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HAAGEN-SMIT
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APRIL 24, 2014

CALEPA HEADQUARTERS
SACRAMENTO, CALIFORNIA



**THE HAAGEN-SMIT CLEAN AIR AWARDS
ARE GIVEN ANNUALLY TO SCIENTISTS,
POLICY MAKERS, COMMUNITY LEADERS, AND
EDUCATORS FROM CALIFORNIA AND AROUND
THE WORLD WHO HAVE MADE SIGNIFICANT
LIFETIME CONTRIBUTIONS TO THE
ADVANCEMENT OF CLEAN AIR AND CLIMATE
CHANGE SCIENCE, TECHNOLOGY, AND POLICY,
THEREBY FURTHERING THE PROTECTION OF
PUBLIC HEALTH AND PROSPERITY FOR ALL.**

Since 2001, the Air Resources Board has annually bestowed the distinguished Haagen-Smit Clean Air Awards. The awards are given to extraordinary individuals to recognize significant career accomplishments in at least one of these air quality categories: research, environmental policy, science and technology, public education and community service. Over the past 12 years there have been 34 acclaimed recipients. In light of the global connection between air quality and climate change, the scope of the program has now expanded to include an international focus and a focus on climate change science and mitigation.

PAST WINNERS

Alphabetical Order by Last Name

Arey, Janet · 2011	Johnson, Timothy · 2009
Atkinson, Roger · 2004	Lloyd, Alan · 2007
Bates, David · 2004	Loveridge, Ron · 2012
Belian, Timothy · 2005	Moore, Curtis · 2005
Billings, Leon · 2004	Nichols, Mary · 2002
Boyd, James · 2006	Oge, Margo · 2009
Cackette, Tom · 2012	Pavley, Fran · 2007
Carter, William · 2005	Peters, John · 2009
Chow, Judith · 2011	Pitts, James · 2002
Denton, Joan · 2010	Sawyer, Robert · 2008
Edgar, Bradley · 2010	Seinfeld, John · 2003
Farrell, Alex · 2008	Sharpless, Jananne · 2011
Friedrich, Axel · 2006	Sher, Byron · 2001
Froines, John · 2010	Walsh, Michael · 2003
Hansen, James · 2007	Wedaa, Henry · 2008
Holmes, John · 2001	White, V. John · 2003
Hricko, Andrea · 2012	Winer, Arthur · 2006

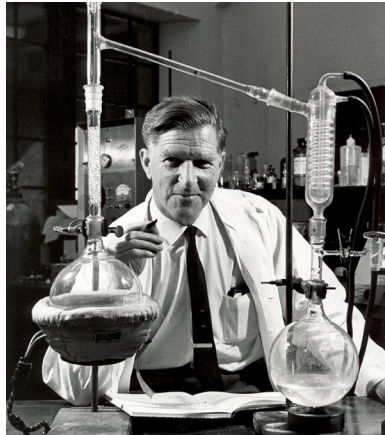
“WE SHOULD HAVE LEARNED BY NOW THAT WE CANNOT HOPE TO CHANGE THE LAWS OF NATURE, BUT WE CAN CHANGE HUMAN INSTITUTIONS. THE ROAD IS NOT AN EASY ONE, BUT THE REWARD ... IS WORTH THE EFFORT.”

– DR. ARIE HAAGEN-SMIT

Dr. Arie Haagen-Smit

Dr. Arie Haagen-Smit, a native of the Netherlands, was a leader in developing air quality standards based on his research efforts. Known by many as the “father” of air pollution control, Dr. Haagen-Smit was a graduate of the University of Utrecht and a biochemistry professor at the California Institute of Technology in Pasadena for 16 years before beginning his air pollution research in 1948. At Caltech, Dr. Haagen-Smit studied the physiological aspects of natural products like rubber and pineapples. This work led to studies with his colleagues investigating the flavor components of wine, onions and garlic. His training and expertise in microchemistry, along with his natural curiosity, brought him to the forefront of air pollution research when he was asked by the county of Los Angeles to investigate the chemical nature of what we now call smog. Noticeably different from earlier accounts of haze and dust in London, which was caused by coal, the eye-irritating haze in Los Angeles was brown and almost odorless. Dr. Haagen-Smit applied his technique of studying plant chemistry in enclosed clear chambers exposed to sunlight to figure out what caused smog in the Los Angeles air basin.

Through a series of experiments, he concluded that most of California’s smog resulted from photochemistry – when substances in the exhaust from motor vehicles and the smokestacks of industrial facilities react with sunlight to create ozone. This breakthrough provided the scientific foundation for the development of both California’s, and the nation’s air pollution control programs. In recognition of this contribution, Dr. Haagen-Smit received the National Medal of Science in 1973, the nation’s highest scientific honor. He became the Air Resources Board’s first chairman in 1968 after serving eight years as an original board member of Air Resources Board’s predecessor, the Motor Vehicle Pollution Control Board. Dr. Haagen-Smit passed away 36 years ago, but his legacy lives on.



