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Publisher *Taylor & Francis*

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Journal of Liquid Chromatography & Related Technologies

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713597273>

Foreword

To cite this Article (1997) 'Foreword', Journal of Liquid Chromatography & Related Technologies, 20: 16, xvii – xix

To link to this Article: DOI: 10.1080/10826079708005576

URL: <http://dx.doi.org/10.1080/10826079708005576>

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FOREWORD

Distinguished Professor J. Calvin Giddings died on October 24, 1997, after a long and courageous battle with cancer. He will be remembered for his many contributions in science, exploration and environment protection.

He received his B.S. degree from Brigham Young University and his Ph.D. from the University of Utah, under Henry Eyring. Professor Eyring suggested that Cal look at the theoretical basis for chromatography, then just beginning to be studied. His insight and careful theoretical development were eventually consolidated in his book *Dynamics of Chromatography*, which has become a classic in the field.

His interests included the properties of dense gases, and led to the establishment of the foundations for supercritical fluid chromatography and supercritical fluid extraction. This alternative approach to HPLC was studied for several years before others became interested in it for the separation of non-volatile compounds.

Concurrent with the supercritical studies, he began work on thin channel separation methods. The first and most studied was field-flow fractionation (FFF) which was initially conceived while on a vacation trip in the fall of 1965, where he stayed one night in a motel in Evanston, Wyoming, at that time a cowboy town. Between the celebrating cowboys and a noisy heat radiator, he was unable to sleep and began thinking about the effects of fields which led him to the basic idea of FFF. He returned to Salt Lake on the following Monday with the basic theory of FFF well under way. The method has now become a reliable and powerful means for characterization of polymers and particles from a wide variety of fields, ranging from medicine to fabrication to environmental studies.

Another thin channel separation method developed more recently is SPLITT, which allows continuous processing of particles to obtain gram and larger quantities of sized material. He founded FFFractionation, LLC, to develop and market equipment for these techniques.

He was the author of over 400 publications, and the founder of the journal, *Separation Science and Technology*, continuing as executive editor until shortly before his death. He also served as executive editor for the series *Advances in Chromatography* for the first 32 volumes.

Professor Giddings was the author of the textbook, "Chemistry, Man, and Environmental Change." The graduate textbook *Unified Separation Science* grew out of his course on separations.

He received many awards, including the Tswett Medal, the Dal Nogare Award, the Martin Award. In addition, ACS Awards in Chromatography and Electrophoresis, Analytical Chemistry, and Separation Science and Technology were given to him in 1967, 1980, and 1986, respectively, and the Nichols Medal from the New York Section of ACS. He was also awarded an Honorary Doctoral Degree from the University of Uppsala in Sweden.

His interests were varied, writing papers on topics ranging from the properties of snow to world population problems. He was always an explorer with a great passion for the outdoors, which placed him in the forefront on the preservation of the environment. He was a major contributor to the establishment of the Lone Peak Wilderness Area, which is only ~25 miles from downtown Salt Lake City.

In his earlier years, he made several first and early technical rock climbs of mountains in Utah. His kayaking expeditions included a number of first descents of rivers in the western states. He led an expedition on the first successful descent of the Apurímac River in Peru—the source of the Amazon river. This descent involved going through the Andes mountains from west to east. This epic is recounted in his book "Demon River Apurimac," published shortly before his death.

In his later years, he became a mountain bike enthusiast. He always chose the most challenging trails to follow. At the Fifth International Symposium on FFF, held in Park City, Utah, in the summer of 1995, he led a group of the participants down a mountain bike trail—some could not keep up with him, and he had been undergoing chemotherapy for nearly a year.

His enthusiasm extended to those around him in all these areas. His research group was included in several river runs such as the San Juan, Desolation and Grays Canyon in Utah, and weekend excursions to Alpine Canyon near Jackson Hole, Wyoming. Weekend skiing and mountain biking excursions were also frequent.

Professor Giddings will be long remembered for his clear insight and the ability to explain complex ideas in ways that were easy to understand. Those of us who had the opportunity to work closely with him for many years greatly feel the loss of this fine man.

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