

SMART GREEN CITIES

STANFORD PROGRAM ON REGIONS OF INNOVATION AND ENTREPRENEURSHIP (SPRIE) STANFORD UNIVERSITY

Smart Green Cities: New Technologies, New Strategies, New Practices

Participant Profiles

“SMART GREEN CITIES” IS PRESENTED BY:



STANFORD PROGRAM ON REGIONS OF
INNOVATION AND ENTREPRENEURSHIP
THE WALTER H. SHORENSTEIN ASIA-PACIFIC RESEARCH CENTER

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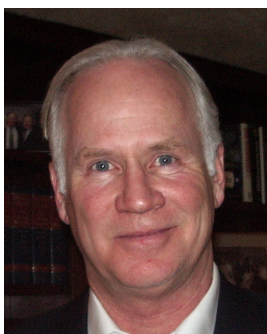
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Rohit T. Aggarwala is Director of the New York City Mayor's Office of Long-term Planning and Sustainability. This office was charged with the creation of PlaNYC A Greener, Greater New York, a comprehensive sustainability plan consisting of 127 separate initiatives to green New York City. Dr. Aggarwala is now charged with implementing the plan and supporting other efforts related to the sustainability of New York City. Under his leadership the City has begun implementing over 90% of the 127 initiatives in PlaNYC, including regulations to make the City's taxicabs and black car fleets clean, planting a million trees throughout the five boroughs and overseeing the investment of \$80 million a year to reduce City government's greenhouse gas emissions.

A native of Manhattan, NY, Dr. Aggarwala holds BA, MBA, and PhD degrees from Columbia University, as well as a Master's from Queens University in Ontario. Prior to joining the Bloomberg administration for the City, Aggarwala was a management consultant at McKinsey & Company. During the Clinton Administration, he worked at the Federal Railroad Administration. Aggarwala is also the author of several articles on transportation policy and on the history of New York City.



Combining a long-time commitment to strengthening US-China relations and a passion for finding solutions to global energy and environmental issues, **Dennis Bracy** leads the US team as CEO for the US-China Clean Energy Forum (www.cleanenergyforum.org) and chairs the Washington State China Relations Council. Over the past 30 years, he has served as a key advisor to business executives, Senators, Governors, Mayors and Members of Congress and is considered a leading strategist on energy issues. His clients have included Boeing, Microsoft, Compaq, Procter & Gamble, US Department of Energy, Itron, Demand Energy Networks, Vigilos and the Pacific Northwest National Laboratory.

Bracy also serves as Chairman of Avatar Studios, a company that produces television programs for clients around the world. In the early 1990s, Bracy led the team that developed the first prime-time television co-produced by foreigners in China and he continues to produce several documentaries and videos in China every year. Previously, Bracy was a partner in the Rockey Company, a leading Northwest PR firm. After the partners sold Rockey to Hill and Knowlton, Bracy was named leader of the Pacific Northwest technology and energy practice and president of Hill & Knowlton Technology. Early in his professional career, he was tapped to serve as press secretary for the Watergate trials, where he worked with Judge John Sirica for three years. Later he was fundraising director for the Udall presidential campaign, regional corporate relations director for ITT Corporation and vice president of Kaiser Aluminum & Chemical Corporation. He has served as vice chairman of the Greater Seattle Chamber of Commerce, and has served on many other community non-profit boards.



Dr. **S. K. Jason Chang** is a professor of Civil Engineering Department in National Taiwan University. He is also a visiting professor of China Academy of Transportation Sciences of MOT in Beijing. He is an advisor to Mayor and Taipei City Government since 1994. In the past ten years, Professor Chang has been invited as advisor for promotion of sustainable urban and transportation development by various international institutes, including the World Bank, the World Resources Institute, Bluemoon Fund, GTZ, and the Energy Foundation. Professor Chang was principal investigator of the project "Green Transportation for Chinese Cities", in which 15 cities in China had been involved from 2000 to 2003. Since 2004, Professor Chang has provided training courses on bus rapid transit, transportation demand management, and sustainable development for more than 20 cities in China. He was also invited to provide lectures on BRT for Delhi in 2001 and then provide lectures on green transportation in India since 2007. Professor Chang's research focuses on public transportation, transportation economics, ITS on e-Payment and Advanced Public Transit, and sustainable development policy.

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Dr. **Jen-Chang Chou**, Visiting Scholar at SPRIE, is the former director of the Science Division, Taipei Economic and Cultural Office, in San Francisco, as well as a distinguished nuclear physicist and government leader. Chou served from 1987-92 as director of Taiwan's Institute of Nuclear Energy Research, and for more than nine years as the Secretary General of Silicon Valley's Monte Jade Science and Technology Association. He is the author of twenty-five journal articles on nuclear science, accelerator applications and nuclear applications, and a frequent contributor to Sino-Canadian American Science News Brief.



Dr. **Woodrow W. Clark II** Clark is a Qualitative Economist who founded and is the Managing Director for Clark Strategic Partners (CSP) in 2004, whose major clients have included: Energy Advisor, LA Community College District; Renewable Energy Advisor for Paramount Studios (solar and renewable systems); Senior Foreign Energy Advisor (Asian Development Bank) Inner Mongolia Autonomous Region (IMAR), Peoples Republic of China. He served as the Renewable Energy and Emerging Technology Advisor to the Governor of California during the State's energy crisis from 2000-2003. Now Clark teaches sustainable development at Auburn University, Alabama and Roosevelt University, Chicago. And lectures frequently in the EU and Asia. He is "Green Advisor" to the State of California Workforce Investment Board (WIB) and the Producers' Guild of America (PGA).

