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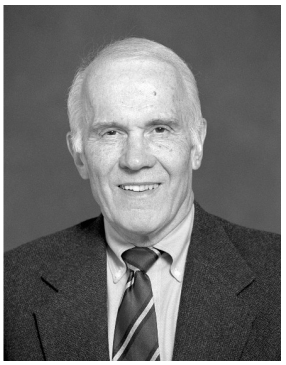
In Memory of Gerard M. Faeth, 1936–2005



IT is with shock and great sadness that I write to tell you about the sudden death of Gerard M. Faeth on 24 January 2005.

Jerry was the former Editor-in-Chief of *AIAA Journal*, the Arthur B. Modine Distinguished University Professor of Aerospace Engineering at the University of Michigan and Head of the Gas Dynamics Laboratories, and a devoted husband, father, and grandfather. A flood of grieving messages from around the world gives testimony to Jerry's brilliance, warmth, generosity, and sheer love of life. Now we can only marvel at the extraordinary scope of his expertise and the range of his accomplishments.

When I first met Jerry almost 30 years ago, it was difficult to believe that one person could do so much groundbreaking research, be such a thoughtful and caring educator, and have a moment left to give extraordinary service to our community. At some point, I realized how amazing he was in each of these facets of his life and work, and how phenomenal was his contribution to the world. More personally, his close friends now realize that the constant availability of his advice factored heavily in an amazing number of our decisions.

Jerry's research interests included theoretical and experimental research in combustion, heat transfer, and fluid dynamics. His contributions to the fluid dynamics of reacting and nonreacting flows were not only prolific, but thoughtful and focused. He had a strong vision of where the field was heading, and he had insight into what was important. His work improved our basic knowledge and understanding of, for example, liquid breakup processes in jets, sprays, and droplets; turbulence properties of jets, plumes, and multiphase flows; diffusion flames on Earth and in low-gravity environments; the radiative, growth, and oxidation properties and structure of soot; and flame structure and suppression in normal and low-gravity environments. Environmental and safety concerns drove a large portion of his research into the underlying science.

There was often a beautiful clarity about Jerry's work. He produced the kinds of basic information and parameters that we need to catalog phenomena and to use as base points in modeling. Through a series of often very simple but extremely elegant experiments, he produced results that turned out to be useful far beyond the original intent of the investigation, and they often had extremely important industrial and other applications. I believe that he was able to contribute so well to the most applied work because he appreciated the basic concepts and was so open to new ideas and approaches. As just one example of many, consider his work on the structure of flames, both sooting and nonsooting, in normal and low-gravity scenarios. These results provided information critical to the design of fire-suppression systems on Earth and in space.

Jerry's research was documented in about 500 articles and papers, many of which made groundbreaking contributions and appeared in the best journals in our fields. He wrote the definitive review articles on many of his research interests and gave hundreds of eagerly attended presentations around the world. The Institute for Scientific Information awarded him a Highly-Cited Researcher Certificate as one of the 99 most highly cited engineers in the world.

Jerry was a superb teacher and advisor who mentored about 50 doctoral students. Those that I met were among the best-trained students I have ever encountered. Their standards of work and presentation, plus their level of professionalism, were almost too good to be true. If he recommended someone, we knew that this person could be counted on to do an excellent job; no more information was really needed.

I don't know anyone who freely gave more of his time to his community. Jerry was the editor of three scientific journals (*Journal of Heat Transfer, Journal of Combustion and Flame*, and *AIAA Journal*). He was active in innumerable committees for many professional societies. He worked diligently and wholeheartedly for the NASA microgravity research program. When we needed a thoughtful and critical evaluator, Jerry was always our choice. He was always fair and always encouraged new ideas.

Jerry's achievements were widely recognized. He was a Fellow of four professional societies: AIAA, American Society of Mechanical Engineers (ASME), American Association for the Advancement of Science (AAAS), and American Physical Society (APS). He was also a Member and National Associate of the National Academy of Engineering. He was a recipient of the ASME Heat Transfer Division's Memorial Award (1988), the AIAA Propellants and Combustion Award (1993) and AIAA Space Processing Award (2004), and the Combustion Institute's Alfred C. Egerton Gold Medal (2004). This is only a small sample of the many awards he received over the course of his career.

Jerry cut through nonsense quickly, directly, and honestly. He expressed things the way he saw them, often with an edge, often with humor. Typical "Articles of Faeth" include comments like the following that I personally remember: "Ozone is a stable molecule with an attitude." That's Jerry. After a heated discussion about surface tension and droplet breakup, "All you have to do is spit on a wall and you know about surface tension." After a disagreement on how to handle a personnel issue, "If you don't get this you need to start changing what you're drinking." And there was always "Faeth here" when we called him. But another side was the long descriptions of his daughters and grandchildren, his time with Mary Ann at his summer home in Eagles Mere, and the very fine Australian shiraz he just tasted and wanted to share.

Jerry's friendship and mentoring were a constant in my professional life, but never more so than when he "showed me the ropes" during the few months preceding and following my appointment as Editor-in-Chief of this journal. I was fortunate to be following in his footsteps, because his editorship of this journal played a significant role in establishing its breadth, scope, and high quality. The AIAA Board of Directors, the AIAA Publications Committee, his fellow Editors-in-Chief of AIAA's journals, all of our Associate Editors, and the AIAA Publications staff join me in expressing our sorrow. He will be missed.

Elaine S. Oran
Editor-in-Chief