Ali E. Abbas, Ph.D.

Professor of Industrial and Systems Engineering and Professor of Public Policy
University of Southern California

EDUCATION

Stanford University, Stanford, CA April 1998-Jan 2004

Ph.D. Management Science and Engineering
Major Field of Study: Decision Analysis

Ph.D. Minor, Electrical Engineering
Minor Field of Study: Information Theory and Signal Processing

Thesis Advisor: Ronald. A. Howard
Dissertation Title: Entropy Methods in Decision Analysis

Stanford University, Stanford, CA Sep 2001-June 2002

MS in Engineering Economic Systems and Operations Research
Field of Study: Decision Analysis, Finance, Risk Analysis

Stanford University, Stanford, CA Sep 1997-June 1998

MS in Electrical Engineering
Primary Field of Study: Signal Processing, Neural Networks

Ain Shams University, Cairo, Egypt Sep 1985-June 1990

BS in Electrical Engineering
Major: Electronics and Telecommunications

PROFESSIONAL WORK EXPERIENCE

University Administration, Teaching and Research

Professor (with Tenure), University of Southern California August 2014- Present

- Department of Industrial and Systems Engineering, Viterbi School of Engineering
- Policy Planning and Governance, Price School Public Policy

Administrative Assignments at USC

Founding Director, Neely Center for Ethical Leadership and Decision-Making (DECIDE)
University of Southern California August 2015 – July 2019

The Neely Center for Ethical Leadership and Decision Making is a joint venture of three schools at the University of Southern California (USC): The Marshall School of Business, the Viterbi School of Engineering, and the Price School of Public Policy. The center was founded by a generous gift from Jerry and Nancy Neely that enabled the merger of the DECIDE center of the

Viterbi and Price Schools at USC with the additional resources of the Marshall School of Business. The center is concerned with preparing future leaders with the skills needed to make the right decisions at the right time with sensitivities towards ethical considerations in enterprise settings. The center's activities include all aspects of research, teaching, and practice of decision analysis and applied ethics on a personal, enterprise, and public policy level. The center launched the first USC Campus-Wide Annual Student Ethics Competition, The Series of Next-Generation Ethics Conferences, the book Next-Generation Ethics: Engineering a Better Society, and numerous executive education courses to industry and local and federal government officials on ethics and decision making. The center achieves its funding through the Neely endowment, executive education, and corporate affiliates programs.

Director, Center for Risk and Economic Analysis of Terrorism Events (CREATE)
University of Southern California August 2014 – August 2015

CREATE, the Center for Risk and Economic Analysis of Terrorism Events is the Nation's first Department of Homeland Security (DHS) center of excellence. The center is accomplishing its mission through an integrated program of research, education and outreach that is designed to inform and support decisions made by elected officials and governmental employees at the national, state, and local levels. During my time as director, the center launched its web-based information page, invited the Secretary of Homeland Security Jeh Johnson and hosted him at USC, organized the first conference between the Transportation Security Administration (TSA) and a university at USC, and launched several new executive education initiatives.

Associate Professor, Department of Industrial and Enterprise Systems Engineering, College of Engineering, University of Illinois at Urbana-Champaign. (*Affiliate, Dept. of Psychology and Dept. of Computer Science*) August 2010 - Aug 2014

Visiting Scholar, Department of Management Science and Engineering, Stanford University. (*Sabbatical Year)* August 2010 - June 2011

Assistant Professor, Department of Industrial and Enterprise Systems Engineering, College of Engineering, University of Illinois at Urbana-Champaign (*Also affiliate Department of Psychology*) August 2004 – August 2010

Lecturer, Department of Management Science and Engineering (MS&E), Stanford University, January 2004-August 2004

Courses Taught at Stanford: **Decision Analysis II and Decision Analysis III.**
Taught the second and third courses in the sequence of Decision Analysis classes for graduate students. Decision Analysis II was televised and broadcast live on Stanford Center for Professional Development (SCPD). Decision Analysis III involved several research projects with graduate students at Stanford.

Instructor, Petroleum Engineering, Stanford University, Winter-2000

Course Taught: **Risk Analysis for Petroleum Engineers**. The course is a graduate course in the Petroleum Engineering department that uses probabilistic methods to optimize oil-well drilling locations and production technologies.

Founder, President, and CEO

Ahoona Corp, 2012-Present
Following the inaugural National Science Foundation (NSF) Innovation Corps program, started the decision making social network, Ahoona. This social network has several thousand users and its purpose is to increase societal awareness about decision making and to help people around the world make better decisions. Ahoona has had numerous media citations, TV coverage, and professional society recognition. It has also been incorporated in classroom teaching on numerous campuses around the world.

Advisory Board Memberships

Hedge Street Inc, San Francisco, CA. Advisory Board Member 2003-2006
Academic advisory board member for HedgeStreet Inc; the first binary futures exchange in the United States that enabled individuals to hedge on real assets using binary coupons.

Decision Education Foundation, Menlo Park, CA Advisory Board Member 2002-2017
The Decision Education Foundation (DEF) is a non-profit organization that helps spread decision skills to teens around the country and empowers youth to make better decisions about their lives. DEF is harbored within Strategic Decisions Group (SDG).

Executive Education

- **Price School Executive Education** 2014, 2015, 2016, 2017, 2018, 2019, 2021

Conducted several sessions in the "Executive Education for Local Leaders" forum. Audience included several Mayors and City Council members from Southern California.

- **D.E. SHAW. Manhattan, N.Y.** **2017**

Delivered a one-day course to executives and students on good decision-making skills and practices.

- **USC-DECIDE Professional Education,** LA, CA 2014, 2015, 2016, 2017, 2018, 2019

Launched the professional education series for the DECIDE center at USC with the course "Foundations of Decision Analysis". Attendees were senior managers in fortune 500 companies and advisory board members of USC Price and Viterbi schools.

- **Department of Homeland Security, Washington D.C.** April 2015

Conducted a 2.5 day workshop on "Foundations of Decision Analysis for Homeland Security" for senior management in the department. Attendees included members from the Federal Bureau of Investigation (FBI), Federal Emergency Management Association (FEMA), United States Secret Service, among others.

- **Southern California Edison,** Irvine, CA December 2014

Conducted several sessions on the "Foundations of Decision Analysis" for executives.

- **Juniper Networks,** Santa Clara, CA November 2012

Conducted several training workshops on decision strategy.

- **BP,** London UK, March, April 2012

Conducted several training workshops on decision analytics and capturing information value to senior researchers in BP.

- **Professional Decision Analysis Seminars,** CA September 2000, 2001, 2002

Assisted in teaching the Strategic Decisions Group, Professional Decision Analysis seminar with Ronald Howard; a two-week intensive course on decision skills for business executives.

- **Stanford Center for Professional Development,** Stanford, CA 1998-2002

Presented several sessions on International Financial Markets and Decision Analysis through Stanford Center for Professional Development that were broadcast live to Silicon Valley companies in the San Francisco Bay area and digitized for web-based learning.

- **International Financial Markets Workshops,** Cairo, Egypt September 1998, 1999

Conducted several training workshops on the analysis of financial instruments and options pricing to senior advisors in the Ministry of Economy in Egypt through a joint program between the United Nations Development Program (UNDP), and the Ministry of Foreign Affairs.

- **The American University in Cairo,** Cairo, Egypt Fall 1998, 1999

Delivered several lectures to the MBA class of 1998 upon invitation by the Prime Minister of Egypt. Topics included "Effective Presentations Skills", "Dealing with Difficult People", and "Making Tough Choices".

Examples of Consulting Work

- **The American University in Cairo (AUC)** 2007, 2008

Invited to attend several round table strategy meetings at the American University headquarters in New York. Developed the blue print of a new business school. The work also involved several trips to deans of business schools with the President of the University. Recommended first (interim) Dean of the AUC Business School, Joseph Bissada.

- **Independent International Consulting Experience** 2001, 2002, 2006, 2007

Wrote the initial strategy document for the creation of a world-class business school in Egypt. The project involved fifteen of Egypt's top businessmen; members of the USAID mission at the American Embassy in Cairo, and Deans of world-class business schools. The project also included visits to USA, France, and India as part of a delegation accompanied by members of the American Embassy in Cairo.

- **Strategic Decisions Group, (SDG)** Menlo Park 2003

Strategy analysis and budget roll-up:
Conducted strategy and budget analysis for a multinational oil company in Canada. The goal of the strategy analysis was to determine the future directions for exploration; whether to be gas-focused or oil-focused or a mixture of both, and part of the budget analysis included resource allocation for the current year's drilling prospects.

Electric Utility Company, Stock Driver Analysis:
Provided strategy and decision analysis to corporate level of an electric utility company on the East Coast. The analysis involved helping the company decide among three alternatives: whether to accept an LBO, to merge with another utility company to acquire a giant utility company, or to improve the company generation process. The project also involved valuation

of the new venture that would result in the case of the merger alternative as opposed to accepting the acquisition.

International Management Experience, Schlumberger LTD

- **Field Services Manager**- Schlumberger Testing, San Jose, CA 2000
  Served as a liaison and managed the interface between the field testing units and the engineering department of Schlumberger Testing and Transactions during the development of the Odyssey E-beam semiconductor tester.

- **Operations Manager**- Schlumberger Oilfield, Egypt 1995-1997
  Managed the profit and loss (P&L) and logistics of a Schlumberger oil field base of annual revenue $20 million. Managed the training and career development of the international staff field engineers and the maintenance engineers.

- **International Training Instructor**-Schlumberger, Cairo/Dubai/Pairs 1993-1995
  Managed the training and evaluation of new international staff engineers on the process of wireline logging through a three-month intensive training program. Launched a Total Quality Management campaign within the Schlumberger training centers. Developed multimedia training packages for the training of the engineers.

