THE UNIVERSITY OF MICHIGAN

Regents Communication

ACTION REQUEST

Subject: **Report of Faculty Retirement**

Action Requested: **Adoption of Retirement Memoir**

    Robert W. Keener, Ph.D., professor of statistics in the College of Literature, Science, and the Arts, retired from active faculty status on May 31, 2024.

    Professor Keener received his Ph.D. degree in applied mathematics from MIT in 1979. He joined the University of Michigan faculty as an assistant professor of statistics in 1980, and was promoted to associate professor of statistics in 1986, and professor of statistics in 1993.

    Professor Keener's research focused on sequential analysis and related topics, including optimal designs, bandit problems, and multivariate renewal theory. His early work concerned optimal designs in simple versus simple hypothesis testing settings, and developed near-optimal designs in general settings with finite parameter spaces. His further work focused on exact solutions to bandit problems, which have now become quite ubiquitous in statistics and machine learning with the growth of reinforcement learning. Professor Keener also made significant contributions to sequential design problems, with several of his Ph.D. students working in this area.

    A unifying theme of Professor Keener's research was the use of asymptotic analysis. His contributions to probability theory involve asymptotic expansions in multivariate renewal theory, papers on asymptotic expansions for boundary crossing problems with nonlinear renewal theory scaling, fluctuation theory, and, more recently, expansions to improve Brownian motion approximations. As an acknowledgment of his contributions to theoretical statistics and probability, Professor Keener was elected to the prestigious fellowship of the Institute of Mathematical Statistics in 1994.

    Professor Keener made many significant contributions to the Department of Statistics during his tenure at UM Statistics. Most notably, he was the graduate chair for multiple terms and a perennial instructor of graduate level courses in theoretical statistics and probability, a task he carried out with great diligence and dedication over many decades. His many years of experience with these core Ph.D. courses gave rise to a popular textbook he authored, *Theoretical Statistics: Topics for a Core Course*, a lucid and rigorous introduction to graduate level theoretical statistics. This book was published in 2010 and has been adopted by many leading Statistics Ph.D. programs across the U.S. since.

    The Regents now salute this distinguished faculty member by naming **Robert W. Keener, professor emeritus of statistics**.

Requested by:

Jon Kinsey
Vice President and Secretary of the University   **May 2024**