In Memoriam: Thomas Keil, Longtime Physics Professor, Former Department Head, and Educational Innovator

Thomas H. Keil, a longtime professor at WPI who twice served as department head and who played a vital role in implementation and success of the WPI Plan, the Institute's groundbreaking undergraduate curriculum, died Feb. 28, 2013, at the age of 73.

Born in Philadelphia, Keil earned a BS in physics at California Institute of Technology and a PhD in optics at the University of Rochester. He was a Sloan Postdoctoral Fellow and a visiting lecturer at Princeton University for two years before joining the WPI faculty as an assistant professor of physics in 1967.

When Keil joined the Institute, it was on the verge of several significant changes, including the admission of its first female undergraduates, the emergence of tenure and faculty governance, and, most significantly, the development of the WPI Plan, which replaced WPI's traditional science and engineering curriculum with a radically different project-based model.

After the faculty approved the Plan in 1970, the General Implementation Committee was established under the leadership of Dean of Undergraduate Studies William Grogan '46 to oversee the huge task of making the switch to the new program. Keil was an inaugural member, and also chaired the Faculty Curriculum Committee from 1970 to 1975.

In those capacities, Keil played a vital role in the development of an institutional proposal that resulted, in 1972, in a $1.2 million award from the National Science Foundation's College Science Improvement Program; the grant supported the implementation and evaluation of the Plan. Keil also contributed substantially to a number of other fundraising efforts related to the Plan.

Described as someone with a particular talent for articulating the philosophy and value of the Plan, Keil found himself called upon frequently as a spokesman to explain the curriculum to outside organizations. In 1973, for example, he was invited to deliver a major address on the Plan to the American Association of Physics Professors in Manhattan.

Keil also helped develop the new registration system required to accommodate the Plan's quirks, including its project-based degree requirements, and was among a small group of faculty members and administrators who inaugurated the Institute's network of off-campus residential project centers known today as the Global Perspective Program.

It was Keil who suggested that the first such center be located in Washington, D.C., a city chock full of agencies and organizations grappling with societal and political issues related to science and technology. He made many trips to the nation's capital to cultivate those organizations, a number of which became longtime project sponsors. He later served as a resident faculty advisor in Washington and Costa Rica.

In a 1976 letter, Keil talked about what he described as his "near total commitment" to the implementation of the Plan. "I made this commitment not only because the success of the endeavor was
important to me personally, but also because I am convinced that success is important to engineering and science education in general."

An ardent and passionate supporter of the Plan, Keil also recognized that it was imperfect (for example, he believed it is difficult for students to learn science in courses that last only seven-weeks) and suggested that one of program's greatest virtues was that it is an ongoing experiment.

"The constant flow of exchange and experimentation is a very important thing," he told the editors of WPI's yearbook, The Peddler, in 1975. "After all, this is an engineering and science school, and no one's ever experimented in curriculum of the very fields that base a great deal of their work on experiment. So now we have a college that is trying."

Just five years after Keil arrived at WPI, he was named head of the Physics Department, replacing Allan Parker, a 30-year veteran of the WPI faculty; Keil was promoted to associate professor a short time later. He took over a department torn by the uncertainty and weighty demands associated with the launch of the Plan, and by one report he managed to bring harmony to the faculty during his five-year term.

During that term, Keil helped develop the first IPI (Individually Prescribed Instruction) courses in physics; these were self-paced courses that used videotapes and other early instructional technology. He also initiated a joint program with Clark University for graduate studies in physics, a program that continues to this day.

In 1994, he was asked to head the department once again; he served for 10 years and counted among his proudest achievements the hiring of WPI's first female professor of physics. He then returned full-time to teaching and to another of his consuming passions: pre-college science and mathematics education.

In 1984, he co-founded Frontiers in Science and Mathematics, a WPI residential summer enrichment program for high school students that he directed for many years. He also worked closely with Massachusetts State Senator Arthur Chase and others at WPI to establish the Massachusetts Academy for Mathematics and Science at WPI, a two-year public high school for talented students from Central Massachusetts.

Keil served on the steering committee for the school, where students would spend their senior year taking undergraduate classes at WPI, and served as the academy's interim headmaster until a full-time director was hired. In a 1993 article in ASEE Prism about the new academy, Keil said he saw WPI's involvement with the school as a chance to contribute to improvements in pre-college STEM (science, technology, engineering and mathematics) education. "We need to learn more about what's happening in the schools and try to support what teachers on the secondary level are doing," he said.

Keil was honored by the academy in 2002, as it graduated its 10th senior class. WPI honored Keil, who once wrote that he had taught nearly every WPI physics course, from freshman to graduate level, at one point or another, with the Board of Trustees' Award for Outstanding Teaching in 1978, the same year he was named a full professor. In a letter recommending Keil for that promotion, Physics Department head Robert Long noted that "his service to WPI is matched by few, if any, other faculty members and he has clearly gone beyond the call of duty in his efforts to see the Plan succeed."

Keil leaves his wife, Elinor (Boynton) "Nora" Keil, a daughter, a son, a brother, and three grandchildren.

A donor card carrier since 1975, Keil donated his body to the University of Massachusetts Medical School's Anatomical Gift Program. There will be no services, but for those who wish to reminisce about Tom Keil, Nora will be at home on March 11 from 1 to 6 p.m.

Members of the Worcester Chamber Music Society will hold a memorial concert on Sunday, May 12, 2013, at 7:30 p.m. (with a pre-concert talk at 7 p.m.) in Mechanics Hall in Worcester. The concert is free and reservations are not necessary. (Keil was an avid cellist who attended the Apple Hill Center for Chamber Music Camp every summer since 1980).
Memorial donations may be made to **Apple Hill Center for Chamber Music**, 410 Apple Hill Road, Nelson, NH 03457; **Worcester Chamber Music Society**, P.O. Box 21001, Worcester, MA 01602; or **Rose Monahan Hospice Home**, 10 Judith Road, Worcester, MA 01602.

March 5, 2013