2013

Sustainability Research Inventory

University *of* California · Irvine

Table of Contents

About the Sustainability Research Inventory 3

Research Centers, Institutes, and Programs
Engaged in Sustainability Research 4

Field Research – UC Natural Reserve System 12

Field Research Partnerships 13

Schools, Departments, and Programs
in which Sustainability Research Takes Place 16

Faculty Engaged in Sustainability Research
(primary School/department/College affiliation) 18

Faculty Engaged in Sustainability Research
(Alphabetical by last name) 24

About our cover …

The graphic shown on the cover was created by Sylvia Irving, UCI Libraries Design Services, for the Spring 2010 Exhibit titled "Green Evolution: Creating a Sustainable Future." It is used here with the Libraries' permission and has been modified by Strategic Communications.

About the Sustainability Research Inventory

UC Irvine's commitment to sustainability spans its tripartite mission of teaching, research, and public service, as well as campus operations. In 2010, 2011, and again in 2012, the University of California, Irvine, ranked among the nation's Top 10 "Coolest Schools," *Sierra* magazine's annual ranking of the greenest and most sustainable colleges and universities in the United States.

The Sustainability Research Inventory was first created in 2012 in response to *Sierra* magazine's "Coolest Schools" survey. It was during that year that the Sierra Club partnered with the Association for the Advancement of Sustainability in Higher Education and adopted that organization's Sustainability Tracking Assessment and Rating System (STARS) as the basis for its rankings. STARS is a self-reporting framework for colleges and universities to measure their sustainability performance. Among other questions, the current version of STARS (Version 1.2) asks whether institutions have:

- Defined "sustainability research"
- Publicized the names of all faculty engaged in sustainability research, along with their department affiliations; and
- Publicized a list of every department in which at least one faculty member engages in sustainability research

For purposes of this undertaking, we consulted three key faculty members to obtain the following definition for the purpose of participating in the AASHE STARS rating program:

> ***The University of California, Irvine identifies "sustainability research" as any research or creative activity that addresses the equitable endurance of natural and human systems in the present and in the future. These studies can address scientific, technological, legal, economic, ethical, governance, social, and other issues that impact the conservation of finite resources for future generations and support long-term environmental and human health.***

Several methods were used to identify faculty engaged in sustainability research:

- An email was sent to all faculty on April 12, 2012, asking them to self-identify; some faculty responded not only on their own behalf but also identified other faculty members who should be included on the list.
- A follow-up communication was sent to deans and department chairs, asking them to encourage faculty to respond.
- Various websites were consulted to learn the names of faculty affiliated with centers doing research in this area.
- Titles and department affiliations were validated with the Office of Academic Personnel, and URLs for faculty profiles were obtained using the campus's online directory.
- This document was distributed to all listed faculty for final review in 2012 and again in 2013 with a request for updates. Their responses have been incorporated.

Kathy Haq
Manager, Special Projects
Office of the Vice Chancellor
Administrative and Business Services
April 2013

Research Centers, Institutes, and Programs

Advanced Power and Energy Program

The Advanced Power and Energy Program at the University of California, Irvine addresses the development and deployment of efficient, environmentally sensitive, sustainable power generation and energy conversion worldwide. At the heart of this endeavor is the creation of new knowledge brought about through fundamental and applied research, and the sharing of this knowledge through education and outreach. Industry is actively engaged and vital to this effort. Built on a foundation established in 1970 with the creation of the UCI Combustion laboratory and the 1998 dedication of the National Fuel Cell Research Center, APEP is an umbrella organization that addresses the broad utilization of energy resources and the emerging nexus of electric power generation, infrastructure, transportation, water resources, and the environment.

AirUCI Institute

The Atmospheric Integrated Research at UC Irvine (AirUCI) Institute addresses the urgent challenges we face in air and water quality, human health, climate change, as well as green technology through the integration of research, education, and outreach.

Arboretum

The UCI Arboretum is a 12.5-acre botanic garden and research facility located approximately one mile from the University of California, Irvine. The Arboretum features plants and communities from the California Floristic Province and also has an extensive collection of South African species. As a part of the School of Biological Sciences, the Arboretum hosts a diversity of research projects, including undergraduate and graduate students, faculty, and post-doctoral scholars. In addition to providing shade cloth growing facilities, the Arboretum is the only site on the campus where “common garden” experiments can be conducted.

California Institute for Hazards Research

The California Institute for Hazards Research was founded to better coordinate natural hazards research across the University of California system. Research areas for the institute include the understanding and prediction of natural hazards and the ways to reduce their impact on society. The institute will collaborate with local, state, and federal governments and organizations on natural disaster research, education, and preparedness.

California Institute for Telecommunications and Information Technology

The California Institute for Telecommunications and Information Technology - known as Calit2 - is a two-campus multidisciplinary research institute. One of four UC Gray Davis Institutes for Science and Innovation, Calit2 divisions at UCI and UC San Diego leverage academic expertise with industry experience to conduct cutting-edge research in diverse fields. The goal: to develop innovative information technology-based products and services to benefit society and ignite economic development in the region and state. The more than 200 UCI faculty and students affiliated with Calit2 are actively engaged in projects based on the digital transformation of energy, the environment, healthcare, and culture.

California Plug Load Research Center

UC Irvine is home to the new California Plug Load Research Center, or CalPlug, a public-private partnership established in 2011 with research funding from the California Energy Commission to improve energy efficiency in the use and design of appliances and consumer electronic devices – anything that plugs into an electrical outlet.

Center for Complex Biological Systems

The UCI Center for Complex Biological Systems promotes research and education in the area of systems biology broadly defined, which includes aspects of synthetic biology, genomics and functional genomics, computational biology, mathematical biology, biophysics, bioengineering and molecular biology. The goal is to develop a more comprehensive and accurate understanding of complex biological systems and their behaviors.

Center for Demographic and Social Analysis

Founded in 2007, the campus Center for Demographic and Social Analysis formalizes a decade of highly productive collaboration between researchers in a dozen departments. With nearly 50 faculty affiliates and 30 associated graduate students, C-DASA is the focal point for a host of population-related research activities at UCI. Expertise in child and youth outcomes; demographic, spatial and social network methodologies; social inequality; and health and well-being make C-DASA a leading center for research on the well-being of local, national, and global populations. C-DASA provides small seed grants to encourage multi-disciplinary projects, collaborative studies, grant proposals, and research by junior faculty. Support for C-DASA comes from the Office of Research. The weekly Population, Society and Inequality Seminar Series fosters dialogue on current research, funding opportunities, analytic approaches, and new data sets.

Center for Disaster Medical Sciences

As societies become more complex and interconnected, the potential for human-caused and natural disasters increases. The consequences of global climate change have exacerbated, created, or are in the process of inducing conditions that require an adaptive management response to disasters and medical and public health needs. This includes an evolutionary approach as new challenges arise from increased fire probability to higher predicted seasonal flooding events, coastal erosion and landslides, and an increase in certain, particularly vector borne and novel emerging, infectious diseases. UC Irvine's Center for Disaster Medical Sciences is adapting to these new challenges so that the human and natural environments can be maintained in ways that correspond with a response methodology that makes resilience and continued sustainability possible. The Center is at the forefront of the emerging field of disaster medicine, offering innovative approaches to optimize disaster management through research, education, training, and public policy. Current research focuses on surge capacity and crisis care, disaster triage, earthquakes, simulation training, and disaster nomenclature.

Center for Environmental Biology

The Center for Environmental Biology in the School of Biological Sciences was established in March 2010 to facilitate research, education, and outreach in biological science to help develop innovative new solutions to environmental problems. Biological resources are a critical component of environmental sustainability. Land, aquatic, and marine ecosystems provide many essential functions that sustain air, water, climate, food, and social systems. It is increasingly challenging to manage these resources in response to multiple stresses and environmental disturbances such as climate change, pollution, land use change, and exotic species invasions. New advances in biological research are providing methods to better understand how organisms and ecosystems influence the environment and how they respond to

environmental change. Working in partnership with ecosystem and resource managers, UC Irvine faculty are collaborating to conduct solutions-oriented research in environmental biology, and train the next generation of stewards of biological resources.

Center for Ethnography

Established in 2006, the Center for Ethnography has worked to develop a series of sustained and diverse theoretical and methodological conversations across disciplines, academic and applied, both to probe the state of ethnographic practice and to influence the current changes in how ethnography is conducted, reported, received, and taught. The center supports innovative collaborative ethnographic research as well as experiments on the theoretical and methodological functioning of ethnography amid contemporary cultural, social and technological transformations.

Center for Evolutionary Genetics

The application of molecular and genetic tools to evolutionary questions provides answers to some of the most fundamental questions in biology. For example, phylogenetic and phylogeographic analyses illuminate the evolutionary history of life, population genetics provides insight into current processes of gene flow and natural selection, and studies that incorporate experimental evolution and functional genetics can give us a preview of future evolutionary trajectories. The utility and power of modern genetic techniques can be applied to a diverse array of academic disciplines, including studies of aging, behavior, infectious disease, cancer, genomic evolution and the domestication of plants and animals.

Center for Global Peace and Conflict Studies

The Center for Global Peace and Conflict Studies is a multidisciplinary program, housed in the School of Social Sciences, dedicated to promoting scholarly, student, and public understanding of international peace and conflict. CGPACS affiliated faculty (approximately 60 faculty from 7 schools across campus), guest speakers, and affiliated graduate students work on the military/ strategic, economic/ environmental, and cultural/ normative motives, processes, and consequences of both peace and conflict.

Center for Hydrometeorology and Remote Sensing

Researchers affiliated with the Center for Hydrometeorology and Remote Sensing focus on land-surface hydrologic processes, their spatial and temporal variability, and the use of remote sensing information and computer models to improve both the understanding of these processes and the ability to model them in order to predict the impacts natural and anthropogenic variables on water resources. A primary goal of CHRS has been to develop the means to extend the benefits of federal space and weather agencies' vast technological resources into applications that can assist hydrologists and water resource managers worldwide.

Center for Learning in the Arts, Sciences and Sustainability

Founded in 2001, the campus Center for Learning in the Arts, Sciences, and Sustainability focuses on developing effective interdisciplinary methods for helping all students to understand key concepts in the arts and sciences, with a special interest in civic competence and scientific knowledge. The Center has a strong focus on investigating methods by which communities and the natural environment may be sustained and thrive.

Center for Occupational and Environmental Health

The University of California Centers for Occupational and Environmental Health were established in 1979 under a mandate from the California legislature with the goal of improving research and training

on injuries and occupational disease prevention in California. The University established centers in Northern and Southern California, and later the Southern center was divided into one center at UC Irvine and the other at UCLA. The centers were established to train occupational health scientists and professionals, conduct research on occupational and environmental health issues, and provide services to the public, employer, and workers in Southern California. UC Irvine's center houses programs in Environmental Health Sciences, Occupational and Environmental Medicine, Environmental Epidemiology, and Environmental Toxicology. Affiliated faculty and staff reside within the School of Medicine, the School of Social Ecology, and the Program in Public Health.

