

*Workable Ideas
For Sustainable Business*



Thursday, June 25, 2015
Frances C. Arrillaga Alumni Center

Presented by Precourt Energy Efficiency Center
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**Precourt Energy
Efficiency Center**
STANFORD UNIVERSITY

On behalf of the Silicon Valley Energy Summit planning committee, I would like to extend our warmest welcome to SVES 2015!

This year, as you may have noticed, we have added several new elements. The luncheon debate about the future of the internal combustion engine in California will be fun, provocative and illuminating. Working with our new partner Sustainable Silicon Valley, we have added Conversations for Action during the final parallel session and the Solutions Showcase exhibition all day. In the breakout conversations, you can take a deep dive on a subject most compelling to you, share your knowledge with each other and gain insights from our expert discussion leaders.

As always, the mission of SVES is to explore practical ideas and information for making our organizations and communities more sustainable. I hope you walk away from the Summit with new ideas, an expanded network, and new information that will help you improve the energy and environmental performance of your organization. Toward that end, I expect that our speakers will enlighten and inspire you. Chances for interaction will include ample Q&A time during the formal part of the program, as well as conversation and networking opportunities throughout the day.

Presenters, your time spent with us today sharing your expertise and vision is greatly appreciated. Thanks also to the SVES 2015 planning committee members, who provided the topics, gathered the speakers and panelists, and handled the logistics necessary for a first-rate conference, and to the staff and volunteers whose efforts are critical to the Summit. I offer my profound gratitude to each of you.

May we make the most of our time together today. Thank you all for making SVES 2015 a great event!

Sincerely,

Jim Sweeney
Director, Precourt Energy Efficiency Center

SVES 2015 PLANNING COMMITTEE

Jeff Byron, Stanford Distinguished Careers Institute

Mark Golden, Precourt Energy Efficiency Center

Marianna Grossman, Sustainable Silicon Valley

Dian Grueneich, Precourt Energy Efficiency Center

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Marek Samotyj, Electric Power Research Institute

James Sweeney, Precourt Energy Efficiency Center

Susan V. Sweeney, Conference Consultants

Margaret Taylor, Precourt Energy Efficiency Center

John Weyant, Precourt Energy Efficiency Center

Chuck Wilhelm, Chuck Wilhelm & Associates, EnLight Energy

7:30–8:30 Registration, Continental Breakfast and Networking			
8:30–8:45 Welcome and Introduction James L. Sweeney, Director, Precourt Energy Efficiency Center, Stanford University			
8:45–9:45 “Comments on the State of the Energy System” George Shultz, Chairman, Task Force on Energy Policy, Hoover Institution; Former U.S. Secretary of State, Treasury and Labor Keynote: “Outlook for Clean Energy” Dan Arvizu, Director, National Renewable Energy Laboratory, U.S. Department of Energy			
9:45–10:15 Networking Break, Solutions Showcase and Sponsor Tables			
THREE PARALLEL SESSIONS	Arrillaga Alumni Center: McCaw Hall	Fisher Conference Center: Lodato	Fisher Conference Center: Cranston
10:15–11:25	Community Choice Energy Has Arrived in California: Is Silicon Valley Ready? Joe Como, California Public Utilities Commission Ann Hancock, Center For Climate Protection Dawn Weisz, Marin Clean Energy <i>Moderator: Mayor Jan Pepper</i> , City of Los Altos, and Silicon Valley Power	Take Charge: Synergies with Distributed Storage and EVs Tom Gage, EVGrid Sila Kiliccote, SLAC and Google Archan Padmanabhan, Tesla Motors <i>Moderator: Anthony Eggert</i> , ClimateWorks	Management for Energy Efficiency: Making a Good Thing Even Better Richard Hart, EnerNOC Bill Mitchel, Microsoft James L. Sweeney, PEEC <i>Moderator: Margaret Taylor</i> , PEEC and Lawrence Berkeley National Lab
11:25–1:00 Debate at high noon	Luncheon Debate: “Internal Combustion Engines Have No Future in California.” Drew Baglino, Director of Engineering, Tesla Motors John Boesel, President and CEO, CALSTART Mark Platshon, Senior Advisor, BMW i-Ventures; Managing Director, Icebreaker Ventures Justin Ward, General Manager, Powertrain System Control Department, Toyota <i>Moderator: Jeffrey Ball</i> , Scholar in Residence, Steyer-Taylor Center for Energy Policy & Finance, Stanford		
1:10–2:15	Tomorrow’s Headline: “Collapse of Water in the U.S. West” Mike Chrisman, Chrisman Ranches Frances Spivy-Weber, California State Water Resources Control Board Leon Szeptycki, Water in the West Program, Stanford <i>Moderator: Jeff Byron</i> , Stanford Distinguished Careers Institute	Net Positive Energy: Breaking the Just-Enough Model Archelle Funníé, East Palo Alto Planning Commission Dian Grueneich, PEEC David Kaneda, Integral Group Brad Liljequist, International Living Future Institute <i>Moderator: Marianna Grossman</i> , Sustainable Silicon Valley	Start Your Start-Up: Resources for Energy Entrepreneurs Mike Graveley, California Energy Commission Larry Kelly, Kelly Ventures and Band of Angels Dawn Lippert, Energy Excelerator Vern Norviel, Wilson Sonsini Goodrich & Rosati <i>Moderator: Barbara Heydorn</i> , SRI International.
2:25–3:30	Conversations for Action Breakout discussions led by experts from industry and government will give you time to exchange ideas, explore questions and meet others with shared interests. <i>Introduction: Marianna Grossman</i> <i>See page 3 for details.</i>	The Future of Energy: Stanford’s Big Clean Energy Gamble Jack Cleary, Stanford Ron Gawer, Stanford Bill Kelly, SunPower <i>Moderator: Jeff Byron</i> , SDCI	Out of the Closets: Optimizing Network Closets and Small Data Rooms Joyce Dickerson, Google Jerry Meek, Genentech Ralph Renne, NetApp <i>Moderator: Mukesh Khattar</i> , Electric Power Research Institute <i>Session sponsored by PG&E.</i>
3:30–3:50 Networking Break, Solutions Showcase and Sponsor Tables			
3:50–4:50 Keynote: “Energy, Environment, High Tech and Silicon Valley Partnerships: Happening Now in the Navy” Dennis McGinn, Assistant Secretary of the Navy—Energy, Installations and Environment William Perry, Professor (Emeritus), Stanford; Director, Preventive Defense Project; Former U.S. Secretary of Defense			
4:50–5:00 Wrap-Up and Adjourn James L. Sweeney, PEEC			
5:00–7:00 Networking Reception, Solutions Showcase and Sponsor Tables			

Conversations For Action

Please choose from among the eight small-group discussions below to share knowledge on a targeted topic in exchanges led by experts.

