

Stanford



Ronald Howard

Professor of Management Science and Engineering, Emeritus

CONTACT INFORMATION

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Bio

BIO

Ronald A. Howard has been Professor in the Department of Engineering-Economic Systems (now the Department of Management Science and Engineering) in the School of Engineering of Stanford University since 1965. Professor Howard is one of the founders of the decision analysis discipline. His books on probabilistic modeling, decision analysis, dynamic programming, and Markov processes serve as major references for courses and research in these fields.

Professor Howard directs teaching and research in the Decision Analysis Program of the Department of Management Science and Engineering. He also is the Director of the Decisions and Ethics Center, which examines the efficacy and ethics of social arrangements. Professor Howard defined the profession of decision analysis in 1964 and has since supervised several doctoral theses in decision analysis every year. His experience includes dozens of decision analysis projects that range over virtually all fields of application, from investment planning to research strategy, and from hurricane seeding to nuclear waste isolation. He has been a consultant to several companies and was a founding Director and Chairman of Strategic Decisions Group. He is President of the Decision Education Foundation, which he and colleagues founded to teach decision skills to young people.

He has written four books, dozens of technical papers, and provided editorial service to seven technical journals. He was founding Editor of the Journal of the Society for Scientific Exploration. He has lectured in decision analysis at universities in several foreign countries, including the former Soviet Union and the People's Republic of China. His national society affiliations have included the Operations Research Society of America; the Operational Research Society (U. K.); the Institute of Electrical and Electronics Engineers (Fellow); the Institute of Management Science, which he served as President, and INFORMS, The Institute for Operations Research and the Management Sciences, (Fellow). Current research interests are improving the quality of decisions, life-and-death decision making, and the creation of a coercion-free society.

In 1986 he received the Operations Research Society of America's Frank P. Ramsey Medal "for Distinguished Contributions in Decision Analysis. In 1998 he received from INFORMS the first award for the Teaching of Operations Research/Management Science Practice. In 1999, this organization invited him to give the Omega Rho Distinguished Plenary Lecture at the Cincinnati National Meeting. In the same year, he was elected to the National Academy of Engineering and received the Dean's Award for Academic Excellence.

Professor Howard earned his Sc.D. in Electrical Engineering from MIT in 1958. He was Associate Professor of Electrical Engineering, Associate Professor of Industrial Management, and Associate Director of the Operations Research Center at MIT when he joined the Stanford faculty as Professor in 1965.

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Management Science and Engineering

HONORS AND AWARDS

- Fellow, IEEE (2013)
- Fellow, INFORMS (2013)
- Frank P. Ramsey Medal, Decision Analysis Society (2013)
- Award for the Teaching of Operations Research/Management Science Practice, INFORMS (2013)
- Fellow, Society of Decision Professionals (2013)
- Dean's Award for Academic Excellence, Stanford University (2013)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Member, Omega Rho (2013 - present)
- Member, National Academy of Engineering (2013 - present)

PROFESSIONAL EDUCATION

- ScD, MIT (1958)

LINKS

- <http://www.stanford.edu/dept/MSandE/people/faculty/howard/index.html>: <http://www.stanford.edu/dept/MSandE/people/faculty/howard/index.html>

Teaching

COURSES

2017-18

- Decision Analysis I: Foundations of Decision Analysis: MS&E 252 (Aut)
- Decision Analysis II: Professional Decision Analysis: MS&E 352 (Win)
- Decision Analysis Seminar: MS&E 454 (Aut, Win, Spr)
- The Ethical Analyst: MS&E 254 (Spr)
- Voluntary Social Systems: MS&E 299 (Win)

2016-17

- Decision Analysis I: Foundations of Decision Analysis: MS&E 252 (Aut)
- Decision Analysis II: Professional Decision Analysis: MS&E 352 (Win)
- Decision Analysis III: Frontiers of Decision Analysis: MS&E 353 (Spr)
- Decision Analysis Seminar: MS&E 454 (Aut, Win, Spr)
- The Ethical Analyst: MS&E 254 (Spr)
- Voluntary Social Systems: MS&E 299 (Win)