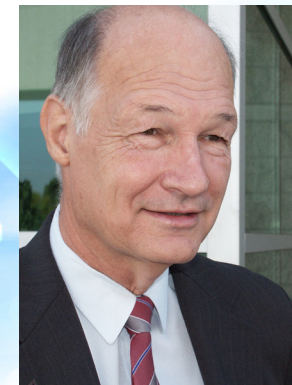
2013 HAAGEN-SMIT CLEAN AIR AWARD RECIPIENTS



Dr. Barbara Finlayson-Pitts
University of California, Irvine
Awarded for Air Pollution Research



Mr. Teruyuki Ohno
Japan Renewable Energy Foundation
Awarded for International Policy



Dr. James Lents
International Sustainable Systems Research Center
Awarded for Environmental Policy

Dr. Barbara Finlayson-Pitts

Air Pollution Research

Dr. Barbara Finlayson-Pitts is a Distinguished Professor of Chemistry at the University of California, Irvine. She is being recognized for her outstanding research and teaching in the field of atmospheric chemistry. She is one of the most important contemporary atmospheric chemists and a leading world expert in atmospheric photochemistry. Dr. Finlayson-Pitts has a master's and doctorate degree in Chemistry from the University of California, Riverside.

Dr. Finlayson-Pitts has a 40-year academic career and is best known to the scientific community for co-authoring two widely acclaimed and influential books on atmospheric chemistry which have been used to educate and inform countless students, scientists and policy makers. Her first textbook – “Chemistry of Upper and Lower Atmosphere” – quickly became the standard textbook for graduate courses and a valuable resource for researchers.



DR. FINLAYSON-PITTS IS ONE OF THE MOST IMPORTANT CONTEMPORARY ATMOSPHERIC CHEMISTS AND THE WORLD'S LEADING EXPERT IN ATMOSPHERIC CHEMISTRY.

Her research has been inspired and driven by air pollution issues. The primary focus of her work is on understanding chemical reactions that can occur, or have the potential to occur, in the atmosphere; and in particular, those between gases and particles, such as sea salt and thin water films on surfaces. This work combines a variety of approaches from in situ experiments to computational modeling, and has resulted in several important and unexpected findings. Throughout her career, in more than 170 papers and book chapters, she has discussed implications of her work on air pollution regulations.

environment and sustainable development for Tokyo's 13 million citizens. He helped establish a new energy policy balancing energy security and climate change for Tokyo in the wake of the Fukushima nuclear disaster.

Mr. Ohno continues to work on this primary issue of energy security in his current role as Executive Director for the Japan Renewable Energy Foundation, a nonprofit organization which brings together experts from around the nation and abroad to create policy recommendations aimed at promoting alternative energies such as solar, wind and geothermal power.

Throughout his career, Mr. Ohno has been a leader in local policy making. He introduced new and innovative policies through a transparent and inclusive stakeholder engagement process. He actively worked with local governments to successfully obtain consensus on joint regulations.

Mr. Ohno has served as a member of the Domestic Emissions Trading Subcommittee of Central Environment Council (Japan), and a Council member on the International Council on Clean Transportation. He has established himself as an expert in Japan's local government policy planning and implementation in the fields of environment and sustainable development as evidenced by the four books he has published during his career. Titles include “Low Carbon Cities: The Future of Urban Planning” and “Energy Strategies of Sub-national Governments.”

We are proud to present Mr. Ohno with one of this year's Haagen-Smit Clean Air Awards and thank Mr. Ohno for his service to his community and all those who value the benefits of clean air.

Mr. Teruyuki Ohno

International Policy

Mr. Teruyuki Ohno of Tokyo, Japan, has been an innovative policy leader for the past 35 years. During his career at the Tokyo Metropolitan Government he pioneered new policy approaches to a broad range of energy and air quality challenges, including diesel pollution, climate change, renewable energy and sustainable urban planning. In pivotal roles over the past 15 years, he has spearheaded multiple groundbreaking clean-air strategies for Tokyo. He has degrees in both business and economics from Tokyo University and returns to his alma mater as a lecturer on sustainability topics.



In 2003, Mr. Ohno was in charge of planning and implementing 'Operation No Diesel,' Japan's diesel retrofit program. Operating with a small staff in Tokyo's Bureau of Environment, the four-year project set aggressive emission standards to reduce particulate emissions from in-use diesel vehicles. This policy led to major changes in national emission control policies as well as dramatic improvements in local air quality.

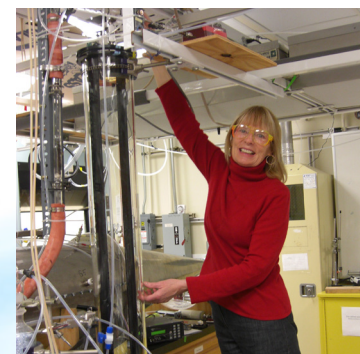
MR. OHNO SPEARHEADED MULTIPLE GROUNDBREAKING CLEAN-AIR STRATEGIES FOR TOKYO... AND HELPED ESTABLISH A NEW ENERGY POLICY IN THE WAKE OF THE FUKUSHIMA NUCLEAR DISASTER.

