

MEMORIAL RESOLUTION SULLIVAN S. MARSDEN (1922- 2011)

Sullivan S. Marsden, Professor Emeritus of Petroleum Engineering, passed away on April 26, 2011.

Sully was very much a part of building the institution we are today. He was the last remaining member of a generation of professors who built on a tradition of petroleum engineering that began at Stanford in 1916. That group included Frank Miller, Hank Ramey, Bill Brigham, and of course, Sully. Together they established Stanford as one of the top institutions in the world in the field. They did that by building the engineering science that makes possible the complex task of persuading porous rocks in the subsurface to give up the oil and gas they contain, which they do only reluctantly.

When Sully joined the Stanford faculty in 1957, he brought a chemist's eye to the problems of describing and managing the flow of the complex fluids we deal with. He was a Stanford grad himself, with a bachelor of science in Chemical Engineering in 1944 and a PhD degree in Chemistry in 1948. He is best known for his work on the flow of emulsions. Emulsions are finely divided mixtures of oil in water or water in oil. Milk and mayonnaise are familiar examples. They are created by the surface forces that arise from molecules that want to reside at the interface between oil and water, and they can be very difficult to handle, or they can be useful if designed well. Sully and a series of coworkers described in detail the physical mechanisms that create the emulsions and showed how to take advantage of useful properties.

Sully loved helping students acquire a sense of experiments and measurements in the lab – alas now all too rare in a world where we use computers to simulate everything. Sully knew that experiments teach the theoreticians humility, and he was a clever designer of experiments.

Sully is remembered with great affection by his many former students. Bill Flint, who was Sully's first MS student when he arrived in 1957, pointed out that Sully was wonderfully generous with his time for students. In 1992, when he retired, his retirement party was attended by many, others sent notes, and there were lots of bottles of wine for him as well, in recognition of his lifelong interest in wine and wine-making. Bill Flint remembered a gathering of the 1957 Petroleum Engineering graduates that was held in Colorado in 1998, 41 years after they graduated. One of those students had saved a bottle of Sully's own home-made wine. Another of the classmates was from France, so he was given the first opportunity to taste what was by then well-aged wine (reviews were mixed). The fact that Sully was a central component of their reminiscing makes the point that he was a very important part of their lives as students.

Sully's generosity to undergrads was manifested in another important way. He recalled that he had benefited from an opportunity to do research as an undergrad here at Stanford, and he provided endowment funds to establish awards for undergrad research at Stanford, as well as at Hillsdale College and Colby College. At Stanford, Sully established three prizes. One was the Miller Marsden Prize for Innovative Research on the Environment, which goes each year to an undergraduate student or coterminal master's degree candidate in an Earth Systems Program class. Here's what Sully said upon establishing it: "The Miller-Marsden Prize honors my professional association and friendship with my Petroleum Engineering colleague, Frank G. Miller, and our mutual interest in environmental matters." When the first Miller-Marsden prize was awarded, Sully completed the award ceremony by handing the student a packet of M&Ms, for Miller-Marsden, with that twinkle in his eye that all remember.

Sully established a similar prize in chemical engineering, the Mason-Marsden prize, which honored Dave Mason, a wonderful faculty member who started chemical engineering at Stanford. And there is a third prize in Chemistry, again to encourage undergraduate research. These prizes are a lasting reflection of Sully's deep interest in students.

Sully was also generous with advice, for the university administration and beyond, often hand-written on the back of previously used paper. Sully was environmentally conscious in a way that was ahead of his time. Throughout all the years of his career he provided advice to society on energy matters, writing letters to the editor and op-eds decades ago calling for policies that would reduce our dependence on imported oil.

His interest in travel started when he was a boy exploring the area near his home in St. Louis by bicycle. He escaped the hot St. Louis summers during his high school years by hitchhiking as far as Maine and California. He later took numerous Sierra Club hiking trips with his children. He backpacked along the 2,650-mile Pacific Crest Trail from Mexico to Canada between 1980 and 1994, logging almost 200 miles each summer.

For his interest in his students, for his dedication to teaching them at Stanford for decades, and for devoting his career to first-class education, he will be remembered fondly by his extended Stanford family.

Committee:

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