1 Energy Efficiency

Strategic demand and supply management strategies and tools.

Expert: **Mandeep Khara**, Daintree Networks

Facilitator: **Walker Kellogg**, Inspired Labs

2 Energy Storage

Grid-scale storage technology and deployment to solve grid challenges due to the shifting energy generation and load make-up.

Expert: **Nick de Vries**, SolarCity

Facilitator: **Ray Martin**, Advanced Lighting Technologies

3 Energy Analytics

The key to achieving a successful energy program is understanding how energy analytics provides energy insight and best program solutions.

Experts: **Michael Steifman**, Utilisave

Kurt Yeager, Galvin Electricity Initiative

Facilitator: **Dian Grueneich**, PEEC

4 Community Choice Energy

Allows cities and counties to purchase and/or generate electricity for their residents and businesses.

Experts: **Jason Caudle**, City of Lancaster

Jan Pepper, City of Los Altos; Silicon Valley Power

Facilitator: **Chuck Wilhelm**, Chuck Wilhelm & Associates, EnLight Energy

5 Net Positive

Beyond Net Zero: Imagine if we could generate more renewable energy than we use, sequester more carbon than we emit, and use only the water we have locally, all by the year 2050? The County of Santa Clara has developed a geo-economic modeling tool to help communities adapt to the impacts of a changing climate.

Expert: **Demetra McBride**, County of Santa Clara

Facilitator: **Kimberly Wiefeling**, Sustainable Silicon Valley

6 Financing Green Projects

Investments in the clean technology sector often combine capital intensity with new technologies. Securing project finance can prove to be a critical step in the path to commercialization.

Experts: **Larry Kelly**, Kelly Ventures

Vincent Siciliano, New Resource Bank

Facilitator: **Andrew Clark**, IBM Venture Capital Group

7 Advanced Manufacturing and Required Electric Infrastructure

Emerging trends in advanced manufacturing, including additive manufacturing technology applications.

Expert: **Siva Sethuraman**, PG&E

Facilitator: **Marek Samotyj**, Electric Power Research Institute

8 Expanding the Community of Energy Entrepreneurs

How can California better help a more diverse group of energy innovators succeed? Outreach to small businesses and businesses led by historically underserved communities can be challenging. What works? What more can be done?

Expert: **Archelle Funnié**, East Palo Alto Planning Commission

Adam Gottlieb, California Energy Commission

Facilitator: **Barbara Heydorn**, SRI International

ABOUT PEEC

The Precourt Energy Efficiency Center is a Stanford University research organization working to improve opportunities for—and implementation of—energy efficient systems, practices and technologies. PEEC addresses market, policy, technology and human behavioral barriers to economically efficient reductions of energy use. PEEC develops and evaluates ways of overcoming those barriers. PEEC also designs and analyzes policy options, and informs public and private policy making.

PEEC is an independent lab at Stanford, drawing on resources throughout the university. PEEC is also part of a Stanford umbrella organization, the Precourt Institute for Energy, which engages in energy research and education broadly. PEEC was founded in 2006 by a generous gift from Stanford alumnus Jay Precourt '59, MS '60.

For more information on PEEC, visit peec.stanford.edu.

ABOUT SUSTAINABLE SILICON VALLEY

Sustainable Silicon Valley is a consortium of more than 100 business, government, research and civic organizations seeking to bring the ingenuity of Silicon Valley to create a more sustainable region and world. SSV's Net Positive initiative is catalyzing action toward a resilient region that by 2050 generates surplus renewable energy, sequesters more carbon than emitted and uses local water resources. SSV's EcoCloud Innovation Platform offers enterprises an opportunity to exchange and implement sustainable ideas and solutions at a corporate level.

For more information: www.sustainablesv.org



Michael Killen is the artist of the painting "Methane Joins Carbon Emissions to Boil the Planet" exhibited at SVES 2015 and reproduced on the back of this program. Michael makes his paintings available to help organizations bring attention to their solutions. Michael is also a television talk

show host, author of six books, and founder of a business think tank. He can be reached at Michael@Killen.com

8:45–9:45

“Comments on the State of the Energy System”



Secretary George Shultz, a native of New York City, attended Princeton, served in the U.S. Marine Corps and earned a doctorate in industrial economics from MIT in 1949. From 1948 to 1957 George taught at MIT. In 1955 he served as a senior staff economist on President Eisenhower’s Council of Economic Advisors. George then joined the University of Chicago’s business school as a professor of industrial relations. He became dean in 1962. He was appointed secretary of labor by President Nixon in 1969. In 1970 he became director of the Office of Management and Budget, and in 1972 he was named secretary of the Treasury. In 1974 George became president of Bechtel Group and joined the faculty of Stanford. He was President Reagan’s secretary of state from 1982 to 1989.

George’s publications include *Game Changers: Energy on the Move* with Robert C. Armstrong (2014); *Issues on My Mind: Strategies for the Future* (2013); *Ideas & Action, Featuring 10 Commandments for Negotiations* (2010); *Putting Our House in Order: A Citizen’s Guide to Social Security and Health Care Reform*, with John B. Shoven (2008); and *Turmoil and Triumph: My Years as Secretary of State* (1993). He is honorary chairman of the Stanford Institute for Economic Policy Research; advisory council chair of both the Precourt Energy Efficiency Center and the Precourt Institute for Energy; chair of the MIT Energy Initiative external advisory board; and chair of the Hoover Institution Task Force on Energy Policy.

