

**UCLA** Luskin School of Public Affairs

# Luskin Center

FOR INNOVATION



FALL 2015

Climate Action	02
Complete Streets	06
Digital Technology	08
Electric Vehicles	12
Sustainable Energy	16
Water Systems	20

## Meyer and Renee Luskin

Celebrating Their Culmination of the \$10 Million gift to the Luskin Center for Innovation



# IMPACT

over the last **6** years

**\$4.2 Million**

### RESEARCH

The Luskin Center helped secure over \$4.2 million in funding to conduct research in six robust initiative areas.

**100 Civic Partners**

### COMMUNITY ENGAGEMENT & PUBLIC AFFAIRS

The Luskin Center collaborated with more than 100 civic partners on policy-informing research and events.

**150 Students**

### STUDENT SUPPORT

The Luskin Center provided direct support to 150 UCLA students while enhancing the educational experiences of hundreds more.



# CONTENTS



## Climate Action

Strengthening state and local governments' capacity to reduce greenhouse gas emissions and adapt to climate change



## Complete Streets

Paving the way for complete, living streets that create vibrant, productive, and sustainable communities



## Digital Technology

Informing public policy for innovation in the digital age



## Electric Vehicles

Supporting the transition to electric-drive and alternative fuel vehicles



## Sustainable Energy

Developing strategies to spur renewable energy and energy efficiency in California



## Water Systems

Advancing technological, economic, and policy solutions to develop underutilized local water systems



## Etcetera

Luskin Center announcements, new staff arrivals, and research previews



# Strengthening State and Local Governments' Capacity to Reduce Greenhouse Gas Emissions and Adapt to Climate Change

# Guide to Greenhouse Gas Reduction Fund Program Designs, Expenditures, and Benefits for Disadvantaged Communities

## \$2.2 Billion in Climate Investments Expected for 2015-16

Rapidly growing revenues from California's Cap-and-Trade Program, which are deposited into the Greenhouse Gas Reduction Fund (GGRF), represent a major new source of funding for state programs. The programs are required to reduce greenhouse gas emissions and provide economic, environmental, and public health co-benefits. Governor Brown has proposed a GGRF budget of \$2.2 billion for the 2015-16 fiscal year for these programs to combat climate change.

A challenge for local governments and community organizations is to understand these programs and how they disperse their funding. A report from the Luskin Center provides a guide to navigate GGRF-funded programs, focusing on those most targeted to benefit disadvantaged communities. This includes six programs in five investment categories:

1. Transit-oriented affordable housing;
2. Financial incentives for the purchase or lease of clean cars, trucks, and buses;
3. Transit capital and operations;
4. Energy efficiency and rooftop solar panels on low-income housing units; and
5. Urban and community forestry projects.

Supported by the Heising-Simons Foundation, the report provides an overview of each program and then analyzes program investments based on recent funding levels (inputs) before the GGRF and then with the GGRF. The authors put forth a framework to systematically assess program inputs, outputs, outcomes, and impacts while making recommendations to enhance their benefits.

The report underscores the importance of the GGRF as a new funding source that is increasing the overall level of funding available for programs that could benefit disadvantaged communities. In some cases the funding is supplementing historical funding sources. Despite the new revenue, demand still exceeds investment levels.

The state is early in its complex and ambitious implementation process for the GGRF. Currently a paucity of data limits attempts to qualitatively assess expected and actual outcomes and impacts of the investments. The authors recommend that the state more comprehensively collect and provide accessible data about investments to allow for prospective and retrospective analyses to best guide future investment decisions.



1



2



3



4



5

## PLANNING CALIFORNIA CLIMATE INVESTMENTS IN DISADVANTAGED COMMUNITIES



*Jeffrey L. Rabin,  
researcher, Greenhouse  
Gas Reduction Fund  
Program Designs,  
Expenditures, and  
Benefits project*



*Julien Gattaciecchia,  
researcher, Cap-  
and-Trade Program's  
Household-Level Impact  
project*

# Analyzing Cap-and-Trade's Household-Level Impacts

The Cap-and-Trade Program is an important component of California's landmark effort to reduce greenhouse gas emissions as required by Assembly Bill 32. The Luskin Center is exploring the potential impact that California's Cap-and-Trade Program could have on gasoline, electricity, and natural gas cost increases for representative households in case-study disadvantaged communities. The impacts are mitigated by a number of AB 32 programs that are helping California households to significantly decrease their transportation and energy costs over time. While outside of the scope to quantify the specific effects of all AB 32 programs, trends most relevant to household-level transportation and energy costs are analyzed.

Preliminary findings indicate that the impact of Cap-and-Trade on households in disadvantaged communities is forecasted to be relatively minor. Yet, the findings also underscore the importance of robust, continued, and strategic climate investments and AB 32 program implementation to ensure that California households, especially those most vulnerable, continue to receive financial benefits overall from AB 32.

This study is part of the Planning California Climate Investments in Disadvantaged Communities project, which includes the aforementioned companion report "A Guide to Greenhouse Gas Reduction Fund Program Designs, Expenditures, and Benefits" released in the summer of 2015.

## Informing Climate Action to Address Public Health Vulnerability

Californians, and in particular certain populations in the Los Angeles region, face many adverse health effects due to climate change. The U.S. Forest Service's Pacific Southwest Research Station entered into a cooperative agreement with the Luskin Center to examine health vulnerability to climate change and develop a framework to inform adaptation measures that reduce health risk.

Results were presented at an event at Los Angeles City Hall. The event, hosted by the Luskin Center and the Los Angeles Center for Urban Natural Resources Sustainability, brought together local leaders, practitioners and researchers in city government, urban forestry and public health. A group discussion advanced ideas for new collaborations and integrated strategies for building climate resiliency.

*Left: Tamanna Rahman, researcher*



# World Watches California's Actions on **CLIMATE JUSTICE**

Luskin Center Briefs National, State, and Local Leaders

With billions of dollars planned for climate investments from California's Greenhouse Gas Reduction Fund (GGRF), disadvantaged communities across the state could significantly benefit from California state law SB 535 (De León). SB 535 requires a set-aside of at least 25 percent of the GGRF to programs benefiting disadvantaged communities and a minimum of 10 percent to investments within disadvantaged communities. Interest from leaders at the national, state, and local levels underscores that this could be a precedent-setting and monumental law to advance climate justice. The world is watching as California implements its larger suite of climate policies, including the Cap-and-Trade Program that is generating the revenues for the Greenhouse Gas Reduction Fund.