In 2007, Clark was a co-recipient of the Nobel Peace Prize due to his co-authorship and co-editorship for the United Nations Intergovernmental Panel on Climate Change (IPCC) from 1995-2000. Clark co-authored "Agile Energy Systems: global lessons from the California energy crisis" (Elsevier Press 2004). His last book was "Qualitative Economics: toward a science of economics" (Coxmoor Press 2008) and most recent is "Sustainable Communities" (Springer Press December, 2009). Clark's book, "Sustainable Communities Design Handbook" (Elsevier Press) is due September, 2010. His next book on "The Third Industrial Revolution" is being reviewed now for 2010 publication.



Professor **Craig Criddle** is a Professor of Civil and Environmental Engineering and Senior Fellow in the Woods Institute for the Environment at Stanford University. His research focus is environmental biotechnology. He received his BS in Civil and Environmental Engineering and BA in Spanish from Utah State University in 1982 and MS in Environmental Engineering in 1984. In 1990, he completed his Ph.D. at Stanford in Civil Engineering (Environmental Engineering and Science). He was a faculty member at Michigan State University for 9 years and has been a member of the Stanford faculty since 1998. He is best known for his work in large interdisciplinary field projects, microbial ecology, and microbial transformations of contaminants. Current projects focus on uranium remediation, microbial production of energy from nitrous oxide, and microbial production of bioplastic from biogas.



Tom Darden is the Chief Executive Officer of Cherokee Investment Partners, a private equity fund that invests in brownfields. Cherokee made its first brownfield investment in 1990 and has since raised five funds: \$50 million in 1996, \$250 million in 1999, \$620 million in 2003 and \$1.4 billion in 2006. Cherokee has invested \$750 million in 54 transactions, purchasing more than 500 sites in 35 states, 5 Canadian provinces and 4 European countries. Cherokee's annual spending on remediation pollution on its sites exceeds \$50 million.

Beginning in 1984, Darden served for 16 years as the Chairman of Cherokee Sanford Group, a brick manufacturing and soil remediation company. From 1981 to 1983, he was a consultant with Bain & Company in Boston. From 1977 to 1978, he worked as an environmental planner for the Korea Institute of Science and Technology in Seoul, where he was a Henry Luce Foundation Scholar. Darden is on the Boards of Shaw University, the Nicholas School of the Environment at



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Duke University and the Institute for The Environment at the University of North Carolina. He was Chairman of the Research Triangle Transit Authority and served two terms on the N.C. Board of Transportation. Darden serves on the Board of Governors of the Research Triangle Institute.

Darden earned a Masters in Regional Planning from the University of North Carolina, a Juris Doctor from Yale Law School and a Bachelor of Arts from the University of North Carolina, where he was a Morehead Scholar. His 1976 undergraduate thesis analyzed the environmental impact of third world development and his 1981 Yale thesis addressed interstate acid rain air pollution. He and his wife, Jody, have three children.



Ross Donaldson is Executive Chairman and CEO of Woods Bagot Architects. With studios across North America, Australia, Asia, Europe and the Middle East, the firm was recognized with 30 global awards in 2009, including its second Most Admired Knowledge Enterprise (MAKE) Award at the World Knowledge Forum in Seoul and International Practice of the Year.

Based in Hong Kong and appointed as CEO in 2006, he has overseen the completion of the firm's global expansion, launching two studios in North America and one in Shanghai in 2009, during the global economic crisis.

The firm's "One Global Studio" philosophy drives knowledge sharing and true collaboration across time zones. Underpinning the culture is the commitment to research, consolidated in PUBLIC, Woods Bagot's research brand.

Ross's primary current focus is zero emissions architecture, with an initial focus on China's urban consolidation and push to a reduced carbon economy.

He was previously Director of the company's Education and Science Sector, leading the design of international University projects in the Middle East, Asia and Australia, bringing significant advances in innovative learning and academic workplace environments, captured in his 2006 publication Education Futures. Prior to joining Woods Bagot, Ross enjoyed a 17-year academic career.



Martin Fischer is Professor of Civil and Environmental Engineering at Stanford University. He also serves as the Director of the Center for Integrated Facility Engineering (CIFE), coordinates the building-related energy efficiency research and activity for the Precourt Institute for Energy Efficiency, and is the first Faculty Director of the Green Dorm ProjectCStanford's new laboratory for learning about sustainable building and living. Dr. Fischer is known globally for his work and leadership in developing virtual 4D modeling (time plus 3D) methods to improve project planning, enhance facility life-cycle performance, increase the productivity of project teams, and further the sustainability of the built environment. His research results have been used by many small and large industrial and government organizations around the world. He has lived and worked in Europe, South America, North America, and Asia. Dr.

Fischer holds a Ph.D. in Civil Engineering and a M.S. in Industrial Engineering from Stanford University and a Diploma in Civil Engineering from the Swiss Federal Institute of Technology in Lausanne, Switzerland.



Dr. **Stephen Hammer** is the Executive Director of the Energy Smart Cities Initiative, a project of the Joint US-China Collaboration on Clean Energy (JUCCCE), which focuses on sustainability training and technical assistance to local governments around China. Dr. Hammer joined JUCCCE in January 2010 after serving as director of the Urban Energy Program at Columbia University, where he led a team conducting research on energy markets, technology, policy and regulation, all viewed from a city-level perspective. He has authored or co-authored dozens of energy and sustainability policy studies and journal articles, and is co-editor of a book on climate change and cities that will be published by Cambridge University Press in late 2010. Dr. Hammer is a member of New York City Mayor Bloomberg's Energy Policy Task Force; a consultant to the State of New York on micro-grid and climate change adaptation issues; and an urban sustainability advisor to the World Bank. Dr. Hammer holds degrees from the London School of Economics, the Kennedy School of Govern-

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ment at Harvard University, and the University of California at Davis.



Marguerite Gong Hancock is the associate director of the Stanford Program on Regions of Innovation and Entrepreneurship (SPRIE). For SPRIE, she manages project research, conferences and seminars, publications, and oversees the project's affiliated academic and government research partners in six countries in Asia. She leads SPRIE's China team, guiding research on high tech regions, case studies of information technology companies, and new work on the globalization of R&D and high tech leadership in Greater China.

