

*At a meeting of the FACULTY OF ARTS AND SCIENCES on November 2, 2021, the following tribute to the life and service of the late Gary Edward Chamberlain was spread upon the permanent records of the Faculty.*

## **GARY EDWARD CHAMBERLAIN**

BORN: April 23, 1948  
DIED: February 26, 2020

Gary Chamberlain, Louis Berkman Professor of Economics, *Emeritus*, at Harvard University, was an econometric theorist of towering importance whose work has had deep influence on econometric theory and the conduct of empirical work in economics and the social sciences. His work laid the foundation for panel data econometrics, with unusually deep insights into the use of these data along with their connections to economic models. His generosity with his students is legendary, and his teaching both at the undergraduate and graduate levels left a deep mark on generations of students. His subtle but penetrating comments in seminars and on the work of students, colleagues, and others made engagement with him an intellectual feast.

Born and raised in Boston, Gary spent almost his entire adult life at Harvard. He earned an A.B. in Economics in 1970 and stayed on to earn a Ph.D. in Economics in 1975 under the supervision of the late Zvi Griliches. He served on the Harvard Department of Economics faculty from 1975 to 1979 as an assistant professor and then moved to the Department of Economics at the University of Wisconsin–Madison as an associate professor and then as Professor of Economics. He returned to Harvard in 1987 as Professor, then as Louis Berkman Professor of Economics until his retirement in 2018, when he was appointed a research professor.

Gary was a deep thinker who read widely. His contributions started in his senior thesis working with Zvi Griliches on models of twins that are built on linear structures with flexible unobservables. The main motivation is to disentangle the role of ability as separate from schooling while allowing for a factor error structure. Gary went on to develop a general approach to studying these longitudinal data sets through insightful modeling of unobservables that led to a unique approach to identification and inference. This resulted in his landmark *Handbook of Econometrics* chapter on panel data methods and models, which continues to be the standard reference on the topic. It is widely cited for the approach he proposed but also for its clarity of thought and encyclopedic treatment of this important class of models.

Using deep insights from statistics and approximation theory, Gary provided the earliest work on the characterization of efficiency bounds in moment-based models, or generalized method of moments (GMM), an inference class in economics that is widely used and remains now the dominant approach to inference. His novel approach relied on exploiting approximations using multinomial distributions that proved fruitful. These results were key in ensuring that these widely used empirical models rested on solid theoretical foundations. He continued this work by providing further results on efficiency bounds in a wide class of semiparametric econometric models that included, for example, correlated random effects models and general nonlinear panels with feedback.

In the mid-1990s, Gary became interested in decision theory and its intersection with estimation in economics. His subsequent work used insights from that literature to provide approaches for obtaining optimal estimators in classes of models that are routinely used by empirical economists such as instrumental variable regression, fixed effects regression, and dynamic panel data models. Again, his unusual understanding of diverse literatures resulted in deep interdisciplinary insights. He believed the decision theorist's job was to act as a consultant recommending optimal estimators to applied economists. He applied this normative approach to examples in models of treatment choice and portfolio choice and more recently to dynamic decisions.

Later, Gary became interested in results in empirical economics that use new administrative data to learn about teacher added value. He became fascinated with the opportunities that these data afforded. In unique ways, he modeled these added values, using deep connections to factor models, and distilled mappings from unobservables to predictions about added values. To do so, he exploited general factor structures he had initially used in his senior thesis that led to useful contributions to the problem of the measurement of added value.

His groundbreaking research led to many honors. He was elected to the National Academy of Sciences, selected as a distinguished fellow of the American Economic Association and a fellow of the American Academy of Arts and Sciences. He was also a fellow of the Econometric Society and a member of its Council (1988–1990, 1991–1993), and he gave its Fisher-Schultz Lecturer in 2001.

Gary was a fantastic teacher, an unusually generous advisor, and a patient and encouraging mentor. He always looked forward to reading his students' and colleagues' work, offering exceptionally helpful feedback. He was a dedicated and generous mentor and a loyal and kind advisor. The astonishing devotion that his former students showed at his retirement conference in May of 2018 bespoke Gary's intellectual and human impact. Gary was also an active participant in the intellectual life of the department, participating in multiple seminars a week where his style of questioning was always helpful and encouraging.

Gary was gentle and generous, but he also experienced sadness and loss with the untimely death of his son Neil at the young age of 28 in 2010. Gary and his wife, Rachel McCulloch, a distinguished economist in her own right, lived in Lexington for almost thirty years, and Gary cared for Rachel during her long illness until her passing in 2016. He passed away unexpectedly four years later in February of 2020. He is survived by his daughter, Laura Gehl; his son-in-law, Ryan Gehl; four grandchildren, Kevin, Nathan, Seth, and Tessa; his sister-in-law, Linda Rothschild; and two nephews.

In June of 2020, friends of Gary started the Chamberlain Seminar, a biweekly online econometrics seminar to commemorate his legacy and celebrate his contributions. As Gary's *Boston Globe* obituary said, "He was a man of few words but significant action who was loved and admired by his colleagues, collaborators, and students."

Respectfully submitted,

Dale Jorgenson  
Ariel Pakes  
Elie Tamer, Chair