Keynote: “Outlook for Clean Energy”



Dan Arvizo has been the director and chief executive of the U.S. Department of Energy’s National Renewable Energy Laboratory in Golden, Colorado, and president of Alliance for Sustainable Energy, LLC since January 2005. Dan is also an executive vice president with MRIGlobal, headquartered in Kansas City, Missouri. He was appointed by two successive U.S. presidents to

serve six-year terms on the National Science Board, which governs the National Science Foundation and advises the president and Congress on science policy. Dan is presently serving as chairman. He is a fellow of the National Academy of Engineering and the National Academy of Public Administration.

Prior to joining NREL, Dan was a chief technology officer with CH2M HILL Companies, Ltd. He was also an executive with Sandia National Laboratories in Albuquerque, New Mexico, leading organizations in energy technologies, material science, and technology commercialization. He started his career with four years at AT&T Bell Telephone Laboratories. Dan has a bachelor of science degree in mechanical engineering from New Mexico State and a master of science degree and doctorate in mechanical engineering from Stanford.

10:15-11:25

Community Choice Energy Has Arrived in California: Is Silicon Valley Ready?



Joe Como has been director of the CPUC Office of Ratepayer Advocates since 2010. Joe had previously worked for the law firm of Dryden, Margoles, Schimaneck & Wertz and the San Francisco City Attorney’s Office on energy matters. Prior to his utility related work, Joe represented disadvantaged communities affected by hazardous chemical contamination as an attorney with the Golden Gate University Environmental Law & Justice Clinic and the Sierra Club Legal Defense Fund (Earthjustice Legal Defense Fund).

In his former career, Joe worked as a civil engineer, designing and managing environmental restoration projects, and he worked at siting and designing hazardous material treatment facilities in California. He holds a law degree from Golden Gate University with an emphasis in environmental law, a master’s degree in civil and environmental engineering from Stanford, and a bachelor’s degree in natural resources planning from Cornell University.



Ann Hancock directs the Center for Climate Protection, which she co-founded in 2001. The organization’s mission is to inspire, align and mobilize action in response to the climate crisis. It works with business, government, youth and the broader community to advance practical, science-based solutions for significant greenhouse gas emission reductions. Ann’s non-profit background includes founding Sustainable Sonoma County, founding Citizens for Social Responsibility and consulting for the Water Heritage Trust. Her work for government includes serving as health program advisor for Humboldt-Del Norte Counties and as sustainability planner for Marin County. Ann has taught various subjects at the college level from leadership to human sexuality. She was a published columnist and a commentator for TomPaine.com, a national online journal. Ann worked for eleven years as a real estate broker. She received her bachelor’s degree in applied behavioral science from UC-Davis, and a master’s degree in public health from UC-Berkeley.



Dawn Weisz is the chief executive officer of Marin Clean Energy and she coordinated efforts to explore, develop and launch MCE as the first community choice aggregation program in California. MCE has launched service to over 150,000 customers in 17 communities, entered into power supply agreements that have doubled the amount of renewable energy purchased in the region, initiated numerous local renewable generation projects, and achieved greenhouse gas reductions through energy efficiency and by exceeding state requirements for renewable energy supply. Dawn has more than 20 years of experience developing and managing renewable energy and energy efficiency programs while working for leading public agencies in the field. Before joining MCE, she managed energy and sustainability initiatives for the County of Marin, served as the executive director for Sustainable North Bay, and was a labor and environmental justice organizer in Los Angeles. Dawn has received awards from the U.S. Environmental Protection Agency, the U.S. Department of Energy and the Power Association of Northern California.

Moderator



Jan Pepper was elected to the city council of Los Altos in 2012 and is the mayor. Jan works full-time as an electric division manager at Silicon Valley Power, the municipal utility serving the City of Santa Clara. She is responsible for Silicon Valley Power's \$200 million debt portfolio and rate setting, and participates in wholesale energy procurement, policy issues, and electric vehicle

projects. Jan has more than 25 years of energy and utility experience, with a focus on contracting and financing renewable energy. She was the founder of four energy-related start-up companies, including APX and Clean Power Markets. At APX, Jan developed and pioneered the first use of renewable energy credits, which are now the standard currency for trading and tracking renewable power. At Clean Power Markets, her company designed and implemented the successful Solar Renewable Energy Credit (SREC) program for the State of New Jersey. She holds a bachelor's degree in civil engineering and an MBA, both from Stanford. Jan is a registered professional engineer in California.

Take Charge: Synergies with Distributed Storage and EVs



Tom Gage is chief executive officer and founder of EV Grid, a Palo Alto company that develops and supplies technology for integrating electric vehicles, batteries and the power grid. Before EV Grid, Tom was chief executive officer of AC Propulsion, a leading supplier of electric vehicle technology based in the United States and China.

During his tenure, AC Propulsion pioneered vehicle-to-grid charging systems, established ongoing supplier relationships with automotive OEMs worldwide, set up manufacturing and marketing operations in China, and achieved profitability. Tom's professional specialties include the energetics of automobiles and the effects of public policy on automotive technology and market trends. He has held executive positions in Chrysler's regulatory strategy office, and SRI International's Global Automotive Practice. He holds a mechanical engineering degree from Stanford and an MBA from Carnegie Mellon University. Tom has driven electric cars since 1995.



Sila Kiliccote is the smart grid leader at SLAC National Accelerator Laboratory and holds a part-time position as a demand response expert at Google. Prior to joining SLAC, Sila spent more than 10 years at Lawrence Berkeley National Laboratory as a deputy of the Demand Response Research Center and leading the grid integration initiatives, where she worked with a team to develop

OpenADR, Virtual Grid Integration Laboratory (VirGIL) and micro-PMUs for distribution systems and led the L.A. Air Force Base V2G pilot. She holds an electrical engineering degree from University of New Hampshire and a master of building science degree from Carnegie Mellon University.



