change, economic inequality, and racial and political fragmentation.

TOP ACHIEVEMENTS

- Paradigm-shifting research in the social sciences advanced social justice: Nameera Akhtar’s work upended widely held ideas about the social engagement of people with autism; Phil Hammack identified a “quiet revolution” in sexual and gender identity; Economist Carlos Dobkin took a data-driven approach to public health, investigating medical bankruptcy, the minimum legal drinking age, the war on drugs, and more.

- The Institute for Social Transformation supported and launched: Human Rights Lab provides to students high-tech, digital-verification skills to investigate allegations of human rights abuses worldwide; “Tech for Social Good” collaboration with CITRIS.

- SocSci faculty and students, tackled questions of social inequality, food insecurity, and the housing crisis, with key contributions by Heather Bullock & the Blum Center on Poverty, Social Enterprise, & Participatory Governance; Stacey Philpott and the Center for Agroecology & Sustainable Food Systems; and Steve McKay and Miriam Greenberg in Sociology.

FY19 TOP RESEARCH AWARDS

$1,240,734
John Campbell (PI), Environmental Studies
NSF; “Coastal SEES: Coastal fog-mediated interactions between climate change, upwelling, and coast redwood resilience: Projecting vulnerabilities and the human response”

$492,358
Julie Guthman (PI), Madeleine Fairbairn (Co-PI), Social Sciences
NSF; “Standard Grant: Investigating the ‘grand challenge’ solutions of agro-food tech”

FIRST-TIME GRANT Awardees

J. Elliott Campbell, Environmental Studies
James Doucet-Battle, Sociology
Deborah Gould, Sociology
Grace Gu, Economics
Cynthia Lewis, Education
Sara Niedzwiecki, Politics
Brenda Samaniego de la Parra, Economics
Katherine Seto, Environmental Studies
The Baskin School of Engineering’s research mission is to create new knowledge and technologies that address societal needs in the 21st century.

Jack Baskin School of Engineering (BSOE)

TOP ACHIEVEMENTS

- **Early Career Awards**: Prof. C. Seshadhri (CSE) was awarded an SDM/IBM Early Career Data Mining Researcher Award for Excellence in Data Analytics and A. Yanik (ECE) received an NSF CAREER Award.

- **Faculty Awards**: P. Garaud (AM) was named Fellow of the American Physical Society, M. Mangel (AM), received the Outstanding Achievement Award of the American Institute of Fishery Research Biologists, and H. Schmidt (ECE) received the Engineering Achievement Award of the IEEE Photonics Society.

- **Research Recognition**: L. Takayama (CM) and A. Thakurta (CSE) won Google Research Awards, J.J. Garcia-Luna-Aceves received a Best Paper Award for Implementing Correct and Efficient Collision in Multi-Hop Ad-Hoc Networks, C. Flanagan (CSE) won an ACM Most Influential Paper Award, and R. Manduchi (CSE) won a Best Industry Paper award at the British Machine Vision Conference.

- **Conferences**: BSOE researchers organized cutting-edge research conferences such as the 3rd Asilomar Bioelectronics Symposium led by M. Rolandi (ECE), the two-day Privacy in Graphs (PiG) workshop put together by the directors of the D3 Data Science Research Center, L. Getoor (CSE) and A. Rodriguez (STAT), and the third annual CROSS Symposium on open source software.

FY19 TOP RESEARCH AWARDS

- **$2,712,300**
  Todd Lowe (PI), *Biomolecular Engineering*
  NIH/NHGRI; “A unified atlas of dynamic tRNA function”

- **$2,607,065**
  Benedict Paten (PI), *Biomolecular Engineering*
  NIH/NHLBI; “The integration of trans-omics for precision medicine (Topmed) and other heart, lung, blood, and sleep (HLbs) data sets with the NIH data Commons”

FIRST-TIME GRANT AWARDEES

- Sara Abrahamsson, Electrical & Computer Engineering
- Rajarshi Guhaniyogi, Statistics
- David Lee, Computational Media
- Heiner Litz, Computer Science and Engineering
- Faisal Nawab, Computer Science and Engineering
- Leila Takayama, Computational Media
- Abhradeep Guha Thakurta, Computer Science & Eng.
- Michael Wehner, Electrical & Computer Engineering
More Information

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