STANFORD ADVISEES

Doctoral Dissertation Advisor (AC)

Daniel Kharitonov

Publications

PUBLICATIONS

- **Analysis of National Strategies to Counter a Country's Nuclear Weapons Program** *DECISION ANALYSIS*
Caswell, D. J., Howard, R. A., Pate-Cornell, M. E.
2011; 8 (1): 30-45
- **Ethics for the Real World: Creating a Personal Code to Guide Decisions in Work and Life**
Howard, Ronald, A., Korver, Clinton, D.
Harvard Business School Press, Boston.2008
- **Dynamic Probabilistic Systems, Markov Models**
Howard, Ronald, A.
Dover Publications.2007
- **Dynamic Probabilistic Systems, Semi-Markov and Decision Processes**
Howard, Ronald, A.
Dover Publications.2007
- **The Foundations of Decision Analysis Revisited** *Advances in Decision Analysis: From Foundations to Applications*
Howard, Ronald, A.
Cambridge: Cambridge University Press.2007: 1
- **Teaching Decision Skills to Troubled Teens** *ORMS Today*
Abbas, A., Hoffmann, N., Howard, Ronald, A., Spetzler, C.
2007; 4 (34)
- **Comment on Influence Diagram Retrospective** *Decision Analysis*
Howard, Ronald, A., Matheson, James, E., Merkhofer, Miley, W. (Lee), Merkhofer, Allen, C.
2006; 3 (2): 117-119
- **Influence Diagram Retrospective** *Decision Analysis*
Howard, Ronald, A., Matheson, James, E.
2005; 2 (3): 144-147
- **An Appreciation of Ed Jaynes**
Howard, Ronald, A.
2005
- **Influence Diagrams** *Decision Analysis*
Howard, Ronald, A., Matheson, James, E.
2005; 2 (3): 127-143
- **Attribute Dominance Utility** *Decision Analysis*
Abbas, Ali, E., Howard, Ronald, A.
2005; 2 (4): 185-206
- **Speaking of Decisions: Precise Decision Language** *Decision Analysis*
Howard, Ronald, A.
2004; 1 (2): 71-78
- **Comments on the origin and application of Markov decision processes (Reprinted 1978)** *OPERATIONS RESEARCH*
Howard, R. A.
2002; 50 (1): 100-102
- **The ethical OR/MS professional** *INTERFACES*
Howard, R. A.

2001; 31 (6): 69-82

- **Decision Analysis and Law** *Cardozo Law Review*
Howard, Ronald, A.
2001; 22 (5-6): 1595-1603
- **Decisions in the Face of Uncertainty** *Visions of Risk*.
Howard, Ronald, A.
edited by Alexander, C.
London: Pearson Education Limited.2000: 1
- **Life and Death Decisions for Individuals and Couples** *in Decision Science and Technology: Reflections on the Contributions of Ward Edwards*.
Howard, Ronald, A.
edited by Shanteau, J., Mellers, B., Schum, D.
Boston: Kluwer Academic Publishers.1999: 1
- **Options** *Wise Choices: Decisions ,Games and Negotiations*.
Howard, Ronald, A.
edited by Zeckhauser, J., Richard, Keeney, Ralph, L., Boston, James, K.
Harvard Business School Press.1996: 1
- **HEATHENS, HERETICS, AND CULTS - THE RELIGIOUS SPECTRUM OF DECISION AIDING INTERFACES**
Howard, R. A.
1992; 22 (6): 15-27
- **In Praise of the Old Time Religion** *Utility Theories: Measurements and Applications*
Howard, Ronald, A.
edited by Edwards, W.
Kluwer Academic Publishers.1992: 27-55
- **Business Ethics: Tell the Truth** *Journal of Management Development*
Howard, Ronald, A.
1992; 11 (4): 4-10
- **From Influence to Relevance to Knowledge** *Influence Diagrams, Belief Nets and Decision Analysis*
Howard, Ronald, A.
edited by Oliver, R., M., Smith, J., Q.
John Wiley & Sons Ltd..1990: 3-23
- **KNOWLEDGE MAPS** *MANAGEMENT SCIENCE*
Howard, R. A.
1989; 35 (8): 903-922
- **Microrisks for Medical Decision Analysis** *International Journal of Technology Assessment in Health Care*
Howard, Ronald, A.
1989; 5 (3): 357-370
- **DECISION-ANALYSIS - PRACTICE AND PROMISE** *MANAGEMENT SCIENCE*
Howard, R. A.
1988; 34 (6): 679-695
- **UNCERTAINTY ABOUT PROBABILITY - A DECISION-ANALYSIS PERSPECTIVE** *RISK ANALYSIS*
Howard, R. A.
1988; 8 (1): 91-98
- **ON FATES COMPARABLE TO DEATH** *MANAGEMENT SCIENCE*
Howard, R. A.
1984; 30 (4): 407-422
- **READINGS on The Principles and Applications of Decision Analysis**