Archan Padmanabhan is an engineer and entrepreneur with expertise in research, development and commercialization of energy technologies. Currently, Archan leads sales and application engineering for the energy storage group at Tesla. Leveraging Tesla's expertise in batteries, Tesla Energy is developing a scalable platform for grid-connected applications.

Previously, he was a co-founder at Verdigris Technologies, a technology company developing an energy monitoring and efficiency platform. Prior to co-founding Verdigris he worked on electricity markets focusing on the impact of policy scenarios, the integration of renewables, and the economics of deregulated markets. As a visiting researcher at UC-Berkeley, Archan also worked on modeling the economic impacts of emerging energy technologies on the U.S. electricity grid. Formerly, he was a founding engineer at Joby Energy where he co-developed novel wind energy systems. While at Joby, Archan researched and published one of the first detailed maps of global wind energy potential using meteorological datasets. His graduate research was focused on energy systems at Stanford, where he received a master's degree in mechanical engineering.

Moderator



Anthony Eggert directs the oil portfolio at ClimateWorks, which supports policies for cleaner and more efficient vehicle and fuel technologies; increased availability and accessibility of transit, biking and walking; and public support for a transition away from oil and toward low-carbon alternatives. Anthony came to ClimateWorks with more than 18 years of

public and private sector experience working on clean energy technologies and policies. Prior to ClimateWorks, he was the founding director of UC-Davis Policy Institute for Energy, Environment & the Economy, which is dedicated to leveraging university expertise to inform better policy. Anthony's public sector experience includes serving as an appointee of Governors Jerry Brown and Arnold Schwarzenegger, helping to implement California's landmark clean energy and climate policies. He started his career as an automotive engineer and program manager at Ford Motor Co. working on regulatory compliance and advanced vehicle technology development.

Management for Energy Efficiency: Making a Good Thing Even Better



Richard Hart is the practice lead for transformation services at EnerNOC. Richard has more than 20 years of experience in organizational change management, process improvement and technology adoption in a variety of commercial, industrial and institutional settings. He has applied his extensive project and staff management expertise to projects in commercial real estate,

financial services, batch and process manufacturing, healthcare, and government. Richard has managed projects in North America, Central America, China, Germany, India, South Korea, and the United Kingdom. He holds an MBA from UC-Berkeley and a bachelor of science degree from the University of Cambridge.



As senior director for Microsoft's World Wide Public Sector team, **Bill Mitchel** leads the company's government business development for its cities and sustainability solutions. Over the last five years, Bill has built an ecosystem of strategic partner relationships with software companies, universities and government to deliver innovative and economically sustainable solutions for smart

cities. During his twelve years at Microsoft he has managed new strategic partnerships with the largest software and services companies, as well as start-ups in smart buildings, energy management and product lifecycle management. In his work on city-scale energy efficiency Bill has forged strategic partnerships with the City of Seattle and UC-Davis, and he is working on initiatives with cities and government globally. Previously, Bill worked in a variety of management and business development roles in software and technology.



James L. Sweeney is the director of the Precourt Energy Efficiency Center and a professor of management science and engineering at Stanford. His research focuses on the economic and environmental effects of energy policies and on the role of energy efficiency in shaping the energy system. Jim chairs the California Energy Commission's Petroleum Market

Advisory Committee. He is a senior fellow of the U.S. Association for Energy Economics, a senior fellow of the California Council on Science & Technology, of the Hoover Institution, the Precourt Institute for Energy, and the Stanford Institute for Economic Policy Research. He serves as a member of the External Advisory Council of the National Renewable Energy Laboratory. Jim earned his bachelor's degree from MIT in electrical engineering and his PhD from Stanford in engineering-economic systems.

Moderator



Margaret Taylor investigates how policy and innovation interact in climate and energy-related industries. Her research aims to inspire practical solutions to the environmental, economic, and security challenges associated with energy use. A former public policy professor at Berkeley and co-chair of the annual Behavior, Energy & Climate Change conference, Margaret has dual

appointments at Stanford's Precourt Energy Efficiency Center and at Lawrence Berkeley National Laboratory.

12:00-1:00

Luncheon Debate: “Internal Combustion Engines Have No Future in California”



Drew Baglino is engaged in two roles at Tesla. He leads the engineering effort for Tesla’s new energy division, where his goal is to develop low-cost, efficient, scalable and easily deployed grid-tied batteries. Second, Drew leads the system architecture, modeling and controls group, which optimizes the design and controls of Tesla’s powertrains and high-voltage systems. In nine years at Tesla, Drew has developed the controls and architecture of Tesla’s motor controllers; led the electrical engineering and software development for Tesla’s Daimler battery programs; and architected the powertrain for the Model S. More recently, Drew designed Tesla’s unique dual-motor system, including the optimized motor and the algorithms responsible for torque vectoring, traction control, and efficiency optimization. Drew earned a bachelor’s degree in electrical engineering from Stanford and worked at Resources for the Future, an energy and environment economics think tank in Washington, D.C. on transportation policy.



John Boesel is the president and CEO of CALSTART, a national organization with more than 150 member companies that is dedicated to the growth of the clean transportation technology industry. John joined the organization as vice president and was promoted to his current position in 2001. Prior to joining CALSTART, John worked as a legislative aide, focusing on environmental and energy policy, in the California State Assembly. Earlier, he was a commercial banker for Wells Fargo. John has an MBA from UC-Berkeley and a bachelor of arts degree from UC-Davis. He is a member of the advisory board of the Precourt Energy Efficiency Center, a member of the California Plug-In Electric Vehicle Collaborative, and a board member of the Clean Vehicle Foundation.