A challenge for state and local stakeholders is to ensure that GGRF investments truly maximize benefits for disadvantaged communities. The U.S. Environmental Protection Agency (EPA) invited Colleen Callahan, deputy director of the Luskin Center, to meet with senior EPA staff and also speak about SB 535 implementation at the 2015 National Environmental Justice Conference in Washington, D.C. Pulling from the Luskin Center's 2014 report "Investment Justice Through the Greenhouse Gas Reduction Fund," she provided key recommendations for implementing the GGRF to help ensure that investments maximize co-benefits for vulnerable communities across California.

On a state level, California Legislative leaders invited J.R. DeShazo, director of the Luskin Center, to brief senators on the economic benefits of California's climate portfolio. The focus of his talk was the tremendous opportunity to build prosperous, healthy, and livable communities through the state's new GGRF.

*“One of the world's most significant events in the arena of climate justice took place when California's Senate Bill 535 (SB 535) was signed into law.”*

—Charles Lee of the U.S. Environmental Protection Agency and a national environmental justice leader

Of California's 58 counties, L.A. County alone has over half (51 percent) of the disadvantaged communities in the entire state. Thus, while L.A. County is disproportionately impacted by environmental pollution and socio-economic vulnerabilities, the region could be poised for investments that would reduce these vulnerabilities while fighting climate change. The Luskin Center is providing information to elected officials and community-based organizations in the Los Angeles region to help guide their involvement in the GGRF-funded program investments.



Left to right: California Senate president pro tempore Kevin de León; California Senator Fran Pavley; Arsenio Mataka, assistant secretary for environmental justice and tribal affairs, California Environmental Protection Agency; J.R. DeShazo, director, Luskin Center; Colleen Callahan, deputy director, Luskin Center



## Paving the Way for Complete, Living Streets That Create Vibrant, Productive, and Sustainable Communities

# THE AVALON GREEN ALLEY NETWORK DEMONSTRATION PROJECT

+ Lessons Learned From Previous Projects for Green Alley Development in Los Angeles & Beyond

## Supporting Green Alleys in South Los Angeles and Beyond

Urban alleys are largely understudied and underutilized, but this is starting to change. Los Angeles and other cities across the U.S. are transforming alleys into multipurpose community assets. How can communities green and revitalize their alleys? A new report from the Luskin Center and the Trust for Public Land, which debuted in early 2015 at the ribbon-cutting event for the Avalon Green Alley Network Demonstration Project in South L.A., tells the story of a particularly comprehensive alley revitalization effort and puts it in context with helpful lessons and best practices from other projects.

This report provides practical information to city staff, community members and other stakeholders interested in advancing green alleys. Created by lead author Rachel Lindt of the Luskin Center, the report introduces a framework presenting a range of green alley project and program possibilities organized by main objectives – environmental, economic, and social benefits. Project examples highlighted in the report span from a one-day community event to a permanent pedestrian corridor. Infrastructure elements often include vegetation and stormwater management techniques such as permeable pavement. The type of green alley created depends on the project facilitators, the amount of resources available, and the surrounding land uses.

Beginning with examples of previous alley transformations, the report also provides an in-depth case study of the Avalon Green Alley Network Demonstration Project (the Avalon Project) led by the Trust for Public Land and partners. The Avalon Project is currently breaking ground in the South Park neighborhood in the heart of South Los Angeles. While not yet a complete transformation, the Avalon Project already represents years of planning, organizing, community engagement, fundraising, and the navigation of a complex regulatory environment. The report is a helpful tool describing these and other key steps that can be replicated and scaled up across Los Angeles and other communities in the nation.



**RIGHT:**

*Rachel Lindt, project manager*

**BOTTOM:**

*Councilmember Curren D. Price Jr. with community members of the Green Team organized by the Trust for Public Land*





# Informing Public Policy for Innovation in the Digital Age

# New Tech Tools to Combat Child Sex Trafficking

Youth's growing access to technology raises concerns for human trafficking experts. Law enforcement and social service providers in the U.S. face new challenges in combating the evolving and anonymous ways in which sex traffickers and consumers of commercial sex have targeted and exploited minors.

Researchers at the Luskin Center are working to illustrate technology's role in human trafficking, in addition to developing recommendations to combat traffickers and consumers and assist commercially sexually exploited child (CSEC) victims and survivors. This work attempts to leverage technology for the advancement of the anti-sex trafficking movement, and inform ways in which it can be better used to counter commercial sex trafficking.

At a high level, this report aims to provide a national perspective on the depth of human trafficking, particularly of domestic-born minors. It will depict U.S. regions with higher instances of trafficking while highlighting nuances in the way exploitation manifests itself across different geographic regions. Research will delve into the ways technology can both facilitate and help prevent child sex trafficking. Both primary and secondary sources will be incorporated into the white paper, including qualitative interviews with key stakeholders, primary-source surveys, and a literature review of local, state, and federal reports and peer-reviewed articles.

# Tackling Threats to Youth Internet Safety



As children's access to the Internet expands, so do concerns about their online safety. Providing a safe environment for children requires an in-depth understanding of the types and prevalence of online risks to which children are exposed, and solutions most effective in mitigating these risks.

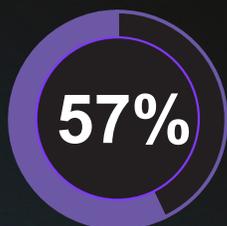
To this end, researchers at the Luskin Center compiled a database of studies and articles pertaining to youth Internet safety, and produced a white paper in conjunction with Google and the Brookings Institution that analyzed the most common issues youth in developed countries face online. These include cyberbullying; sexual solicitation and unwanted exposure to sexual content; breaches in privacy; and inter-generational gaps between parents, teachers, and youth. The report identified the prevalence and context of each issue, as well as best practices to avoid or cope with problems online. It also highlighted 11 specific recommendations for further research. Researchers Adina Farrukh and Rebecca Sadwick presented their findings at Google's public policy headquarters in Washington, D.C., in November 2014.