- **Field Engineer**- Schlumberger Oilfield Services, Sultanate of Oman 1991-1993
  Led a team of engineers on the process of acquiring logging data for interpretation of oil and well reservoir characteristics.

National Science Foundation (NSF) AWARDS

- **NSF Award:** Cyber-Based Decision Support Strategies to Achieve Consensus for FEW System Sustainability using Incentive and Policy Structures. (Principle Investigators **Ali Abbas**, **Christina Bloebaum**). Recipient of the National Science Foundation award for improving the decision making within systems with a special focus on food, energy, and water systems. Award amount $2.4 Million (2017-2020), USC portion **$300k**.

- **NSF Award:** Summer School on Decision Making in Systems Engineering and Design . (Principle Investigator **Ali Abbas**). Recipient of the National Science Foundation award for teaching decision making to PhD students through a summer school at USC. Award amount **$50k** (2017-2018).

- **NSF Award**: EAGER: Collaborative Research: Lectures for Foundations in Systems Engineering. (Principle Investigators **Ali Abbas**, **Christina Bloebaum**). The objective of the Early-concept Grant for Exploratory Research (EAGER) collaborative project is to create a series of educational videos on foundational areas from which systems engineering theory will be able to draw. Award amount $200K (2016-2018). USC portion ($**140k**).

- **NSF Award**: *Collaborative Research: Organizational and Uncertainty Impacts of Couplings in a System Design Framework.* (Principle Investigators **Ali Abbas**, **Christina Bloebaum**). Recipient of the National Science Foundation award for improving the decision making within systems with a special focus on the couplings of interconnected subsystems in the presence of uncertainty. Award amount $500K (2013-2016). USC portion ($**240k**).

- **NSF EAGER Award**: *Normative Perspectives for Design and Manufacturing.*
  Recipient of the National Science Foundation EAGER award for improving the decision making within large-scale design enterprises (Single PI). Award amount $**298K** (2012-2014).

- **NSF I-CORPS Award**: *I-Decide Fast: A web-based application for decision analysis*
  Recipient of the National Science Foundation inaugural I-Corps award for commercializing research (Single PI). Award amount $**50K** (2012-2013).

- **NSF CAREER Award**: *Decisions with Multiple Dependent Objectives.*
  Recipient of the National Science Foundation (2008) CAREER award. The proposed work derives new methods for capturing preferences of decision makers in decisions with multiple objectives (Single PI). Award amount $**400K** (2009-2013).

- **NSF Award:** Collaborative Research: *Bayesian Predictive Modeling and Decision Theory to Milling Profit Optimization under Uncertainty*. (Principle Investigators **Ali Abbas**, **Tony Schmitz**). The proposed research incorporates Bayesian methods and decision analysis to improve the efficiency of high-speed milling operations. Award amount **$382k** (2009-2012).

- **NSF Award:** *Assessing Joint Distributions with Isoprobability Contours*, Principle Investigator (PI) **Ali Abbas**, Co-PI **David Budescu**. The proposed research investigated new methods for constructing joint probability distributions and assessing them in a simple way from decision makers. Award amount $**274 K** (2006-2009).

- **NSF Award**: SGER/Collaborative Research: *Applying Decision Theory to Machining Optimization*. Principle Investigators **Ali Abbas**, **Tony Schmitz**. Award amount $**200 K**. (2006-2008).

- **NSF Award Supplement**: Research Experience for Undergraduates (REU), Principle Investigator (PI) Ali Abbas. Supplement amount $**6 K** (Summer 2008).

- **NSF Award Supplement**: Research Experience for Undergraduates (REU), Principle Investigator (PI) Ali Abbas. Supplement amount $**6 K** (Fall 2008).

Department of Homeland Security (DHS) AWARDS

- **Principal Investigator** for numerous Department of Homeland Security Awards and supplement awards and contracts totaling approximately **$9 Million**. Awards were for the following
  - Center for Excellence for Command, Control and Interoperability ($**50k**)
  - Dynamic Aviation Risk Management System (DARMS): A Proof of Concept Study Incorporating Game Theory and Multi-Attribute Utility (**$100k +$800k**)
  - Visiting Faculty Scholars for DHS S&T Transition and Commercialization Issues (**$500k**)
  - Trade Strategy Development (**$300k**)
  - Center for Risk and Economic Analysis of Terrorism events Basic Agreement (**$3.6 million**)
  - Foreign Fighter Recruitment Qualitative Study (**$175k**)
  - CBP Southern Border Metrics Project (**$50k**)
  - Center for Risk and Economic Analysis of Terrorism Events Basic Agreement (**$2.9 million**)

- DHS Professional Development - Executive Program in Counter-Terrorism (**$21 k**)
- Development of Disaster Deductible Formula for FEMA (**$250 k**)

Art Davis Faculty Scholar Award 2012- 2017

Awarded the Department of Industrial and Enterprise Systems Engineering Art Davis faculty scholar award for outstanding research and teaching at the department and college levels. The award amount was $**20 K**.

Gifts and Contracts 2017

PBF Energy

PBF Energy - one of the "largest independent petroleum refiners and suppliers of unbranded transportation fuels" in the U.S. provided an introductory gift to the Neely Center's director, to help sponsor the Next Generation Ethics Conference. The award amount was $**20 K**.

Jeff and Elle De Maio with matching funds from Goldman Sachs

Jeff and Elle De Maio provided a **$20k** gift with **matching funds from Goldman Sachs** to help sponsor the Neely Center's Student Ethics Competition.

Recent Publication Awards

IEEE Systems Best Publication Award 2019

This award is given annually to the best article in systems engineering by the IEEE. Out of 689 papers that were published in 2018, two papers were given first prize publication award. This award was given for the paper

Abbas, A. E and Cadenbach A. H. 2018. On the use of utility theory in engineering design. *IEEE Systems Journal*. Volume: 12 , Issue: 2, Page(s): 1129 - 1138

Decision Analysis Best Publication Award 2011

This award is given annually to the best decision analysis article or book by the Decision Analysis Society of INFORMS. The intent of the award is to recognize the best publication in "Decision Analysis, broadly defined." This includes, but is not limited to, theoretical work on decision analysis methodology (including behavioral decision making and non-expected utility theory), descriptions of applications, and experimental studies.

This award was given for the paper
Abbas, A. E and J. Matheson. 2009. Normative Decision Making with Multiattribute Performance Targets. *Journal of Multicriteria Decision Analysis,* 16 (3, 4), 67–78.

Decision Analysis First Runner up Best Publication Award 2011

This award was given for the paper:
Abbas, A. E. 2009. Multiattribute Utility Copulas. *Operations Research,* 57 (6), 1367-1383.

Decision Analysis First Runner up Best Publication Award 2013

This award was given for the paper:
Abbas, A.E. and D.E. Bell. 2011. One-Switch Independence for Multiattribute Utility Functions, *Operations Research*, 59 (3), pages 764-771.

Decision Analysis First Runner up Best Publication Award 2013

This award was given for the paper:
Abbas, A.E., 2011. The Multiattribute Utility Tree, *Decision Analysis*, 8 (3), pages 165-169.

Areas of Research and Teaching Interests

- Decision analysis (broadly defined)
  - Utility theory (risk aversion).
  - Multiattribute utility theory.
  - Probability encoding.
  - Behavioral decision making
- Risk analysis for Homeland Security (Broadly defined)
- Risk measures and valuation of risky assets.
- Investment science.
- Information theory (applications to Management Science).
- Systems engineering
  - Constructing value functions for engineering design
  - Demand estimation for engineering design.
- Data-based decision making
  - Bayesian Networks, Boolean Networks, Neural Networks.

Editorial Work

Editorialships for Academic Journals

- Inaugural Area Editor, Decision Analysis Department, *IIE Transactions* 2012-2017.
- Associate Editor, *Operations Research* journal of INFORMS. 2010- Present.
- Associate Editor, *Decision Analysis* journal of INFORMS. 2010- Present.
- Editorial Board Member, *Risk Analysis.* 2018-Present.
- Editorial Board Member, *Entropy.* 2014-Present.
- Associate Editor, *Decision* 2019-Present.

Editorialships for Encyclopedias

- Topical Editor, Decision Analysis area of *John Wiley Encyclopedia of Operations Research and Management Sciences.* 2009-2011

Editorialships for Edited Books

- Co-Editor, *Twenty Fifth International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering,* American Institute of Physics. 2005

PUBLICATIONS

1) Issued Patents

1) Abbas, A. E. 2015. *United States Patent* No. US9171255B2. Method, software, and system for making a decision. Patent Issue Date 10/27/2015.

2) Abbas, A.E. 2018. *United States Patent* No. US10078801B2. System, method and software for representing decision trees. Patent Issue Date 9/18/2018

3) Abbas, A. E. 2013. System, method and software for representing decision trees. Provisional Patent.

2) Books and Book Chapters

Books

1) Howard, R. A. and A. E. Abbas. 2015. *Foundations of Decision Analysis*, Pearson, NY.

2) Abbas, A. E. 2018. *Foundations of Multiattribute Utility*. Cambridge University Press, Cambridge, U.K.

Edited Books

1) Abbas, A. E. 2019. *Next Generation Ethics: Engineering a Better Society*. Cambridge University Press, Cambridge, U.K.

2) Abbas, A. E, Tambe, M, and von Winterfeldt, D. 2017. *Improving Homeland Security Decisions*. Cambridge University Press. Cambridge, U.K.

3) Topical Editor, Decision Analysis area of *John Wiley Encyclopedia of Operations Research and Management Sciences.* Published by John Wiley in 2010.

4) K. Knuth, A. E. Abbas, R. Morris, P. Castle. 2005. Conference book of the *25th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering*. AIP Conference Proceedings 803, San Jose, CA, 2005

Book Chapters

1) Abbas, A. E. 2019. Next Generation Ethics: An Introduction, In *Next Generation Ethics*, Cambridge University Press, Cambridge, U.K.