Mark Platshon is senior advisor with BMW i-Ventures fund, managing director of Icebreaker Ventures and a partner with Birchmere Ventures. Previously, Mark was a serial Silicon Valley chief executive officer and then a partner at Trident Capital and VantagePoint. He is co-founder of Amprius, a Lithium-ion battery company spun out of Stanford. He was an early investor in Tesla. He has served as chief executive officer or on the boards of numerous companies, including: ELO, the Raychem subsidiary that pioneered the touchscreen; Synxis, acquired by Sabre; Everdream (Dell); Idetek (Idexx); Zing (Sony); and Ancore (Rapiscan). Mark’s current portfolio includes Peloton, Amprius, Eargo, Estimote, Bloomboard, Life 360, ChargePoint, RideCell, Zendrive, Weld, PerceptiMed, PredPol, CodeHS, TapResearch, Zirx, and Humin. Mark earned a bachelor’s degree in naval architecture and marine engineering at the University of Michigan and an MBA from Stanford. As a lieutenant in the Navy, he was on Admiral Rickover’s nuclear submarine engineering staff.



Justin Ward is the general manager of Toyota’s powertrain system control department at the Toyota Technical Center in Gardena, Calif. Powertrain system control responsibilities include suitability testing of advanced powertrain technologies in North America, coordinating development of new or improved powertrain software, coordinating Toyota’s contributions to North American codes and standards related to advanced powertrains, and supporting technical outreach. Justin began his career at the Toyota Technical Center in 2001, when he joined the company to support the opening of Toyota’s first facility in North America dedicated to fuel cell vehicle development, located at the California Fuel Cell Partnership in West Sacramento, Calif. Justin earned a bachelor of science degree in mechanical engineering from UC-Davis.

Moderator



Jeffrey Ball, a writer on energy and the environment, is scholar-in-residence at Stanford’s Steyer-Taylor Center for Energy Policy & Finance and a lecturer at Stanford Law School. Jeff’s stories and essays have appeared in *Fortune*, *The New Republic*, *Foreign Affairs*, *The Wall Street Journal*, and *Slate*, among other publications. He came to Stanford in 2011 from *The Wall Street Journal*, where he was environment editor and spent more than a decade writing about energy and the environment as a reporter and columnist. Jeff won the Society of American Business Editors & Writers’ top energy-writing prize in 2015 for a *Fortune* article on Mexico’s energy reform. At the Steyer-Taylor Center, he heads a project exploring the globalization of clean energy. It examines how China and the United States might deploy cleaner energy more efficiently if each played to its economic strengths. Jeff graduated from Yale, where he was editor-in-chief of the *Yale Daily News*. He and his wife are the resident fellows of Roble Hall, a Stanford undergraduate house, where they live with their two daughters.

1:10-2:15

Tomorrow's Headline: "Collapse of Water in the U.S. West"



Mike Chrisman is a fourth generation Californian and San Joaquin Valley resident, as well as a partner of Chrisman Ranches in Tulare County. Mike was the director of the southwestern partnership office for the National Fish & Wildlife Foundation from 2010 to 2013. He was the California Secretary of Natural Resources from 2003 until 2010. As a member of Gov. Arnold

Schwarzenegger's cabinet, he was chief advisor on the states' natural, historic and cultural resources. Mike also chaired the California Ocean Protection Council, Sierra Nevada Conservancy, and the Stewardship Council. Mike holds a master of science degree and a bachelor of science degree from the University of Arizona.



Frances Spivy-Weber was appointed to the State Water Resources Control Board in 2007, reappointed and elected vice-chair of the board in 2009, and reappointed by Governor Brown in 2013 to a four-year term. Before that, Frances was the executive director of the Mono Lake Committee and the director of international programs for the National Audubon Society. She is chair of the Water

Policy Center Advisory Council with the Public Policy Institute of California and a member of the advisory Board of Synergy. Previously, Frances was a member of the Bay-Delta Public Advisory Committee, co-chair of the Southern California Water Dialogue and convener of the California Urban Water Conservation Council.



Leon Szeptycki is executive director of Water in the West and a professor of the practice at the Stanford Woods Institute for the Environment. Water in the West engages Stanford in solving the West's growing water scarcity problems. Leon is an attorney who has devoted his career to water quality, water management and watershed restoration issues. Before joining Stanford, he ran

the Environmental Law & Conservation Clinic at the University of Virginia School of Law. Prior to that, he was general counsel of Trout Unlimited. He has also worked in private law practice and at the U.S. Department of Justice. Leon earned a bachelor's degree from the University of Kansas and a law degree from Yale Law School.

Moderator



Jeff Byron is a fellow in the inaugural cohort of the Stanford Distinguish Career Institute. Jeff has nearly 40 years of experience in emerging energy technologies, customer requirements and energy policy. His recent focus has been on the technical, regulatory and financial implications of clean energy and smart grid technologies. He has also served on non-profit boards providing local services for the

developmentally disabled and the world's largest clean technology business accelerator. He recently served for five years on the California Energy Commission. Jeff consults with a number of startup companies developing unique generation and control technologies, energy management and consumer-oriented smart grid devices. He earned bachelor's and master's degrees from Stanford.

Net Positive Energy: Breaking the Just-Enough Model



As one of East Palo Alto's planning commissioners, **Archelle Funnie** is responsible for making recommendations to the city council regarding major subdivision, zoning, environmental reviews, and development permits and amendments associated with those projects. Previously, Archelle was a real estate agent and consultant, and a marketing professional in the high tech industry for more than 20 years. He holds a bachelor of arts degree in communications/economics from the University of Pittsburgh, and an MBA in technology management from the University of Phoenix.



Dian Grueneich was a commissioner on the California Public Utilities Commission from 2005 to 2010 and led its efforts on energy efficiency, developing the "California Long-Term Energy Efficiency Strategic Plan" and overseeing transmission planning and permitting. Dian is currently a senior research scholar at the Precourt Energy Efficiency Center and the Shultz-

Stephenson Energy Policy Task Force at Stanford, focusing on state and regional energy issues, particularly on regulatory policy governance and the next generation of energy efficiency. Dian is a member of the DOE-EPA State Energy Efficiency Action Plan Leadership Group and the NREL External Advisory Council. Dian is a graduate of Stanford and holds a law degree from Georgetown.



