Editorial from the New TEAC Co-Editors-in-Chief

Economists have long recognized algorithmic considerations as crucial to the design of workable economic systems. To give just a few (Nobel-winning) examples: In the 1950s, Herbert Simon highlighted the importance of bounded rationality for designing organizations. In the 1960s, Leo Hurwicz formalized Hayek's idea about the "informational efficiency" of the market system, anticipating the field of communication complexity by a decade. In the 1970s, Oliver Williamson pointed to bounded rationality as the source of "transaction costs" that determine organization of economic activity. However, the main focus of economics has been on incentives, and economists have often lacked the tools to understand bounded rationality.

Meanwhile, with the development of distributed computing and the Internet, computer scientists have become interested in incentives, rational behavior, game theory, and other economic problems. Practical applications such as online auctions and spectrum auctions, with stakes totaling billions of dollars, have driven some computer scientists to think about incentives and incorporate them into their algorithmic problems, moving beyond benevolent or malevolent models of behavior to incorporate (bounded) rationality. Today's markets are increasingly making use of powerful but tractable optimization and machine learning algorithms to yield more economically efficient outcomes, designed by experts schooled in both incentives and algorithms.

Since its inception in 1999, SIGecom has provided a platform where economists and computer scientists could exchange ideas and contribute to the development of new economic mechanisms and gain a better understanding of existing ones. Several conferences were developed to publish research in this newly burgeoning field. In starting *ACM TEAC*, founding editors Vincent Conitzer and Preston McAfee brought a logical continuation to this path. We are deeply grateful to them for their efforts in developing the journal into the highly respected venue it is today. It is an honor to be selected to succeed them. We will strive to keep up their fantastic work, including matching their commitment to timely decisions.

While maintaining the journal's strengths, we hope to expand it into emerging areas that may not already have a natural home. In particular, computer science ideas such as communication complexity, computational complexity, information theory, the theory of finite automata, and robust decision making are starting to permeate several fields of economics, including game theory, mechanism design, finance, and macroeconomics. Machine learning will play a large role in modern markets, from explore-exploit tradeoffs to causal inference. Optimization technology will support good outcomes for complex allocation problems. It can sometimes be difficult to publish papers on these topics in mainstream economics journals. We hope that *ACM TEAC* becomes a natural outlet for these topics. Many economists should find the opportunity to influence the bright minds of the new generation of computer scientists very exciting. Many computer scientists will find inspiration in speaking to a community of scholars who are analyzing and inventing the digital economy. The future of the economy is in many ways

a future of economics married with computation. We are excited to edit *ACM TEAC*, cultivating this journal's role as the premier venue covering this interdisciplinary and influential topic.

David Pennock
Ilya Segal

New TEAC Co-Editors-in-Chief