Left to right: John Villasenor, scholar and director, Digital Technology Initiative; Sarah Godoy, researcher; Adina Farrukh, researcher; Rebecca Sadwick, program manager, Digital Technology Initiative

# WOMEN IN TECHNOLOGY

## By the Numbers



Percent of U.S. professional occupations held by women



Percent of U.S. technology jobs held by women



Percent of U.S. software developers who are women



Percent of women executives at U.S. venture-backed startups



The percentage of female partners at VC firms declined from 10% in 1999 to 6% in 2014.



Fewer than 5% of all ventures receiving equity capital have even a single woman on their executive teams.

## Rethinking Strategies to Advance Women in Technology Reveals Gaps

The tech industry epitomizes innovation and progress, but ironically has some of the most disparate representations of women and minorities of any industry in the U.S. Historic gender disparities in fields like law and medicine have not seen the regression in diversity that permeates today's tech sector. Despite recent efforts to address the diversity gap by corporations, high-profile NGOs, and the public sector, women's representation in technical and executive leadership roles has not improved since 1991.

### So what are we missing?

To answer that question, UCLA's Luskin Center and Office of Information Technology convened 250 influential leaders in the public, private, and nonprofit sectors for a conference on April 30, 2015.

Strategies to reduce inequality in the tech sector fall into three main categories: personal, private, and public. Rather than focusing on personal strategies that place the onus of cultural change on individuals, UCLA's conference focused on private and public strategies to foster systemic change. Private strategies include policies or processes implemented by private organizations to improve their own culture and outcomes in terms of gender equality. Public strategies encompass a broader category that can include social movement/large-scale public dialogue aided by social media, nonprofit initiatives, government initiatives, public-private partnerships, and public policies.



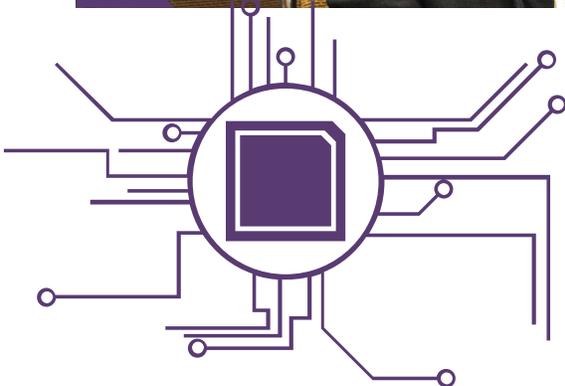
The conference underscored gaps in existing knowledge, especially around public-sector strategies. The need to inform public strategies that are relevant to the constantly evolving technical workforce is a priority for the Luskin Center. Some government programs, such as California Competes, offer income tax credits to businesses that meet certain objectives. In general, however, public-sector initiatives currently remain fragmented and limited.

The outcome report, to be published at the end of 2015, will propose a roadmap for more primary research to analyze best practices and inform ways to fill the gaps. We also will work with leaders in the public, private, and nonprofit sectors in the coming months to expand effective strategies and public-private partnerships.



*Attendees at the Women in Technology conference.*

1. Adaora Udoji, outLoud Inc. 2. Jane Margolis, UCLA Graduate School of Education and Information Studies. 3. Monique Morrow, Cisco Systems, Inc. 4. Davida Johnson, UCLA Office of Information Technology. 5. Tiffany Crawford, CREATE Leadership Institute. 6. Sue Gardner, Wikimedia Foundation. 7. Nancy Perlman, Office of L.A. Mayor Eric Garcetti



The Digital Technology Initiative involves many project collaborators, including Google. We thank Google for their gift that supports our initiative's work to inform public policy innovations in the digital age.



## Supporting the Transition to Electric-Drive and Alternative Fuel Vehicles

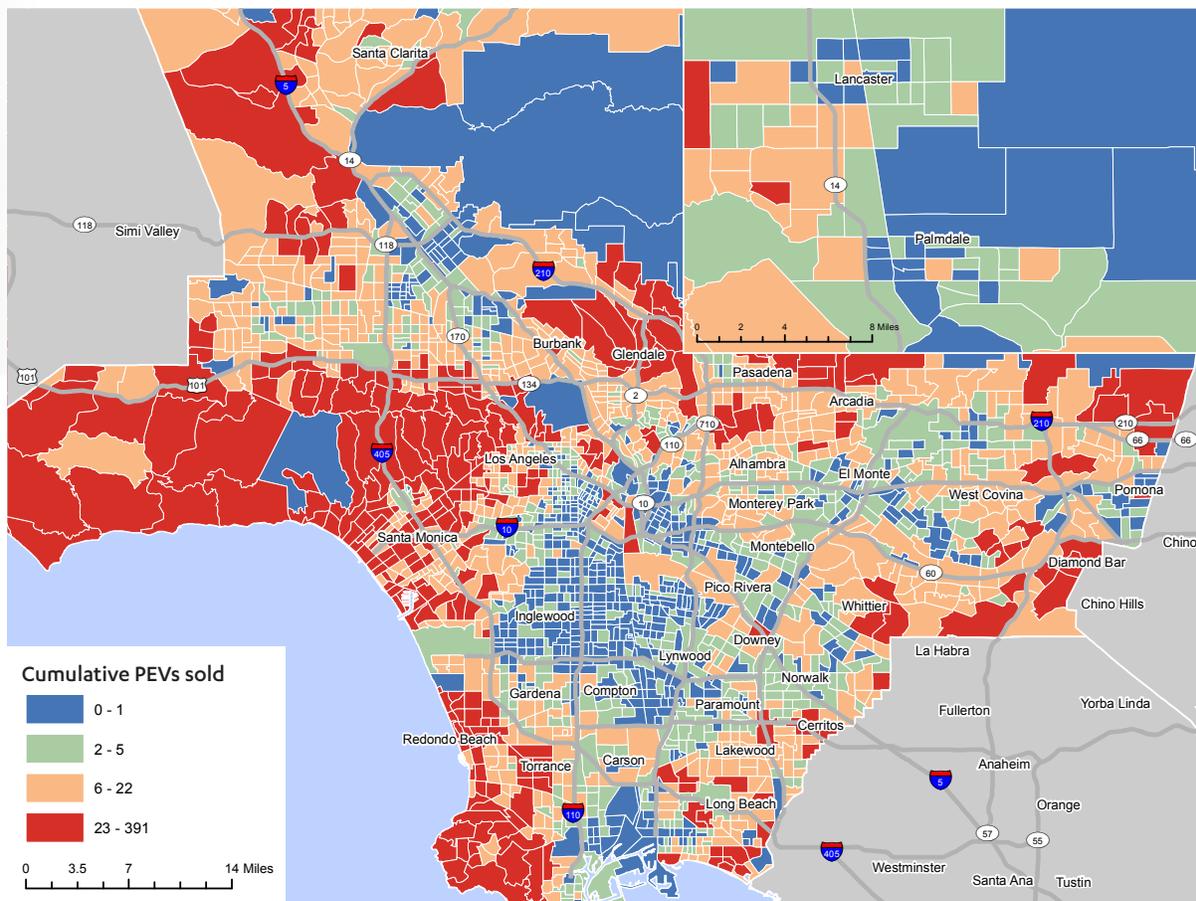
# Factors That Influence Plug-in Electric Vehicles (PEV) Sales in California