Over the past three decades **David Kaneda**, managing principal of Integral Group, has designed high performance and resource efficient electrical systems, resulting in cutting-edge, sustainable projects attaining net zero energy, zero carbon emissions, and CHPS, Net Zero Energy, and LEED Platinum certification. David co-chairs GSA's Net Zero Energy Task Group and the AIA California

Council COTE and is an advisor to a number of key organizations focused on sustainability issues. He has spoken on sustainable engineering issues at the National Academies, the Pacific Energy Center, Pennsylvania State University, Sustainable Silicon Valley, the American Institute of Architects and the U.S. Green Building Council. David is a professional engineer, a registered architect, AIA Fellow and a LEED Accredited Professional.



Brad Liljequist, as director of the International Living Future Institute's Net Zero Energy and Living Community programs, is at the forefront of a global transformation toward a carbon-free future. He directed development of the Petal and Net Zero Energy Certified zHome, the first multifamily zero net energy community in the United States, as well as Issaquah Fire Station 72, the world's most energy

efficient fire station and recipient of the international 2012 ASHRAE Technology award. Brad has nearly three decades of experience catalyzing change in the fields of planning, environmental policy, urban design, construction management and sustainable building. He was educated at Georgetown, the University of St. Andrews and the University of Washington Evans School.

Moderator

Marianna Grossman [see page 10]

Start Your Start-Up: Resources for Energy Entrepreneurs



Mike Graveley is the deputy division chief of the California Energy Commission's energy research and development division. The division manages over \$150 million annually in energy-related research and development projects. Mike's focus includes: expanding energy efficiency and demand response, integrating renewables, evaluating new advanced generation systems, implementing the

California smart grid, guiding energy related environmental research, assessing future energy storage needs, and demonstrating energy smart sustainable communities. Previously, Mike worked in the federal government and private industry managing research, testing and fielding distributed generation and energy storage systems for the U.S. Department of Defense. Mike earned a bachelor's degree from the Virginia Military Institute and a master's degree from Cal State-Sacramento, both in electrical engineering.



Larry Kelly is a serial entrepreneur and has worked in most aspects of the computer and information industry. Since starting Kelly Ventures in 1984, Larry has been its managing director, and is active in venture investing and building portfolio companies in both the information and the energy sectors. Earlier in his career, Larry worked at Hewlett Packard, where he was involved in

calculators, started and built the networking business, and started and built the personal computer business. At GRiD Systems, Larry led the development of the first laptop computers. Larry received a bachelor's degree in mechanical engineering and a master's degree in nuclear science and engineering from MIT, and an MBA from Harvard. He chairs the energy interest group for the Band of Angels. Larry founded the Montclair Educational Foundation to raise money for a public elementary school in Los Altos.



Dawn Lippert is the co-founder of Energy Excelsator, a startup program in Hawaii dedicated to solving energy challenges. Energy Excelsator invests in energy, transportation and water companies. It's funded by the U.S. Department of Defense, the Department of Energy and private investors. Dawn is chair of the HCEI advisory board. She founded and is on

the board of Women in Renewable Energy. Dawn is a member of the boards of Entrepreneurship Foundation of Hawaii, EPRI's Clean Energy Incubator Network, and University of Hawaii's Center for Entrepreneurship. She also has worked on energy in India and Africa. Dawn earned a bachelor of arts degree from Yale and a master's degree from the Yale School of Forestry & Environmental Management.



Vern Norviel is a partner at Wilson Sonsini Goodrich & Rosati, where he leads the patents and innovation counseling practice. Vern has three decades of experience in formulating successful strategies for life science companies and the development of their intellectual property programs. He represents a wide variety of companies and venture capital firms in areas

such as therapeutics, diagnostics, nanotechnology, genomics, proteomics and personalized medicine. Vern's interest in personalized medicine prompted him to become the first attorney to have had his or her entire genome sequenced and made available in a public database. Previously, he was senior vice president and general counsel of Affymetrix, the biotechnology company that pioneered and developed DNA chip technology. Vern is a lecturer in biotechnology law at UC-Berkeley School of Law.

Moderator



Barbara Heydorn is senior director of SRI International's Energy Center. In that role, she directs SRI's business development opportunities in the energy arena, shaping the strategy that links SRI's research and development capabilities to market needs. SRI's Energy Center enables multidisciplinary efforts to address important energy problems, from developing alternative

energy sources to using conventional resources in a more sustainable manner. SRI energy initiatives include technologies to reduce energy's environmental footprint; ensuring safety when producing, distributing or using conventional or emerging fuels; developing electro-active textiles to expand an individual's thermal comfort range, radiative cooling to reduce water consumption at power plants, and cyber security for the energy sector. Barbara's experience includes conducting market research and competitive analysis studies, and in formulating competitive strategy.

2:25-3:30

Conversations for Action

Session Introduction



Marianna Grossman leads Sustainable Silicon Valley, which strives to deliver programs that inspire action. Marianna's previous roles include partner for sustainability and innovation at Minerva Consulting; investor in high tech start-ups; and corporate roles in the automotive, computer and semiconductor industries. She serves on the Board of Transportation Choices for Sustainable

Communities, the Sustainability Committee of the SF Bay Area Super Bowl 50 Host Committee, the advisory council for the sustainability and climate action plan for the City of Palo Alto and the California Congress of the International Living Future Institute. She earned an MBA from Yale and a bachelor of arts degree in policy studies from Dartmouth.

1 Energy Efficiency



Mandeep Khara is responsible for all marketing and channel sales functions at Daintree Networks. Mandeep brings over two decades of experience in marketing, sales, engineering, general management, and other functions in enterprise software, software as a service/cloud and managed services. His experience spans various industries including big data analytics, internet of

things, mobile application development platform, security, web services, CRM, asset management and logistics management. Mandeep is a graduate of Harvard Business School's leading product development program and Northwestern University's executive development program. He also earned an MBA from Santa Clara University.