Center for Research in International and Global Studies

The Center for Research on International and Global Studies is designed to promote research connections among all faculty and students at UCI with international and global interests. Promoting synergies enhances the prospects for both addressing the global issues of today and educating the next generation of global citizens.

Center for Research on Immigration, Population and Public Policy

The Center for Research on Immigration, Population and Public Policy focuses on policy-related research concerned with immigration and immigrant settlement, including the role that immigration plays in affecting population dynamics and the economy. Broadly speaking, the Center's research involves projects on what kinds of immigrants come, what happens to them when they are here, and what effects they have on America.

Center for Solar Energy

The mission of the Center for Solar Energy is to study the fundamental scientific principles of solar energy conversion and to educate scientists, students, and the general public about harnessing our most abundant energy resource.

Center for the Study of Democracy

The Center for the Study of Democracy sponsors research and education aimed at improving the democratic process in the United States and expanding democracy around the world. The Center's research activities focus on developing a better understanding of the conditions fostering democratic development and democratic processes in the United States and internationally.

Center for Trauma and Injury Prevention Research

Since its inception in 2004, the University of California, Irvine School of Medicine's Center for Trauma and Injury Prevention Research has demonstrated its commitment to the reduction of the associated personal and societal burden of traumatic injury by conducting multidisciplinary research, translating research into policy and practice, serving as a regional and national resource, and working in close partnership with communities. This is part of the University's institutional and cultural commitment to sustainability as trauma injuries increase through climate change challenges and the prevention of injury becomes a focused societal need.

Center for Unconventional Security Affairs

Global environmental change, technological innovation, economic globalization, and the spread of democracy have dramatically transformed the security landscape. While the incidence of war has declined, other, unconventional threats have moved onto the agenda, such as climate change, cybercrime and complex disasters. These threats to human security and national security have become as important as the traditional threat of war. Security today depends as much on investments into

promoting sustainability, alleviating poverty and facilitating cooperation as into intelligence and defense. The Center for Unconventional Security Affairs (CUSA) was established in 2003. Its Unconventional Security Research Group studies and develops solutions to unconventional security challenges through interdisciplinary field research. CUSA's Transformational Media Lab explores the use of media in communicating these challenges and moving people from concern to action. The eARTh Studio provides a platform for artists who create art informed by these issues. CUSA also focuses on supporting leaders in the business, government and non-profit communities who are trying to address these challenges, and on educating the next generation of leaders by integrating students into all aspects of the Center's activities. In 2010, the Center launched a Sustainability Seminar Series that continues today.

Center in Law, Society and Culture

The Center in Law, Society and Culture brings together UC Irvine faculty and graduate students who share interests in law, society, and culture, broadly defined. Issues of interest to center affiliates include race, law and justice; law and literature; critical legal theory; legal consciousness; law and space; legal philosophy, culture and policing; the interaction of local and international legal cultures; globalization; migration; knowledge production; law, science, and society; and law and history.

Community Outreach Partnership Center

Initiated in 2001, the Community Outreach Partnership Center (COPC) builds bridges between UCI and local communities. The Center harnesses university resources – faculty, student, and institutional – to help address key regional challenges. COPC projects are guided by a commitment to "community engagement." The Center uses applied research, training and instruction, and outreach to help build and sustain healthy communities.

Environment Institute: Global Change, Energy and Sustainable Resources

UC Irvine created the Environment Institute in 2008 to foster environment and sustainability related educational opportunities and research partnerships. Institute-sponsored research focuses on defining and understanding the dynamic interactions among science, technological innovation, and societal response. The Institute also serves as a campus portal for faculty, students, and the regional community interested in UCI's environment and sustainability-related research, education, and engagement.

Greenhouse

The UCI Greenhouse is a 9,000-square-foot growth facility that supports teaching and research needs for the School of Biological Sciences. The Greenhouse is divided into 15 growth areas that are individually programmable for temperature. Greenhouse Staff provides watering, pest management, and basic maintenance for plants used in research and teaching. Additional facilities include common-use lab space, a lath house adjacent to the Greenhouse for plants requiring ambient conditions, an autoclave for soil sterilization, and storage space for greenhouse supplies, which are provided by investigators. Limited environmental growth chamber space is also available.

Health Policy Research Institute

UC Irvine's Health Policy Research Institute is a multidisciplinary research unit that conducts health services research, comparative effectiveness and quality-of-care research. The Institute focuses on the assessment and improvement of the quality of health care, especially care for chronic diseases, with an emphasis on understanding and reducing disparities in health and healthcare for racial/ethnic minorities and vulnerable populations.

Institute of Transportation Studies

The Institute of Transportation Studies (ITS) – a University of California organized research unit with branches at Irvine, Davis, and Berkeley – was established to foster research, education, and training in the field of transportation. Research at ITS covers a broad spectrum of transportation issues spanning the fields of engineering, planning, economics, computer science and public health. ITS-Irvine serves as headquarters for a major six-campus Multicampus Research Program and Initiative funded by the UC Office of the President on Sustainable Transport: Technology, Mobility and Infrastructure. Other current funded research projects at Irvine focus upon: intelligent transportation systems, particularly advanced transportation management systems; analysis and simulation of urban traffic networks; transportation system operations and control; travel demand forecasting for both person and freight transportation; analysis of complex travel behavior; transportation/land use interactions, particularly those which encourage alternative modes of travel; planning and evaluation of advanced public transit systems; transportation pricing and regulation; energy and environmental issues, particularly demand for alternative fuels and assessing the greenhouse gas and air quality impacts of traffic and truck operations and associated pollution mitigation strategies; effect of land-use on transportation demand; and the growth of automobile use in the U.S. and Western Europe.

National Fuel Cell Research Center

The NFCRC was dedicated in 1998 by the U.S. Department of Energy and the California Energy Commission and is affiliated with the Advanced Power and Energy Program at UC Irvine. The goal of the NFCRC is to facilitate and accelerate the development and deployment of fuel cell technology and fuel cell systems; promote strategic alliances to address the market challenges associated with the installation and integration of fuel cell systems; and to educate and develop resources for the various stakeholders in the fuel cell community. The NFCRC addresses the role of ***stationary*** fuel cell systems for both distributed and central plant generation of electricity, back-up power, powering laptops and cell phones, co-generating heat and cooling, and tri-generating hydrogen as a transportation and an industrial feedstock. The NFCRC addresses the role of ***mobile*** fuel cell systems for powering automobiles, trucks, buses, locomotives, ships, and long-distance trucks, and deploys fuel cell vehicles to address hydrogen generation, fueling, and public preparation for a future hydrogen economy.

Newkirk Center for Science and Society

The Newkirk Center for Science and Society promotes research in the natural and social sciences to enhance the quality of life. It finds ways to develop and share research knowledge with the public and policy makers so they can make informed decisions on vital policy issues on law, education, environment, health care, crime, and public infrastructure. Among these are the Center's "Toward a Sustainable 21st Century" seminar series, begun in 2007, and the Summer Seminar Series: "Empowering Sustainability on Earth," launched in July 2011. Emphasizing health, the environment, community development, education, and law, the Center embraces the following principles in its operations: enabling scientists to connect more easily with policy makers, practitioners, and citizens; assisting the community to connect to the development of science intended to serve its needs; harnessing the multidisciplinary capacities of UC Irvine and the University of California system-wide.

Social Ecology Research Center

Affiliated with the School of Social Ecology, the Social Ecology Research Center promotes research that links natural and socio-cultural domains, transcending individual disciplines and bridging critique and action. Current research projects include Social Ecology of Resilience and Sustainability, Ecology and the Neighborhood, and Climate Narratives.

UCI Law Center for Land, Environment, and Natural Resources

The Center for Land, Environment, and Natural Resources was created in 2012 with the goal of making UC Irvine School of Law a nationally recognized site for scholarship, education, community outreach, and public engagement on environmental, natural resources, and land use law. In its first four years, UCI Law has hosted or co-hosted eight interdisciplinary conferences on a range of environmental topics, including offshore drilling, environmental health and law, water conservation in Mexico, the Arctic, California coastal conservation, climate justice, ice melt, and pesticides. In addition to hosting annual interdisciplinary environmental conferences, Center programming includes an annual environmental law lecture series, an environmental literature and film series, and an international interdisciplinary summer institute for future sustainability leaders. Future programming also will include convening of focused environmental dispute resolution processes, interdisciplinary research funding, and policy papers.

University of California Center for Hydrologic Modeling

Located on campus of the University of California, Irvine, the University of California Center for Hydrologic Modeling (UCCHM) involves researchers from nearly all the UC campuses and affiliated laboratories in the creation of a state-of-the-art, integrated model of California water resources. The models and modeling framework developed at the Center allow researchers to address pressing issues including how water availability will change in response to climate change and a diminishing snowpack; how these resources will vary in response to climate oscillations such as El Niño; and how the frequency of hydrologic extremes such as flooding and drought will affect California. An important outcome of UCCHM's work is to influence local, state and regional (Western U.S.) water policy and decision-makers and have the major water agencies participate in the effort as stakeholders.

University of California Network for Experimental Research on Evolution

NERE, the Network for Experimental Research on Evolution, is a University of California Multicampus Research Program funded and administered through the UC Office of the President and its constituent UC campuses. NERE (pronounced "near") supports collaboration, communication, and graduate education concerned with research on biological evolution. A number of UC Irvine researchers are affiliated with NERE.

University of California Research and Education in Green Materials Program

The goal of the Research and Education in Green Materials program is to transform the research education of a new cadre of graduate students to approach materials science, toxicology, environmental engineering and technologies, and the social sciences through selective engagement collaboratively to transform what some call "our current toxic material society" into a "green material society." California, as the world's sixth largest economy, is both a source and sink for consumer products manufactured with material components that remain poorly characterized with respect to potential impacts on human health and environmental quality. The program is designed not only to pinpoint toxic risks but also to develop effective strategies for managing the risks while paying attention to consumer preferences, the bottom line for manufacturers, and the role of government policies in protecting the public.

Urban Water Research Center

The Urban Water Research Center's mission is to advance the understanding of the distinct characteristics of the urban water environment in order to assist people and institutions in their effort to promote health, enhance the efficient use of water resources, and protect environmental values.

The Center is multidisciplinary in practice and involves more than 70 faculty members from departments across the campus. The Center pursues research that addresses topics such as water supply, demand and distribution, water quality issues for drinking and recreational use, how wetlands can reduce pollutants entering our streams and rivers from urban runoff, and how the acquisition and distribution of water and wastewater affect urban ecosystems, urban water reuse and public policy.

FIELD RESEARCH – UC NATURAL RESERVE SYSTEM

University of California Natural Reserve System

The UC Natural Reserve System contributes to the understanding and wise stewardship of the Earth and its natural systems by supporting university-level teaching, research, and public service at protected natural areas throughout California. **Sites administered by the University of California, Irvine include:**

Burns Piñon Ridge Reserve
The Burns Piñon Ridge Reserve lies at the westernmost edge of the Mojave Desert, where Joshua trees give way to the piñons and junipers of higher elevations. To the west, the peaks of the San Bernardino Mountains cast a rain-shadow over this boulder-strewn land. Animal communities from the desert and the mountains cross paths at the Burns Reserve. A three-hour drive from UC Irvine and two hours from UC Riverside, the 121-hectares (303 acres) contained within this site are located in the Morongo Basin, just north of the town of Yucca Valley.