## Access to High Occupancy Lanes Spurs Electric Vehicle Sales

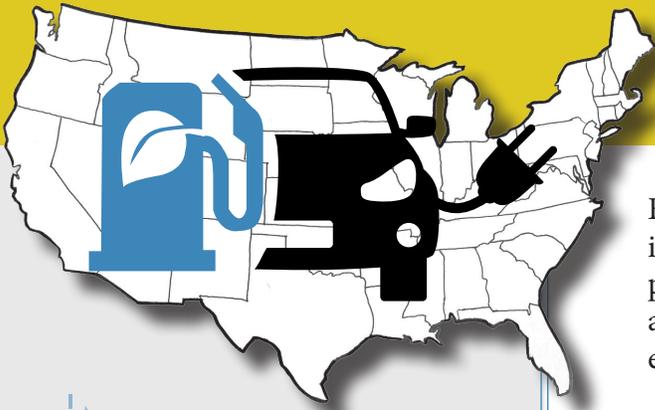
California policymakers have granted single-occupancy electric vehicle drivers access to high-occupancy vehicle (HOV) lanes, with the hope of spurring the widespread adoption of these cleaner vehicles. Until now there has been no evidence about the effectiveness of this policy, which could be renewed in 2019, has been. Tamara Sheldon and J.R. DeShazo conducted a study, funded by the California Air Resources Board, which shows how much HOV lane access increased electric vehicle sales. For example, they find that access to 40 miles of nearby HOV lanes leads to four additional plug-in electric vehicle (PEV) sales in a nearby neighborhood (i.e., census tract). They also show how these effects vary geographically across California cities including San Diego, Los Angeles, San Francisco, and Sacramento. These findings will assist legislators in deciding whether to re-authorize the policy in 2019.

## Neighborhood and Household Characteristics Influence Electric Vehicle Sales in California

Why are sales of electric vehicles greater in some neighborhoods than in others? Which neighborhood and household characteristics best explain where electric vehicle sales will be greatest and smallest? Luskin Center researchers tackle these questions in order to understand patterns of statewide market growth, as part of a California Air Resources Board funded–study. Researchers identify the importance of household size, income, education, age, vehicle fleet, commuting distances, housing type, and several other variables on neighborhood sales of EVs. This research also assesses the effectiveness of existing policies, such as vehicle rebates and HOV lane access, as well as identifying the need for new policy designs to spur sales.



# Assessing the State of the State's PEV Policies



Ever since plug-in electric vehicles (PEVs) entered the U.S. market in 2010, both the federal government and state governments have passed and implemented policies to leverage the benefits of PEVs and to address obstacles to their diffusion. States have become an exciting laboratory for such policies.



## Cost Reduction for PEVs

The most common policy instruments used to reduce the purchase price of PEVs are rebates and tax credits. Other instruments include sales tax exemptions, grants, and loans.



## Expansion and Accessibility of PEV Supply Equipment

States have introduced rebates, tax credits, loans, and grants to incentivize EVSE installations for individuals, businesses, and public entities. States can enter into agreements to help expand charging networks on interstate freeways.



## Transportation Incentives

The most common incentive some states have provided is giving PEV drivers access to HOV lanes regardless of the time of day or the number of passengers in the vehicle. Other incentives include free parking at spots with charging stations, privileged access to charging stations, and toll exemptions.

The Luskin Center's "State of the States' Plug-in Electric Vehicle Policies Report" provides a comprehensive assessment of state policy instruments to encourage PEV adoption and expand charging infrastructure. The release of the report was featured in a National Governors Association newsletter reaching all U.S. state governors' offices.

The report found that 22 states have adopted at least one policy aimed at reducing the cost of electric vehicles, and 28 states have provided incentives to install electric vehicle supply equipment (EVSE) in homes, offices, retail centers, or agencies. These and other incentives are explored in the report within the following three main dimensions: cost reduction for PEVs, expansion and accessibility of electric vehicle supply equipment, and transportation incentives.



*C.C. Song, project manager*



*Michael Sin, project manager*



# CA Energy Commission Awards Several Grants to Luskin Center to Overcome PEV Challenges



## Overcoming Electric Vehicle Adoption Barriers for Apartment and Condominium Residents

Partnering with both the South Bay Cities Council of Governments and the Southern California Association of Governments, the Luskin Center looks to tackle one of the biggest hurdles to widespread plug-in electric vehicle (PEV) adoption: multi-unit dwelling (MUD) charging. A large number of residents in apartment buildings and condominiums remain unable to install charging equipment on-site due to installation costs and ownership issues, and thus are precluded from PEV ownership. By analyzing latent PEV demand and installation cost factors for South Bay and Westside cities, the result of these two projects will be the identification of top MUD candidates for outreach and pilot projects.



*Alex Turek, project manager*

## Deploying Solar Forecasting Technology and PEVs as Aggregated Energy Storage Systems

The Luskin Center has teamed with UC San Diego, San Diego Gas and Electric, and others to deploy high-accuracy solar forecasting technologies. Better forecasting allows commercial and industrial ratepayers to maximize their available rooftop space for solar photovoltaic by co-optimizing their electrical demand load with flexible workplace PEVs. As distributed energy resources gain a greater share of utility generation, forecasting and dispatchable energy storage technology will play vital roles in modern grid management—lowering integration costs and providing greater reliability at the benefit of ratepayers. The Luskin Center’s role in the project will be to apply its PEV expertise to identify and prioritize top warehouse cluster candidates that may qualify as pilot projects and estimate the ratepayer benefits associated with forecast-enhanced solar systems combined with on-site energy storage capacity.