She is co-editor of *Greater China's Quest for Innovation* (Walter H. Shorenstein Asia-Pacific Research Center Books, 2008), *Making IT: Asia's Rise in High Tech* (Stanford University Press, 2007) and *The Silicon Valley Edge* (Stanford University Press, 2000). She continues to be an active member of Stanford's Entrepreneurship Task Force and a speaker to university and business leaders, including presentations for executive education and conferences in Silicon Valley and Asia.

A specialist on government-business relations in the development of information technology, Hancock has worked as director of Network Research for the Stanford Computer Industry Project at the Graduate School of Business; as a research associate at the East Asia Business Program of the University of Michigan; and as a company consultant in Boston and Tokyo. She holds a BA in humanities and East Asian studies from Brigham Young and an MA from Harvard in East Asian studies. While pursuing a PhD at the Fletcher School of Law and Diplomacy, she focused on computer industry development in China.



Jeffrey Heller, FAIA, is President of Heller Manus Architects and a leading international expert on sustainability. He currently serves as Co-Chair of the Bay Area Council Climate Change Committee, Senior Counselor of the Urban Land Institute and as a board member for San Francisco's official city office for business relations with China, the Asia Society and SPUR. Heller is a member of the California Architects Board and served as past President. He also served as President of the S.F. Chapter of the American Institute of Architects.

Heller's experience spans numerous building types including complex urban, mixed-use, commercial, residential, civic, renovation, sustainability, and master-planning projects, specifically in difficult approvals environments. He serves as design principal for Emeryville Marketplace, the first project in the U.S. to be awarded LEED Neighborhood Development Platinum Certification under the New Development Pilot Program. Heller Manus' 26-story office high-rise in Shanghai is the first

to be LEED-Gold precertified in Shanghai, and they are currently leading the design for a major urban master plan of Guangzhou's downtown. Heller has Bachelor's and Master's in Architecture and Urban Design from MIT.



Professor **Ming-Chin Ho** is the Dean of Architecture and planning College, Chung-Hua University, Taiwan. 3 months ago, Dr. Ho retired from the Director General of Architecture and Building Research Institute, Ministry of the Interior (ABRI). This Institute is a government agency in charge of practical building research and development programs related to policy-making and administrative affairs.

Dr. Ho was appointed to this position in May 2006. He was responsible for conduct and administration of architecture and building research plans, including green building, eco-community, and sustainable environment, intelligent living space, urban disaster prevention and mitigation. Meanwhile, he also conducted the important projects of "Green building promotion program (2001-2007)" and "Eco-city and green building promotion program (2008-2011)" in Taiwan.

Dr. Ho worked in ABRI from 1996 to 2006. Before this, he spent seventeen years to serve as an engineer and manager for urban planning, mass rapid transit system planning, and public work in Taiwan Provincial Housing and Urban Development Bureau.



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Arpit Joshipura is Vice-President, Strategy & Market Development–Office of CTO, Ericsson Silicon Valley. His current role is as Ericsson's driver of Convergence Vision and Transformation Strategy to Operators and outbound audience worldwide including Silicon Valley Ecosystem partners. Focus areas include All-IP End to End Convergence across Fixed and Mobile architectures (eg 4G/SAE/EPC, IPTV, Backhaul, Edge, Metro, Applications). Arpit also works on the vision of 50B connections and its strategy impacts to Verticals including future connected cities.

Background: Arpit moved to Ericsson from Redback where he was the VP of Product Management, Marketing, Standards and Solutions (CTO/CMO Role), responsible for the strategic success of Redback's flagship SmartEdge router family and its acquisition through Ericsson. Prior to Redback, Mr. Joshipura was the Vice President of Portfolio Management CIENA/ONI focusing on Metro Ethernet and Optical Architectures. He has also held senior leadership positions in Engineer-

ing at Caspian Networks and Nortel Networks.

He has an M.B.A., M.S. in computer engineering from North Carolina State University, B.S. in electrical engineering.

Prior to working for the County of San Mateo, **Joseph Kott** was Senior Transportation Projects Manager at Wilbur Smith Associates in San Francisco, a Principal at Nelson/Nygaard Consulting Associates in San Francisco, and Chief Transportation Official for the City of Palo Alto.

Kott is a graduate of Wayne State University in Detroit and holds a master's degree in urban and regional planning from the University of North Carolina at Chapel Hill, as well as master's degrees in both transport planning and traffic engineering from the Institute of Transport Studies at Monash University in Melbourne, Australia. He is completing a doctoral dissertation on sustainability assessment of commercial arterial streets (main streets) under the supervision of Professors Jeff Kenworthy and Peter Newman within the Curtin University Sustainability Policy Institute (CUSP) at Curtin University of Technology in Perth, Western Australia.

Kott has been a member of the American Institute of Certified Planners (AICP) since 1982 and in 2007 was awarded Professional Transportation Planner (PTP) certification from the Transportation Professional Certification Board Inc., an affiliate of the Institute of Transportation Engineers, achieving the highest certification test score in the nation. A native of Detroit, he comes from a Michigan family with four generations of service in automobile manufacturing, primarily with the Chrysler Corporation and one of its predecessors, the Dodge Brothers Company.



Mark D. Levine was director of the Environmental Division at Lawrence Berkeley National Laboratory (LBNL) from 1996-2006, a division of 400 people working on energy efficiency policy analysis and R&D. In 1988, he created and has since led the China Energy Group at LBNL. His policy research on China focuses on collaboration with Chinese counterparts in advancing energy efficiency.

Dr. Levine is a board member of four leading non-profits in the United States and one in China. He is an advisory board member of three major organizations, including one in Japan. He was elected a fellow of the California Council on Science and Technology in 1999. In recent years he has been the recipient of three prestigious awards: the Obayashi Prize for his contributions to sustainable urban development, the Public Service Award of the Federation of American Scientists, for his groundbreaking work on energy efficiency in China, and the highest award of the Japan Institute of Architects.