San Joaquin Marsh Reserve
The San Joaquin Marsh Reserve represents one of the last remnants of wetlands that once covered much of Orange County's flood plain. Located in an ancient river-cut channel at the head of Newport Bay, the reserve supports a variety of wetland habitats, including marshlands, shallow ponds, and channels confined by earthen dikes. Dry upland habitats with a remnant coastal sage scrub community rise on the margins of the reserve. The marsh is a critical stopping place for 100 migratory bird species using the Pacific Flyway. Altogether, more than 200 bird species (20 nesting) have been sighted in the reserve, including two resident endangered bird species: the light-footed clapper rail and the California least tern. The marsh is located within a ten-minute walk from UC Irvine, making it convenient for day use by faculty and numerous students.

Steele Burnand Anza Borrego Research Center
At 615,000 acres, Anza-Borrego Desert State Park is the largest state park in California and one of the largest desert protected areas in the west. Located in the eastern half of San Diego County, the park extends roughly 25 miles east to west and 50 miles north to south.
The Steele/Burnand Anza-Borrego Desert Research Center, housed in a former country club, is located adjacent to the park in the town of Borrego Springs. An agreement with Anza-Borrego Desert State Park and the Anza-Borrego Foundation makes the park available to reserve users. Anza-Borrego Desert State Park encompasses a wide variety of habitats. High elevation species such as white fir grow on several mountaintops. Sonoran Desert stalwarts such as ocotillo, palo verde, fishhook cacti, and creosote are found in hotter, lower elevation areas. A perennial stream, Coyote Creek, offers rare riparian habitat within this arid region. Thirty fan palm oases, piñon pine and juniper forests, and live oak woodlands. The eroded formations of the Borrego and Carrizo Badlands are found in the eastern portion of the park.

As of July 2012, the Reserve now also includes the White Mountain Research Center, hosted by the Institute of the Environment and Sustainability at UC Los Angeles. WMRC includes a number of field stations: the Owens Valley base station near the town of Bishop, a montane station at Crooked Creek, an alpine state at Barcroft, and the summit lab. The combination of facilities, geologic exposure, steep topography, and high elevation make the station uniquely valuable for scientific study and education. Researchers from UC Irvine's Advanced Power and Energy Program were instrumental in upgrading the site's energy infrastructure in recent years.

FIELD RESEARCH PARTNERSHIPS

Crystal Cove State Park and Marine Research Facility

UC Irvine has partnered with Crystal Cove State Park and the Crystal Cove Alliance to provide the opportunity for UCI faculty and students to undertake small-scale and low-impact scientific research in the Park by utilizing the Park and Marine Research Facility for approved projects. The facility has been restored and renovated for modern scientific research, while simultaneously preserving the structure, design and look of an historic cottage. The Park and Marine Research Facility supports low-impact scientific study that furthers understanding of Crystal Cove's natural, cultural, and historical resources.

UC Irvine Ecological Preserve

The UC Irvine Ecological Preserve is a 60-acre site on the southern edge of the campus, located adjacent to University Hills, the Irvine Research Park, and the San Joaquin Transportation Corridor. It is part of the main campus and is managed by UC Irvine's Office of Natural Reserves for the School of Biological Sciences. The Preserve is enrolled in the Nature Reserve of Orange County. The Preserve is used for research and is a cherished and scenic campus asset. Its panoramic view encompasses much of the campus, with the Pacific Ocean and Catalina Island as a westerly backdrop. The Ecological Preserve has seen extensive research efforts over the years, including many publications, theses, and surveys of plants and animals ranging from bobcats, California gnatcatchers, and cactus wrens to research focused upon restoration ecology and plant-animal interactions.

UC Irvine Field Laboratory

UC Irvine is combining novel strategies for energy efficiency, energy management, and self-generation with research that positions the campus as one of the nation's most advanced field laboratories for community energy generation and utilization, and microgrid technology. The partnership is led by the UC Irvine Advanced Power and Energy Program in a novel collaboration with UC Irvine Facilities Management, and campus Environmental Planning and Sustainability. Partners include Siemens, MelRoK, Toyota, ETAP, and UCI's Transportation and Distribution Services. As a result of previous and ongoing investments in multiple photovoltaic installations and energy research initiatives, the UCI Field Laboratory provides a unique combination of key renewable, distributed energy, and smart demand response resources for the study of photovoltaic deployment and integration into the electric grid. The Field Laboratory also enables the investigation of controlled metrics in the context of the emerging smart grid paradigm. Included are natural gas-powered distributed generators, energy storage devices, photovoltaic power systems, a large thermal storage tank, electric vehicles, and smart demand response and dispatchable power capabilities. Overlaying the hardware is a sophisticated array of circuit, energy, and transportation steady-state and dynamic simulation and computer models.

Fuel Cell Vehicle Deployment and Hydrogen Infrastructure

The National Fuel Cell Research Center (NFCRC) hosts the world's largest university program in the deployment of fuel cell vehicles and hydrogen fueling stations through partnerships with automakers and hydrogen providers. The NFCRC fuel cell vehicle (FCV) deployment program has been ongoing since 2002 and currently includes 17 Toyota FCVs. Through the program, fuel cell vehicles are deployed to local political and business leaders, including members of the Irvine City Council, so that they can gain experience and understanding of the operation and refueling of this next-generation vehicle. The NFCRC also manages two hydrogen fueling stations in partnership with Air Products. The UC Irvine hydrogen station was the first 24-hour publicly accessible hydrogen station in the United States, and the Orange County Sanitation District hydrogen station is the first in the world to produce bio-hydrogen on site.

Orange County, and in particular Irvine, has become a hub for the early deployment of fuel cell vehicles, which several automakers plan to retail in 2015. Through a strategic alliance with automakers including General Motors, Toyota, Honda, Nissan, Hyundai, and Mercedes and energy companies Air Products and Linde, the NFCRC is engaged in systematic planning for the deployment of hydrogen fueling infrastructure.

Irvine Smart Grid Demonstration Project

UC Irvine is the host to one of the country's largest smart grid demonstration programs, the Irvine Smart Grid Demonstration (ISGD), sponsored by the U.S. Department of Energy ISGD under the leadership of Southern California Edison. ISGD is demonstrating and evaluating future smart grid technologies through a public-private partnership. The Advanced Power and Energy Program is a research partner in many aspects of the project, manager of the electric vehicle deployment to 30 homes engaged in the project, and coordinator with UC Irvine Facilities Management, Campus and Environmental Planning, and Transportation and Distribution Services with various dimensions of the project. ISGD spans from the western grid, to the substation and distribution circuit level, and to individual homes that have been outfitted with smart appliances, solar panels, electric vehicles, smart chargers, battery storage, and various energy efficiency measures to explore the zero net energy home of the future.

Tri-Generation from Biogas

The National Fuel Cell Research Center (NFCRC) is demonstrating the world's first high-temperature fuel cell tri-generation system at the Orange County Sanitation District through a public/private partnership. The system, which is fueled on biogas derived from wastewater treatment, simultaneously produces electricity, heat, and hydrogen fuel. The installation is also coupled with a hydrogen fueling dispenser which is today used to refuel fuel cell vehicles with bio-hydrogen. Tri-generation technology was first conceived at the NFCRC in 2002 and then developed further through research and collaboration with Air Products and Chemicals, Inc. and FuelCell Energy, Inc., eventually leading to the current demonstration at the Orange County Sanitation District. The partners involved in the program include Air Products and Chemicals, FuelCell Energy, the U.S. Department of Energy, the California Air Resources Board, South Coast Air Quality Management District, and the Southern California Gas Company.

Nature Reserve of Orange County

UC Irvine is a founding member and serves a leadership role in the Nature Reserve of Orange County is a 503(c)(3) nonprofit corporation that manages the Natural Community Conservation Plan/Habitat Conservation Plan for the central and coastal subregion of Orange County, California. The Nature Reserve coordinates the land-management activities of public and private landowners within the 37,000-acre reserve system, conducts wildlife and habitat research and monitoring, and restores disturbed habitats.

Organization for Tropical Studies

UC Irvine is a founding member of the Organization for Tropical Studies (OTS), headquartered at Duke University, through which more than 300 scientists from 25 countries work at field sites in Costa Rica and Africa each year. OTS is a non-profit consortium that has grown to include 63 universities and research institutions from the United States, Latin America and Australia. OTS was founded to provide leadership in education, research and the responsible use of natural resources in the tropics. To address this mission, OTS conducts graduate and undergraduate education, facilitates research, participates in tropical forest conservation, maintains three biological stations in Costa Rica and conducts environmental education programs.

ZEV•NET at the Irvine Transportation Center

The Advanced Power and Energy Program operates a novel shared car program of electric vehicles called ZEV•NET for "Zero Emission Vehicle Network Enabled Transport," in partnership with Toyota and the City of Irvine. ZEV•NET provides battery electric transportation for the critical "last mile" of commutes, from the Irvine train station to offices and local meetings. Since its inception in 2001, seven businesses in the City of Irvine have participated in the ZEV•NET car sharing program, providing employees access to convenient, zero emission transportation. The innovative transportation model provides multiple benefits to the community such as reducing road congestion by enabling more train commuting and replacing short trips made by gasoline vehicles during the work day – trips that produce the most harmful "start-up" emissions – with zero emission BEV trips.

SCHOOLS, DEPARTMENTS, AND PROGRAMS
IN WHICH
SUSTAINABILITY RESEARCH TAKES PLACE

School of **Biological Sciences**
- Developmental and Cell Biology
- Ecology and Evolutionary Biology

The Paul Merage School of **Business**

Department of ***Education***

The Henry Samueli School of **Engineering**
- Biomedical Engineering
- Chemical Engineering and Materials Science
- Civil and Environmental Engineering
- Electrical Engineering and Computer Science
- Mechanical and Aerospace Engineering

College of **Health Sciences**
- Program in Public Health

School of **Humanities**
- History

Donald Bren School of **Information and Computer Sciences**
- Computer Science
- Informatics
- Statistics

School of **Law**

School of **Medicine**
- Biological Chemistry
- Emergency Medicine
- Epidemiology
- Medicine
  - Occupational and Environmental Health Division
- Psychiatry and Human Behavior

School of **Physical Sciences**
- Chemistry
- Earth System Science
- Mathematics
- Physics and Astronomy

School of **Social Ecology**

- Criminology, Law and Society
- Planning, Policy and Design

School of **Social Sciences**

- Anthropology
- Cognitive Sciences
- Economics
- Political Science
- Sociology

FACULTY ENGAGED IN SUSTAINABILITY RESEARCH
(LISTED BY PRIMARY SCHOOL/DEPARTMENT/COLLEGE AFFILIATION)

School of **Biological Sciences**

- Developmental and Cell Biology
  - Bruce Blumberg
  - R. Michael Mulligan
- Ecology and Evolutionary Biology
  - Steven D. Allison
  - John C. Avise
  - Francisco J. Ayala
  - Eman "Manny" Azizi
  - Albert F. Bennett
  - Peter A. Bowler
  - Timothy J. Bradley
  - Adriana D. Briscoe
  - Nancy Tyler Burley
  - Diane Campbell
  - F. Lynn Carpenter
  - Michael Clegg
  - Steven A. Frank
  - Brandon S. Gaut
  - Donovan German
  - Bradford A. Hawkins
  - James W. Hicks
  - Brad Hughes
  - Travis Huxman
  - Anthony D. Long
  - Catherine "Kate" Loudon
  - Jennifer Martiny
  - Matt McHenry
  - Kailen A. Mooney
  - Laurence D. Mueller
  - Jose Ranz
  - Robert D. Reed
  - Michael R. Rose
  - Ann K. Sakai
  - Richard Symanski
  - Kathleen K. Treseder
  - Arthur E. Weis
  - Stephen G. Weller
  - Dominik Wodarz

The Paul Merage School of **Business**

- Christopher W. Bauman
- L. Robin Keller
- Devin Shanthikumar
- Shivendu Shivendu
- Kerry Vandell
- Alladi Venkatesh

Department of ***Education***

- Liane Brouillette

The Henry Samueli School of **Engineering**

- ❖ Biomedical Engineering
  - Abraham P. Lee
- ❖ Chemical Engineering and Materials Science
  - Nancy Da Silva
  - Allon Hochbaum
  - Martha L. Mecartney
  - Ali Mohraz
  - Daniel R. Mumm
  - Albert F. Yee
- ❖ Civil and Environmental Engineering
  - William J. Cooper
  - Xiaogang Gao
  - Stanley Grant
  - Kuo-lin Hsu
  - R. Jayakrishnan
  - C. Sunny Jiang
  - Wenlong Jin
  - Ayman S. Mosallam
  - Betty H. Olson
  - Wilfred R. Recker
  - Stephen G. Ritchie
  - Diego Rosso
  - Brett Sanders
  - Jean-Daniel Saphores
  - Jan Scherfig
  - Masanobu Shinozuka
  - Soroosh Sorooshian
- ❖ Electrical Engineering and Computer Science
  - G.P. Li
  - Kuman Wickramasinghe

- ❖ Mechanical and Aerospace Engineering
    - Jack Brouwer
    - Donald Dabdub
    - Derek Dunn-Rankin
    - Faryar Jabbari
    - Vince McDonell
    - Larry Muzio
    - Scott Samuelsen
    - William R. “Randy” Seeker
    - Yun Wang

College of **Health Sciences**

- ❖ Program in Public Health
    - Lisa Grant Ludwig
    - Andrew Noymer
    - Oladele Ogunseitan
    - Sharon Stern

School of **Humanities**

- ❖ History
    - Patricia Seed

Donald Bren School of **Information and Computer Sciences**

- ❖ Computer Science
    - Sharad Mehrotra
    - Eric D. Mjolsness
    - Patrick J. “Padhraic” Smyth
- ❖ Informatics
    - Cristina Lopes
    - Melissa Mazmanian
    - Bonnie Nardi
    - Donald J. Patterson
    - Debra J. Richardson
    - Bill Tomlinson
- ❖ Statistics
    - Hal Stern
    - Yaming Yu

School of **Law**

- Alejandro E. Camacho
- Joseph DiMento
- Carrie Menkel-Meadow
- Michael Robinson-Dorn

School of **Medicine**

- ❖ Biological Chemistry

- Suzanne Sandmeyer
- Robert Steele

❖ Emergency Medicine
- Craig L. Anderson
- Bharath Chakravarthy
- J. Christian Fox
- Wirachin Ying Hoonpongsimanont
- Kristi L. Koenig
- Shahram Lotfipour
- Christopher Eric McCoy
- Merritt Schreiber
- Carl H. Schultz

❖ Epidemiology
- Ralph Delfino

❖ Medicine

Occupational and Environmental Health Division
- Dean Baker
- Stephen C. Bondy
- BongKyoo Choi
- M. Joseph Fedoruk
- Leslie M. Israel
- Michael T. Kleinman
- Ulrike Luderer
- Robert R. Phalen
- Peter L. Schnall

❖ Psychiatry and Human Behavior
- Roger Walsh

School of **Physical Sciences**

❖ Chemistry
- Donald R. Blake
- Robert M. Corn
- Aaron P. Esser-Kahn
- William J. Evans
- Barbara Finlayson-Pitts
- Filipp Furche
- R. Benny Gerber
- John C. Hemminger
- Alan Heyduk
- Kenneth Janda
- Liz Jarvo
- Matthew D. Law
- Sergey Nizkorodov
- Reginald Penner
- Athan J. Shaka
- Douglas J. Tobias

- Earth System Science
    - Claudia Czimczik
    - Ellen Druffel
    - Todd Dupont
    - Jay Famiglietti
    - Michael Goulden
    - Kathleen R. Johnson
    - Gudrun Magnusdottir
    - Adam Martiny
    - Michael J. Prather
    - Francois W. Primeau
    - James T. Randerson
    - Eric Rignot
    - Eric S. Saltzman
    - Susan E. Trumbore
    - Isabella Velicogna
    - Jin-Yi Ju
    - Charlie Zender
- Mathematics
    - John S. Lowengrub
- Physics and Astronomy
    - Liu Chen
    - Zachary Fisk
    - William W. Heidbrink
    - Wilson Ho
    - David P. Kirkby
    - Ilya Krivorotov
    - Roger D. McWilliams
    - Dennis Silverman
    - Peter Taborek
    - Ruqian Wu

School of **Social Ecology**

- Criminology, Law and Society
    - Geoff Ward
- Planning, Policy and Design
    - Victoria Basolo
    - Scott Bollens
    - David L. Feldman
    - Ajay Garde
    - John D. “Doug” Houston
    - Raul P. Lejano
    - Richard Matthew
    - Sanjoy Mazumdar
    - Daniel Stokols

School of **Social Sciences**

- ❖ Anthropology
  - William M. Maurer
- ❖ Cognitive Sciences
  - Barbara Sarnecka
- ❖ Economics
  - Marianne P. Bitler
  - David Brownstone
  - Linda Cohen
  - Martin C. McGuire
  - Kenneth Small
- ❖ Political Science
  - Cecelia Lynch
- ❖ Sociology
  - Frank D. Bean
  - Susan K. Brown
  - Ann M. Hironaka
  - David S. Meyer
  - Evan Schofer
  - David A. Smith

FACULTY ENGAGED IN SUSTAINABILITY RESEARCH
ALPHABETICAL LISTING

Allison

Steven D. Allison
Assistant Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
Earth System Science, School of Physical Sciences
http://allison.bio.uci.edu
Research: microbial ecology, global change, and carbon cycling

---

Anderson

Craig L. Anderson
Research Director, Center for Trauma and Injury Prevention Research
Research Specialist
Department of Emergency Medicine, School of Medicine
http://www.faculty.uci.edu/profile.cfm?faculty_id=5797&name=Craig%20L.%20Anderson
Research: Reducing the burden of injury through research

Avise

John C. Avise
Distinguished Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5292
Research: ecological and evolutionary genetics, natural history, conservation biology

---

Ayala

Francisco J. Ayala
University Professor and Donald Bren Professor of Biological Sciences
Department of Ecology and Evolutionary Biology, School of Biological Sciences
Professor
Department of Philosophy, School of Humanities
Department of Logic and Philosophy of Science, School of Social Sciences
Affiliate: UC Network for Experimental Research on Evolution
http://www.faculty.uci.edu/profile.cfm?faculty_id=2134
Research: evolutionary genetics

Azizi

Eman "Manny" Azizi
Assistant Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5841
Research: muscle biology, locomotion, biomechanics

Baker

Dean Baker
Chief, Division of Occupational and Environmental Medicine
Director, UC Irvine Center for Occupational and Environmental Health
Professor of Pediatrics, Professor of Epidemiology
Department of Medicine, School of Medicine
http://www.coeh.uci.edu/faculty/coeh_fac/dr_baker.htm
Research interests: environmental epidemiology; occupational epidemiology; occupational medicine; toxicology; children's health; developmental toxicity; exposure, study design; occupational stress; asthma; pesticides; hazardous waste; environment; biological markers

---

Basolo

Victoria Basolo
Associate Professor
Department of Planning, Policy and Design, School of Social Ecology
http://socialecology.uci.edu/faculty/basolo/
Research: housing planning and policy, economic and community development, and urban disasters

---

Bauman

Christopher W. Bauman
Assistant Professor
The Paul Merage School of Business
Affiliate: Center for Global Leadership
Research: corporate social responsibility

Bean

Frank D. Bean
Director, Center for Research on Immigration, Population and Public Policy
Chancellor's Professor
Department of Sociology, School of Social Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4622
Research: international migration, demography, racial and ethnic relations, economic sociology, family

---

Bennett

Albert F. Bennett
Dean, School of Biological Sciences
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
Affiliate: UC Network for Experimental Research on Evolution
http://www.faculty.uci.edu/profile.cfm?faculty_id=4546
Research: evolutionary and comparative physiology, the interaction of living things with their environments, particularly with regard to temperature and energy exchange

---

Bitler

Marianne P. Bitler
Associate Professor
Department of Economics, School of Social Sciences
http://www.socsci.uci.edu/~mbitler/cvBitler.pdf
Research: labor economics, health economics, public economics, applied microeconomics

Blake

Donald R. Blake
Professor
Department of Chemistry, School of Physical Sciences
Department of Earth System Science, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4579
Research: atmospheric chemistry

Blumberg

Bruce Blumberg
Professor
Department of Developmental and Cell Biology, School of Biological Sciences
http://blumberg-lab.bio.uci.edu/index.htm
Research: gene regulation and intercellular signaling during embryonic development

---

Bollens

Scott A. Bollens
Professor
Warmington Chair in Peace and international Cooperation
Department of Planning, Policy and Design, School of Social Ecology
http://www.faculty.uci.edu/profile.cfm?faculty_id=2505
Research: social sustainability in politically and ethnically divided cities, and sustainable land use policy and regional governance

---

Bondy

Stephen C. Bondy
Professor
Environmental Toxicology Program
Center for Occupational and Environmental Health
Department of Medicine, School of Medicine
http://www.coeh.uci.edu/faculty/coeh_fac/dr_bondy.htm
Research: the potential role of toxic agents in the promotion of brain aging and neurological disease

---

Bowler

Peter A. Bowler
Director, UCI Arboretum and Herbarium
Director, Interdisciplinary Minor in Global Sustainability
Faculty Manager of the San Joaquin Marsh Reserve
and the Burns Piñon Ridge Desert Reserve
Oversees use and management of the UCI Ecological Preserve
Senior Lecturer
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2119&name=Peter%20A.%20Bowler
Research: ecological restoration

Bradley

Timothy J. Bradley
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
Affiliate: UC Network for Experimental Research on Evolution
http://www.faculty.uci.edu/profile.cfm?faculty_id=2131
Research: physiology, ecology, cell biology, and pathology of insects

Briscoe

Adriana D. Briscoe
Associate Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
Affiliate: UC Network for Experimental Research on Evolution
http://www.faculty.uci.edu/profile.cfm?faculty_id=5288
Research: molecular evolution, evolutionary physiology, color vision, color, behavior