2) Abbas, A. E, M. Senges, and R. A. Howard. 2019. A Hippocratic Oath for Technologists. In *Next Generation Ethics*, Cambridge University Press, Cambridge, U.K.

3) Vint Cerf and A. E. Abbas. 2019. An Interview with Vint Cerf, In Next Generation Ethics, Cambridge University Press, Cambridge University Press. Cambridge, UK.

4) J. Karandikar, C. Tyler, A. Abbas, and T. Schmitz. 2016. "A Decision Analytic Framework for Optimal Milling Parameter Selection", in *Bayesian Inference: Observations and Applications*, , Nova Science Publishers, Inc., Hauppauge, NY (in press).

5) Abbas, A.E and D. S. Stipanovic. 2016. A combined control-theoretic utility theory approach to maximizing security with limited resources. In *Improving Homeland Security Decisions* (Eds) A. E. Abbas, M. Tambe, D. von Winterfedlt.

6) Abbas, A.E. 2016. Some flawed methods of decision making. In *Improving Homeland Security Decisions* (Eds) A. E. Abbas, M. Tambe, D. von Winterfedlt.

7) Hupman, A and A.E. Abbas. 2016. Medical Decision Making: An Application to Sugar-Sweetened Beverages, *Advances in Decision Making*, Forthcoming.

8) Abbas, A. E. 2011. Constructing Multiattribute Utility Functions for Decision Analysis, *INFORMS Tutorials in Operations Research*, editor Hasenbein, J. Hanover, MD. pp 62-98.

9) Liu, W and A. Abbas. 2006. Bioinformatics, *John Wiley Encyclopedia of Biomedical Engineering*, John Wiley and Sons, Inc. , Hoboken, New Jersey (16 pages).

   - Reprinted in *John Wiley Encyclopedia of Medical Devices and Instrumentation*, 2006. Vol 1, John Wiley and Sons, Inc., Hoboken, New Jersey, 216-230.

10) Abbas, A. 2006. Entropy, *John Wiley Encyclopedia of Biomedical Engineering*, John Wiley and Sons, Inc., Hoboken, New Jersey (11 pages).

11) Evens, J and A. Abbas. 2006. Hidden Markov Models, *John Wiley Encyclopedia of Biomedical Engineering*, John Wiley and Sons, Inc. , Hoboken, New Jersey (13 pages).

12) Evens, J and A. Abbas. 2006. Markov Chains, *John Wiley Encyclopedia of Biomedical Engineering*, John Wiley and Sons, Inc. , Hoboken, New Jersey (8 pages).

13) Williams, A. and A. Abbas. 2006. Bayesian Analysis, *John Wiley Encyclopedia of Biomedical Engineering*, John Wiley and Sons, Inc. , Hoboken, New Jersey (9 pages).

3) Journal Papers

Invited Journal Special Issues

1) Ali E. Abbas, Jay Simon, Chris Smith, 2017. Invited guest Editors. Decision Analysis, Special issue on Decision Analysis and Social Media, *Decision Analysis*, 14(4).

2) Ali E. Abbas, David E. Bell, Ronald A. Howard, Kevin McCardle, John W. Pratt, Karl Schmedders. John Weyant. 2018. Invited Guest Editors. *Operations Research*, Special Issue honoring Kenneth Arrow. *In progress.*

Invited Papers

3) Abbas, A. E. and S. Holmes. 2004. Invited Paper. Bioinformatics and Management Science: Some common tools and techniques. *Operations Research*, 52(2), 165-190.

4) Ali E. Abbas, Jay Simon, Chris Smith, 2017. Introduction to the Special Issue on Decision Analysis and Social Media, *Decision Analysis*, 14(4), pp. 227–228

Utility Theory

5) Abbas, A. E. and Z. Sun. 2019. Archimedean Utility Copulas with Polynomial Generating functions. *Decision Analysis.* Vol 16 (3), pp 218-237.

6) Fletcher, K.C. and A.E. Abbas. 2018. A Value Measure for Public Sector Enterprise Risk Management: A TSA Case Study, *Risk Analysis*, 38(5), pp. 991-1008.

7) Sun, Z and A.E. Abbas. 2018. Pareto Optimality and Risk Sharing in Group Utility Functions *IISE Transactions*, 50(4) pp. 298-306.

8) Abbas, A. E. and Hupman, A. 2016. On the use of utility functions in engineering design. *Systems Engineering*, 12(2) pp. 1129-1138.

9) Abbas, A. E and D. E. Bell. 2015. Ordinal One-Switch Utility Functions. *Operations Research*, 63(6), 1411 - 1419.

10) Abbas, A. E. and Z. Sun. 2015. Multiattribute Utility functions satisfying Mutual Preferential Independence. *Operations Research*, 63(2), 378 – 393.

11) Abbas, A. E. and Z. Sun. 2015. A Utility Copula Approach for Preference Functions in Engineering Design. *ASME Journal of Mechanical Design* 137(9), 1- 8.

12) C. Valicka, R. A. Rekoske, D. M. Stipanovic, and A. E. Abbas. Multiattribute Utility Copulas for Multi-objective Coverage Control, Paladyn, *Journal of Behavioral Robotics* 5 (2014), pp. 12-34.

13) Sun Z and A.E. Abbas. 2014. On the Sensitivity of the Value of Information to Risk Aversion in Two-Action Decision Problems. *Environment, Systems and Decisions.* Special issue on Value of Information (34) 24-37.

14) Stipanovic D, Valika C and A.E. Abbas. 2014. Control Strategies for Players in Pursuit-Evasion Games Based On Their Preferences. *International Game Theory Review* 16(2) 144-164.

15) Abbas, A. E. and J. Chudziak. 2013. One-Switch Utility Functions with Annuity Payments. *Applied Mathematics and Computation*, 219(14), 7699-7710.

16) Abbas, A. E., N. Bakir, G. Klutke, Z. Sun. 2013. The Effects of Risk Aversion on the Value of Information in Two-Action Decision Problems. *Decision Analysis*, 10(3) 257–275.

17) Abbas, A. E. 2013. Utility Copula Functions matching all Boundary Assessments. *Operations Research*, 61(2) 359-371.

18) Abbas, A. E and D. E. Bell. 2012. One-Switch Conditions for Multiattribute Utility Functions. *Operations Research,* 60(5) 1199-1212.

19) Abbas, A. E. 2012. Valuing Changes in Investment Opportunities. *Operations Research*, 60(6) 1451-1460.

20) Abbas, A. E and D. E. Bell. 2011. One-Switch Independence for Multiattribute Utility Functions. *Operations Research,* 59(3) 764-771.

21) Abbas, A.E. 2011. The Multiattribute Utility Tree, *Decision Analysis*, 8 (3), 180-205.

22) Abbas, A.E. 2011. Decomposing the Cross-Derivatives of a Multiattribute Utility Function into Risk Attitude and Value, *Decision Analysis*, 8 (2), 103-116.

23) Abbas, A. E. 2011. General Decompositions of Multiattribute Utility Functions. *Journal of Multicriteria Decision Analysis*, 17 (1, 2), 37–59.

24) Abbas, A. E. 2011. Risk-Adjusted Martingales and the Design of Indifference Gambles. *Theory and Decision* 71(4) 643-668. Online first, April 4th 2010.

25) Abbas, A. E and J. Aczél. 2010. The Role of some Functional Equations in Decision Analysis. *Decision Analysis,* 7 (2), 215–228.

26) Abbas, A. E and J. Matheson. 2010. Normative Decision Making with Multiattribute Performance Targets. *Journal of Multicriteria Decision Analysis*, 16 (3, 4), 67–78.

27) Abbas, A. E and I. Hahn. 2010. Measuring Risk Aversion in a Name-Your-Own-Price Channel. *Decision Analysis,* 7 (1), 123–136.

28) Abbas, A. E. 2009. Multiattribute Utility Copulas. *Operations Research,* 57 (6), 1367-1383.

29) Abbas, A. 2009. Invariant Multiattribute Utility Functions. *Theory and Decision*, Special Issue on *Foundations of Utility and Risk*, FUR, 68 (1, 2), 69-99.

30) Abbas, A. E. , J. Aczél, J. Chudziak, 2009. Invariance Formulations for Multiattribute Utility Functions under Shift Transformations. *Results in Mathematics*, 54, 1-13.

31) Abbas, A. E, R. Bordley and J. Matheson. 2009. Effective Utility Functions from Organizational Target-Based Incentives. *Managerial and Decision Economics*, 30, 235-251.

32) Abbas, A. E. 2007. Invariant Utility Functions and Certain Equivalent Transformations. *Decision Analysis*, 4 (3), 17-31.

33) Abbas, A. E. 2007. Moments of Utility Functions and Their Applications. *European Journal of Operational Research,* 180, 378-395.

34) Abbas, A. E. 2006. Maximum Entropy Utility. *Operations Research*, 54(2), 277-290.

35) Abbas, A. E and R. A. Howard. 2005. Attribute Dominance Utility. *Decision Analysis* 2(4), 185-206.

36) Abbas, A. E. and J. E. Matheson. 2005. Normative Target-Based Decision Making. *Managerial and Decision Economics,* 26 (6), 373-385.

37) Matheson, J. E. and A. E. Abbas. 2005. Utility Transversality: A Value-Based Approach; *Journal of Multicriteria Decision Analysis*, 13, 229-238.

38) Abbas, A. E. 2004. Entropy Methods for Adaptive Utility Elicitation. *IEEE Transactions on Systems, Science and Cybernetics,* 34 (2), 169-178.

Probability Encoding

39) A. E Allahverdyan, A. Galstyan, A. E Abbas, Z. Struzik. 2018. Adaptive decision making via entropy minimization, *International Journal of Approximate Reasoning,* 103, pp 270-287.

40) Abbas, A. E, A. Hupman-Cadenbach, and E. Salimi. 2017. A Kullback Leibler View of Maximum Entropy and Maximum Log-Probability Methods, *Entropy, Forthcoming.*

41) Budescu, D, A. Abbas, L. Wu. 2011. Does Probability Weighting Matter in Probability Encoding? *Journal of Mathematical Psychology,* 55 (4), 320-327.

42) Abbas, A. E, D. V. Budescu, R. Gu. 2010. Assessing Joint Distributions with Isoprobability Contours, *Management Science,* 56 (6), 997-1011.

43) Abbas, A.E. 2009. A Kullback-Leibler View of Linear and Log-Linear Pools. *Decision Analysis,* 6 (1) 25-37.

44) Abbas, A. E., Budescu, D.V, Yu Hsiu-Ting, Haggerty, R. 2008. A Comparison of Two Probability Encoding Methods: Fixed Probability Wheel vs. Fixed Variable Values. *Decision Analysis,* 5 (4), 190-202.

45) Abbas, A. E. 2006. Entropy Methods for Joint Distributions in Decision Analysis. *IEEE Transactions on Engineering Management,* 53 (1) 146-159.

Bayesian Inference: Demand Estimation, Auctions, High Speed Machining

46) Sun Z, Hupman A, and A. E. Abbas. 2020. Value of Information with Price-Dependent Demand. European Journal of Operational Research, *Forthcoming*.

47) Sun Z, Hupman A, Ritchey H, and A.E. Abbas. 2016. Bayesian Updating of the Price Elasticity of Uncertain Demand. *IEEE Systems Journal* Vol 10 issue 1, 136 - 146.

48) Hupman, A., Abbas, A., and Schmitz, T., 2015, Incentives Versus Value in Manufacturing Systems: An Application to High-Speed Milling, Journal of Manufacturing Systems, 36:20-26.

49) Karandikar, J., Traverso M, Abbas, A., and Schmitz, T. 2014. Bayesian inference for milling stability using a random walk approach. *ASME Journal of Manuf. Science and Engineering* (Forthcoming)

50) Karandikar, J., Schmitz, T., and Abbas, A. 2014. Application of Bayesian Inference to Milling Force Modeling. *ASME Journal of Manuf. Science and Engineering* (Forthcoming)

51) Karandikar, J, Tyler, C., Abbas, A., and Schmitz, T. 2014. Value of information-based experimental design: Application to process damping in milling. *Precision Engineering* (Forthcoming).

52) Karandikar, J., Abbas, A., and Schmitz, T., 2014, Tool Life Prediction using Random Walk Bayesian Updating, *Journal of Machining Science and Technology*, 17/3: 410-442

53) Karandikar, J., Abbas, A., and Schmitz, T., 2014, Remaining Useful Tool Life Predictions in Turning using Bayesian Inference, *International Journal of Prognostics and Health Management (Forthcoming)*

54) Karandikar, J., Abbas, A., and Schmitz, T., 2014, Tool Life Prediction using Bayesian Updating, **Part 1**: Milling Tool Life Model using a Discrete Grid Method, *Precision Engineering* 38(1), 9-17

55) Karandikar, J., Abbas, A., and Schmitz, T., 2014, Tool Life Prediction using Bayesian Updating, **Part 2**: Turning Tool Life using a Markov Chain Monte Carlo Approach, *Precision Engineering (Forthcoming)*

56) Karandikar, J, T. Schmitz, A. E. Abbas. 2012. Spindle Speed Selection for Tool Life Testing using Bayesian Inference. *Journal of Manufacturing Systems*, 31, 403-411.

57) Karahan N, and A. E. Abbas. 2011. Measuring Consumer Impatience and Time Preference in a Repeat Bid Name-Your-Own-Price Channel. *IEEE Transactions on Engineering Management*, 99 (1), 1-14.

58) Schmitz, T, Karandikar, J, Kim, N, and A. E. Abbas. 2010. Uncertainty in Machining: Workshop Summary and Contributions. *ASME Journal of Manufacturing Science and Engineering* 133(5).

59) Gupta A, and A. E. Abbas. 2008. Repeat Bidding on Internet-Based Multiple-Item Name-Your-Own-Price Auctions. *IEEE Transactions on Engineering Management*, 55(4) 579-589.

60) Zapata, R, T. Schmitz, M. Traverso, A. E. Abbas. 2009. Value of Information and Experimentation in Milling Profit Optimization. *International Journal of Mechatronics and Manufacturing Systems,* 2 (5, 6), 580 – 599.

61) Abbas, A., L. Yang, R. Zapata, and T, Schmitz. 2008. Application of decision analysis to milling profit maximization: An introduction. *Int. J. Materials and Product Technology*, Vol. 35 (1/2), 64-88. Special Issue on Intelligent Machining.

4) Published Articles on Decision Analysis

62) Orr, L, A. E. Abbas, and J. Dann. 2018. Autonomous Vehicles: Technological Changes and Ethical Challenges. *Case Study, Greif Center for Entrepreneurial Studies-USC Marshal. Also available on Harvard Business Publishing*: https://hbsp.harvard.edu/product/SCG545-PDF-ENG?itemFindingMethod=Search&parentProductId=SCG545-PDF-ENG

63) Why we Worry about Flying. Abbas, A. E. *CNN Opinion OpEd*, May 19th, 2016.

64) Aviation Security Decisions: Opportunities and Challenges. 2015. (Abbas and Fletcher). *ORMS Today*. 42(5), 22-25.

65) Teaching Decision Making with Social Networks. 2013. (Abbas). *ORMS Today*. 40(6), December 2013.

66) Some Ideas that Triggered My Research. (Abbas) *Decision Analysis Today* 2012.

67) Decision Analysis: Past, Present and Future. 2012. (Abbas) *ORMS Today*. 39(1), 30-33.

68) Peer-To-Peer Decision Training: Teaching Decision Skills to Troubled Teens. 2011. (Abbas, Herring, Robbins, Simms, and Spetzler), *ORMS Today,* 38 (4), 42-43.

69) Peer-To-Peer Decision Training. (Abbas, Herring, Robbins, Simms, and Spetzler). *Decision Analysis Today*, 29(3), 25-26. 2010.

70) Teaching Decision Skills to Troubled Teens. (Abbas, Hoffman, Howard, and Spetzler). *ORMS Today*. 34(4), August 2007.

71) Teaching Teens How to Make Good Decisions. (Abbas, Reiter, Spetzler, and Tani). *ORMS Today.* 31(4), August 2004.

5) Journal Papers under Review

1) Abbas, A. E, D. Budescu, A. Galstyan, and M. Zellner. 2019. A Survey of Human and Machine Forecasting Methods. *Under review*.

2) Sun, Z, A. Hupman, and A.E. Abbas. 2018. Value of information with elastic demand. *Under review (Revised).*

6) Work in Progress

1. Abbas, A. E. 2018. On the Equivalence of Linear Options Pricing and Expected Utility Valuation. Target Journal *Operations Research.*

2. Z. Sun and A. E. Abbas. 2019. Continuous time risk-adjusted martingales. Target Journal *Operations Research.*

3. Abbas A. E. and S. Ho. 2018. Utility Bayesian Networks. Target *Journal of Artificial Intelligence Research.*

4. Z. Sun and A. E. Abbas. 2018. Value of Information and Stochastic Dominance. Target Journal *Decision Analysis.*

5. Hupman, A and A. E. Abbas. 2018. Empirical experiments on intended consequences of incentive structures. Target Journal *Management Science.*

7) Refereed Conference Proceedings Publications

1) Abbas, A. 2002. An Entropy Approach for Utility Assignment in Decision Analysis. In: C. Williams (ed.), *Bayesian Inference and Maximum Entropy Methods in Science and Engineering*, Moscow ID August 3rd – 7th 2002, AIP Conference Proceedings 659, American Institute of Physics, Melville NY, pp.328-338

2) Abbas, A. 2002. Entropy Methods for Univariate Distributions in Decision Analysis. In: C. Williams (ed.), *Bayesian Inference and Maximum Entropy Methods in Science and Engineering*, Moscow ID august 3rd – 7th 2002, AIP Conference Proceedings 659, American Institute of Physics, Melville NY, pp.339-349.

3) Abbas, A. and A. Markopoulo. 2003. A Bayesian-Maximum Entropy Approach to Subjective Voice-Quality Testing. In: G.J. Erickson, Y. Zhai (eds.), *Bayesian Inference and Maximum Entropy Methods in Science and Engineering*, Jackson Hole WY August 3rd – 8th 2003, AIP Conference Proceedings 707, American Institute of Physics, Melville NY, pp. 44-58.

4) Abbas, A. 2003. An Information Theory for Preferences. In: G.J. Erickson, Y. Zhai (eds.), *Bayesian Inference and Maximum Entropy Methods in Science and Engineering*, Jackson Hole WY August 3rd – 8th 2003, AIP Conference Proceedings 707, American Institute of Physics, Melville NY, pp. 127-144.

5) Abbas, A. 2005. Maximum Entropy Distributions with Upper and Lower Bounds. In: K.H. Knuth, A.E. Abbas, R.D. Morris, J.P. Castle (eds.), *Bayesian Inference and Maximum Entropy Methods in Science and Engineering*, San José, California, USA, August 7th – 12th 2005, AIP Conference Proceedings 803, American Institute of Physics, Melville NY, pp. 25-42.

6) Abbas, A., R. Hafiz, and L. Yang. 2007. Sensitivity to Multiplicative Utility Independence. *19th International Conference on Multicriteria Decision Making, Sydney, Australia*, January 7th -12th (on CD, 3 Pages)

7) Zapata, R., T. Schmitz, A. Abbas, and L. Yang, 2007. Quantifying the Stability uncertainty in a Milling Model. *Proceedings of the 2007 ASPE Annual Meeting*, October 14th -19th 2007, Dallas, TX (on CD, 4 pages).

8) Abbas, A., E. Gselmann, G. Maksa, and Z. Sun. 2008. General and Continuous Solutions of the Entropy Equation. In: M.S. Lauretto, C.A. Pereira, J.M. Stern (eds.), *Bayesian Inference and Maximum Entropy Methods in Science and Engineering*, São Paulo, Brazil, July 6th – 11th 2008, AIP Conference Proceedings 1073, American Institute of Physics, Melville NY, pp 3-7.

9) Abbas, A., Schmitz, T., Zapata, R., Hafiz, R., and Yang, L., 2008, Application of Decision Analysis to Milling Profit Maximization, *NSF CMMI Engineering Research and Innovation Conference* 2008, January 7-10, Knoxville, TN (on CD, 17 pages).

10) Zapata, R., Traverso, M., Abbas, A., and Schmitz, T., 2008, Bayesian Updating of Stability Beliefs, *Proceedings of American Society for Precision Engineering Annual Meeting*, October 19-24, Portland, OR (on CD, 4 pages).

11) Abbas, A., Schmitz, T., Traverso, M., and Zapata, R., 2009, Bayesian Methods for Milling Stability Prediction, *Proceedings of 2009 NSF Engineering Research and Innovation Conference*, June 22-25, Honolulu, HI (on CD, 7 pages).

12) Traverso, M., Zapata, R., Schmitz, T., and Abbas, A., 2009, Optimal Experimentation for Selecting Stable Milling Parameters: A Bayesian Approach, *Proceedings of the ASME 2009 International Manufacturing Science and Engineering Conference*, Paper No. MSEC-84032, MSEC2009, West Lafayette, IN, October 4-7, 2009.

13) Abbas, A. E. 2009. From Bayes' Nets to Utility Nets. Forthcoming *Bayesian Inference and Maximum Entropy Methods in Science and Engineering, Oxford, Mississippi.*

14) Abbas, A. E. 2009. On a Class of Stochastic Processes with Constant Valuation. Forthcoming *Bayesian Inference and Maximum Entropy Methods in Science and Engineering, Oxford, Mississippi.*

15) Chen, X, A. E. Abbas and D. Stipanovic. 2009. A Multi Attribute Utility Approach to Target Assignment. *Proceedings of the ASME 2009 Dynamic Systems and Control Conference, DSCC2009, October 12-14, 2009, Hollywood, California, USA.*

16) Traverso, M and A. E. Abbas. 2009. Demand Curve Prediction via Bayesian Probability Assignment over a Functional Space. *Proceedings of the Winter Simulation Conference, Austin, Tx.*

17) Alkindi, M and A. E. Abbas. 2010. A Decision Analysis View of Six Sigma. *Proceedings of IEEE Systems Conference,* April 5th-8th, San Diego, CA, 2010.

18) Alkindi, M and A. E. Abbas. 2010. Testing decisions in Product Development. *Proceedings of IEEE Systems Conference.* April 5th-8th, San Diego, CA, 2010.

19) Traverso, M., Zapata, R., Karandikar, J., Schmitz, T., and Abbas, A., 2010, A Sequential Greedy Search Algorithm with Bayesian Updating for Testing in High-Speed Milling Operations, Proceedings of the ASME 2010 *International Manufacturing Science and Engineering Conference*, Paper No. MSEC-34048, MSEC2010, Erie, PA, October 12-15, 2010

20) Karandikar, J., Schmitz, T., and Abbas, A., 2011, Tool Life Prediction Using Bayesian Updating, *Transactions of the NAMRI/SME*, 39: 466-475.

21) Hupman, A and A. E. Abbas. 2012. Modeling the cost of sugar-sweetened beverages to health care. *Proceedings of Industrial and Systems Engineering Research Conference.* May 18th-24th, 2012. Orlando, FL.

22) Alkindi, M and A. E. Abbas. 2012. Joint Manufacturing and Marketing Decision Analytic Model. *Proceedings of Industrial and Systems Engineering Research Conference.* May 18th-24th, 2012. Orlando, FL.

23) Abdildin, Y and A. E. Abbas. 2012. An Algorithm for Excluding Redundant Assessments in a Multiattribute Utility Problem. *Proceedings of the International Conference on Computational Science*, vol (9) pp 802-811, ICCS 2012. June 2, 2012.

24) Abbas, A. E, G. Hazelrigg, M, Al-Kindi. 2012. Bayesian Inference for the Demand of Engineering Products. *ASME Conference in Design Theory and Methodology*. DETC 2012-70153. August 12-15, Chicago, IL, 2012.

25) Karandikar, J., Schmitz, T., and Abbas, A., 2012, Spindle Speed Selection for Tool Life Testing using Bayesian Inference, *Transactions of the NAMRI/SME*, 40.

26) Abbas, A. E. 2013. Normative Perspectives on Engineering Systems Design. *IEEE Systems Conference*, SYSCON 2013. April 15th – 18th, 2013. Orlando, FL.

27) Sun, Z and A. E. Abbas. 2013. Bayesian Updating on Price Elasticity of Uncertain Demand. *IEEE Systems Conference*, SYSCON 2013. April 15th – 18th, 2013. Orlando, FL.

28) Valicka, C, D. Stipanovic, and A. E. Abbas. 2013. Multiattribute Utility Copulas for Multiobjective Control. Proceedings of the 2013 *American Control Conference*, June 17th -19th , 2013 Washington, DC, USA.

29) Abdildin, Y.G. and A.E. Abbas. 2013. Canonical Multiattribute Utility Functions: Enumeration, Verification, and Application. *Proceedings of the 2013 International Conference on Computational Science*, Procedia, ICCS, Barcelona, Spain, June 5-7, 2013.

30) Hupman, A and A. E. Abbas. 2014. Optimizing Fixed Targets in Organizations through Simulation. *Proceedings of the 2014 Winter Simulation Conference*, Savannah, GA, A. Tolk, S. D. Diallo, I. O. Ryzhov, L. Yilmaz, S. Buckley, and J. A. Miller, eds.

31) Sutcu, M and A.E. Abbas. 2015. First-order dependence trees with cumulative residual entropy, Bayesian Inference and Maximum Entropy Methods in Science and Engineering, (MAXENT 2014), AIP Publishing, Volume 1641 pp 512-521.

32) Hupman, A, A. E. Abbas, B. Tibor, H. Kannan, C. Bloebaum and B. Mesmer. 2015. Calculating Value Gaps Induced by Independent Requirements, Deterministic Modeling, and Fixed Targets. *Proceedings of the 56th AIAA/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, Huntsville, Alabama

33) Abbas, A. E. 2015. Perspectives on Some Widely Used Methods of Multi-Objective Decision Making in Systems Engineering, *Proceedings of the 2015 Industrial and Systems Engineering Research Conference,* S. Cetinkaya and J. K. Ryan, eds.

34) Abbas, A. E. and A. Hupman. 2015. On the Use of Utility Theory in Engineering Design, *Proceedings of the 2015 Industrial and Systems Engineering Research Conference,* S. Cetinkaya and J. K. Ryan, eds.

35) Zatezalo, A, D M Stipanović, and A.E Abbas. Multi-Agent Multi-Objective Control Design with Discrete-Time Information Updates and Preferences. *Proceedings of the 2015 IcETRAN Conference*. Srebrno Jezero, Serbia, 2015.

36) Abbas, A. E. 2016. Perspectives on the Use of Decision Analysis in Systems Engineering: Workshop Summary and Results. Proceedings of the *IEEE Systems Conference, SYCON 2016,* Orlando, FL.

37) E. Salimi, A. H. Cadenbach and A.E Abbas, "*Survey of Four Uncertainty Quantifications Methods in Systems Engineering*" Conference on Systems Engineering Research (CSER), *Forthcoming.*

38) H. Kannan, S. Shihab, E. Salimi, A.E. Abbas and C.L. Bloebaum, "*Preference Modeling for Government-Owned Large-Scale Complex Engineered Systems A Satellite Case Study*", Conference on Systems Engineering Research (CSER), *2016*

39) E. Salimi, A.E Abbas, "*A Simulation-Based Comparison of Maximum Entropy and Copula Methods for Capturing Non-Linear Dependence*", to appear in Proceedings of the 2016 Winter Simulation Conference.

40) A. E. Abbas, M. Zellner. "*The Role of Decision Analysis in Industrial and Systems Engineering Education*" to appear in proceedings of Conference on Systems Engineering Research (CSER), *2016.*

41) A.E Abbas, E Salimi, "*On Cumulative Residual Opinion Pools*", to appear in Proceeding of Bayesian Inference and Maximum Entropy Methods in Science and Engineering workshop, 2016.

42) A. E. Abbas. 2016. *Attribute Selection for Preference Functions in Engineering Design*, International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering Vol:10, No:12, 2016

43) A. E. Abbas. 2016. *Reflections on Opportunities and Challenges for Systems Engineering*, International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering Vol:10, No:8, 2016

44) A. E. Abbas. 2016. *Characterizing Multivariate Thresholds in Industrial Engineering*, International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering Vol:10, No:8, 2016

45) *Zellner, M and A. E. Abbas. 2018. The effects of demand elasticity and selling price decisions on the value of information, IEEE Systems Conference (SysCon), April 23-26, Vancouver, British Columbia, Canada.*

46) Kannan, H, S Shihab, M Zellner, E Salimi, A. E. Abbas, and C. L Bloebaum. 2018. Preference Modeling for Government-Owned Large-Scale Complex Engineered Systems: A Satellite Case Study, *Disciplinary Convergence in Systems Engineering Research*, 513-529

47) Salimi, E, A.H Cadenbach, and A.E Abbas. 2018. Survey of Four Uncertainty Quantifications Methods in Systems Engineering, *Disciplinary Convergence in Systems Engineering Research*, 945-957

48) A. E Abbas, M Zellner. 2018. The Role of Decision Analysis in Industrial and Systems Engineering Education, *Disciplinary Convergence in Systems Engineering Research*, 1107-1119

49) Zellner, M and A. E. Abbas. 2018. The effects of demand elasticity and selling price decisions on the value of information. *IEEE International Systems Conference (SysCon)*, Vancouver, CA.

50) Zellner, M., and A.E. Abbas. 2019. *Valuing the Option to Delay in Engineering Management: A Case Study*, 2019 IEEE International Conference on Industrial Engineering and Engineering Management, *Dec 15-18, Macau (Short listed best three papers submitted).*

51) *Alzanki, A and A. E. Abbas. 2019. A Sensitivity Analysis for The Derived Micromort Value of Life and Death Decisions Using Two Methods for Constructing Utility Functions,* 2019 IEEE International Conference on Industrial Engineering and Engineering Management, *Dec 15-18, Macau*

8) Examples of Media Coverage

a) **New York Daily News:** #DeleteFacebook gains steam as advertisers get cold feet, company struggles to talk way out of privacy scandal https://www.nydailynews.com/news/national/deletefacebook-gains-steam-high-profile-privacy-scandal-article-1.3890987

b) **Globe and Mail**: Canada's National Newspaper: Unfriended: Facebook backlash points to troubling new narrative

https://www.theglobeandmail.com/world/article-unfriended-facebook-backlash-points-to-troubling-new-narrative/

c) **USC News**: Fake social media news http://news.usc.edu/139164/future-of-facebook/

d) **CNN Opinion:** *Why we Worry about Flying*. May 19th 2016. http://www.cnn.com/2016/05/19/opinions/fear-of-flying-misplaced-abbas/index.html

e) TV appearance: Al Jazeerah English November 7th 2016
My decision Analysis class introduced at Price was featured in Al Jazeerah English TV http://decide.usc.edu/content/decide-decision-analysis-course-featured-al-jazeera

f) **TV appearance:** 10 Minute Interview on PBS: WTTW Channel 11: ***Chicago Tonight***: Calculating Good Life Choices. February 20th 2014. http://chicagotonight.wttw.com/2014/02/20/calculating-good-life-choices

g) The News-Gazette. Front Page coverage: Can't Make a Decision? This site might help. February 11th 2014

http://www.news-gazette.com/news/local/2014-02-11/ui-profs-website-tackles-decision-making.html

h) The Republic, Columbus, Indiana. Front Page coverage: U. of Illinois professor creates site he hopes help with decisions big and small. February 11th 2014 http://www.therepublic.com/view/story/76b683666c8348c49c45c708f52c1e11/IL--Decisions-Website

i) American Society for Engineering Education Newsletter: February 12th 2014: University Of Illinois Engineering Professor Develops Website That Tackles Decision-Making.

j) Institute for Operations Research and Management Sciences (INFORMS) Front page Coverage, January 2014: https://www.informs.org/Apply-Operations-Research-and-Analytics/INFORMS-Today-The-Podcast-Series/Helping-Teens-Make-Life-Changing-Decisions

k) **TV appearance:** CBS Channel 3: WCIA Recognizes Ahoona: *Using Ahoona is easy decision, March 29, 201. Video clip at* http://illinoishomepage.net/fulltext?nxd_id=476472

l) **The National Science Foundation Discoveries** Section http://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=127901&WT.mc_id=USNSF_51&WT.mc_ev=click

m) University of Illinois Recognizes Ahoona: Engineering professor develops "Facebook for Decision-Making", March 26, 2013

https://engineering.illinois.edu/news/2013/03/26/illinois-engineering-professor-develops-facebook-decision-making

9) Recent Invited Talks

1) **Inaugural Plenary Speaker: MultiObjective Decision Making (MoDem 2021) Conference,** Ireland.

2) **Invited Speaker:** Abbas, A. E. 2019. Understanding Preferences in Engineering Design, ASME IDTEC-2019 conference in Anaheim, CA

3) **Invited Speaker:** Abbas, A. E. 2019. Constructing Preference Functions in Engineering Design, Fifth IEEE International Symposium on Systems Engineering, ISSE 2019 in Edinburgh.

4) **Stanford University. 2018.** MSandE Reunion, Plenary Speaker honoring Ronald Howard.

5) **Applied Materials Inc. 2018.** Invited to present a full day session on my research in strategic decision making for their World Wide Operations meeting in Vancouver, June 2016. The meeting was attended by the CEO and 40 VP's.

6) **International Institute for Applied Systems Analysis (IIASA).** Invited to present in the Howard-Raifa session for the first conference honoring Howard Raiffa. Laxenberg, Austria 015. Video of presentation at https://sa2015.iiasa.ac.at/speakers/ali-e-abbas/

7) **National Defense University, Joint Forces Staff College.** Invited to present on the need for a sound decision making system. New Orleans, April 7th 2015.

8) **American Association for Artificial Intelligence (AAAI) Spring Symposium.** Invited speaker to present space and security decisions: The next 10 years. Stanford, CA, March 2015.

9) **Maritime Cyber Security Symposium (Rutgers University).** Invited to present decision analytic perspectives on cyber security for off shore oil rigs, with Vice Admiral Charles Michel. New Jersey, March 2015.

10) **Deputy Commissioner of the U.S. Customs and Border Protection**. Invited to present results of study on border security metrics with Deputy Commissioner Kevin McAleenan, Washington D.C., January 2015.

11) **Transportation and Security Administration (TSA)**. Invited to present results of study on aviation security with Chief Risk Officer Ken Fletcher, December 2014, January 2015.

12) **Naval Postgraduate School (NPS)**. Perspectives on some arbitrary methods of decision making in defense systems. Monterey, CA, January 2015.

13) **U.S. Customs and Border Protection.** Invited to present results of study on border security metrics with Chief Michael Fisher. Washington D.C., December 2014.

14) **Under-Secretary of Science and Technology, U.S. Department of Homeland Security.** 2014. Invited to present results of study on transitionable projects to Under Security, Dr. Reginald Brothers. Washington D.C., November 2014

15) **INFORMS 2014.** Invited Speaker for the 50th anniversary celebration of Decision Analysis, San Francisco, CA, October 2014.

16) **Southern California Edison.** The Necessity of Decision Analysis, Irvine, CA, December 2014.

17) **TEDx UIUC 2014**, Decision Making and the Pursuit of Happiness. Champaign, IL, April 2014.

18) **The Houses of Parliament**, Decision Making for Financial Governance and Social Innovation. Houses of Parliament, London, UK. November 2013.

19) **INFORMS Podcast** (with INFORMS Front Page Coverage). Helping Teens Make Life-changing Decisions. January 2014.

20) **Society of Decision Professionals Podcast** (DA Fundamentals Series): Constructing Multiattribute Utility Functions for Decision Analysis. January 2014.

21) Decision Analysis: From Foundations to Large Scale Systems. **University College London**. London, UK. January 2014

22) The Foundations of Multiattribute Utility. **London Business School**. London, U.K. January 2014

23) Perspectives on Constructing Multiattribute Utility Functions in Decision Analysis. **Decision Analysis Affinity Group** (DAAG). Chicago, Illinois, May 2012

24) A Decision Analytic Framework for the Assessment of Systems Engineering for Clean and Renewable Energy. International Research Assessment on Systems Engineering For Clean and Renewable Energy Manufacturing (SEEM), Arlington, Virginia, May 2012

25) Decision Analysis: From Basic Research through Product Realization. **NSF and NASA Workshop on Large-Scale Complex Engineered Systems**, Arlington, Virginia, February 2012

26) Constructing Multiattribute Utility Functions for Decision Analysis, University of Texas at Dallas, Dallas, Texas, November 2011

27) The Role of Some Functional Equations in Decision Analysis, Stanford University, Stanford, California, February 2011

28) The Necessity of Decision Analysis, Naval Postgraduate School, Monterey, California, December 2010

29) Adventures in a Multiattribute Utility Space, University of California, Irvine. Irvine, California, November 2010

30) Normative Perspectives in Engineering Design. University of Florida, Gainesville, Florida. October 2010

31) Constructing Multiattribute Utility Functions in Decision Analysis, McCombs School of Business, University of Texas Austin, Austin, Texas, April 2010

32) Uncertainty in Machining, National Science Foundation, Arlington, VA, February 2010.

33) Multiattribute Utility Copulas, IBM Watson Research Center, Manhattan, New York, March 2009

34) Recent Advances in Multiattribute Utility Theory, Stanford University. Stanford, California. February 2009

35) Recent Advances in Multiattribute Utility Theory, Department of Industrial and Systems Engineering, University of Texas A & M, College Station, Texas December 2008

36) Decision Making in Manufacturing, Society of Manufacturing Engineers, Manufacturing Education, Long Island, New York, November 2008
37) The Foundations of Decision Analysis. Schlumberger Oilfield Services. Sugar Land, Texas, August 2008

38) Bidirectional Utility Diagrams, Stanford University. Stanford, California, November 2007

39) Multiattribute Utility Copulas, National Science Foundation-SAMSI Joint Workshop on Risk Analysis, Extreme Events and Decision Theory, Research Triangle Park, North Carolina, September 2007

40) Bidirectional Utility Diagrams, Fuqua School of Business, Duke University, Durham, North Carolina, May 2007

41) Invariant Utility Functions and Certain Equivalent Transformations, Darden Business School, University of Virginia. Richmond, Virginia, November 2006

42) Invariant Utility Functions, Stanford University, Stanford, California. February 2006

43) *The Evolution of Decision Analysis*. The 17th Face-to-Face Open Workshop took place at the 2004 NSF Design, Service and Manufacturing Grantees and Research Conference in Dallas, Texas. (January 2004).

10) Conference/Workshop Organization

1) Organizing committee: Advances in Decision Analysis 2019, a conference organized by the Decision Analysis Society of INFORMS. This conference—the third of its kind—was held June 19-21, 2019 at Bocconi University, Milan, Italy.
2) INFORMS 2018 Annual Conference, Organizing Committee: Plenary Co-Chair with Georgia Perakis
3) Next Generation Ethics 2018 and 2019: Chaired the first and second USC conferences on ethical leadership and decision making titled: Next Generation Ethics. The conferences involved numerous people from federal and local government, numerous technology pioneers e.g. Vint Cerf and numerous business speakers.

4) NSF Summer School for PhD Students
Hosted an NSF-Funded Summer school (2018) at USC for PhD students around the country in decision making and ethics for systems engineering.

5) **National Science Foundation: From Engineering Phenomena to Value**
Organized a workshop at the National Science Foundation that included people from Academia, Government, and Industry to discuss methods to determine value functions for engineering systems. Arlington, VA, October 2015.

6) **First CREATE_TSA Symposium** on Improving Transportation Security Decisions (Symposium Co-Chair together with **Ken Fletcher Chief Risk Officer of the TSA)** Organized the first conference between the Transportation Security Administration (TSA) and a university. The two-day symposium at the University of Southern California included academics, government and businesses in aviation security. Los Angeles, CA, July 2015.

7) **Invited Talk for Secretary of Homeland Security, Jeh Johnson.** Organized a visit for Secretary of Homeland Security Jeh Johnson on Unity of Effort at the University of Southern California. Los Angeles, CA, February 2015.

8) **NASA Langley** workshop on Decision Making in Engineering Design. NSF Funded workshop for 30 managers and design engineers from NASA Langley as well as 10 academics to discuss decision making in space missions. The focus was on the asteroid capture strategy envisioned by the Obama administration. Hampton, VA, March 2014.

9) **Decision Analysis: Past, Present and Future.** NSF Sponsored workshop that included **Nobel Laureates** (e.g. Ken Arrow) and several prominent founders of the field of decision analysis. Workshop article was presented as a paper in ORMS Today, the Magazine of the INFORMS society. Palo Alto, CA, October 2012.

10) **IFORS Conference**, Decision Analysis Cluster Chair, Toronto (2009).

11) **INFORMS Conference**, Decision Analysis Cluster Chair Seattle (2007).

12) **INFORMS Conference**, Decision Analysis Cluster Chair Pittsburg, (2006).

13) ***25th International Workshop on Bayesian Inference and Maximum Entropy Methods*** *in Science and Engineering*. (San Jose 2005). Organizing Committee Member and Co-editor of the conference book.

11) Conference Presentations

1. *Decision Analytic Foundations for Design and Manufacturing.* Gordon Research Conference. *Session with Ronald Howard*. Plymouth, Massachusetts. (June 2000).

2. *Entropy Methods in Decision Analysis.* Session Chair at the INFORMS conference in Miami, Florida. (November, 2001).

3. *An Entropy Approach for Utility Assignment. Invited Speaker and Student Scholarship Award.* Maximum Entropy and Bayesian Research Conference. Moscow, Idaho. (August, 2002)

4. *Entropy Methods for Joint Distributions in Decision Analysis. Session with Bob Clemen.* INFORMS conference in San Jose, California. (November, 2002)

5. *Epistemic Aleatory and Uncertain Probabilities: A Decision Analytic Perspective. Session with Elisabeth Pate-Cornell.* INFORMS conference in San Jose, California (November, 2002)

6. *Maximum Entropy Utility: Session Chair Utility Modeling Session, Decision Analysis Track.* INFORMS conference in San Jose, California. (November, 2002)

7. *Tutorial: Bioinformatics and Management Science (Jointly with William Swope (IBM Research) and Susan Holmes (Stanford University)).* INFORMS conference in San Jose, California. (November, 2002)

8. *Utility-Probability Duality.* Pacific Region Intercollegiate Symposium for the Management Sciences (PRISMS) Berkeley (March 2003). First Prize Award.

9. *Tutorial: Advances in Maximum Entropy Utility.* 23rd international workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering, Jackson Hole (August 2003)

10. *A Bayesian -Maximum Entropy Approach to Subjective Voice Quality Testing (Jointly with Athina Markopoulo).* 23rd international workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering, Jackson Hole (August 2003)

11. *Utility-Probability Duality.* INFORMS conference in Atlanta. (November, 2003)

12. *Utility Transversality: A value-Based Approach.* INFORMS conference in Atlanta. (November, 2003)

13. *Reasoning about Preferences: An Invariance Approach.* 37th Annual Meeting of the Society for Mathematical Psychology - Ann Arbor. (2004).

14. *Attribute Dominance Utility*. INFORMS conference in Denver. (November 2004)

15. *Invariant Utility Functions.* IFORS conference in Hawaii (July 2005)

16. *Maximum Entropy Distributions with Upper and Lower Bounds*. 25th international workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering, Jackson Hole (August 2005). Conference Organizer.

17. *Learning, Teaching, and Using the Precise Decision Language*. INFORMS conference in San Francisco (November 2005)

18. *Effective Utility Functions from Organizational Target-Based Incentives.* INFORMS conference in San Francisco (November 2005)

19. *Repeat Bidding strategies for Name Your Own Price Channels.* INFORMS conference in San Francisco (November 2005)

20. *Bidirectional Utility Diagram.* INFORMS conference- Pittsburgh. (November 2006).

21. *Reaching Out to Juvenile Detention Centers.* INFORMS conference- Pittsburgh. (November 2006).

22. *Panel Discussion: Decision Analysis: Foundations in Mathematics, Science, and Engineering* INFORMS conference- Pittsburgh. (November 2006).

23. *Panel Discussion: NSF Outreach.* INFORMS conference- Pittsburgh. (November 2006).

24. Seminar Speaker : Fuqua School of Business, Duke University: Bidirectional Utility Diagrams: Graphical Representations of Utility Independence (April 2007)

25. *Multiattribute Utility Copulas*, INFORMS Midwest Conference (August 2007).

26. *Generalized Copula Structures for Multiattribute Utility Functions* SAMSI Workshop on Risk Analysis, Extreme Events and Decision Theory (September 2007)

27. *The Foundations of Decision Analysis* Schlumberger Oilfield Services, Sugar land, Houston, Texas (August 2008)

28. *One-Switch Utility Independence* (with David Bell) INFORMS conference – Washington D.C. (October 2008).

29. *Applying the Power of Transforms to Utility Theory* (with Jim Matheson and Ronald Howard) INFORMS conference – Washington D.C. (October 2008).

30. *Assessing Joint Distributions with Isoprobability Contours* (with David Budescu) INFORMS conference – Washington D.C. (October 2008).

31. *A Comparison of Two Probability Encoding Methods* (with David Budescu) INFORMS conference – Washington D.C. (October 2008).

32. *Decision Analysis of Mine Rescue Operations* (with Rayan Hafeez) INFORMS conference – Washington D.C. (October 2008).

33. Decision Making in Manufacturing. Second Manufacturing Education Leadership Forum, Society of Manufacturing Engineers. (November 2008).

34. *Recent Advances in Multiattribute Utility Theory.* University of Texas A&M (November 2008).

31. *Measuring Risk Aversion in a Name-Your-Own Price Channel,* Rothkopf Memorial Conference, College Park, Pennsylvania, May 2009.

32. *Multiattribute Utility Functions with Partial Utility Independence,* IFORS/CORS, Toronto, June 2009.

33. *From Bayes' Nets to Utility Nets,* MaxEnt 2009, Oxford, Mississippi, July 2009.

34. *On a Class of Stochastic Processes with Constant Valuation*, MaxEnt 2009, Oxford, Mississippi, July 2009.

35. *Bidirectional Utility Diagrams*. INFORMS conference – San Diego (November 2009).

36. *The Role of Some functional Equations in Decision Analysis* (with Janos Aczel and Duncan Luce). INFORMS conference – San Diego (November 2009).
37. Uncertainty in Machining, National Science Foundation. Washington DC, February 2010.
38. *Constructing Multiattribute Utility Functions in Decision Analysis*, University of Texas Austin, McCombs School of Business Austin, Tx, April 2010.

39. *The Necessity of Decision Analysis in Engineering Design*. Invited Seminar Speaker, University of Florida, Gainesville, FL (October 2010).

40. *Adventures in a Multiattribute Utility Space*. Invited Speaker. University of California, Irvine (November 2010).

41. *Constructing Multiattribute Utility Functions for Decision Analysis*. Tutorial Speaker, INFORMS conference - Austin, Tx (November 2010).

42. *Equivalence of the Utility Indifference Price and Linear Price of an Option in an Incomplete Market.* INFORMS conference - Austin, Tx (November 2010).

43. *One-Switch Conditions for Multiattribute Utility Functions (*with David Bell*).* INFORMS conference - Austin, Tx (November 2010).

44. *Using Bayesian Analysis in Milling Profit Optimization*. INFORMS conference - Austin, Tx (November 2010).

45. *Normative Perspectives in Design and Manufacturing*. NSF CMMI Grantees Conference – Atlanta, GA (January 2011).

46. *The Role of Some Functional Equations in Decision Analysis.* Stanford University, Stanford, California (February 2011).

47. *Double-Sided Utility Copulas*. INFORMS conference – Charlotte, NC (October 2011).

48. *Value of Information in Two-action Decision Problems (* with Zhengwei Sun*)*. INFORMS conference – Charlotte, NC (October 2011).

49. *Teaching Decision Skill to Troubled Teens*. INFORMS conference – Charlotte, NC (October 2011).

50. *Constructing Multiattribute Utility Functions for Decision Analysis.* University of Texas at Dallas, Dallas, Tx. (November 2011).

51. *Double-Sided Utility Copulas*. INFORMS conference – Phoenix, Az (October 2012).

52. *Valuing Changes in Investment Opportunities.* INFORMS conference – Phoenix, Az (October 2012).

53. *Enhancing Adolescents' Lives through Decision-Making Skills* (with Carl Spetzler, Chris Spetzler, and Nadine Oesser). INFORMS conference – Phoenix, Az (October 2012).

54. *Constructing Multiattribute Utility Functions.* University of Sussex. Brighton, U.K. (September 2013).
55. *Building Ahoona: The Decision-Making Social Network*. INFORMS conference – Minneapolis, Mn (October 2013).
56. *Continuous-time Risk-adjusted Martingales* (with Z. Sun and D. Kwon) INFORMS conference – Minneapolis, Mn (October 2013).
57. *Value-Maximizing Fixed Targets* (with A. Hupman) INFORMS conference – Minneapolis, Mn (October 2013).
58. *Utility Bayesian Networks* (with S. Ho and Z. Sun) INFORMS conference – Minneapolis, Mn (October 2013).
59. *On the Monotonicity of Value of Information with Risk Aversion in Two-Action Decision Problems* (with Z. Sun) INFORMS conference – Minneapolis, Mn (October 2013).
60. *Teaching and Evaluating Decision-Making Competence* (with Carl Spetzler, Chris Spetzler, and Nadine Oesser). INFORMS conference – Minneapolis, Mn (October 2013).
61. *Invited Speaker: Complex Aerospace Systems Exchange (CASE) 2014. Panelist for Session on Decision Making in Manufacturing, San Diego, CA, August 2014.*
62. *Invited Speaker and Lead of the Mathematics of Manufacturing Track: US- South Korea Workshop on Advanced Manufacturing. National Science Foundation Sponsor. Reno, NV, August 2014.*
63. *Teaching Decision Making with Social Networks* (with Ron Howard, Mazen Skaff, Carl Spetzler, and Brad Powley) INFORMS conference – San Francisco, CA (October 2014).
64. *Multiattribute Utility Functions Satisfying Mutual Preferential Independence* (with Zhengwei Sun) INFORMS conference – San Francisco, CA (October 2014).
65. *Space and Security Decisions: The Next 50 Years.* INFORMS conference – San Francisco, CA (October 2014).
66. *Ordinal One-Switch Utility Functions* (with David Bell) INFORMS conference – San Francisco, CA (October 2014).

Society Service

1. Area Editor, Decision Analysis Department of *IISE Transactions*, 2012-2017.
2. Associate Editor, *Decision Analysis* journal, 2010-Present.
3. Associate Editor, *Operations Research* journal, 2010-Present.
4. Associate Editor, *Entropy* journal, 2010-Present
5. Associate Editor, *Decision, January* 2019 – Present.
6. Organizing committee of the 2018 annual INFORMS conference (Plenary co-chair with Georgia Perakis).
7. Guest Editor: *Operations Research* journal, special issue honoring Nobel Laureate Ken Arrow.

8. Raiffa-Howard Award committee, 2016, (Other committee members included Jim Matheson, Greg Parnell, David Leonhardi, Larry Neal).
9. Panel member National Science Foundation (NSF), for the division of Decision, Risk, and Management Sciences (DRMS). Requested to serve for four panels: February 2011-November 2012.
10. Panel member for National Science Foundation (CMMI), Engineering Research Centers (ERC), and CAREER.
11. Chair Decision Analysis Society of INFORMS (DAS) Publications Award Committee (2014) (Other committee members include James Dyer and David Budescu).
12. Chair Decision Analysis Society of INFORMS Membership Committee (2013)
13. Nominated and elected to the Decision Analysis Council of the Decision Analysis Society of INFORMS (2006-2009).
14. Co-Chair, Decision Analysis Society Student Paper Award (2008), with Bob Clemen.
15. Chair Decision Analysis Society New Comers Committee (2008).
16. Member Decision Analysis Society Membership Committee (2008).
17. Member Decision Analysis Society, Council 2005-2007
18. Website Ahoona for teaching decision making to society
19. Referee for several journals including *Operations Research*, *Management Science*, *Decision Analysis*, *European Journal of Operational Research*, *IEEE Transactions on Engineering Management*, *Journal of Policy Analysis*, and *Risk Analysis*.

Student Advising at the University of Illinois, Urbana-Champaign

- Postdoctoral Advisor for

    1. Zhengwei Sun. April 2013 – August, 2014.

- Ph.D. Principle Advisor for

    1. **Mahmoud Al-Kindy** (Now Assistant Professor of Industrial Engineering at Sultan Qaboos University, Sultanate of Oman)
    2. **Zhengwei Sun**. (Now Assistant Professor of Business at East China University of Science and Technology)
    3. **Yerkin Abdildin** (Now Assistant Professor of Mechanical Engineering at Kazakhstan University).
    4. **Mehmet Sutcu** (Now Assistant Professor of Industrial Engineering at Abdullah Gal University, Turkey**)**

5. **Andrea Hupman** (Now Assistant Professor at the Business School of University of Missouri, Saint Louis). Awarded the Best Thesis Award, Department of Industrial and Enterprise Systems Engineering, University of Illinois at Urbana-Champaign.

- Ph.D. Thesis Committee Member at UIUC for

1. Rapik Saat (Civil Engineering. Now Research Assistant Professor at UIUC.
2. J'Tia Taylor (Nuclear Engineering)
3. Vijit Pandy (Industrial and Enterprise Systems Engineering. Now Postdoc at University of Michigan).
4. Stephen Broomell (Psychology). Now assistant professor at Carnegie Melon.
5. JD Mathews (Industrial and Enterprise Systems Engineering). Now Assistant Professor at the Air force Institute of Technology, Ohio).
6. Scarlett Herring (Industrial and Enterprise Systems Engineering). Now Assistant Professor at Penn State University.
7. Yuan Zhao (Industrial and Enterprise Systems Engineering). Graduated August 2012.
8. Sara Behdad (Industrial and Enterprise Systems Engineering). Graduated August 2013. Now assistant professor at SUNY University at Buffalo.
9. Estelle Kone (Industrial and Enterprise Systems Engineering). Graduated August 2014. Now at Goldman Sachs.
10. Banafsheh Behzad (Industrial and Enterprise Systems Engineering). Graduated August 2014. Now assistant professor at California State University.

- M.S. Principle Advisor at UIUC for

1. Erin Engels (2006)
2. Abhimanyu Gupta (2006). Now pursuing an MBA at NYU, New York.
3. Molly Hathaway (2006)
4. Jeremie Even (2006)
5. Rayan Hafiz (2009). Now at Saudi Aramco, Dammam, Saudi Arabia.
6. Xi Chen (Co-advisor Duan Stipanovic) (2009)
7. Nihan Gomez-Karahan (2010). Now at Credit Suisse, Manhattan, New York.
8. Mike Traverso (2010). Continued on with a PhD at Stanford University.
9. Rola Gu (Co-Advisor David Budescu) (2009). Now at Deloitte Consulting, New York.
10. Lijuan Wu (2011). Now pursuing a PhD at Kentucky State University.
11. Rayan Haggerty (2011). Now at Los Alamos National Labs.

12. Andrea Hupman (2011). Now pursuing a PhD at UIUC.
13. Charles Kammin (2012). Graduated August 2012.
14. Heather Ritchie (2014). Graduated June 2014. Now a Lecturer at West Point.

PhD Committee Member at Stanford University

- Ph.D. Thesis Committee Member for

1. Thomas Seyller, Stanford University. Now, data scientist at **Google**.
2. Ibrahim Al-Mojel, Stanford University. Now at **Saudi Aramco, Saudi Arabia**.

Mentoring at University of Southern California

- Post-Doctoral Associate
    - Daniel Benjamin, January 2019- Present
    - Ehsan Salimi,, January 2016 – January 2017

- Ph.D. and DPPD Doctorate Students
    - Max Zellner, Viterbi School of Engineering, August 2016 – Present.
    - Ahmed Al Zanki, Viterbi School of Engineering, January 2016 – Present.
    - Luke Haravitch, Viterbi School of Engineering, August 2017 – Present.
    - Kevin Williams, Price School of Public Policy, DPPD, 2017 – Present.
    -

Examples of University Service at USC

1. Administrating the Neely Center for Ethical Leadership and Decision making. Some of the activities last year included:
    a. Launching the first and second campus-wide student ethics competition. This led to a BBC interview.
    b. Chairing the First and Second USC conferences on ethical leadership and decision making titled: Next Generation Ethics. The conference involved numerous people from federal and local government, numerous technology people e.g. Vinton Cerf and business speakers.
    c. Editing a book titled Next Generation Ethics: Engineering a Better Society, that will be published by Cambridge University Press in December 2019.

2. Hosted an NSF-Funded Summer school (2018) at USC for PhD students around the country in decision making and ethics for systems engineering.

3. Industrial and Systems Engineering (ISE) department representative to the Engineering Faculty Council (EFC, Viterbi). This assignment involves multiple sub-committees including: faculty and staff relations, among others. (2015-Present)

4. Industrial and Systems Engineering (ISE) department representative to the Appointment, Promotions, and Tenure committee (APT, Viterbi School). This assignment has involved reviewing promotion dossiers and making promotion decisions (2018-Present).

5. Chair of the ISE Chair evaluation committee. This assignment involved soliciting questions from faculty for the chair evaluation, obtaining responses, tabulating them, and summarizing the responses to the dean.

6. ISE Chair nomination committee. This assignment involved soliciting input from faculty and summarizing the results to the dean.

7. Chair of the ISE Vision statement committee. The assignment involved scribing a vision statement for the ISE department.

8. Member of various PhD and qualifying exam committees

9. