Institute for Mathematical Behavioral Sciences
Quantitative Approaches to Language Science
University of California, Irvine
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ABSTRACT

This conference convenes current and future leaders in language science who utilize mathematical methods -- implemented either analytically or through computational simulation -- for understanding natural language. Such methods serve as tools for theory specification and evaluation, allowing practitioners to make their theoretical commitments precise while delivering both qualitative and quantitative predictions that are testable against human behavior. These quantitative approaches to language science target a variety of subfields, including language use and understanding, language development, and the nature of our linguistic representations. Quantitative approaches also serve as an essential bridge to explorations of natural language in combination with computer science, including artificial intelligence and natural language processing.

Despite a good deal of recent progress, the diversity of perspectives and theoretical frameworks often goes unnoticed (or ignored) by individual practitioners, which results in missed opportunities for large-scale advances. By bringing together representatives of this diversity under one roof, we set the stage for a lively discussion aimed at increasing awareness, clarifying positions, and fostering collaboration.