---

Brouillette

Liane Brouillette
Co-Director, Center for Learning in the Arts, Sciences, and Sustainability
School of Biological Sciences
Associate Professor
Department of Education
http://www.faculty.uci.edu/profile.cfm?faculty_id=4510
Research: using arts education to help students from low-income neighborhoods better understand the language of science

---

Brouwer

Jack Brouwer
Associate Director, National Fuel Cell Research Center
Assistant Professor of Mechanical, Aerospace and Environmental Engineering
Department of Mechanical and Aerospace Engineering
The Henry Samueli School of Engineering
Research: advanced energy technologies, fuel cells, energy sources and pollutant emissions

---

Brown

Susan K. Brown
Associate Professor
Department of Sociology, School of Social Sciences
Affiliate: Center for Research on Immigration, Population and Public Policy
http://www.faculty.uci.edu/profile.cfm?faculty_id=4670
Research: international migration, demography, educational inequality and urban sociology

---

Brownstone

David Brownstone
Professor
Department of Economics, School of Social Sciences
http://www.economics.uci.edu/~dbrownst/
Affiliate: Institute of Transportation Studies
Research: demand for efficient vehicles and sustainable transportation

---

Burley

Nancy Tyler Burley
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2138
Research: evolutionary significance of mate preferences, using Zebra finches as experimental models

Camacho

Alejandro E. Camacho
Director, Center for Land, Environment, and Natural Resources
Professor
School of Law
Affiliate: Newkirk Center for Science and Society
http://law.uci.edu/faculty/page1_a_camacho.html
Research: environmental, land use, and natural resources law; adaptive management; collaborative governance; climate change

---

Campbell

Diane Campbell
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://campbell-lab.bio.uci.edu/
Research: evolution in natural populations, pollination, invasive species

---

Carpenter

F. Lynn Carpenter
Professor Emeritus
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://darwin.bio.uci.edu/~flcarpen/
Research: restoring native trees and soil fertility to eroded pasture land in the Neotropics

---

Chakravarthy

Bharath Chakravarthy
Associate Director, Center for Trauma and Injury Prevention Research
Assistant Professor
Department of Emergency Medicine, School of Medicine
http://www.faculty.uci.edu/profile.cfm?faculty_id=5752&name=Bharath%20%20Chakravarthy
Research: population-based sustainable reduction of the burden of disease caused by behavioral emergencies

---

Chen

Liu Chen
Professor
Department of Physics and Astronomy, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2034
Research: controlled thermonuclear fusion research

Choi

BongKyoo Choi
Assistant Professor
Center for Occupational and Environmental Health
Department of Medicine, School of Medicine
Program in Public Health
http://www.coeh.uci.edu/faculty/coeh_fac/dr_choi.htm
Research: psychosocial occupational epidemiology, work stress theories and methodologies, work stress physiology, cross-cultural studies, and quality of working life policies

Clegg

Michael T. Clegg
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
Affiliate: UC Network for Experimental Research on Evolution
http://www.faculty.uci.edu/profile.cfm?faculty_id=5127
Research: plant genetics, population genetics, molecular evolution

---

Cohen

Linda Cohen
Professor
Department of Economics, School of Social Sciences
Affiliate: UCI Environment Institute, Center for Economic Public Policy, Center for the Study of Democracy, the Institute for Mathematical Behavioral Sciences, and the UC Center for Energy and Environmental Economics
http://www.faculty.uci.edu/profile.cfm?faculty_id=2222
Research: energy economics, environmental economics, economics of innovation, with a focus on understanding how innovation for environmental and energy industries responds to public policies and economic institutions

---

Cooper

William J. Cooper
Director, Urban Water Research Center
Professor
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
http://www.eng.uci.edu/files/William_Cooper_CV_2006.pdf
Research: 1) the design and optimization of low-cost and efficient constructed wetlands for the treatment of water from storm water, 2) the environmental fate of pharmaceuticals in natural waters, and 3) optimization of processes in indirect potable reuse of wastewater

---

Corn

Robert M. Corn
Professor
Department of Chemistry, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5123
Research: surface chemistry, nanoparticles for microinverters

---

Czimczik

Claudia Czimczik
Assistant Professor
Department of Earth System Science, School of Physical Sciences
http://sites.google.com/site/cczimczik/
Research: carbon and nitrogen cycling in the terrestrial biosphere

---

Dabdub

Donald Dabdub
Professor
Department of Mechanical and Aerospace Engineering
The Henry Samueli School of Engineering
http://www.faculty.uci.edu/profile.cfm?faculty_id=3297
Research: air pollution dynamics, atmospheric chemistry, energy and air quality

Da Silva

Nancy Da Silva
Professor
Department of Chemical Engineering and Materials Science
The Henry Samueli School of Engineering
http://www.faculty.uci.edu/profile.cfm?faculty_id=2331
Research: biofuels and biorenewable chemicals

Delfino

Ralph J. Delfino
Professor
Department of Epidemiology, School of Medicine
http://www.faculty.uci.edu/profile.cfm?faculty_id=5070
Research: environmental epidemiology, health effects of air pollution on human populations

---

DiMento

Joseph DiMento
Professor
Department of Planning, Policy and Design, School of Social Ecology
Affiliate: Center for Land, Environment, and Natural Resources, School of Law
http://www.faculty.uci.edu/profile.cfm?faculty_id=4768
Research: planning, land use and environmental law, use of social science in policy making, legal control of corporate behavior

---

Druffel

Ellen Druffel
Professor
Department of Earth System Science, School of Physical Sciences
Adjunct Professor, Urban Water Research Center
http://www.faculty.uci.edu/profile.cfm?faculty_id=2027
Research: marine carbon tracking

Dunn-Rankin

Derek Dunn-Rankin
Professor and Chair
Department of Mechanical and Aerospace Engineering
The Henry Samueli School of Engineering
http://www.faculty.uci.edu/profile.cfm?faculty_id=2366
Research: combustion, optical particle sizing, particle aerodynamics, laser diagnostics and spectroscopy, indoor air quality

---

Dupont

Todd Dupont
Assistant Professor
Department of Earth System Science, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5438
Research: climate change and ice sheet dynamics

Esser-Kahn

Aaron P. Esser-Kahn
Assistant Professor
Department of Chemistry, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5835
Research: carbon capture, waste heat conversion

Evans

William J. Evans
Professor
Department of Chemistry, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2024
Research: catalysis, nuclear fuels, rare earth single molecule magnets

---

Famiglietti

Jay Famiglietti
Founding Director, University of California Center for Hydrologic Modeling
Professor
Department of Earth System Science, School of Physical Sciences
Department of Civil and Environmental Engineering, The Henry Samueli School of Engineering
http://www.faculty.uci.edu/profile.cfm?faculty_id=4738
Research: hydrology and climate, terrestrial and global water cycles, hydrological and Earth system modeling

---

Fedoruk

M. Joseph Fedoruk
Clinical Professor of Medicine
Center for Occupational and Environmental Health
Department of Medicine, School of Medicine
http://www.coeh.uci.edu/faculty/coeh_fac/dr_fedoruk.htm
Research: assessment of health effects of mold, pesticides, and other toxic exposures; microbial and indoor air quality issues; hazardous material incidents; exposure assessment

---

Feldman

David L. Feldman
Professor and Chair
Department of Planning, Policy and Design, School of Social Ecology
http://www.faculty.uci.edu/profile.cfm?faculty_id=5594
Research: water resources, climate change policy, environmental ethics and policy, and environmental risk management

---

Finlayson-Pitts

Barbara Finlayson-Pitts
Founding Director, Atmospheric Integrated Research at UCI (AirUCI)
Professor
Department of Chemistry, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2194
Research: analytical atmospheric chemistry

Fisk

Zachary Fisk
Distinguished Professor
Department of Physics and Astronomy, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5451
Research: superconductors

Fox

J. Christian Fox
Director of Instructional Ultrasound
Professor of Clinical Emergency Medicine
Department of Emergency Medicine, School of Medicine
http://www.ultrasound.uci.edu/facultyandstaff.asp
Research: the use and promotion of ultrasound as a sustainable medical diagnostic technique

---

Frank

Steven A. Frank
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
Affiliate: UC Network for Experimental Research on Evolution
http://www.faculty.uci.edu/profile.cfm?faculty_id=2115
Research: evolutionary genetics, host-parasite interactions

Furche

Filipp Furche
Professor
Department of Chemistry, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5490
Research: computational atmospheric chemistry, electronic structure theory

---

Gao

Xiaogang Gao
Adjunct Professor
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
http://www.faculty.uci.edu/profile.cfm?faculty_id=5091
Research: hydroclimatology, hydrology, fluid dynamics, and engineering mathematics

---

Garde

Ajay Garde
Associate Professor
Department of Planning, Policy and Design, School of Social Ecology
http://socialecology.uci.edu/faculty/agarde
Research: sustainable design and sustainable neighborhood development in Southern California

---

Gaut

Brandon S. Gaut
Professor and Chair
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4561
Research: population genetics, molecular evolution, genome evolution

Gerber

R. Benny Gerber
Professor
Department of Chemistry, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2017
Research: quantum chemical simulation of atmospheric systems

German

Donovan German
Assistant Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5858
Research: nutritional physiology, comparative physiology, global change, biogeochemistry

---

Goulden

Michael Goulden
Professor and Chair
Department of Earth System Science, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=3245
Research: ecosystem ecology, plant physiology, micrometeorology

---

Grant

Stanley Grant
Professor
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
http://www.faculty.uci.edu/profile.cfm?faculty_id=2358
Research: tidal transport of bacteria, coastal runoff, microbial pollution in urban runoff, water reclamation and sustainable water supply

---

Grant Ludwig

Lisa Grant Ludwig
Associate Director, California Institute for Hazards Research
Associate Professor
Program in Public Health, College of Health Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4545
Research: natural hazards, paleoseismology, active faults, San Andreas fault, southern California faults, seismic hazard, environmental health and geology

---

Hawkins

Bradford A. Hawkins
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4562
Research: biogeography, macroecology, diversity gradients

Heidbrink

William W. Heidbrink
Professor
Department of Physics and Astronomy, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2015
Research: experimental plasma physics, fusion energy

Hemminger

John C. Hemminger
Vice Chancellor for Research
Professor
Department of Chemistry, School of Physical Sciences
Affiliate: AirUCI, Center for Solar Energy, Urban Water Research Center
http://www.faculty.uci.edu/profile.cfm?faculty_id=2014
Research: surface chemistry and physics, photovoltaic material analysis

---

Heyduk

Alan Heyduk
Associate Professor
Department of Chemistry, School of Physical Sciences
Affiliate: Center for Solar Energy
http://www.faculty.uci.edu/profile.cfm?faculty_id=4940
Research: energy conversion chemistry

Hicks

James W. Hicks
Associate Vice Chancellor for Research
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2158
Research: comparative physiology of circulation and gas exhange

---

Hironaka

Ann M. Hironaka
Associate Professor
Department of Sociology, School of Social Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5489
Research: world society and environmental protection outcomes

---

Ho

Wilson Ho
Donald Bren Professor
Department of Physics and Astronomy, School of Physical Sciences
Department of Chemistry, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4583
Research: surface studies of photovoltaic material