2 Energy Storage



Nick de Vries is the head of Silevo product management at SolarCity, where he is commercializing n-type hybrid tunneling junction cells for use in SolarCity's projects. Previously, Nick was responsible for the design and performance of utility and commercial scale photovoltaic projects at Phoenix Solar. He started in the solar industry at Applied Materials, where he was a director of field

operations in the solar business group. Nick is an industry mentor to collegiate teams competing in the MIT Clean Energy Prize. Nick was an infantry captain in the U.S. Army and served in Kuwait and Bosnia-Herzegovina. He received his bachelor of science degree in mechanical engineering from Lehigh University. A native of the San Francisco Bay Area, Nick enjoys bicycling and camping with his wife and two young children.

3 Energy Analytics



After graduating from the Wharton School of Business, **Michael Steifman** began his career in 1986 at the Starrett Housing Corp., where he was ultimately promoted to corporate vice president. His duties included implementing and monitoring all phases of real estate development projects from site negotiations and acquisitions, to design, financing, construction management, marketing, and leasing of projects. Michael acquired a wealth of knowledge within the real estate sector, in particular property management for utility consumption and billing. In 1992, he founded UtiliSave, which seeks to educate clients on their energy use, uncover billing errors, and develop trustworthy relationships to identify cost saving opportunities. At UtiliSave, Michael establishes the long-term strategic direction of the company and develops the company's business initiatives to support his vision.



Kurt Yeager is the vice chairman of the Galvin Electricity Initiative and the Perfect Power Institute, a non-profit focused on transforming the quality of U.S. electricity service. Kurt retired as president and chief executive officer of the Electric Power Research Institute in 2004. He is a fellow of ASME and has authored over 200 publications on energy and environmental topics, including *Perfect Power*

with Bob Galvin. He was also a convening lead author for the International Institute of Applied Systems Analysis *Global Energy Assessment*. Kurt is a fellow of the American Society of Mechanical Engineers. He has served on several National Academy of Engineering committees and the Energy Research Advisory Board to the Secretary of Energy. Kurt is also a member of Sustainable Silicon Valley's advisory council.

4 Community Choice Energy



Jason Caudle became Lancaster's deputy city manager in 2008. He has been integral in developing and implementing multi-scaled sustainable energy projects, as well as Lancaster's award-winning downtown district. Jason has overseen formation of the Lancaster Power Authority, California Clean Energy Authority, and Lancaster Choice Energy, which is the city's community choice aggregate. He has worked with city planners and solar energy developers to promote ongoing public-private partnerships. Previously, Jason was vice president of public finance for Kinsell, Newcomb & De Dios. He holds a bachelor's degree in political science and master's degree in public policy and administration, both from California State University-Bakersfield. Jason enjoys spending time with his wife Leslie and their two children, Jackson and Kennedy.

Jan Pepper [see page 5]

5 Net Positive: Beyond Net Zero

Demetra McBride is the director of Santa Clara County's Office of Sustainability & Climate. She is responsible for the county's integration of climate and sustainability programs and policies across all departments; community climate, sustainability, energy and other resource efficiency and conservation programs; and for representing the county in regional and state efforts to drive resilient and sustainable communities. Demetra has published articles and studies on urban metabolism and heat island effects, serves on a number of regional and state non-profit boards and committees, and often funds and leads multi-jurisdictional grant projects. She received her juris doctorate from New York Law School, and a combined international affairs degree from the Université de Paris Sorbonne and Florida International University.

6 Financing Green Projects

Larry Kelly [see page 9]



Vincent Siciliano is president and chief executive officer of New Resource Bank, which serves values-driven organizations working to achieve well-being for our community and the planet. Headquartered in San Francisco, the bank is dedicated to advancing sustainability through every aspect of its operations from the loans it makes to its commitment to using deposits for good. Vincent is a member of the advisory boards of the American Sustainable Business Council, the Ken Blanchard Center for Faith Walk Leadership, the Sustainable Accounting Standards Board and the Regeneration Project. He began his banking career at Bank of America and was chief executive to a number of San Diego financial institutions. Vincent is a graduate of Stanford and earned a master's degree in environmental planning from UC-Berkeley.

7 Advanced Manufacturing and Required Electric Infrastructure



Siva Sethuraman manages PG&E's industrial, agricultural and water portfolio of energy efficiency programs. Siva's roles at PG&E have focused on program strategy and operations, product management and emerging technology assessments. As manager for the industrial and agriculture programs team, Siva is responsible for executing the program plans for achieving goals in these sectors. These programs deliver over 150 gigawatt-hours and 15 megawatts of electric efficiency and over 10 million therms of natural gas savings on an annual basis. Prior to PG&E, Siva spent several years building and leading an engineering team at a Bay Area startup involved in the development of fuel cell power generation systems. Siva has a Masters in chemical engineering from Penn State and an MBA from UC-Berkeley's Haas School of Business.

8 Expanding the Community of Energy Entrepreneurs

Archelle Funníé [see page 8]

Adam Gottlieb is a marketing and outreach specialist for the California Energy Commission.

The Future of Energy: Stanford's Big Clean Energy Gamble



Jack Cleary is the associate vice president of Academic Projects & Operations, a division of the Land, Buildings & Real Estate department at Stanford. The division includes 420 employees, (plus 200 contracted services personnel), responsible for the operation, maintenance and capital construction of university facilities and utilities infrastructure. Academic Projects &

Operations is divided into four departments (buildings and grounds maintenance, sustainability and energy management, project management, and the university architect/campus planning office) and has an annual operating budget of \$200 million. The organization operates and maintains approximately 8.5 million gross square feet in 400 buildings and oversees the design and construction of the university's three-year \$2.8 billion capital plan. Current capital construction activity includes more than 150 projects with an annual expenditure of \$300 million.



Ron Gawer has 30 years of experience in the construction, operation and maintenance of energy systems, starting with the nuclear engineering program of the U. S. Navy. Ron then entered the private sector in projects from combined cycle power plants, hydro and biomass to solar and wind farms. He holds a bachelor of science degree in nuclear engineering technology.

Ron moved to California in 2008 to commission and operate the Gateway Generating Station for PG&E, an award winning 600 megawatt combined cycle facility located in Antioch. Ron came to Stanford in 2014 to lead the energy operations group to oversee all electrical and thermal energy systems. Ron is a pilot and enjoys flying to out-of-the-way places with his family for camping and adventure. When not flying with his family, Ron is a mission pilot for Angel Flight, which provides charitable transportation to those with special traveling needs.