In addition to authoring numerous technical publications, he was the leader of the chapter on CO2 emissions from energy use in buildings for the Intergovernmental Panel on Climate Change (that won the Nobel Peace Prize). He has also led major comprehensive studies of the energy systems of the United States, China, and the world.

Dr. Levine graduated *summa cum laude* from Princeton University, earned a PhD from the University of California, Berkeley, and has been the recipient of a Fulbright scholarship, a Woodrow Wilson Fellowship, and National Institute of Health doctoral awards.

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With over 20 years of experiences in technology and management, Dr. **Rong Chang (RC) Liang** is currently CTO of Delta Electronics, Chairman and CEO of DelSolar, and founding Chairman and CEO of Trillion Science, CA.

Prior to joining Delta Group, Dr. Liang worked for a number of well-known companies and universities, including founding Vice Chairman, President and CTO of SiPix Group, CA ; Executive Advisor of BASF Electronic Materials (Germany); Research Fellow and Program Director of Polaroid Corp. MA; Research Fellow and Group Manager of Mead Corp., OH; and Research Assistant Professor in Polytechnic University (Now NYU Polytechnic), NY.

In addition to his extensive industrial experiences, his laurels include receiving the Herman Mark Medal in 2007 as well as Alumni Achievement Awards from Polytechnic University in 2004 and National Tsing Hua University, Taiwan in 2006.

Dedicated to technology development, Dr. Liang holds more than 120 U.S. patents in materials and processes for electronics, displays and imaging applications. (Ranking # 10 in patent portfolio in the Electronics & Storage Sectors by IEEE Spectrum, 12/2008; Ranking # 28 in patent portfolio in the Electronics & Instrumentation and # 1 in science content by Wall Street Journal, USA , 2/2007)

Dr. Liang received his B.S. in Chemistry from National Tsing Hua University, Taiwan in 1975, M.S. in Chemistry from National Taiwan University in 1977, and Ph.D. in Polymer Science & Engineering from Polytechnic University, NY in 1985.



Peter Liu is the Founder and Vice Chairman of New Resource Bank, an innovative commercial bank in San Francisco that focuses on the green economy. He also currently serves as the resident entrepreneur for the California Clean Energy Fund.

Pete was a banking executive at Chase Manhattan and Credit Suisse First Boston, where he completed \$ 8 billion in energy project financings. He was also an air quality regulator at the California Air Resources Board and an engineer at the Chevron Corporation.

Peter is the Co-founder and Vice Chairman of the China US Energy Efficiency Alliance. He was a clean technology advisory board member for the California Public Employees Retirement Systems and the California Teacher's Retirement Systems, two of the US' top pension funds. He also currently serves on the boards of the Climate Action Reserve, the Roots of Change Fund and the Christensen Fund.



Charles R. McElwee is Program Officer for Climate Policy at ClimateWorks Foundation, an organization that works to prevent dangerous climate change by enabling low-carbon economic growth and sustainable prosperity for people everywhere through an international network of affiliated organizations. Mr. McElwee was trained as a lawyer and practiced environmental and energy law for over 20 years with an international law firm, including five years in Shanghai. He is also an adjunct professor of law at Shanghai Jiaotong University's School of Law (where he won the President's Prize for extraordinary contributions to the University in 2009). For the last two years he served as chair of the Environment Committee of the American Chamber of Commerce (AmCham) in Shanghai, and is a board member of the Joint US-China Collaboration on Clean Energy (JUCCCE). Mr. McElwee is a frequent author, speaker, and commentator on China environmental and energy issues. He was awarded the Shanghai Municipal Government's Magnolia Award (the highest honor the City bestows upon foreigners) in 2008.

Dr. **William F. Miller** is Co-Director of the Stanford Program on Regions of Innovation and Entrepreneurship. He has spent about half of his professional life in business and about half in academia. He was the last faculty member recruited to Stanford University by the legendary Frederick Terman, who was then Vice President and Provost of Stanford. Miller himself later became Vice President and Provost of Stanford. He conducted research and directed many graduate students in Computer



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Science.



In 1968 Dr. Miller also played a role in the founding of the first Mayfield Fund (venture capital) as a special limited partner and advisor to the general partners.

As President and CEO of SRI International (1979-1990) Miller opened SRI to the Pacific Region; he established the spin-out and commercialization program at SRI and established the David Sarnoff Research Center (now the Sarnoff Corporation) as a for-profit subsidiary of SRI, and he became the Chairman and CEO of SRI.

In 1982 Miller was appointed to the National Science Board. He has served on the board of directors of several major companies such as Signetics, Firemans Fund Insurance, First Interstate Bank (and later) Wells Fargo Bank, Pacific Gas and Electric Company, Varian Associates, WhoWhere? Inc. (Chairman), and Borland Software Corp. (Chairman).

He co-founded SmartValley, Inc. and aided the formation of CommerceNet and serves on the board of directors. Dr. Miller was a founding director of the Center for Excellence in Non-profits. He currently serves as Chairman of the Board of Sentius Corporation and is a Founder and Chairman of Nanostellar, Inc.

Dr. Miller is a Life Member of the National Academy of Engineering, Fellow of the American Academy of Arts and Science, Fellow of the American Association for the Advancement of Science, Life Fellow of IEEE, and Member of the Silicon Valley Engineering Hall of Fame.



David Nieh, AIA AICP LEED AP, serves as General Manager for Shui On Land. He is a registered architect and certified planner, as well as an accredited professional in sustainable design. He formerly directed the studio for Skidmore, Owings and Merrill's (SOM) Shanghai office, and was chief architect for the City of San Jose and Redevelopment Agency. He has taught architecture, urban design and urban studies at Stanford University and is an honorary member of the International Society for City and Regional Planners and a member of the China Planning Network.