Hochbaum

Allon Hochbaum
Assistant Professor
Department of Chemical Engineering and Materials Science
The Henry Samueli School of Engineering
Department of Chemistry, School of Physical Sciences
Affiliate: UCI Environment Institute, the Center for Solar Energy, and the Institute for Complex Adaptive Matter
http://www.faculty.uci.edu/profile.cfm?faculty_id=5863
Research: nanoscale materials and hybrid bio-inorganic devices for applications in clean energy

Hoonpongsimanont

Wirachin Ying Hoonpongsimanont
Clinical Instructor
Department of Emergency Medicine, School of Medicine
Affiliate: Center for Trauma and Injury Prevention Research
http://www.ctipr.uci.edu/fellowship/fellowship.aspx
Research: Reducing the burden of disease through injury prevention research and emergency medicine education

---

Houston

John D. "Doug" Houston
Assistant Professor
Department of Planning, Policy and Design, School of Social Ecology
Affiliate: Institute of Transportation Studies and C-DASA
http://socialecology.uci.edu/faculty/houston
Research: transportation, air pollution, urban inequality, environmental equity, spatial analysis

---

Hsu

Kuo-lin Hsu
Associate Adjunct Professor
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
http://www.faculty.uci.edu/profile.cfm?faculty_id=5092
Research: remote sensing of precipitation, hydrologic systems modeling, stochastic hydrology, and water resources systems planning

---

Hughes

Brad Hughes
Co-Director, Center for Learning in the Arts, Sciences, and Sustainability
Lecturer
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5587
Research: science education, experimental evolution, sustainable energy, educational media production, marine science, ecological modeling

---

Huxman

Travis Huxman
Director, Center for Environmental Biology
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
Research: the evolution of plant traits and the impacts of climate change on ecosystems

---

Israel

Leslie M. Israel
Associate Professor
Center for Occupational and Environmental Health
Department of Medicine, School of Medicine
http://www.faculty.uci.edu/profile.cfm?faculty_id=5709
Research: implementation of a national wellness and fitness examination for Orange County Fire Authority firefighters, biomonitoring in firefighters

Jabbari

Faryar Jabbari
Professor
Department of Mechanical and Aerospace Engineering
The Henry Samueli School of Engineering
http://www.faculty.uci.edu/profile.cfm?faculty_id=2368

Janda

Kenneth Janda
Dean, School of Physical Sciences
Professor
Department of Chemistry, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2048
Research: chemical physics, gas hydrates

Jarvo

Liz Jarvo
Assistant Professor
Department of Chemistry, School of Physical Sciences
http://chem.ps.uci.edu/~erjarvo/Jarvo_Group/Home.html
Research: green chemistry, catalysis

Jayakrishnan

R. Jayakrishnan
Professor
Department of Civil and Environmental Engineering,
The Henry Samueli School of Engineering
Affiliate: Institute of Transportation Studies
http://www.faculty.uci.edu/profile.cfm?faculty_id=2514
Research: transportation systems analysis

Jiang

C. Sunny Jiang
Professor
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
Adjunct Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4873
Research: environmental biotechnology, water quality and pollution microbiology, microbial ecology

---

Jin

Wenlong Jin
Assistant Professor
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
Affiliate: Institute of Transportation Studies
http://www.its.uci.edu/~wjin/

Johnson

Kathleen R. Johnson
Assistant Professor
Department of Earth System Science, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5444
Research: past climate carbon dating, paleoclimatology, speleology, isotope and trace element geochemistry

---

Keller

L. Robin Keller
Professor
Operations and Decision Technologies
The Paul Merage School of Business
http://faculty.sites.uci.edu/lrkeller/
Affiliate: The Institute for Mathematical Behavioral Sciences
Research: water resources in Arizona and flood risk in California

---

Kirkby

David P. Kirkby
Professor
Department of Physics and Astronomy, School of Physical Sciences
Affiliate:
http://www.faculty.uci.edu/profile.cfm?faculty_id=4844
Research: experimental particle physics, energy efficiency

Kleinman

Michael T. Kleinman
Adjunct Professor
Center for Occupational and Environmental Health
Department of Medicine, School of Medicine
http://www.coeh.uci.edu/faculty/coeh_fac/dr_kleinman.htm
Research: potential links between environmental pollutants and preventable neurological, cardiological, and pulmonary diseases

---

Koenig

Kristi L. Koenig
Director, Center for Disaster Medical Sciences
Director, Public Health Preparedness
Director, International EMS and Disaster Medical Sciences Fellowship
Professor
Department of Emergency Medicine, School of Medicine
http://www.faculty.uci.edu/profile.cfm?faculty_id=5400
Research: surge capacity, crisis care, disaster nomenclature, disaster medicine, emergency management systems, public health preparedness

---

Krivorotov

Ilya Krivorotov
Associate Professor
Department of Physics and Astronomy, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5305
Research: superconducting nanostructures

Law

Matthew D. Law
Assistant Professor
Department of Chemistry, School of Physical Sciences
Affiliate: Center for Solar Energy
http://www.faculty.uci.edu/profile.cfm?faculty_id=5535
Research: nanoscale materials and devices, solar energy conversion

---

Lee

Abraham P. Lee
Professor and Chair
Department of Biomedical Engineering, The Henry Samueli School of Engineering
http://www.eng.uci.edu/users/abraham-lee

Lejano

Raul P. Lejano
Associate Professor
Department of Planning, Policy and Design, School of Social Ecology
http://www.faculty.uci.edu/profile.cfm?faculty_id=5499
Research: theories of collective action, policy analysis, environmental governance, human dimensions of environmental change

---

Li

G.P. Li
Director, UC Irvine Division, California Institute for Telecommunications and Information Technology
Director, Integrated Nanosystems Research Facility
Interim Director, California Plug Load Research Center
Professor
Departments of Electrical Engineering and Computer Science, Biomedical Engineering, and Chemical Engineering and Materials Science
The Henry Samueli School of Engineering
http://www.eng.uci.edu/users/gp-li
Research: high-speed semiconductor technology, optoelectronic devices, integrated circuits, technologies for efficient energy utilization and consumption, and e-health

---

Long

Anthony D. Long
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
Affiliate: UC Network for Experimental Research on Evolution
http://www.faculty.uci.edu/profile.cfm?faculty_id=4563
Research: quantitative and population genetics

Lopes

Cristina Lopes
Associate Professor
Department of Informatics, Donald Bren School of Information and Computer Sciences
http://www.ics.uci.edu/~lopes/

Lotfipour

Shahram Lotfipour
Director, Center for Trauma and Injury Prevention Research
Professor
Department of Emergency Medicine, School of Medicine
Program in Public Health, College of Health Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5163&name=Shahram%20%20Lotfipour
Research: reducing the burden of injury through screening and brief intervention for alcohol in the ED and trauma setting

---

Loudon

Catherine "Kate" Loudon
Senior Lecturer
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5386
Research: biomechanics, insect physiology, sensory ecology

Lowengrub

John S. Lowengrub
Professor
Department of Mathematics, School of Physical Sciences
Departments of Biomedical Engineering and Chemical & Materials Science
The Henry Samueli School of Engineering
http://www.faculty.uci.edu/profile.cfm?faculty_id=5697
Research: modeling of photovoltaic material growth

Luderer

Ulrike Luderer
Director, Environmental Toxicology Graduate Program
Associate Professor
Center for Occupational and Environmental Health
Department of Medicine, School of Medicine
Department of Developmental and Cell Biology, School of Biological Sciences
Program in Public Health, College of Health Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4535&name=Ulrike%20%20Luderer
Research: reproductive toxicology, developmental toxicology

Lynch

Cecelia Lynch
Director, International Studies
Professor
Department of Political Science, School of Social Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4537
Research: international humanitarianism and sustainability, non-governmental organization work in Africa and Middle East, blog editor: The CIHA Blog, http://www.cihablog.com

Magnusdottir

Gudrun Magnusdottir
Professor
Department of Earth System Science, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4467
Research: atmospheric dynamics, climate dynamics, atmospheric/ocean interactions, atmospheric/sea-ice interactions

---

Martiny

Adam Martiny
Associate Professor
Department of Earth System Science, School of Physical Sciences
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5362
Research: microbiology, environmental genomics, oceanography

Martiny

Jennifer Martiny
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5363
Research: community ecology, microbial diversity, and global change biology

---

Matthew

Richard A. Matthew
Founding Director, Center for Unconventional Security Affairs
Senior Fellow, International Institute for Sustainable Development
Senior Member, United Nations Expert Group on Environment, Conflict and Peace
Professor
Department of Planning, Policy and Design, School of Social Ecology
Department of Political Science, School of Social Science
Senior Fellow, Munk School, University of Toronto
Affiliate: Center for hydrologic Modelng
http://www.faculty.uci.edu/profile.cfm?faculty_id=4770
Research: security implications of unsustainable process and systems, challenges of implementing sustainability into post-conflict peacebuilding and post-disaster reconstruction, and the use of social media to educate and mobilize around sustainability

---

Maurer

William M. Maurer
Professor
Department of Anthropology, School of Social Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4488
Research: anthropology of law, globalization, anthropology of money and finance; gender and kinship

Mazmanian

Melissa Mazmanian
Assistant Professor
Department of Informatics
Donald Bren School of Information and Computer Sciences
http://www.ics.uci.edu/~mmazmani
Research: mobile communication technologies and sustainable lives, socio-materiality and information technologies, organizational coordination and communication practices

---

Mazumdar

Sanjoy Mazumdar
Professor
Department of Planning, Policy and Design, School of Social Ecology
http://socialecology.uci.edu/faculty/mazumdar
Research: passive techniques for the design of buildings and professional requirements for sustainability (e.g., LEED)

McCoy

Christopher Eric McCoy
Assistant Clinical Professor
Director of Simulation Education
Director of Education and Training, Center for Disaster Medical Sciences
Director of Emergency Medical Services
Department of Emergency Medicine, School of Medicine
http://www.faculty.uci.edu/profile.cfm?faculty_id=5789&name=Christopher
Research: reducing the burden of disease and improving healthcare systems via emergency medicine and disaster management simulation development and training

---

McDonell

Vince McDonell
Associate Director, UC Irvine Combustion Laboratory
Advanced Power and Energy Program
Adjunct Professor
Department of Mechanical and Aerospace Engineering
The Henry Samueli School of Engineering
Research: characterization of and application of advanced diagnostics and modeling to alternative and renewable liquid and gaseous fuels for advanced combustion and distributed generation systems

---

McGuire

Martin C. McGuire
Clifford S. Heinz Professor for Economics of Global Peace and Security
Professor Emeritus
Department of Economics, School of Social Sciences
Affiliate: Center for Global Peace and Conflict Studies
http://www.faculty.uci.edu/profile.cfm?faculty_id=2454
Research: political economy of redistribution, social investment, and conflict resolution; international conflict, economic development and strategic competition; international trade and security

McHenry

Matt McHenry
Associate Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5273
Research: biomechanics, locomotion, sensory biology

McWilliams

Roger D. McWilliams
Professor
Department of Physics and Astronomy, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2735
Research: experimental plasma physics, fusion energy, lasers, intellectual property law