## Burbank Innovates With Curbside Electric Vehicle Charging

To increase the public’s access to charging electric vehicles, Burbank Water and Power (BWP) is deploying curbside charge stations. The Luskin Center assisted the utility by helping it identify high-use charging locations as it engaged in the largest deployment of curbside charging in the country. BWP’s efforts were supported by a California Energy Commission Grant.



*Ronald Davis, general manager, Burbank Water and Power*



# Developing Strategies to Spur Renewable Energy and Energy Efficiency in California

# Strengthening L.A.'s Energy Efficiency Commitment

*Los Angeles' Energy Efficiency Programs Could Create 17,000 Job Years Through 2020*

The Los Angeles Department of Water and Power (LADWP) in 2014 approved a commitment to reduce electricity consumption in Los Angeles by 15 percent through energy efficiency measures. A Luskin Center report reveals an important co-benefit of this goal: Full implementation of these programs through 2020 could result in nearly 17,000 job-years in Los Angeles County. Speaking at a press conference with Los Angeles Mayor Eric Garcetti in November, Luskin Center Director J.R. DeShazo highlighted study findings that LADWP's diverse portfolio of energy efficiency programs already create 16 job-years per million dollars invested.

The report, "Efficiency Energizing Job Creation in Los Angeles," underscores the importance of energy efficiency efforts. Benefits include reduced air pollution and decreased burden on the electric grid, while the study specifically quantifies the numbers and types of jobs created by LADWP's existing energy efficiency programs.

*"Just as water conservation is how we will get through our drought and control our water costs, energy conservation is how we will address climate change and keep our power bills low. Investing in efficiency is three to four times cheaper than building new power plants, and it takes pollution out of our air."*

*— Los Angeles Mayor Eric Garcetti*

The authors of the study note that 16 job-years per million dollars invested is significantly higher than legacy energy production methods such as coal and natural gas, as well as "typical" job creators like construction, which create 6.9, 5.2, and 10.7 jobs respectively. This research fills a gap in accurate job-creation numbers associated with specific types of energy efficiency programs, and will hopefully serve as a model that other utilities around the country can use. Moving forward, the programs could create more than a quarter billion dollars annually in economic output.



*Nancy Sutley, chief sustainability and economic development officer, LADWP*



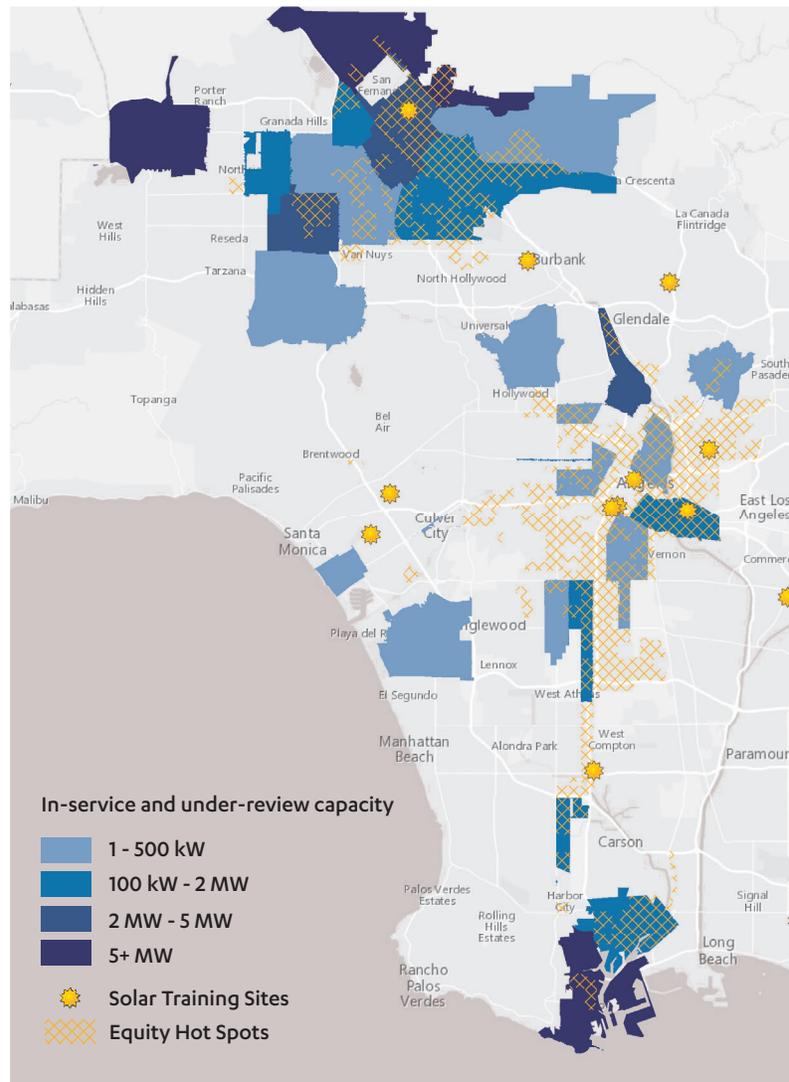
*David Jacot, director of energy efficiency, LADWP*

Industry	Job Years/Million \$ Invested
Energy Efficiency	16.0
Solar	13.7
Smart Grid	12.5
Construction	10.7
Coal	6.9
Natural Gas	5.2

# Current State of Solar in Los Angeles

Los Angeles' flagship local solar procurement program, the FiT 100, is at risk of not achieving its ambitious capacity goals on time if certain measures are not taken by the Los Angeles Department of Water and Power (LADWP), the Luskin Center reported to stakeholders early in the year at a Los Angeles Business Council-hosted Rooftop Solar Roundtable. In evaluating the first four tranches of the FiT 100, researchers found that high attrition rates and the utility's waitlist management strategy need to be addressed if the program's 100 MW of capacity are to be installed before the end of 2016. Even still, the program remains the largest of its kind in the U.S. and will result in a significant amount of locally distributed rooftop solar for the City of Los Angeles, 40% of which is estimated to be sited in solar equity hot spots - areas of the city with high solar rooftop potential and also in high socioeconomic and environmental distress. Substantial new Feed-in tariff projects were announced this year including the completion of the first FiT project in Boyle Heights and an agreement with the Port of Los Angeles Commission to develop 10MW at the Port as part of the Bundled FiT50.