Bill Kelly is SunPower's vice president of Commercial Americas, with over 25 years' experience in renewable energy, building systems and energy efficiency. Bill's work at SunPower includes establishing partnerships with business, public and educational leaders, while managing the team that delivers high performing SunPower systems to commercial customers in the Americas.

He has been a leader at SunPower for the past twelve years, known for innovation, his energy technology expertise and an unwavering commitment to great customer service. Previously, Bill worked in energy engineering, project management and operations at a leading energy services company. His work there included integrating solar systems with energy efficiency and demand side management solutions. Bill holds a bachelor's degree in mechanical engineering from Stanford.

Moderator

Jeff Byron [see page 8]

This session sponsored by PG&E.

Out of the Closets: Optimizing Network Closets and Small Data Rooms



Joyce Dickerson leads global data center sustainability at Google. She engages across the data center, server and infrastructure groups to develop, coordinate and lead programs that drive the efficiency and sustainability of Google's technical infrastructure. Previously, Joyce was director of sustainable information technology at Stanford. Before joining Stanford, Joyce spent 15

years leading business development and product management for technology firms in Silicon Valley. Joyce earned a bachelor's degree in industrial engineering and an MBA, both from Stanford.



Jerry Meek has been Genentech's energy manager since 2010. He created a team that has reduced site energy consumption by 24 percent over the past five years. Previously, Jerry managed utility operations for Roche Pharmaceuticals' Palo Alto site for 19 years. There, his department reduced energy and water consumption, waste and chemical use about 35 percent over 10 years.

The Roche Palo Alto site received numerous awards for pollution prevention and resource conservation. Jerry was an Association of Energy Engineers 2004 Energy Manager of the Year. He received a bachelor's degree in industrial technology (facilities engineering) from Cal Poly in San Luis Obispo.



At NetApp, **Ralph Renne** is the director of facilities operations in the Americas, which includes 54 facilities in six countries. Ralph's primary responsibilities are operations and maintenance, property management and energy management of the office and data center facilities. Ralph has more than 25 years of facilities industry experience in construction and operations, which includes

new corporate campus development, semiconductor fabrication plants, high-energy physics labs, data centers and major energy efficiency and self-generation projects. He was director of facilities for Exar Corp. and he worked for SLAC. Ralph is a certified facilities manager. He chairs Moffett Park Business Group.

Moderator



Mukesh Khattar leads applications research, development and demonstration of advanced technologies and solutions for data centers at the Electric Power Research Institute in Palo Alto. At Oracle as its energy director, Mukesh led the company's commitment to reducing energy use. His work has earned ASHRAE awards, including one for the design and operation of an ultra-

efficient cooling system in an enterprise scale data center in 2014. His work on breakthrough technologies in data center cooling was awarded by Data Center Dynamics last year. He was inducted into the Space Technology Hall of Fame in 1990 for his R&D work on heat pipe technology. Mukesh served on the board of directors of Green Grid and co-chaired the energy committee of the Silicon Valley Leadership Group from 2010 to 2012.

3:50-4:50

Keynote: “Energy, Environment, High Tech and Silicon Valley Partnerships: Happening Now in the Navy”



Dennis McGinn was appointed assistant secretary of the Navy (Energy, Installations & Environment) in 2013. In this position, Dennis develops department-wide policies, procedures, advocacy and strategic plans. He also oversees all Navy functions and programs related to installations, safety, energy and environment. This includes management of Navy and Marine Corps real property, housing, and

other facilities; natural and cultural resource protection, planning, and compliance; safety and occupational health for military and civilian personnel; and timely completion of closures and realignments of installations under base closure laws. Previously, Dennis was president of the American Council on Renewable Energy, where he led efforts to communicate the significant economic, security and environmental benefits of renewable energy. Dennis was also co-chairman of the CNA Military Advisory Board and an international security senior fellow at the Rocky Mountain Institute.

In 2002, after 35 years of service, Dennis retired from the Navy after achieving the rank of vice admiral. He was a naval aviator, test pilot, aircraft carrier commanding officer, and national security strategist. His capstone assignment was as the deputy chief of naval operations for warfare requirements and programs, where he oversaw the development of future Navy capabilities. In a previous operational leadership role, he commanded the U.S. Third Fleet. Dennis was a member of the steering committee of the Energy Future Coalition, the U.S. Energy Security Council, and the Bipartisan Policy Center Energy Board. He earned a bachelor of science degree in naval engineering from the U.S. Naval Academy; attended the national security program at the Kennedy School of Government, Harvard; and was a chief of naval operations strategic studies fellow at the U.S. Naval War College.



Secretary **William Perry** is professor (emeritus) at Stanford, senior fellow at the Hoover Institution and director of the Preventive Defense Project. Bill was U.S. secretary of defense from February 1994 to January 1997. For a year prior, he was deputy secretary of defense, and he was secretary of defense for research and engineering from 1977 to 1981. He is an expert in U.S. foreign policy, national security and arms control. In 2007, Bill, former Secretary of State George Shultz, former Secretary of State Henry Kissinger and former Senator Sam Nunn joined together to form the Nuclear Security Project—a major effort to galvanize global action to reduce urgent nuclear dangers and build support for reducing reliance on nuclear weapons, ultimately ending them as a threat to the world. Bill serves on the Defense Policy Board and the International Security Advisory Board. He is on the board of directors of Theranos, Xyleco, and several emerging high-tech companies.

Bill was a laboratory director for General Telephone & Electronics; founder and president of ESL Inc.; executive vice-president of Hambrecht & Quist Inc.; and founder and chairman of Technology Strategies & Alliances. He is a member of the National Academy of Engineering and a fellow of the American Academy of Arts and Sciences. Bill received a bachelor's degree and a master's degree from Stanford University, and a doctorate from Pennsylvania State University, all in mathematics.



"Methane Joins Carbon Emissions to Boil the Planet" by Michael Killen, 2015



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