

**MEMORIAL RESOLUTION  
ON BEHALF OF  
  
CARL F. ROTHE  
PROFESSOR OF PHYSIOLOGY AND BIOPHYSICS  
INDIANA UNIVERSITY SCHOOL OF MEDICINE**

Carl Frederick Rothe died in Indianapolis on February 1, 2016, five days short of his 87th birthday. He was born in 1929 in Lima, Ohio, the son of Calvin H. and Katharine Rothe. He spent his early years on a farm, and developed there his passion for building and fixing things. Carl earned B.S. (summa cum laude) and M.S. degrees in Animal and Dairy Science and a Ph.D. degree in Physiology, all at Ohio State University. He married Mary Lou Hawk on August 16, 1952. After graduation, he served as a commissioned officer in the U.S. Public Health Service in the Toxicology Laboratory, Savannah, Georgia. Carl joined the fledgling Department of Physiology in Indianapolis in 1958, and retired as Professor emeritus in 2000.

Carl played a leading role in teaching physiology to medical, dental, and graduate students in our department. He presented lectures on cardiovascular physiology to medical students for 25 years. He was particularly influential in establishing the physiology teaching laboratories. Together with Ewald Selkurt, he developed a mechanical model of the cardiovascular system which was adopted by medical schools all over the world. Later, he pioneered the use of computer simulations to teach physiology. He was especially proud of a computer simulation that helped students learn about cardiovascular interactions, a project that he worked on and refined over many years. He wrote book chapters in four editions of Selkurt's *Physiology*.

Carl was a wonderful role model for graduate students and faculty alike. Carl taught an Instrumentation course, under the auspices of the Medical Biophysics program. This course gave graduate students an appreciation for the limitations of measuring devices. Carl always emphasized proper experimental design and appropriate use of statistical methods in evaluating data. Carl trained five Ph.D. students in his laboratory (Thomas Lesh, John Drees, Bruce Johns, Tom Bennett, and Carol MacAnespie) and three postdoctoral fellows (Paul Stein, Monica Gaddis, and Roberto Maass-Moreno). As both a researcher and teacher, his thoroughness and critical thinking set the standard for his students and colleagues.

Carl was internationally recognized for his research on the cardiovascular system. His research was supported by the National Institutes of Health (NIH) without interruption for 34 years. For part of his NIH-funded work, he applied for a five-year grant, and was given a 10-year MERIT award, a rarely-bestowed mark of recognition of the quality and importance of his research. He published more than 60 original research papers. He was an expert on the venous side of the circulation, and wrote major review articles on this topic in *Physiological Reviews* and the *Handbook of Physiology*.

Quite late in his career, Carl decided that he needed to study the *in vivo* microcirculation of the liver to understand better how the arterial and portal vein inflows of blood worked together to nourish the liver. This was a major shift in direction for Carl, but, with his usual enthusiasm and attention to detail, he mastered all of the techniques required and proceeded to publish many studies that changed the field. This work was extraordinarily difficult because the techniques

involved were so different from Carl's previous expertise, and he needed to repeat the studies in multiple animal models to determine if their vascular anatomy influences liver microvascular physiology. Carl retired as one the world authorities on microvascular physiology of the liver.

Carl was an active member of several professional societies, including the American Physiological Society, Microcirculatory Society, Biomedical Engineering Society, American Heart Association, and American Association of University Professors. He served on various committees in these organizations. He served on the editorial boards of the *American Journal of Physiology*, *Journal of Applied Physiology*, and *Critical Care Medicine*. He was a frequent guest reviewer for numerous journals, and his careful, critical reading of manuscripts was highly valued. Dr. Martin Frank, Executive Director of the American Physiological Society, wrote "I could always count on Carl for a straight assessment and insightful response to issues."

Carl served on many school committees, at the department level, School of Medicine, IUPUI, and Indiana University. He was a member of the IUPUI Faculty Council for many years and chaired the School of Medicine Library Committee. He was a member of several IUPUI and Indiana University committees that dealt with the transition to using computers for research, teaching, data storage, and communication.

An account of Carl's achievements and intellectual qualities doesn't begin to describe the sterling human being that he was. He was modest, humble, and thoroughly unassuming. His honesty and moral sensitivity informed every aspect of his life. His work ethic, his resourcefulness, and his generosity were unbounded. He enthusiastically grasped every opportunity to help others, whether it was with advice, tools, or, in many cases, taking on the task himself.

Carl brought the same qualities to his church, the First Congregational United Church of Christ. He served on the Indiana-Kentucky Conference committee and the United Church Homes. Not surprisingly to those of us who knew him, if anything needed to be fixed at his church, whether it was the plumbing or electrical work, Carl did it.

Carl and Mary Lou traveled all over the United States and the world. Carl was particularly fond of waterfalls, and the hallway of his home was decorated with photographs that he had taken. He had an exceptional collection of tools, which he was always eager to share with others. He repaired and maintained many old wall clocks which would sound all day long. Carl also enjoyed going to the movies and classical music and ragtime. Together with Mary Lou, Carl was a strong proponent of community service and civil rights and fairness to all people. Those of us who had the privilege of knowing Carl will always remember his sincerity and kindness.

Be it here resolved that this Memorial Resolution be adopted by the Faculty Council of Indiana University-Purdue University at Indianapolis at Indianapolis, and that a copy be sent to his wife, Mary Lou Rothe, his son Thomas H. Rothe and daughter Sarah K. Whitfeld, and grandsons Jason Lee and Jeffrey Lee.

Prepared by: George A. Tanner, Ph.D. and H. Glenn Bohlen, Ph.D.

*Adopted by the IUPUI Faculty Council at their meeting on April 5, 2016.*