Mr. Nieh has served on advisory boards ranging from strategic economics, creative communities, campus development, education, social innovation, biotech and public art. He is currently a Board Member for the Joint US-China Collaboration on Clean Energy (JUCCCE), Stanford Program on Regions of Innovation and Entrepreneurship (SPRIE) and Cogswell College in Silicon Valley. He advises the One-North Development in Singapore, the US-China Clean Energy Forum, the China Greentech Initiative, and the Cleantech Group in China.

With social benefit and energy sustainability as key principles, his projects are large-scale and urban in nature, focusing on the translation of strategic planning initiatives into the implementation of infrastructure, architecture and built form. His work has won numerous awards and he has been a guest speaker in Asia, North America and Europe. He has published seminal articles in the International Society for City and Regional Planners "Creative Communities" edition, World Architecture, as well as other publications.

Mr. Nieh holds a Masters of Architecture in Urban Design degree from Harvard University and a Masters of Architecture degree from the University of California/ Berkeley.



Leonard Ortolano is a specialist in water resources and environmental planning. He is interested in the implementation of environmental policies and programs in the United States and in developing countries. Current research includes studies of: (1) policies for environmental planning and management in China; (2) strategies and tactics of environmental non-governmental organizations in several countries, including the US and China; (3) delivery of water supply and sewerage services to disadvantaged communities; and (4) diffusion of technologies for environmental protection and "cleaner production". In addition to his research experiences, Professor Ortolano has worked as an environmental engineer for the U.S. Public Health Service and as a consultant to environmental management firms and agencies as well as international development aid organizations. Professor Ortolano has received two Fulbright-Hays grants: one as a visiting professor at the Istituto di

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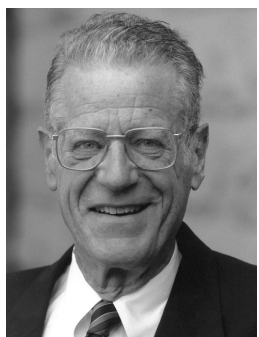
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Ricerca Sulle Acque in Rome (1978-79); and a second as a visiting professor at the École Nationale des Ponts et Chaussées in Paris (1978-88). He received the Rhodes Prize for Excellence in Undergraduate Teaching in 1996, and the Eugene L. Grant Award for Excellence in Teaching in 2005. Between 2003 and 2006, Professor Ortolano served as director of Stanford's Haas Center for Public Service. He is also on the editorial policy committee of Environmental Impact Assessment Review.



Nicholas Parker, Executive Chairman, co-founded the Cleantech Group, introducing the cleantech concept to the investment and business community in 2002. Previously Nicholas accumulated over 15 years experience starting and investing venture funds worldwide through limited partnerships, family offices, corporate funds and endowments. During this time, he pioneered the first “sustainability” driven private equity funds and participated in one of the first solar IPOs. In the 1990s, he also founded, built and sold an environmental finance firm. He has served as an advisor to multilateral agencies and major corporations.

Nicholas earned a BA Hons. in Technology Studies (Carleton University, Ottawa) and an MBA (City University, London), and has authored or edited more than ten publications related to cleantech, finance and international business, starting with *Investing in Emerging Economies* in 1993. He served as Chairman of E+Co, a public purpose investment company for clean energy enterprises in developing countries, and is on several boards, including: Government of Singapore Cleantech Advisory Board, Canadian Centre of Excellence for Commercialization of Research and the X PRIZE Energy & Environment Council. He is a Fellow of the Royal Society for the Arts, Manufactures and Commerce (RSA). Nicholas has lived and worked in Africa, Asia, Europe and North America and currently resides with his two children in Toronto.



Henry S. Rowen, Co-Director of the Stanford Program on Regions of Innovation and Entrepreneurship, is a senior fellow at the Hoover Institution, a professor of Public Policy and Management emeritus at Stanford University's Graduate School of Business and a senior fellow emeritus of the Walter H. Shorenstein Asia-Pacific Research Center (Shorenstein APARC) at the Freeman Spogli Institute for International Studies at Stanford University. Rowen is an expert on international security, economic development, and high tech industries in the U.S. and Asia. His current research focuses on the rise of Asia in high technologies.

In 2004-05, Rowen served on the Presidential Commission on the Intelligence of the United States Regarding Weapons of Mass Destruction. From 2001-04, he served on the Secretary of Defense Policy Advisory Board. Rowen was Assistant Secretary of Defense for International Security Affairs in the U.S. Department of Defense from 1989 to 1991. He was also chairman of the National Intelligence Council from 1981 to 1983. Rowen served as president of the RAND Corporation from 1967 to 1972 and was assistant director, U.S. Bureau of the Budget, from 1965 to 1966.

Rowen's most recent work is co-editor of *Greater China's Quest for Innovation* (Shorenstein Asia-Pacific Research Center, 2008). He co-edited *Making IT: The Rise of Asia in High Tech* (Stanford University Press, 2006) and *The Silicon Valley Edge: A Habitat for Innovation and Entrepreneurship* (2000). Other books include *Prospects for Peace in South Asia* (edited with Rafiq Dossani) and *Behind East Asian Growth: The Political and Social Foundations of Prosperity* (1998). Among his articles are “The Short March: China's Road to Democracy,” *National Interest* (1996); “Inchon in the Desert: My Rejected Plan,” *National Interest* (1995); “The Tide underneath the ‘Third Wave,’” *Journal of Democracy* (1995).

Born in Boston in 1925, Rowen earned a bachelors degree in industrial management from the Massachusetts Institute of Technology in 1949 and a masters in economics from Oxford University in 1955.

Lee Schipper joined the Precourt Institute of Energy Efficiency at Stanford in September, 2008 to develop research and policy studies of efficient energy use in transport systems. Dr. Schipper earned his Ph.D. at Berkeley in astrophysics, but has devoted his career to earthly problems of transport, energy and environment. He is also currently Senior Project Scientist at Global Metropolitan Studies, UC Berkeley. Previously he had been Director of Research for EMBARQ, the World Resources Institute (WRI) Center for Sustainable Transport, which he helped found in April, 2002, and remains as Senior Associate



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Emeritus.



