



## IN MEMORIAM

Alexander E. Farrell  
Associate Professor in Energy and Resources  
UC Berkeley  
1962 - 2008

Alexander E. Farrell, associate professor in the Energy and Resources Group, passed away on April 13, 2008, at age 46. He joined the University of California, Berkeley, faculty in 2003 after having managed the Electricity- Industry Center at Carnegie Mellon University (CMU), a research and outreach center focused both on innovation and genuine academia- industry partnership in the energy field. He was my colleague, close faculty collaborator, and someone whom I was truly thrilled to have been able to recruit to join the Energy and Resources Group at Berkeley.

Born in Miami, Florida, on January 1, 1962, Farrell graduated from the United States Naval Academy in 1984 with a degree in systems engineering. After completing five years of service as an engineer aboard nuclear submarines, he became employed in the private sector and then undertook doctoral work at the University of Pennsylvania, from which he received a Ph.D. in energy management and public policy in 1996. This was followed by appointment as a research fellow of the American Association for the Advancement of Science in 1997 and a postdoctoral fellowship at Harvard University's John F. Kennedy School of Government. The following year he joined Carnegie Mellon as a research engineer in the Department of Engineering and Public Policy.

All of these experiences were very much apparent in, and part of, who Alex was as a person. He maintained close friendships and collaboration with several postdoctoral fellows from his time at Harvard. Similarly, the collaborations and friendships from Alex's time at Carnegie Mellon were some of the closest bonds I've ever seen between professional colleagues. Alex lived and breathed the science and technology policy methods, approaches, and in fact the overall ethos of the CMU community.

Farrell rapidly became a key player in state, regional, and international discussions on a wide range of transportation and energy issues. One of his projects, a 2006 paper assessing the energy and climatic impacts of biofuels, became a 'cottage industry' in itself, with thousands of academic and media requests. It resulted in an appearance I made on 60 Minutes. The group of students, a faculty colleague Michael O'Hare, and I have continued Alex's tradition of detail- oriented assessment of the life- cycle inputs and impacts of a wide range of fuels.

At the same time, Alex and his doctoral student Adam Brandt were developing an assessment of the environmental impacts of unconventional forms of oil — those derived from tar sands, shale rock, and other sources — many of which come with a far larger "environmental footprint" than does gasoline. The resulting paper became a "best seller" in a new journal, Environmental Research Letters, that is notable for the open

access format that Alex favored. The Farrell and Brandt paper appeared in the inaugural issue in 2006. In fact, while alive Alex was the most frequent contributor to Environmental Research Letters.

These efforts led to a defining project in Alex's career: analysis, education, and collaboration with industry, elected officials, and the nongovernmental sector's efforts in the design of a low carbon fuel standard (LCFS). The LCFS sets a fleet-wide maximum greenhouse gas impact for transportation, measured on a life cycle basis, and has been globally influential in rethinking how we assess and regulate vehicle pollution. We worked together on this project, along with our students and Professor Dan Sperling of the University of California, Davis, and his students and colleagues, and with a number of nongovernmental groups. The project was vetted frequently during the process of developing the two major reports, with individuals from industry, government agencies, and colleagues in Europe who were working on various national and European Union commissions. Alex and Dan Sperling took the lead on this, but Alex and I chatted at least daily about the issues, both high-level and minute, that arose in this work. Governor Arnold Schwarzenegger signed Executive Order S-1-07 enacting the LCFS in January 2007, and both U.S. presidential candidates, Senators Barack Obama and John McCain, endorsed this standard.

Alex worked on a range of projects for the State of California, including assessments of low-carbon energy options, a project he co-managed with Professor Michael Hanemann of Berkeley, and was often the "first call" by elected officials on transportation issues. He served on the Economic and Technical Advisory Committee (ETAC) on greenhouse gas reduction options for the State of California. The major papers on the LCFS were developed for the state in a collaboration directed by Alex and Dan Sperling, although the overall effort involved discussions and input from industry, a wide range of civic and environmental groups, and municipalities. Alex was also very active in the international community in comparing differing evolving versions of the LCFS for use in Asia, Europe, and elsewhere.

Alex took on a widening set of responsibilities while still a junior member of the faculty. In 2005, he became codirector of the Pacific Region Combined Heat and Power Center and then became the director of the Joint Center for Transportation Sustainability Research.

A hallmark of Alex's efforts and his very approach to work was a focus on the numbers and the facts. He had a cherished sign over his desk, "Skepticism is a virtue", that he'd point to often. Alex was a tireless advisor and mentor, working closely and constantly with a cluster of both direct advisees, and with the wider set of master's students in the Energy and Resources Group. In fact, it is the loyalty and dedication to his students that they cite and note both in terms of praise for his assistance, and in the void left by his passing.

Throughout his career, Alex continued to expand the range of technologies and practices he studied. The day he died, he was working on a detailed assessment of battery issues for work on plug-in hybrid vehicles.

Alex is survived by his mother, Alice Farrell, of Harrisburg, Pennsylvania; brothers Mark of Portland, Oregon, and Brian of Portland, Maine; his sister, Beth Ann Connolly of Harrisburg; two nieces, and a nephew. In dealing with Alex's sudden departure, I connected in an equally sudden and intense way with his family. In them I glimpsed the other, more personal side of Alex's life. What was most striking was the same sort of admiration and dedication that is so apparent in Alex's colleagues and students, with the added benefit that many of his mannerisms, it turns out, are shared with his close family.

Altogether his was a remarkable and intense life. Colleagues, students, friends, and family think of him each day. He is very much missed.

Daniel M. Kammen