edited by Howard, Ronald, A., Matheson, James, E.
Strategic Decisions Group, Menlo Park, California.1984

- **The Evolution of Decision Analysis** *READINGS on the Principles and Applications of Decision Analysis*
Howard, Ronald, A.
1984: 7-16
- **Decision Analysis for Forest Product Tactical and Strategic Decisions", Forest-to-Mill, Challenges of the Future**
Forberg, Richard, R.
1981
- **The Risks of Benefit-Cost-Risk Analysis** *Risk/Benefit Analysis in Water Resources Planning and Management*
Howard, Ronald, A.
edited by Haimes, Yacov, Y.
Plenum Press.1981: 1
- **ASSESSMENT OF DECISION-ANALYSIS OPERATIONS RESEARCH**
Howard, R. A.
1980; 28 (1): 4-27
- **On Making Life and Death Decisions** *Societal Risk Assessment, How Safe Is Safe Enough?*
Howard, Ronald, A.
General Motors Research Laboratories, Plenum Press.1980: 1
- **An Assessment of Decision Analysis** *Special Issue on Decision Analysis, Operations Research*
Howard, Ronald, A.
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- **Influence Diagrams** *Private Report*
Howard, Ronald, A.
1980
- **Alternatives to Federal Management of Public Lands**
Forberg, Richard, R., Howard, Ronald, A., Sauer, Gerald, L.
1980
- **Life and Death Decision Analysis** *Research Report EES DA-79-2, Department of Engineering-Economic Systems, Stanford University*
Howard, Ronald, A.
1979
- **The Value of Life and Nuclear Design**
Howard, Ronald, A., Matheson, James, E., Owen, Daniel, L.
1978
- **Comments on the Origin and Application of Markov Decision Processes** *Dynamic Programming and Its Applications*
Howard, Ronald, A.
edited by Puterman, Martin, L.
Academic Press, Inc..1978: 1
- **Life and Death Decision Analysis**
Howard, Ronald, A., Matheson, James, E., Owen, Daniel, L.
1978
- **Baseball a la Russe** *Optimal Strategies in Sports*
Howard, Ronald, A.
edited by Ladany, Shaul, P., Machol, Robert, E.
North-Holland Publishings Co..1977: 89-93
- **Readings in decision analysis**
Howard, Ronald, A., Matheson, James, E., Miller, Katherine, L.