The Luskin Center continues work with the Los Angeles Business Council - a partnership that started during the planning stages of the FiT 100 in 2009 - to identify the programmatic features that benefited both the FiT 100 as well as the Bundled FiT 50, and develop recommendations for LADWP's recently adopted 300 MW expanded feed-in tariff program.



*The geographic distribution of in-service and under-review FiT 100 solar*



*The FiT 100 is producing clean, local solar, as seen with the 3-MW Forever 21 installation in downtown Los Angeles.*



Alex Turek, project manager



Michael Samulon, researcher

## Lessons Learned for Designing Community Solar Programs

Community solar offers a solution to residents who cannot install solar on their own roof due to structural constraints or ownership issues, such as those associated with residing in an apartment or condominium. The program strategy is fairly simple. An administrating entity, often the local utility, covers the cost of installing a large solar array and then recoups these costs by allowing co-investors to buy into the project. Co-investing participants receive virtual benefits from their share of solar energy production.

Community solar programs have emerged across the country as a viable policy option for the expansion of solar access and environmental equity, as well as an opportunity for economic development. Over the last two years alone, community solar programs have nearly doubled in number, with more than 40 utility-sponsored community solar programs now active.

The Luskin Center’s “Guide to Design Decisions for Utility-Sponsored Community Solar” provides a comprehensive survey of community solar programs from across the country. Decisions made at each stage of the design process—siting, construction and operation, retail design, and annual program administration—will ultimately determine the success of the program. This Guide is designed to help decision makers and stakeholders better understand the choices that go in to designing a community solar program.



K.C. McKanna, project manager

## Designing New Conservation Nudges

Customer “nudges” or messages have proven surprisingly effective in motivating households to reduce their water and energy consumption. A popular example involves showing households how their relative use of water or energy compares with that of their neighbors, a strategy known to reduce aggregate usage by 2 to 4 percent. What is unknown is why these types of messages work and how they can be better refined and targeted to different types of households. KC McKanna and J.R. DeShazo answer these research questions through both field research and a careful review of the existing experimental and quasi-experimental literature. This research will reveal how to better spur sustainable choices and how far this broad approach can take us toward our conservation goals.



# Advancing Technological, Economic and Policy Solutions to Develop Underutilized Local Water Systems

# Water Atlas Reveals Vulnerabilities Guiding State Policy



Report Finds **75%** of Community Water Systems in **L.A. County** Exhibit Vulnerability

Despite the importance of potable water to the quality of life, economy, and ecosystems in Los Angeles County, surprisingly little is known about the 228 government and private entities that deliver water, and how vulnerable or resilient they are to withstanding pressures from droughts and climate change. A study by the Luskin Center fills this gap, and finds that 75% of community drinking water systems in L.A. County exhibit at least one indicator of supply vulnerability due to either dependency on a single type of water source, local groundwater contamination, small size, or a projected increase in extreme heat days over the coming decades.

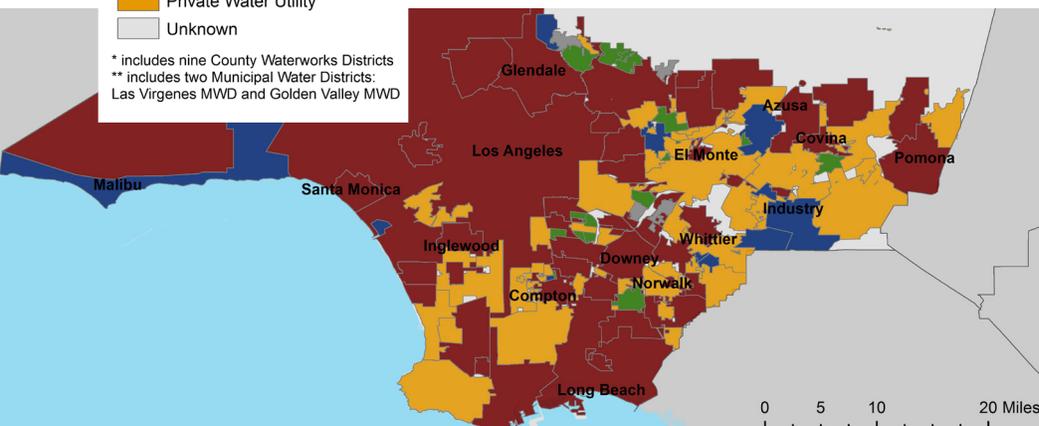
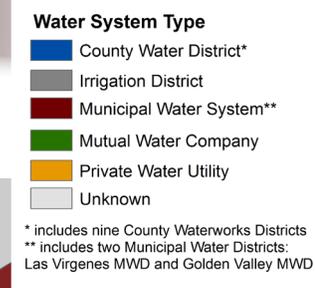
As featured in a *Los Angeles Times* article series, the Luskin Center's "Los Angeles County Community Water Systems Atlas and Policy Guide" provides in-depth, system-level profiles of water supply vulnerabilities and the most complete, publicly accessible set of maps ever created of L.A. County's community drinking water systems. These systems range from major municipal water providers, such as the L.A. Department of Water and Power, to small utilities serving mobile home parks and remote communities.

The first *Los Angeles Times* article highlighted findings that certain areas of L.A. County will experience a particularly dramatic increase in extreme heat days, and as a result will see increases in residential and agricultural water demand. Another arti-

cle focused on the extent of groundwater contamination, and the water systems that rely heavily on contaminated groundwater as a source of drinking water.

The state is experiencing its fourth consecutive year of severe drought conditions and new sources of funding are now available for drinking water systems through Proposition 1 and emergency drought relief assistance. Managers of these state funding programs supporting access to safe drinking water can use this Water Atlas to identify at-risk systems and disadvantaged populations that have the most to gain from financial and technical assistance. For policymakers and researchers, this report can be used to evaluate impacts of water policies on specific drinking water systems.

This Volume I Water Atlas is the first in a series dedicated to expanding knowledge of drinking water systems in L.A. County, with respect to policies, practices, risks and opportunities. The approach used in this report is easily scalable and could be applied to every county in the state to inform water policymakers and researchers in California.



