DOCUMENTS OF THE GENERAL FACULTY

REPORT OF THE MEMORIAL RESOLUTION COMMITTEE FOR LLEWELLYN K. RABENBERG

The special committee of the General Faculty to prepare a memorial resolution for Professor Llewellyn K. Rabenberg, Department of Mechanical Engineering, has filed with the secretary of the General Faculty the following report.

Alan W. Friedman, Secretary
General Faculty and Faculty Council
The University of Texas at Austin
Arthur J. Thaman and Wilhelmina Doré Thaman Professor of English and Comparative Literature

IN MEMORIAM
LLEWELLYN K. RABENBERG

Llewellyn K. Rabenberg passed away November 18, 2016, at the age of sixty. Dr. Rabenberg was born in the small town of McLaughlin, South Dakota, and raised with six brothers and sisters. His interest in science was kindled at a young age, and he went on to obtain a Bachelor of Science degree in Metallurgical Engineering at the South Dakota School of Mines in 1978, followed by a Master's of Science and Ph.D. at The University of California at Berkeley in Material Science and Engineering. His doctoral supervisor was Gareth Thomas, an internationally recognized electron microscopist. Lew's graduate studies focused on phase transformations and the development of magnetic coercivity in samarium-cobalt based permanent magnet alloys.

Following graduation, Dr. Rabenberg joined the faculty in the Department of Mechanical Engineering at The University of Texas at Austin. His expertise was in electron microscopy, but the breadth of his knowledge in numerous topics related to Materials Science was valued by both students and faculty. He consequently served on a large number of doctoral committees, ninety-eight in total, and supervised to completion eleven doctoral students and eleven masters students over his career, with topics ranging from electronic and electrochemical materials to structural materials. Dr. Rabenberg was promoted to the rank of Associate Professor with tenure effective in 1989. He was twice a visiting professor for short periods of time at the Institut National Polytechnique de Grenoble in France and the Technical University of Vienna in Austria. He retired from the University in 2015 after having spent his entire career at UT Austin.

Dr. Rabenberg applied electron microscopy and electron diffraction techniques to characterize ultrastructures of engineering materials. After publishing several papers on the microstructure of permanent magnets, Dr. Rabenberg extended his expertise into manufacturing and metal compounds. He studied microstructural evolution in electrically resistive consolidated aluminum powder and also deformation mechanisms in yttria-stabilized zirconia. In 1988, he was instrumental in the first experimental observation of eta borides, which hitherto had only been predicted based on first principles. In the 1990s, Dr. Rabenberg moved into the areas of advanced energy generation and storage. He characterized ultrafine particle formation in Nafion films, voiding in passivated aluminum interconnects, and described catalytic carbide formation at Al-C interfaces. He followed the interest in lithium ion batteries, nanoscaled materials and thin films beginning around 2001.

An excellent teacher, Dr. Rabenberg won the Texas Excellence Teaching Award in 1987. In 1990, he won the ASM International Bradley Stoughton Award for Young Teachers, a society award that recognizes one materials professor for outstanding teaching. Dr. Rabenberg's broad technical background allowed him to teach an unusually diverse range of classes at both the undergraduate and graduate level. He was, for example, the only faculty member who regularly taught both undergraduate core material engineering courses. Also instrumental in course development, Dr. Rabenberg created several graduate courses in electron microscopy, characterization, and atomic structures and defects. His graduate courses were some of the most challenging and rigorous courses taught within the materials curriculum, but they nevertheless were well attended because

students recognized and appreciated their value. Dr. Rabenberg also spent countless hours revising and improving content for the undergraduate materials laboratory experience. His enthusiasm for this activity is evidenced by his continuing to work on laboratory units after moving onto long-term disability. Amongst both students in his classes and faculty, his understated sense of humor was his trademark, which will be sorely missed.

Professor Rabenberg is survived by his wife, Beverly; two children, Amy and Phillip; his mother, Dorothy; and his siblings: Marv, Dana, Keith, Risë Seidl, Rita, and Lanita Herbener

This memorial resolution was prepared by a special committee consisting of Professors David L. Bourell (chair) and Desiderio Kovar.

Distributed to the Dean of the Cockrell School of Engineering on August 16, 2017, and posted under “Memorial Resolutions” at https://wikis.utexas.edu/display/facultycouncil/Wiki+Home.