---

Mecartney

Martha L. Mecartney
Professor
Department of Chemical Engineering and Materials Science
The Henry Samueli School of Engineering
http://www.eng.uci.edu/users/martha-mecartney
Research: New electrolytes for solid oxide fuel cells, ceramics for nuclear energy waste and recycled fuel, low energy routes to ceramic superplastic forming

---

Mehrotra

Sharad Mehrotra
Professor
Department of Computer Science
Donald Bren School of Information and Computer Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4685

Menkel-Meadow

Carrie Menkel-Meadow
Chancellor's Professor
Center for Land, Environment, and Natural Resources
School of Law
http://ssrn.com/author=98428
Research: conflict resolution and facilitation of land use, environmental and community issues

---

Meyer

David S. Meyer
Professor
Department of Sociology, School of Social Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4654
Research: social movements, public policy, peace and war, social justice

Mjolsness

Eric D. Mjolsness
Director, Center for Computational Morphodynamics
Professor
Department of Computer Science
Donald Bren School of Information and Computer Sciences
Department of Mathematics, School of Physical Sciences
http://www.ics.uci.edu/~emj/
Affiliate: UCI Institute for Genomics and Bioinformatics, UCI Center for Complex Biological Systems, Caltech Biological Network Modeling Center
Research: systems biology, scientific inference systems, and mathematical methods; "The Computable Plant;" metabolic modeling

---

Mohraz

Ali Mohraz
Assistant Professor
Department of Chemical Engineering and Materials Science
The Henry Samueli School of Engineering
http://www.eng.uci.edu/users/ali-mohraz
Research: designing microstructural materials with enhanced functionality for composites, biomimetic applications, alternative energy, and environmental remediation

---

Mooney

Kailen A. Mooney
Assistant Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://kmooney.bio.uci.edu/lab/home.html
Research: community, and evolutionary and conservation ecology

---

Mosallam

Ayman S. Mosallam
Professor
Director of Structural Engineering Testing Hall
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
http://www.eng.uci.edu/users/ayman-mosallam
Research: evaluation of structural behavior and sustainability of green construction materials and systems; development of new rating system for green buildings; use of waste and recycled materials including plastics (LDPE, HDPE), tires, and waste concrete for developing new construction materials; Upgrading the structural capacity of wood members both virgin and damaged using advanced composites to reduce the consumption of natural wood; and the use of nanotechnology in developing affordable epoxy-based insulating films for building glass windows

---

Mueller

Laurence D. Mueller
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2704
Research: theoretical and empirical studies or density-dependent natural selection, population stability and dynamics

Mulligan

R. Michael Mulligan
Professor
Department of Developmental and Cell Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=3342
Research: molecular evolution and molecular mechanisms of RNA editing in plants

---

Mumm

Daniel R. Mumm
Associate Professor
Department of Chemical Engineering and Material Science
The Henry Samueli School of Engineering
http://www.eng.uci.edu/users/daniel-mumm
Research: advanced materials and structures, primarily the development of materials for power generation systems, propulsion, integrated sensing, advanced vehicle concepts and platform protection

---

Muzio

Larry Muzio
Adjunct Professor
Department of Mechanical and Aerospace Engineering
The Henry Samueli School of Engineering
Research: thermodynamics, combustion and combustion in practical systems, air pollution formation and control, advanced diagnostics applied to practical combustion systems

---

Nardi

Bonnie Nardi
Professor
Department of Informatics
Donald Bren School of Information and Computer Sciences
Associate: Laboratory for Ubiquitous Computing and Interaction
http://www.ics.uci.edu/faculty/profiles/view_faculty.php?ucinetid=nardi
Research: collapse computing-the study, design, and development of sociotechnical systems in the abundant present for use in a future of scarcity

---

Nizkorodov

Sergey Nizkorodov
Professor
Department of Chemistry, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4905
Research: atmospheric chemistry of organic aerosols

Noymer

Andrew Noymer
Associate Professor
Program in Public Health, College of Health Sciences
Department of Sociology, School of Social Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5373
Research: demography, health

Ogunseitan

Oladele Ogunseitan
Chair, Department of Population Health and Disease Prevention
Director, Lead Campus on Green Materials – UC Toxic Substances Research and Teaching Program
Professor
Program in Public Health, College of Health Sciences
Department of Social Ecology, School of Social Ecology
http://www.faculty.uci.edu/profile.cfm?faculty_id=2423
Research: environmental and health effects of industrial development with respect to pollution prevention and remediation, interdisciplinary approaches to environmentally benign product design and life-cycle assessment of materials that affect human health and the environment

---

Olson

Betty H. Olson
Professor
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
Community and Environmental Medicine, School of Medicine
http://www.faculty.uci.edu/profile.cfm?faculty_id=2422
Research: public health aspects of waters and wastewaters

Patterson

Donald J. Patterson
Associate Professor
Department of Informatics
Donald Bren School of Information and Computer Sciences
http://luci.ics.uci.edu/LUCIinterface.html#bioFaculty&djp3
Associate: Laboratory for Ubiquitous Computing and Interaction
Research: collapse computing-the study, design, and development of sociotechnical systems in the abundant present for use in a future of scarcity

---

Penner

Reginald Penner
Director, Center for Solar Energy
Chancellor's Professor
Department of Chemistry, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2040
Research: thermoelectrics

Phalen

Robert F. Phalen
Director, Air Pollution Health Effects Laboratory
Professor
Center for Occupational and Environmental Health
Department of Medicine, School of Medicine
http://www.coeh.uci.edu/faculty/coeh_fac/dr_phalen.htm
Research: possible long-term consequences for lung disease due to toxic inhalation exposure

Prather

Michael J. Prather
Director, UC Irvine Environment Institute
Fred Kavli Chair and Professor
Department of Earth System Science
School of Physical Sciences
http://www.ess.uci.edu/~prather
Research: global change, atmospheric chemistry, climate forcing and air quality

---

Primeau

Francois W. Primeau
Associate Professor
Department of Earth System Science, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4739
Research: transport of tracers by the global ocean circulation, dynamics of the wind-driven ocean circulation, mid-latitude ocean-atmosphere interations

---

Randerson

James T. Randerson
Professor
Department of Earth System Science, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4971
Research: climate-carbon cycle feedbacks, fires, land cover change, remote sensing, tropical deforestation, global change in arctic and boreal ecosystems, terrestrial ecosystems and climate policy

---

Ranz

Jose Ranz
Assistant Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5434
Research: functional and comparative genomics, evolution of the expression network, speciation

---

Recker

Wilfred W. Recker
Professor
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
Affiliate: Institute of Transportation Studies
http://www.faculty.uci.edu/profile.cfm?faculty_id=2874
Research: transportation modeling and urban systems

Reed

Robert D. Reed
Assistant Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5401
Research: evolution and development, butterfly wing patterns

Richardson

Debra J. Richardson
Professor
Department of Informatics, Donald Bren School of Information and Computer Sciences
Founding Dean, Donald Bren School of Information and Computer Sciences
Research: Software Engineering for Sustainability – methodology to develop software-intensive IT systems that meet the functional needs of users while reducing environmental and other unsustainable impacts brought about by those systems, including appropriate technologies to treat sustainability as a first-class quality attribute in system development

---

Rignot

Eric Rignot
Professor
Department of Earth System Science, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5467
Research: glaciology, climate change, radar remote sensing, ice sheet modeling, interferometry, radio echo sounding, ice-ocean interactions

---

Ritchie

Stephen G. Ritchie
Director, Institute of Transportation Studies
Professor
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
http://www.faculty.uci.edu/profile.cfm?faculty_id=2072
Research: transportation systems engineering

Robinson-Dorn

Michael Robinson-Dorn
Director, Environmental Law Clinic
Clinical Professor of Law
Center for Land, Environment, and Natural Resources
School of Law
http://www.law.uci.edu/faculty/page1_m_robinson-dorn.html
Research: law related to climate change, natural resources, pollution control and transboundary resource and environmental issues

---

Rose

Michael R. Rose
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
Affiliate and Director: UC Network for Experimental Research on Evolution
http://www.faculty.uci.edu/profile.cfm?faculty_id=5261
Research: experimental evolution, aging, biological immortality, drosophila, human evolution, evolution of sex

Rosso

Diego Rosso
Assistant Professor
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
http://www.faculty.uci.edu/profile.cfm?faculty_id=5528
Research: environmental process engineering, water and wastewater engineering, carbon and energy footprints, energy conservation

---

Sakai

Ann K. Sakai
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
Affiliate: UC Network for Experimental Research on Evolution
http://www.faculty.uci.edu/profile.cfm?faculty_id=2693
Research: plant population biology and conservation biology, plant breeding systems, population biology of invasive species

---

Saltzman

Eric S. Saltzman
Professor
Department of Earth System Science, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4740
Research: atmospheric chemistry, biogeochemistry, air-sea exchange

---

Samuelsen

Scott Samuelsen
Director, Advanced Power and Energy Program
Director, National Fuel Cell Research Center
Director, UCI Combustion Laboratory
Professor of Mechanical, Aerospace, and Environmental Engineering
Henry Samueli Endowed Chair
Department of Mechanical and Aerospace Engineering
The Henry Samueli School of Engineering
Affiliate: Institute of Transportation Studies
http://www.faculty.uci.edu/profile.cfm?faculty_id=2933
Research: energy, combustion, fuel cells, hydrogen, distributed generation, alternative fuels, gas turbine engines, coal, oil, natural gas, air pollution

---

Sanders

Brett Sanders
Professor and Chair
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
http://www.faculty.uci.edu/profile.cfm?faculty_id=3296
Research: urban flooding, sea level rise and coastal flooding, storm water management

Sandmeyer

Suzanne Sandmeyer
Director, UCI Genomics High-Throughput Facility
Professor
Departments of Biological Chemistry and Microbiology and Molecular Genetics
School of Medicine
Department of Chemical Engineering and Materials Science
The Henry Samueli School of Engineering
Affiliate: Center for Biorenewable Chemicals, Center for Complex Biological Systems and the Institute for Genomics and Bioinformatics
http://www.faculty.uci.edu/profile.cfm?faculty_id=2247
Research: creating platform chemicals through the bioengineering of microorganisms, in particular Saccharomyces cerevisiae; using genomics, bioinformatics and molecular biology to enhance the ability to produce important hydrocarbons from yeast

---

Saphores

Jean-Daniel Saphores
Associate Professor
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
Assistant Professor
Department of Planning, Policy and Design, School of Social Ecology
Department of Economics, School of Social Sciences
Affiliate: Institute of Transportation Studies
http://www.faculty.uci.edu/profile.cfm?faculty_id=4771
Research: environmental and natural resource economics and policy, urban economics, sustainability

---

Sarnecka

Barbara Sarnecka
Assistant Professor
Department of Cognitive Science, School of Social Sciences
Research: closing the achievement gap between Latino students from low-income backgrounds and students from higher-income backgrounds

---

Scherfig

Jan Scherfig
Professor Emeritus
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
http://www.faculty.uci.edu/profile.cfm?faculty_id=2955
Research: water reclamation, waste treatment processes, environmental engineering

