



Decision Analysis Society

2018 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.



Dr. Max Henrion has been selected to receive the 2018 Frank P. Ramsey Medal.

Dr. Max Henrion is Chief Executive Officer of Lumina Decision Systems and Adjunct Professor in the Department of Engineering and Public Policy at Carnegie Mellon University. He has also been a consulting professor at Stanford University and an associate professor at Carnegie Mellon.

Dr. Henrion has over 30 years of experience as a researcher, educator, software designer, consultant, and entrepreneur, specializing in the design and effective use of decision technologies. As the founder and CEO of Lumina Decision Systems and creator of its flagship product line Analytica, he develops and publishes decision software and provides consulting and training in decision analysis.

Dr. Henrion holds an MA in Natural Sciences from Cambridge University, Master of Design from the Royal College of Art, London, and a PhD from Carnegie Mellon. His dissertation entitled *The Value of Knowing How Little You Know*, introduced the expected value of including uncertainty (EVIU) as a way to estimate the cost of ignoring uncertainty.

Dr. Henrion has made significant contributions to the theory and practice of decision analysis, the integration of decision analysis and artificial intelligence, and the improvement of energy and environmental policy decision making.

He led the design and development of the Analytica decision software, which has brought decision analysis techniques to a wide audience with little previous exposure to those methods. Analytica has a current user base of over 4800 people in 1250 organizations. It has been used by over 43,000 people since its first release in 1996. It is employed in industries ranging from energy and environment to high tech around the world.

Lumina has created decision-support tools in a wide variety of applications, including environment and energy, R&D management, healthcare, telecommunications, aerospace, security, and consumer choice. Dr. Henrion's work on the decommissioning of offshore oil and gas platforms, with numerous stakeholders, including the State of California, oil companies, and environmental groups was awarded the Decision Analysis Practice Award in 2014.

Through Analytica and his associated consulting practice, Dr. Henrion has made significant contributions to the practice of decision analysis and has help disseminate the use of decision analysis to new user communities.

Dr. Henrion has published three books, and over seventy peer-reviewed articles focused on decision and risk analysis, artificial intelligence, and applications to energy and environmental policy. His book, co-authored with Granger Morgan, *Uncertainty: A Guide to Dealing with Uncertainty in Quantitative Risk and Policy Analysis* has been an important resource since its publication in 1990.



Dr. Henrion has been a leader at the intersection of decision analysis and artificial intelligence since the 1980s. He published a number of papers comparing inference tools based on probabilistic Bayes' networks, decision analysis, heuristic rule-based expert systems, and other representations of uncertainty. He was the founding President of the Association for Uncertainty and Artificial Intelligence. Lumina's technology was employed by *Ask Jeeves* (now *Ask.com*), where Dr. Henrion was Vice President for Decision Technology.

Dr. Henrion's work in energy and environmental policy has ranged from decision tools to evaluate the Clean Air Act, a national energy plan for Nigeria with the World Bank, the future of the automobile and adoption of electric vehicles, the valuation of electricity storage facilities, and the distributional impacts of a carbon tax.

Dr. Henrion is a longtime member of the Decision Analysis Society.

The Ramsey Medal Award Committee for 2018 was Eric Bickel (Chair), Vicki Bier, Robin Keller, Jack Kloeber, and Carl Spetzler.