Dr. Schipper came to EMBARQ from the International Energy Agency (IEA) in Paris, where he had been visiting Scientist from 1995 to 2001. Previous to that he was Staff Senior Scientist at the Lawrence Berkeley National Laboratory for two decades. He worked in Group Planning at Shell International Petroleum Company in the 1980s and again in 2001, where he worked on two sets of Shell Scenarios. He has been a guest researcher at the World Bank, VVS Tekniska Foerening (Stockholm), the OECD Development Center, and the Stockholm Environment Institute.

Dr. Schipper has authored over 100 technical papers and a number of books on energy economics and transportation around the world. He takes part in numerous prestigious international panels and studies on energy and transportation, and is on the editorial boards of six major journals in the fields. Current interests focus on global trends in motor vehicle use and their carbon-dioxide emissions, urban transport in developing countries, and special focuses on India, China, Viet Nam,

and Mexico.

Dr. Schipper was a member of the Swedish Board for Transportation and Communications Research for four years, and is currently a member of the US Transportation Research Board's on Sustainable Transport, Energy, and Developing Countries Committees. He is on the editorial boards of a half-dozen international transportation, energy, and environmental journals.

As a consultant, Dr. Schipper works with Global Business Network/Monitor and Cambridge Energy Research Associates as a Senior Associate. He also served as a consultant to the World Bank, the Asian Development Bank and other international groups. He lectures widely around the world.



Dr. **Chintay Shih** is Professor and Dean of the College of Technology Management, National Tsing Hua University. Dr. Shih has had a long association with the Industrial Technology Research Institute (ITRI), most recently serving as Chairman in 2008; since 2003 he has been a Special Advisor at ITRI, from 1994-2003 he was President, and he was Executive Vice President from 1989-1994.

Since 2005 Dr. Shih has been Chairman of the Taiwan Monte Jade Science and Technology Association; he has served as a Science and Technology Advisor for the Executive Yuan (1998-2004), President of the Chinese Institute of Engineers (1998-2000), Chairman of the Asia Pacific Intellectual Property Association (1997-present), Member of the National Infrastructure and Communication Initiative Steering Committee of the Executive Yuan, Chairman of the Taiwan Semiconductor Industry Association (1996-2000), Chairman of the Chinese Society for the Management of Technology (1995-2007), and Chairman of the Chinese Institute of Electrical Engineering (1993-1995).

Dr. Shih received the BS from National Taiwan University, the MS from Stanford University, and the Ph.D. from Princeton University.



Sabrina Soussan is a senior executive with 20 years of experience in guiding companies to market success and profitability.

She currently serves as Global Head Marketing, Building Automation – a US\$3 billion global business unit of Siemens Building Technologies Division. Under her leadership, Building Automation successfully markets Smart Building technologies and solutions including energy efficiency for buildings, distributed generation from renewable sources, and advanced topics such as dynamic management of smart consumption, storage and production of energy in buildings. In addition, Mrs. Soussan oversees the Sustainable City initiatives of Siemens Building Technologies, which analyzes and promotes innovative concepts and solutions that contribute to CO2 abatement potential of large cities as well as the Global Key Account Management.

Prior to joining Building Technologies, Mrs. Soussan held management positions in the automotive industry within Siemens and Renault. She has a Bachelor's Degree in Aeronautical and Mechanical Engineering, and a Master's Degree in Business Administration.

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Stephen Su is the General Director of Industrial Economics & Knowledge Center (IEK) in Industrial Technology Research Institute (ITRI). Prior to that, he was a Principal in Roland Berger Strategy Consultants based in Shanghai. From 2000-2008 he was a Senior Director of Consumer Electronics in Primax Electronics Ltd. based in Taipei. From 1994-1998 he served as a Project Leader in Boston Consulting Group (BCG) Hong Kong. From 1992-1994 he was a Applications Engineer in the Semiconductor Group of Motorola Phoenix. Stephen has both industry and business consulting experiences for 20 years. His professional specialties include Strategy, Performance Improvement, Changing of Organization, Business Process Redesign, and Marketing. Stephen received BSc in Electronic/Computer Engineering from UC Berkeley, MSc in Electronics from California Institute of Technology, and MBA from Kellogg School of Management at Northwestern University.



Kevin Surace is CEO of Serious Materials. Mr. Surace, a noted speaker and writer on climate change and the built environment, is on a mission to drive energy efficiency in the built environment, and bring green jobs and manufacturing back to the US. As CEO of Serious Materials, Kevin leads the company in its mission to reduce energy usage and CO2 generation of the world's largest contributor, our buildings. By developing new materials and processes that require little energy to manufacture, and advanced products which dramatically improve the insulation and comfort of homes and offices, climate change can be minimized and the US can lead the world in the next industrial revolution.

Before joining Serious Materials in 2002, Mr. Surace held executive and technical positions with Perfect Commerce, General Magic, Air Communications, National Semiconductor, and Seiko-Epson. He received his degree in electrical engineering technology from Rochester Institute of Technology where he currently serves on the Board of Trustees, and has been awarded 9 patents. Mr. Surace also serves on the boards of Array Converter, and Arch Rock; and was recognized as 2009 Entrepreneur of the Year by Inc. Magazine.



In 2008, Dr. **Simon C. Tung** joined Industrial Technology Research Institute (ITRI) as the Vice President and General Director, and he is responsible for managing all R&D programs in Energy and Environmental Research Laboratories. Dr. Tung's technical expertise includes energy technology, environmental engineering, surface engineering, automotive propulsion system, and advanced manufacturing process.

