



## **Decision Analysis Society**

### **2016 Frank P. Ramsey Medal**

The Frank P. Ramsey Medal is the highest award of the Decision Analysis Society (DAS). It was created to recognize distinguished contributions to the field of decision analysis. The medal is named in honor of Frank Plumpton Ramsey, a Cambridge University mathematician who was one of the pioneers of decision theory in the 20th century. His 1926 essay "Truth and Probability" (published posthumously in 1931) anticipated many of the developments in mathematical decision theory later made by John von Neumann and Oskar Morgenstern, Leonard J. Savage, and others.

For this award, decision analysis is defined as a prescriptive approach to provide insight for decision making based on axioms that are logically consistent with the axioms of von Neumann and Morgenstern and of Savage. Key constructs of decision analysis are utility to quantify one's preferences and probability to quantify the state of one's knowledge. There are overlapping aspects of decision analysis with other fields such as behavioral decision research, probabilistic risk analysis, and engineering and economic analyses.

Behavioral decision research addressing how people make decisions that has direct implications for improving the practice of decision analysis is a contribution to decision analysis. Models of uncertain possible consequences from scientific, engineering, and economic modeling that are useful for decision analysis are contributions.

Distinguished contributions to the field of decision analysis can be internal, such as theoretical or procedural advances in decision analysis, or external, such as developing or spreading decision analysis in new fields. Thus, the specific award criteria for evaluating potential Ramsey Medal recipients are a candidate's

- Theoretical, methodological, and procedural contributions to decision analysis
- Applications of decision analysis (including new uses and in new fields)
- Other contributions promoting decision analysis (e.g. educational and public awareness)
- Exceptional contributions to the DAS (e.g. service to society or journal)

A potential recipient need not meet all of the criteria, but contributions to each criterion are pertinent.

**Prof. Vicki M. Bier has been selected to receive the 2016 Frank P. Ramsey Medal.**

Prof. Bier has been and continues to be a consistent contributor and leader to the field of decision analysis, including serving in leadership positions in the Decision Analysis Society of INFORMS and in a variety of other leadership roles. She served on the Decision Analysis Society of INFORMS council from 1998 to 2001, and then as President-Elect, President and Past President from 2008 to 2014, among many other contributions. Dr. Bier came to decision analysis by way of risk analysis. Her ability to bridge these two closely related fields has been to the great benefit of both. She is a Fellow of the Society of Risk Analysis, and received that organization's Award for Distinguished Achievement, as well as serving on its council and as Engineering Editor for its flagship journal. She has also served on numerous panels, working groups and committees promoting the broad and correct application of decision and risk modeling in important settings including nuclear safety and risk-benefit analyses.

Vicki Bier has spent most of her academic career at the University of Wisconsin, where she is currently Professor of Industrial and Systems Engineering and of Engineering Physics. She earned her B.S. in Mathematical Sciences from Stanford University in 1976 and her Ph.D. in Operations Research from MIT in 1983.

Upon receiving her doctorate she joined Pickard, Lowe & Garrick, where she led risk analyses, particularly in the nuclear industry, building on earlier consulting experience with Arthur D. Little. Her efforts on Bayesian methods in risk assessment led to a number of innovative publications. In 1989, she joined the University of Wisconsin as an assistant professor. Since 1996, she has directed the Center for Human Performance and Risk Analysis. She became full professor in 2001, and she served as chair of the Industrial and Systems Engineering Department from 2011 until this year. In the course of her time at Wisconsin, she has also supervised sixteen doctoral dissertations (and counting), and her students are also making an impact on the field.

With the analytical mind and the practical mindset Prof. Bier brings to her research, she provides rigorous answers to problems of great societal importance and impact. Early in her career, she focused on nuclear safety and reliability modeling. More recently, she has focused on problems of security and counterterrorism. She has well over 100 research publications, including four books and edited volumes and more than 60 journal articles. Her highly cited work combines risk analysis and game theory with decision analytic modeling, and lays a theoretical foundation for decisions regarding the allocation of defensive resources. Her work has also focused on creating sound methods for eliciting and synthesizing judgments in challenging situations.

This award recognizes Prof. Vicki M. Bier's leadership, intellectual and practical contributions to decision analysis and closely related fields.

The Ramsey Medal award committee for 2016 was Jeff Keisler (Chair), Karen Jenni, Don Kleinmuntz, Jim Smith and Detlof von Winterfeldt.