# Advancing One River for All

## Los Angeles River Greenway Toolkit



The Los Angeles River has long been an underutilized community asset. However, accessible pathways and green spaces along the 51-mile Los Angeles River embankment are beginning to be forged by local communities, nonprofits, and municipalities. Many L.A. River-adjacent communities—such as from East L.A. to Long Beach along the 710 Corridor—are heavily burdened by environmental health risks, and thus have much to gain from the physical and mental health benefits of river parkways. These benefits include increased physical activity, contact with nature, active commuting by bicycling or walking, community connectedness, and helping to create a cleaner, safer environment.

The Luskin Center is creating the Los Angeles River Greenway Toolkit to support community-driven approaches to implementing greenway projects. Many entities have already blazed a trail to build greenway projects along the L.A. River, resulting in a considerable body of knowledge that UCLA is working to document. Our case-study analysis includes four types of greenway projects: multimodal linear pathways, green infrastructure open-space projects adjacent to the L.A. River, access points, and non-motorized bridges.

The Toolkit, released during the 2014-15 year, will feature case studies of existing or soon-to-exist projects. These projects were selected after completing a comprehensive database of greenway projects along the L.A. River.

The inspiration, practical tips, and lessons learned will be applicable for those pursuing greenway projects along riverways in general. We expect that the Toolkit will be especially useful for efforts along the Lower L.A. River area, from East L.A. to Long Beach. Historically, the Upper L.A. River area has received more resources and attention compared with the Lower L.A. River. This can change given many exciting advancements, including new funding from Proposition 1 and an upcoming urban greening master planning process involving the Watershed Conservation Authority.

In partnership with the Watershed Conservation Authority, the Luskin Center co-hosted a Lower L.A. River Community Workshop attended by community leaders, collaborating organizations, and others interested in maximizing the benefits of their local river. The workshop highlighted upcoming opportunities to advance greenway projects, and introduced the Toolkit as a resource. Participants at the workshop provided their input on what project types they would like to see, where, and what information in the Toolkit would be most useful to support such efforts.

Three foundations are supporting the Luskin Center's One River for All project: the Rosalinde and Arthur Gilbert Foundation, the David Bohnett Foundation, and the California Endowment.

# Sonoma County Water Agency Supplies Carbon-free Water



*Grant Davis, general manager,  
Sonoma County Water Agency*



Supplying water to Californians consumes nearly 20 percent of the state's energy. Producing this embedded energy from gas and coal emits large amounts of greenhouse gases. The Sonoma County Water Agency (SCWA) is one of the first water agencies in the world to supply its customers with carbon-free water.

Today, SCWA uses net carbon-free electricity for all of its operations including water delivery, water treatment, and administration facilities supplying its 600,000 Sonoma and Marin County residents. Its energy comes from a mix of solar, wind, wave, geothermal, anaerobic digestion, and pyrolysis energy systems. To accelerate its transition, SCWA encouraged water conservation across its service area. Nearly a decade ago, Luskin Center Director J.R. DeShazo suggested this audacious goal at the request of the SCWA leadership who sought to establish the agency as a world leader in sustainability. In August 2015, Dr. DeShazo and others at the Luskin Center returned to SCWA to facilitate a roundtable discussion with experts to identify the next big idea in sustainability.

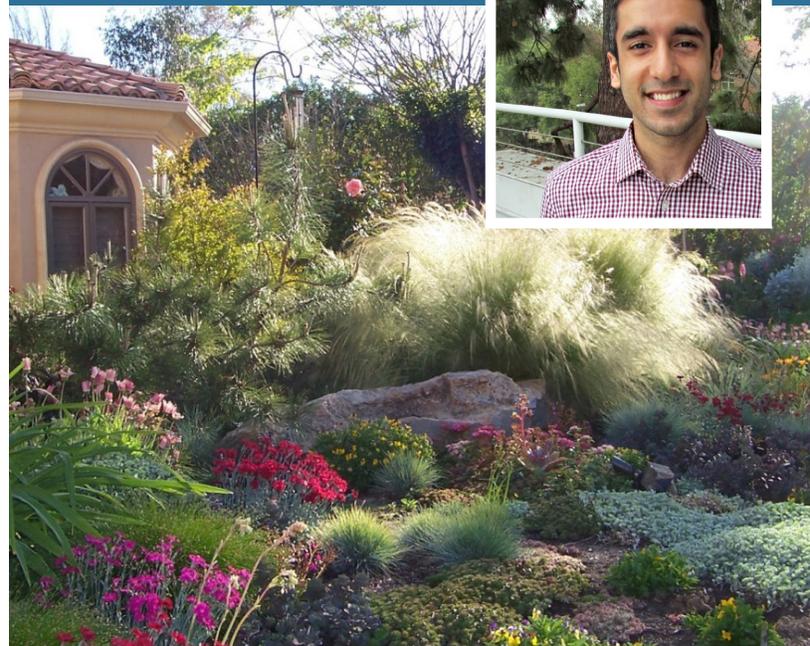
# Turf Replacement Promises BIG Water Savings



Turf replacement will play a critical role in meeting Los Angeles' goals of reducing water use by 16 percent by 2016. Watering lawns and landscaping account for over 50 percent of residential water use. Given the many attractive low-water landscaping alternatives to turf, outdoor water use can be dramatically reduced to generate several benefits. Well-designed turf replacements increase the value of homes and reduce future water bills, while helping L.A. adapt to the drought and future climate change. Yet so far only about 1.5 percent of single-family homes in L.A. have replaced turf.

In a study commissioned by the Office of Los Angeles Mayor Eric Garcetti, the Luskin Center is analyzing how large a "nudge" the turf rebates must be to induce households to replace their turf with attractive low-water landscapes. This research is critical now that the Metropolitan Water District has suspended its regional turf rebate, which nearly all of the region's water suppliers relied upon.

*Ali Panjwani, researcher*





## **J.R. DeShazo Appointed to State Committee**

Dr. J.R. DeShazo, director of the Luskin Center, was appointed to the Research Screening Committee of the California Air Resources Board (CARB). This committee advises the CARB on its research projects. He also recently served as a reviewer on the U.S. Environmental Protection Agency panel for “Valuing Improved Water Quality Benefits.”



## **Colleen Callahan Appointed Director of the UCLA Leaders in Sustainability Program**

Colleen Callahan, deputy director of the Luskin Center, is also the newly appointed director of the UCLA Leaders in Sustainability Graduate Certificate Program (LiS). LiS is offered through the Institute of the Environment and Sustainability and is open to all UCLA graduate students. During the 2014-15 school year, nearly 200 students from 24 distinct disciplines enrolled and participated in this innovative, award-winning and interdisciplinary certificate program that helps students advance sustainability in their fields. Callahan’s role as director includes mentoring and assisting students with networking both across and off campus, collaborating with faculty and co-teaching the certificate’s core course.