Dr. Tung received his Ph.D. in Chemical Engineering from Rensselaer Polytechnic Institute, Troy, New York, in July 1982. In 1982, Dr. Tung joined General Motors Research Laboratories. He was responsible for leading research and development on automotive tribology and surface engineering in automotive powertrain and manufacturing systems. In 2000, Dr. Tung was appointed as Technical Fellow (the highest technical level) in General Motors R&D Center to lead advanced energy research and discovery project program. Dr. Tung has been recognized as the well-known international expert in his professional fields including automotive propulsion system, energy technology, powertrain tribology, advanced materials, and manufacturing process. In addition to technical achievement, he also received the highest honor from SAE to elevate to the SAE Fellow in March 2001. In 1999, he received the highest honor-Gold Award from the Engineering of Society of Detroit (ESD) to recognize his outstanding achievements in engineering leadership.

Dr. Tung has 125 publications that appear in 5 different journals; cover such diverse subjects as advanced materials, surface engineering, automotive engineering, and manufacturing. He also holds fourteen U.S. Patents and international patents on novel methods for improving energy efficiency and environmental protection.

Michael Tymoff is a project manager in the Mayor's Office of Economic and Workforce Development. Working on behalf of the Treasure Island Development Authority on the redevelopment planning and entitlements for the 435-acre former Naval Station



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Treasure Island, Michael is responsible for key aspects of securing project approvals including managing the environmental review and redevelopment plan adoption process. He is also responsible for coordinating with the master developer on urban design, transportation planning, infrastructure master plans, and open space planning, and representing the interests of TIDA and the City in negotiating a final Disposition and Development Agreement. Prior to joining the Mayor's Office, Michael was a project manager at UrbanGreen Development Advisors working with developers and land owners on planning and entitlements for master planned communities. Michael received a Master of Landscape Architecture from the University of Georgia and a Bachelor of Science in Environmental Studies from the Evergreen State College.



Joseph Ren-Chain Wang is currently serving as the Deputy Director of the Planning Division of Energy and Environmental Research Laboratories (EEL) of Industrial Technology Research Institute (ITRI) in Taiwan. His research interest spreads over the policy, industry, and technology of energy, resources, as well as technology foresight.

Before joining EEL, Joseph has also worked in various units in ITRI. He has been the Director of Energy and Resources Division of Industrial Economics and Knowledge Center (IEK), the America Business Division Director in the International Business Center, and the Deputy Director of Applied Chemistry Division of Union Chemical Laboratories. In addition to his research and development experiences in ITRI, he also served as the Senior Vice President of Chitec Technology Company and as a Research Chemist in Shell Oil Company.

Joseph obtained his Ph. D. degree in inorganic chemistry at the University of Illinois, and his Bachelor of Science degree at the Soochow University in Taiwan.



Kung Wang is currently Chair Professor of the Department of Business Administration at China University of Technology in Taiwan since 2007, and he was Professor of the Graduate Institute of Industrial Economics at National Central University since 1985. From 2000-2004 he served as General Director of Industrial Economics and Knowledge Center in Industrial Technology Research Institute; he also established ITRI's market analysis and consulting service division. He also joined International Motor Vehicle Program (IMVP) at Massachusetts Institute of Technology in the 1980s.

Wang has held numerous Taiwanese governmental positions, including advisor for Nation Science Council and Ministry of Economic Affairs (MOEA), Director General of Hsinchu Science-based Industrial Park, and Commissioner of Fair Trade Commission, Executive Yuan. He has also served on boards of directors for state-owned enterprises and venture capital funds, and as an advisor to the Taiwanese government and industrial and commercial associations. His current research is focused on regional innovation and entrepreneurship, competitive strategy and industrial policy.

Dr. Wang received the BS and MS from National Taiwan University and the Ph.D. from the Massachusetts Institute of Technology.



Sean S. H. Wang, Ph.D., is the President of ITRI International (San Jose, CA), a subsidiary of ITRI, since June 2005. Sean joined ITRI as the General Director of IEK in July 2004. Before that, for about 15 years, Sean was with SRI International/SRI Consulting (Menlo Park, CA), where he developed and implemented international proprietary projects on technology evaluation, feasibility study, strategic planning, licensing strategy, buy-or-build issue, new business opportunities identification, and new plant investment for international clients. Earlier, Sean was with M.W. Kellogg (now KBR) and Morgantown Energy Technology Center (now the National Energy Technology Lab) of U.S. Dept of Energy. With a chemical engineering background, Sean's energy related activities include polysilicon production process design, economics, and benchmarking; integrated fuel cell and combined cycle

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power generation system design and evaluation; industrial high-temperature heat pump system design; evaluation and improvement of boiler efficiency; advanced IGCC systems; underground coal gasification modeling; and marketing strategy of refined products in major Asian countries.



Dr. **Qingpeng Wei** is Associate Professor at the Building Energy Research Center (BERC) at Tsinghua University.

Dr. Wei received his B.Sc., M.Sc., and Ph.D. degrees in building services engineering from Tsinghua University. Dr. Wei initiated his research in building energy efficiency (BEE) in 1996. And he was involved in lots of international cooperation projects on BEE, including UNDP-GEF funded CHINA End-use Energy Efficiency Project, World Bank funded CHINA building Energy Efficiency Study etc. Currently, He is leading a research team on energy efficiency in large-scaled commercial buildings which have the highest electricity use intensity among all kinds of buildings in China. Dr. Wei and his team have accomplished energy diagnosis in more than 150 buildings in China, Hong Kong SAR, USA and Japan, including 20 office buildings of central government, Beijing Olympic venues, etc. Dr. Wei was also invited to visit and investigate energy data of commercial buildings in France, Belgium, Netherland, Germany, etc.. In addition, with his effort, no-cost retrofitting tech-

niques including control strategy optimization, energy efficiency oriented FDD, have been implemented in about 40 commercial buildings which obtained more than 30% of energy savings.



Yi-Ling Wei is a senior industrial and science and technology researcher at the Industrial Economics and Knowledge Center (IEK) in the Industrial Technology Research Institute (ITRI), Taiwan. Now she is also a doctoral student in Institute of Technology Management at National Tsing Hua University, Taiwan. Since 1996 she performed market and industrial research in automotive and semiconductor equipment industries, and has disseminated those results in publications and seminars. Currently, Wei's major study is focused on innovation and entrepreneurship in high-tech industry cluster or science parks and public research and development policy evaluation. She received a B.A. in mechanical engineering from Tamkang University in 1992, and an MBA from Providence University in 1994.



