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**CAIMS Research Prize**  
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*Thirty Years of Progress in the Solution of Large Sparse Systems*

The majority of systems of equations that arise in science and engineering models are sparse. Moreover, solving these systems represents a major component in the total cost of solving these models. The development of efficient methods for solving these systems involves questions about the complexity of certain computations and their numerical stability and accuracy, along with software issues related to the design and analysis of efficient methods for storing sparse matrices and the use of multiprocessor architectures. This talk will trace the development of efficient methods for solving large sparse positive definite systems of equations over the past thirty years. This class of systems enjoys some significant advantages, and very efficient methods are now available for their solution. If time permits, approaches to solving more general systems (e.g., unsymmetric, indefinite, overdetermined, constrained) using the tools developed for sparse positive definite systems will be discussed.