## **Luskin Center Welcomes Visiting Scholar From Spain**

Cristina García Fernández joined the Luskin Center during the summer of 2015 as a visiting scholar. She is a professor at the Universidad Complutense de Madrid in Spain. She is an expert in carbon taxes, climate change mitigation and climate change adaptation strategies in European cities. While in Los Angeles, she is assessing actions that municipalities in the L.A. region are taking to adapt to climate change, with a focus on coastal areas and health. This involves analyzing coastal adaptation plans to sea-level rise as well as health policies being developed by local health departments. More generally, she is identifying U.S. leading cities and best practices for improving climate resiliency in vulnerable communities, to be used for a comparative analysis with European cities.



# LUSKIN CENTER for Innovation

# STAFF INTRODUCTIONS AND RESEARCH PREVIEW



## Carrie Hadaller

Carrie Hadaller is the Luskin Center's new operations manager and executive assistant to J.R. DeShazo. She is responsible for the personnel and financial administration for the center, which includes supporting project budgeting, proposal writing, and grant management. Hadaller comes from the UCLA Henry Samueli School of Engineering and Applied Science, where she supported Dean Dhir and Dean Chang, managed large projects, and supported the implementation of several office and lab safety programs. Currently she is collaborating with Gaurav Sant, associate professor of materials science, to produce the Luskin Center's first International Conference on Grand Challenges in Construction Materials.



## Gregory Pierce

Gregory Pierce is the Luskin Center's new senior researcher and program manager of the Smart Water Systems initiative. Pierce completed his Ph.D. in Urban Planning, and was named Outstanding Doctoral Student by the department in June 2015. His expertise will enable the Smart Water Systems initiative to build on current research analyzing the vulnerabilities of community water systems and system impacts on households in Los Angeles County. This analysis is being expanded to cover the greater Southern California region and eventually the entire state. Research findings from this project will be communicated to a wide range of stakeholders through policy briefs and publications, and via a water system policy summit organized by the center in Sacramento.



## Kelsey Jessup

Kelsey Jessup recently joined the Luskin Center as a project manager. Her work currently focuses on the financial effects of the Turf Replacement Program in Los Angeles and the importance of the program for achieving state and local water conservation goals. Jessup is also helping to develop the L.A. River Greenway Toolkit and to support a roundtable with the Sonoma County Water Agency to discuss the future of water in California. She is especially interested in conservation policy and planning. Future projects will involve exploring the importance of biodiversity particularly as it relates to ecosystem health and our changing climate.



## Andrew Pasillas

Andrew Pasillas is the project manager for the Los Angeles River Greenway Toolkit project. Pasillas is a second-year student pursuing a Master's Degree in Urban and Regional Planning. His interest in planning developed through his study of the fields of Sociology and Environmental Science as an undergraduate, also at UCLA. As a professional, he has contributed to various revitalization projects working for the City of Los Angeles — L.A. River Project Office, and also worked to improve access to community resources with the City of Fullerton Task Force on Homelessness and Mental Health Services.

# WE THANK OUR 2014 -



Originate



UCLA Luskin School



UCLA Extension

Luskin Center  
FOR INNOVATION



# 2015 COLLABORATORS\*

\*This is not a complete showing of our collaborators.



UCLA IT Services

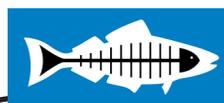


The City Project



ACQUIA®

ool of Public Affairs



Heal the Bay



North East Trees  
Bringing Nature Back

skin  
nter  
OVATION



MCS



Strengthening the Voice of Business



Personal >>>>  
POWERWORKS

# Participating Faculty



**Madelyn Glickfeld,**  
IoES



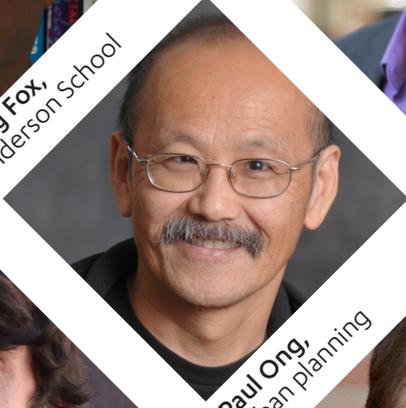
**Craig Fox,**  
Anderson School



**Manuel Pastor,**  
sociology, USC



**Yoram Cohen,**  
chemical engineering



**Paul Ong,**  
urban planning



**Richard Carson,**  
economics, USCD



**Jan Kleissl,**  
UC San Diego



**Ertugrul Taciroglu,**  
civil & env. engineering



**Evy Blumenberg,**  
urban planning



**Matt Kahn,**  
IoES



**Tamara Sheldon,**  
economics, UCSD



**Alex Hall,**  
atmospheric sciences



**Gaurav Sant,**  
civil & env. engineering



**Norman Wong,**  
Lewis Center



**Mark Gold,**  
associate dean of research



**Suzanne Paulson,**  
atmospheric sciences



**Byron Washom,**  
UC San Diego

Core Administration



**J.R. DeShazo,**  
director



**Carrie Hadaller,**  
operations manager



**Colleen Callahan,**  
deputy director



**Christian Zarate,**  
communications, events



**Alex Turek,**  
project manager



**Kelsey Jessup,**  
project manager



**Rebecca Sadwick,**  
project manager



**Gregory Pierce,**  
project manager



**Henry McCann,**  
project manager

Project Manager: Christian Zarate  
Editors: Colleen Callahan  
J.R. DeShazo  
Design: Christian Zarate  
Contributing Writers: Colleen Callahan  
J.R. DeShazo  
Rebecca Sadwick  
Alex Turek  
Kelsey Jessup  
Photography:  
Mary Beth DeLucia Photography  
Christian Zarate  
Alejandro Rioja

**UCLA** Luskin School *of* Public Affairs

**Luskin  
Center**  
**FOR INNOVATION**

INNOVATION.LUSKIN.UCLA.EDU  
3323 Luskin School of Public Affairs  
Box 951656, Los Angeles, CA 90095-1656