Mr. **Steve Westly** is a Managing Partner of The Westly Group, a venture capital firm located on Sand Hill Road in Menlo Park, California. The Westly Group invests primarily in clean technology companies, as well as in governmental-related industries such as health care and security. Prior to founding The Westly Group, he served as the Controller and Chief Fiscal Officer of the state of California - the world's sixth largest economy. As Controller, he chaired the State Lands Commission and served on 63 other boards and commissions, including CalPERS and CalSTRS, the nation's two largest public pension funds, which together invest more than \$350 billion. During his four-year term, Mr. Westly spearheaded innovative tax programs that helped close the State's budget deficit and also led an effort to commit more than \$1 billion to clean technology investments.

Before running for office, Mr. Westly helped guide the online auction company eBay through its period of most rapid growth, serving as the Senior Vice President of Marketing, Business Development, M&A and International. Mr. Westly helped bring eBay to Europe and Asia and developed the marketing and acquisition strategies that paved the path for the firm's exponential growth.

In 2008 Mr. Westly served as a California Co-Chair of the Obama for President Campaign. He began his career in Washington, D.C., where he worked first on Capitol Hill and later in the Office of Conservation and Solar at the U.S. Department of Energy. Mr. Westly returned to California to become special assistant to the President of the California Public Utilities Com-



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mission. While there, he published two books on alternative energy and the utilities. Mr. Westly also worked for four years as a program manager for Sprint.

Mr. Westly holds a bachelor's degree from Stanford University and an MBA from Stanford's Graduate School of Business, where he served on the faculty for five years. Mr. Westly and his wife, Anita, run the Westly Foundation, which provides education and health care services for children and underserved communities throughout California.



Dr. **Jyh-Shing Yang** is the Senior Director of Industrial Economics and Knowledge Center (IEK) in ITRI (Industrial Technology Research Institute) and also teaches at the National Central University. He was the Deputy General Director of Energy and Environment Laboratories at ITRI before joining IEK. His main task for the past ten years was helping Taiwan's industries to pursue the "Sustainable Development" activities – ISO 14001 Environmental System, Life Cycle Assessment, Design for Environment and Clean Production Technologies. Dr. Yang was the Executive Secretary of the Office of Green Energy Industry Promotion (supported by Bureau of Energy in Taiwan) in 2009 with the assignment of helping local renewable energy related industries to identify the chances for investment and provide technical assistantship. He is working with a team in IEK to help Kaohsiung City, Hsin-Chu City and Taipei County planning the low-carbon city strategies based on the "Demand-Side Governance".



Dr. **Robert Yang** is a Special Advisor with the Industrial Technology Research Institute (ITRI). Bob joined ITRI in 1986, first as its Vice President and General Director for the Energy and Resources Laboratories (ERL) and then its Executive Vice President. He later joined Hong Kong Applied Science and Technology Research Institute Company (ASTRI) as its Chief Executive Officer, where he retired in 2007. Since then Bob's retirement life has taken a turn for the less leisurely as more people learned of his retirement and assumed he has a lot of time on his hands. During this time he became senior advisor to ITRI and private sector companies, and director on Boards of companies both in Taiwan and China. He was also appointed by the Administrator of Taiwan's EPA to be his senior advisor on energy and climate change matters. Later the Premier appointed him as an Executive Affairs Advisor for the Executive Yuan, the executive branch of Taiwan's government.

Throughout his career, Bob has been involved closely with Taiwan's energy and climate change affairs, both technically as ITRI's overall supervisor on all energy technologies and policy-wise as a member of both Taiwan's National Energy Committee and National Sustainable Development Committee. He was a Managing Director of the Chinese Petroleum Corporation (CPC), and Chairman of Taiwan's Solar Energy Society and Combustion Institute. He was also the founding Executive Director of Taiwan's National Nanotechnology Program and an Honorary Professor of the National Chiao Tung University. He earned his PhD degree at the University of Washington in the United States of America.



Stanley Yip is a land economist and urban designer with in-depth professional expertise in economic studies and urban design. With more than 25 years of professional and management experience around the world, he is currently the Director, Planning & Development with ARUP China (www.arup.com),

His recent experience in China includes a wide range of urban development projects driven by low carbon, ecological and sustainable development principles, as well as innovative resource management approaches. He has in-depth knowledge on the land development, economics and implementation issues associated with sustainable city development in China. He is also currently undertaking research studies in the College of Urban and Environmental Studies in Peking University.

Mr. Yip is the Past President of the Hong Kong Institute of Planners. He served as the Part-

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time Member of the Central Policy Unit of the Hong Kong SAR Government, as well as Advisor to the Department of Construction of Jiangsu Province and the Planning Bureau of the City of Harbin in China, as well as the Honorary Advisor to the Beijing Municipality Institute of City Planning and Design.



Elisabeth Zornes is the Director of Cisco's Solutions Design Center which includes being the North American lead for Smart+Connected Communities™. Her international marketing background and over 15 years of experience in high tech industry have enabled multinational Fortune 100 companies to transform their vital business processes by leveraging innovative technology solutions. In addition, she is a well-known and proven "change agent" in enterprise business process reengineering. Specifically, her success in transforming Siemens Business Services' customer service organization won her Germany's highest Program Management award – the "Project Management Award '98" from the International Project Management Association.

Ms. Zornes began her career as a research biologist focused on human disease control with scientific publications in parasitology (Master of Science in biology from Friedrich Alexander University at Erlangen, Germany). Since 2000, she has provided Cisco with C-level visible program management for Advanced Services within Global and Top Accounts. Ms. Zornes resides with her husband and two pre-school daughters in Hillsborough, California.



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