Professor Paul Steen, an internationally recognized scholar in fluid dynamics who combined applied mathematics with experiments to provide deep insights into processes involving fluids, died in Vermont on September 4, 2020. He was 68.

Professor Steen was born on June 22, 1952 and grew up in Meadville, Pennsylvania. He received a bachelor’s degree in Engineering and another in English Literature from Brown University and then completed a fifth year of undergraduate studies at Bristol University in England. After his year in England, Paul went to Johns Hopkins University where he earned his Ph.D. in Fluid Dynamics. He spent some time as a postdoctoral researcher at Stanford University before joining the faculty of Cornell University’s School of Chemical Engineering in 1982.

In his research Professor Steen focused on questions of stability, often working with fluids at interfaces, such as droplets, bubbles, and thin films. His experiments were visually striking and his theories elegant and insightful. Professor Steen is known world-wide for a clever, switchable “spider man” adhesion device he co-invented and patented, wherein electroosmotic pumping of liquid water droplets is used to create reconfigurable sticky surfaces. He is also known internationally for his technical contributions in the area of nonlinear dynamics. There, Professor Steen brought the method of ‘problem deformation’ or ‘homotopy’ to solve difficult problems in chemical engineering practice.

Professor Steen had a special skill for identifying basic scientific questions within important engineering contexts and carried out productive collaborations with companies, including Kodak (on printing) and Metglas (on casting of amorphous metals). He improved the rapid solidification processing of metallic alloys by planar-flow spin casting by introducing the Bessemer-meets-Gutenberg innovation. He also created a new periodic table system for classifying droplet motions. At the time of his passing, Dr. Steen was working on projects sponsored by NASA (on microgravity) and with a start-up, InCaveo (on the commercialization of a recent invention from his lab on capillary adhesion).
Shortly after his passing, his NASA collaboration was launched into orbit.

Professor Steen engaged broadly and generously with the international research community, serving as an associate editor of the Journal of Fluid Mechanics for more than a decade and co-editing “A Gallery of Fluid Motion,” published by Cambridge University Press. In 2007, Dr. Steen was awarded the Henry Marion Howe Medal for a paper he published in the journal *Metallurgical Transactions*. He is a fellow of the American Institute of Chemical Engineers, the American Physical Society, and the Alexander von Humboldt Foundation. In 2008, he was named the Maxwell M. Upson Professor of Engineering, an endowed position he held for the rest of his time at Cornell.

The American Society for Gravitational and Space Research has announced that they will publish a special issue dedicated to topics in Interfacial Transport Phenomena in memory of Professor Steen, who served as an associate editor for the society. This issue will honor his work in interfacial fluid mechanics and in microgravity research.

Dr. Steen was an excellent collaborator, teacher, advisor, and mentor. He worked with dozens of co-authors, thousands of undergraduates, and many doctoral students. He understood the value of investing time, care, and effort in the people who become colleagues and who further the work of the field of chemical engineering. The alumni of his lab populate top academic and industrial positions around the globe. Notably, he always welcomed and cultivated undergraduate students through engagement in his research, often mentoring them from their freshman year through their senior year.

For thirty-eight years, Paul was a valued teacher and advisor across departments and graduate fields in the College of Engineering at Cornell. His colleagues have noted both his sharp intellect and his humility. He had a keen sense of humor and an infectious laugh. Paul was a runner, hiker, and avid bicyclist who enjoyed traveling and experiencing other cultures. He was a remarkable man who is survived by his wife, Kyra D. Stephanoff; daughters Ana and Frances; sister, Martha Steen Whitney; and brothers, Robert, John, and Rodger.

*Written by Abe Stroock, Lynden Archer, and Susan Daniel*