---

Schnall

Peter L. Schnall
Professor
Center for Occupational and Environmental Health
Department of Medicine, School of Medicine
http://www.coeh.uci.edu/faculty/coeh_fac/dr_schnall.htm
Research: the role of occupational stress in causing hypertension and cardiovascular disease

Schofer

Evan Schofer
Professor
Department of Sociology, School of Social Sciences
http://faculty.sites.uci.edu/schofer/
Research: globalization, political participation, education, environmentalism, economic growth, and economic inequality

---

Schreiber

Merritt Schreiber
Director of Psychological Programs, Center for Disaster Medical Sciences
Associate Clinical Professor
Department of Emergency Medicine, School of Medicine
http://faculty.uci.edu/profile.cfm?faculty_id=5890
Research: focused on preventing/mitigating the burden of traumatic injuries and disaster/mass casualties/terrorism events on children and adults; additional foci on the impacts of crisis standards of care on healthcare providers in public health emergencies; other sustainable efforts include national policy on mental health effects of disasters; and the impact of crisis standards of care in mass casualty events on patients, families and providers

---

Schultz

Carl H. Schultz
Director of Research, Center for Disaster Medical Sciences
Director, EMS and Disaster Medical Sciences Fellowship
Director, Disaster Medical Services
Professor of Emergency Medicine
Department of Emergency Medicine, School of Medicine
http://www.faculty.uci.edu/profile.cfm?faculty_id=5042
Research: reducing the human impacts of earthquakes, allocation of scarce resources in disaster

---

Seed

Patricia Seed
Professor and Cartographer
Department of History, School of Humanities
http://www.faculty.uci.edu/profile.cfm?faculty_id=5308
Research: mapped the potential human and environmental impact of rising sea levels on the West African coast, currently serving as an expert witness for the U.S. Department of Justice's Environmental Resources Division

---

Seeker

William R. "Randy" Seeker
Adjunct Professor
Department of Mechanical and Aerospace Engineering
The Henry Samueli School of Engineering

Shaka

Athan J. Shaka
Professor
Department of Chemistry, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2175
Research: radio chemistry and nuclear power

Shanthikumar

Devin Shanthikumar
Assistant Professor
The Paul Merage School of Business
Research: corporate reporting of sustainability activities, market responses to sustainability information

---

Shinozuka

Masanobu Shinozuka
Distinguished Professor
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
http://www.eng.uci.edu/users/masanobu-shinozuka
Research: earthquake and structural engineering with a special interest in field theory and risk assessment methodology in civil engineering

---

Shivendu

Shivendu Shivendu
Assistant Professor
The Paul Merage School of Business
Affiliate: California Plug Load Research Center
Research: markets, incentives, asymmetric information, and energy efficiency

---

Silverman

Dennis Silverman
Professor Emeritus
Department of Physics and Astronomy, School of Physical Sciences
http://sites.uci.edu/energyobserver/
Research: energy systems

Small

Kenneth Small
Professor Emeritus
Department of Economics, School of Social Sciences
Affiliate: Institute of Transportation Studies
http://www.faculty.uci.edu/profile.cfm?faculty_id=2431
Research: energy use in transportation

Smith

David A. Smith
Professor
Department of Sociology, School of Social Sciences
Department of Planning, Policy and Design, School of Social Ecology
http://www.faculty.uci.edu/profile.cfm?faculty_id=2529
Research: world systems analysis, urbanization, development, comparative-historical sociology, dependent development in East Asia, global cities

Smyth

Patrick J. "Padhraic" Smyth
Director, Center for Machine Learning and Intelligent Systems
Professor
Department of Computer Science
Donald Bren School of Information and Computer Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4518
Research: data mining, pattern recognition, machine learning, time series analysis, artificial intelligence, applied statistics

---

Sorooshian

Soroosh Sorooshian
Director, Center for Hydrometeorology and Remote Sensing
Distinguished Professor
Department of Civil and Environmental Engineering
The Henry Samueli School of Engineering
Department of Earth System Science, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5082
Research: hydrology, hydrometeorology and hydroclimate modeling, remote sensing, water resources management

---

Steele

Robert Steele
Professor
Department of Biological Chemistry, School of Medicine
http://www.faculty.uci.edu/profile.cfm?faculty_id=2387
Research: hydra, developmental biology, receptor protein-tyrosinekinases, evolution, homeobox genes, spliced leaders, trans-splicing

---

Stern

Hal Stern
Ted and Janice Smith Family Foundation Dean
Donald Bren School of Information and Computer Sciences
Professor
Department of Statistics
http://www.faculty.uci.edu/profile.cfm?faculty_id=5011
Research: statistics, applications of statistics to biological and social sciences, sports and statistics

---

Stern

Sharon Stern
Senior Lecturer
Program in Public Health, College of Health Sciences
http://www.uwrc.uci.edu/faculty/50-faculty/70-sharon-stern.html
Research: water pollution and treatment, environmental pollution remediation, health and policy

Stokols

Daniel Stokols
Research Professor
Chancellor's Professor Emeritus
Departments of Planning, Policy and Design and Psychology & Social Behavior
School of Social Ecology
Department of Epidemiology, School of Medicine
Program in Public Health, College of Health Sciences
Program in Nursing Science, College of Health Sciences
http://www.seweb.uci.edu/stokols
Research: theory development in environmental psychology and social ecology, environmental design research, community and worksite health promotion, effects of environmental stressors on behavior and health, environmental psychology of the internet

---

Symanski

Richard Symanski
Senior Lecturer
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2731

Taborek

Peter Taborek
Professor
Department of Physics and Astronomy, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2166
Research: surface physics of gas hydrates

Tobias

Douglas J. Tobias
Professor
Department of Chemistry, School of Physical Sciences
Affiliate: AirUCI
http://www.faculty.uci.edu/profile.cfm?faculty_id=4581
Research: molecular dynamics of atmospheric systems

Tomlinson

Bill Tomlinson
Associate Professor
Department of Informatics
Donald Bren School of Information and Computer Sciences
http://www.amazon.com/Greening-through-Information-Environmental-Sustainability/dp/0262013932
Affiliate: Laboratory for Ubiquitous Computing and Interaction and the California Institute for Telecommunications and Information Technology
Research: environmental informatics, sustainability education, software engineering for sustainability, collapse computing (the study, design, and development of sociotechnical systems in the abundant present for use in a future of scarcity)

Treseder

Kathleen K. Treseder
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4968
Research: microbial biogeochemistry, ecosystem ecology, and global change

---

Trumbore

Susan E. Trumbore
Professor
Department of Earth System Science, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2210
Currently on leave from UCI, at the Max-Planck Institute for Biogeochemistry
Research: use of radiocarbon to trace the global carbon cycle, greenhouse gas production and consumption in terrestrial ecosystems

---

Vandell

Kerry Vandell
Director, Center for Real Estate
Dean's Professor of Finance
The Paul Merage School of Business
http://merage.uci.edu/Faculty/FacultyDirectory/FacultyProfiles.aspx?FacultyID=7089
Research: urban/real estate/environmental economics

Velicogna

Isabella Velicogna
Assistant Professor
Department of Earth System Science, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5518
Research: geophysics, glaciology, hydrology, remote sensing

Venkatesh

Alladi Venkatesh
Professor
The Paul Merage School of Business
Affiliate: California Plug Load Research Center
http://www.faculty.uci.edu/profile.cfm?faculty_id=2643
Research: markets, incentives, asymmetric information, and energy efficiency

---

Walsh

Roger Walsh
Professor
Department of Psychiatry and Human Behavior, School of Medicine
http://www.faculty.uci.edu/profile.cfm?faculty_id=2372
Research: psychological causes and consequences of sustainability issues

---

Wang

Yun Wang
Director, Renewable Energy Resources Laboratory
Assistant Professor
Department of Mechanical and Aerospace Engineering
The Henry Samueli School of Engineering
http://ywang.eng.uci.edu/Yunw.htm

Ward

Geoff Ward
Associate Professor
Department of Criminology, Law and Society
School of Social Ecology
http://socialecology.uci.edu/faculty/gward
Affiliate: Center in Law, Society and Culture
Research: advancing racial equality in juvenile justice, i.e., the fate of the group rests on the equitable development of its children and youth

---

Weis

Arthur E. Weis
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
Affiliate: UC Network for Experimental Research on Evolution
http://www.faculty.uci.edu/profile.cfm?faculty_id=3104&name=Arthur%20E.%20Weis
Research: plant ecological genetics, plant-insect interactions

---

Weller

Stephen G. Weller
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=2686
Research: plant population biology and evolutionary genetics of plant reproductive systems

---

Wickramasinghe

Kumar Wickramasinghe
Professor and Henry Samueli Endowed Chair
Department of Electrical Engineering and Computer Science
The Henry Samuel School of Engineering
Professor
Departments of Biomedical Engineering and Chemical Engineering & Materials Science
The Henry Samueli School of Engineering
http://www.eng.uci.edu/users/h-kumar-wickramasinghe
Research: nanotechnology

Wodarz

Dominik Wodarz
Professor
Department of Ecology and Evolutionary Biology, School of Biological Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=5128
Research: mathematical and computational biology

Wu

Ruqian Wu
Professor
Department of Physics and Astronomy, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4848
Research: density function calculations of photovoltaic materials

Yee

Albert F. Yee
Professor and Chair
Department of Chemical Engineering and Materials Science
The Henry Samueli School of Engineering
Professor, Department of Chemistry, School of Physical Sciences
Professor, Department of Biomedical Engineering
The Henry Samueli School of Engineering
http://www.faculty.uci.edu/profile.cfm?faculty_id=5442
Research: polymer materials science, plastics, composites, mechanical properties, nanopatterning, nanoimprinting

---

Yu

Jin-Yi Yu
Professor
Department of Earth System Science, School of Physical Sciences
http://www.ess.uci.edu/~yu/
Research: climate dynamics, atmospheric ocean interaction

Yu

Yaming Yu
Associate Professor
Department of Statistics, Donald Bren School of Information and Computer Sciences
http://www.ics.uci.edu/~yamingy/
Research: statistical computing, Bayesian analysis, applications to astronomy and earth systems science

---

Zender

Charlie Zender
Professor
Department of Earth System Science, School of Physical Sciences
http://www.faculty.uci.edu/profile.cfm?faculty_id=4743
Research: desert dust, climate, erosion, radiation, snow, soot

A Reputation Takes Root

UC Irvine is again named a Tree Campus USA

For the third year running, UC Irvine has been recognized by Tree Campus USA, a program funded by Toyota and administered by the Arbor Day Foundation.

The trees that shade Aldrich Park, the oasis of green at the center of campus, are an important part of UCI's legacy and future. The more than 24,000 trees on campus not only protect students, faculty and staff from the sun but also reduce the warming effect of asphalt parking lots and other human development.

UC Irvine is also actively engaged in research associated with urban forestry. Current work is focused on tree survivability in the face of decreased water availability due to climate change and the role of our campus trees in the sequestration of carbon dioxide, offsetting greenhouse gas emissions.

Ask students anywhere on campus—maybe those sitting against a tree trunk with laptops on their knees—and they'll say UC Irvine is a great tree campus!

UCIrvine

www.uci.edu