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- **SOCIAL DECISION ANALYSIS** *PROCEEDINGS OF THE IEEE*
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- **HURRICANE SEEDING ANALYSIS - REPLY** *SCIENCE*
Howard, R. A., Matheson, J. E., North, D. W.
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- **Decision Analysis in Systems Engineering** *Systems Concepts: Lectures on Contemporary Approaches to Systems*
Howard, Ronald, A.
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- **RISK-SENSITIVE MARKOV DECISION PROCESSES** *MANAGEMENT SCIENCE SERIES A-THEORY*
Howard, R. A., Matheson, J. E.
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- **The Decision to Seed Hurricanes** *Science*
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- **PROXIMAL DECISION ANALYSIS** *MANAGEMENT SCIENCE SERIES A-THEORY*
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Howard, Ronald, A.
John F. Wiley & Sons, Inc., New York City.1971
- **MANAGEMENT SCIENCE EDUCATION - NATURE AND NURTURE** *MANAGEMENT SCIENCE SERIES B-APPLICATION*
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- **Decision Analysis: Perspectives on Inference, Decision and Experimentation** *IEEE Special Issue, Detection Theory and Applications*
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- **Decision Analysis**
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- **PRACTICALITY GAP** *MANAGEMENT SCIENCE*
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- **Stochastic Models of Consumer Behavior** *Applications of the Sciences in Marketing Management*
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- **The Practicality Gap** *Management Science*
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- **The Foundations of Decision Analysis** *IEEE Transactions on Systems, Science and Cybernetics*
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- **Risk Preference** *Private Report*
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1968

- **Power of Pricing Mechanisms** *Management Science*, "Free for All" Section
Howard, Ronald, A.
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- **Value of Information Lotteries** *IEEE Transactions on Systems, Science and Cybernetics*
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- **Decision Analysis: Applied Decision Theory**
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- **Dynamic Programming** *Management Science*
Howard, Ronald, A.
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- **Information Value Theory** *IEEE Transactions on Systems, Science and Cybernetics*
Howard, Ronald, A.
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- **Dynamic Inference Decision Processes** *Recent Advances in Optimization Techniques*
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- **Bayesian Decision Models for Systems Engineering** *IEEE Transactions on Systems, Science and Cybernetics*
Howard, Ronald, A.
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Howard, Ronald, A.
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Howard, Ronald, A.
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McGraw-Hill.1965: 1
- **Research in Semi-Markovian Decision Structures** *Journal of the Operations Research Society of Japan*
Howard, Ronald, A.
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- **Systems Analysis of Semi-Markov Processes** *Transactions IEEE Prof. Group on Mil. Elec*
Howard, Ronald, A.
1964; MIL-8 (2): 114-124
- **The Science of Decision Making** *Private Report*
Howard, Ronald, A.
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- **Probabilistic Consumer Models** *Technical Report*
Howard, Ronald, A., Little, Arthur, D.
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- **Stochastic Marketing Models** *Progress in Operations Research*
Howard, Ronald, A., Herniter, J., D.
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John F. Wiley & Sons.1964: 33-96

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Howard, Ronald, A.
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Stanford University Press.1963: 143–184
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- **Prediction of Replacement Demand**
Howard, Ronald, A.
1963
- **On Methods: Stochastic Process Models of Consumer Behavior** *Journal of Advertising Research*
Howard, Ronald, A.
1963; 3 (3): 35-42
- **Lineargraph (Flowgraph) and Its Applications** *Keiei Kagaku*
Howard, Ronald, A., Kagaku, K.
1962; 6: 45-53
- **Commentary on "Industrial Dynamics"** *Management and the Computer of the Future*
Howard, Ronald, A.
MIT Press and John Wiley & Sons, Inc.1962: 1
- **Mathematical Programming in Systems Engineering** *IRE Transactions on Education*
Howard, Ronald, A.
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- **The Used Car Buyer** *Private Report*
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1962
- **Systems Control through Discrete Dynamic Programming**
Howard, Ronald, A.
1961
- **Brand Switching-Key to Marketing Decisions** *Technical Report*
Howard, Ronald, A., Herniter, J., D., Little, Arthur, D.
1961
- **Dynamic Programming and Markov Processes**
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- **Sequential Decision Processes** *Notes on Operations Research*
Howard, Ronald, A., Kimball, G., E.
Technology Press.1959: 1
- **Control Processes** *Notes on Operations Research*
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Technology Press.1959: 1