Following that success, he headed the Urban and Global Environment Division in Tokyo's Bureau of the Environment and, in 2008, established the Tokyo Cap-and-Trade Program, Japan's first carbon trading program. That system, which was modeled in part on California's AB 32 legislation, took effect in 2010 as a key part of Tokyo's move to recreate itself as a low-carbon metropolis.

Building upon his proven abilities and innovative approach in Japanese policy-making, Mr. Ohno became Director General of the Bureau of Environment and was responsible for the environmental governance on climate change, energy, waste management, pollution control, natural

Dr. Finlayson-Pitts is also an inspiring leader. In addition to her own research group, she formed and serves as Director of AirUCI (Atmospheric Integrated Research at the University of California, Irvine) Institute, the mission of which is to "address urgent challenges we face in air and water quality, human health, climate change and green technology through the integration of research, education and outreach." More recently, her group has contributed to our growing understanding of particulate air pollutants. In addition to its cutting edge research activities under Barbara's leadership, AirUCI conducts outreach activities, including classroom presentations and laboratory tours. An annual teacher training program funded by the National Science Foundation, which has trained 180 high-school and middle-school teachers since 2005 in an accredited two-week intensive Environmental Chemistry summer workshop, has been cited as a shining example of the importance of public school chemistry teachers engaging in and supporting the chemical workforce now and in the future.

2006 proved to be an academically distinguished year for Dr. Finlayson-Pitts. She was elected to the American Academy of Arts & Sciences, the National Academy of Sciences, and named a University of California, Irvine Distinguished Professor for her work in advancing atmospheric chemistry research and education. Most recently, in December 2013, Dr. Finlayson-Pitts was admitted as a Fellow of the Royal Society of Chemistry. The Royal Society of Chemistry is a professional association in the United Kingdom with the goal of "advancing the chemical sciences." The Royal Society of Chemistry elects Fellows who have made major contributions to chemistry each year.



She served on the California Air Resources Board's Research Screening Committee from 2003-2007. The Research Screening Committee consists of scientists, engineers and others knowledgeable, technically qualified and experienced in air pollution problems. The committee reviews proposed and completed research projects.

Her work and passion to improve California's air, and in turn ensure the vitality of the people and communities, will be a long-standing legacy, and we thank her for her dedication.

Dr. James Lents

Environmental Policy

Dr. James Lents has been a leader in environmental policy since the 1970s. Dr. Lents received his master's and doctorate degrees in physics from the University of Tennessee. He began his career in air pollution control in Chattanooga, Tennessee, in the 1970s where he helped the city improve air quality bringing down the highest concentrations of particulate pollution in the nation to meet air quality standards in just five years. The work resulted in an EPA film, "What One City Did," and a Newsweek article titled, "Most Polluted City in U.S. Shows the Way to Clean Up."



He then moved to Colorado in the 1980s where he developed a comprehensive attainment plan for the state. He established the Western States Air Pollution Coordination Group with the Western Governors Association. He also established the first high-altitude automobile and truck testing facilities, leading groundbreaking work that helped result in today's cleaner burning gasoline. He then came to California's South Coast Air Quality Management District, to help meet air quality standards.

DR. LENTS LED THE SOUTH COAST AIR DISTRICT TO PRODUCE THE FIRST REGIONAL AIR QUALITY PLAN EVER APPROVED FOR THE REGION BY THE U.S. EPA.

As Executive Director for South Coast Air Quality Management District during the 1980s and 90s, he successfully reorganized the agency into teams and led the agency to produce the first regional plan that demonstrated the steps needed to attain air quality standards. This was the first attainment plan ever approved for the region by the U.S. Environmental Protection Agency.

Dr. Lents also played a major role in writing the Clean Air Act for California as well as amendments to the Federal Clean Air Act in 1990.

He continues to lead innovative clean air policy-making in his role as President of the International Sustainable Systems Research Center (ISSRC), a small yet highly effective policy shop which he founded in 2003. For the past decade, Dr. Lents has been working through the ISSRC to train officials throughout the world on methods to regulate air pollution, build capacity of local staff and work with local advocates to ensure that the general public has the data it needs to fight for cleaner air. The ISSRC has developed programs in collaboration with local air officials internationally in more than a dozen cities located in Kazakhstan, Mexico, China, Peru, Chile, Kenya, India, Brazil, Columbia, Argentina, Turkey, South Africa, and Malaysia.



His efforts and successes have been recognized around the country and the world. Dr. Lents was given a Clean Air Award by the California Clean Air Coalition and the American Lung Association. He was recognized by the California Public Health Association as Environmental Leader of the Year and received the International Environmental Award from the King of Sweden. Most recently, he received an Outstanding Individual Achievement Award from the U.S. Environmental Protection Agency. We are proud to add the Haagen-Smit Clean Air Award to his list of honors this year.

Throughout his career, James Lents has consistently proven to be innovative, demonstrated perseverance, advocated for international and national cooperation in air quality and sustainability, and shown leadership in the fight for clean air. He has also proven to be a key strategist in the global expansion of sustainable environmental practices. We thank Dr. Lents for his dedication and service to improving air quality around the world.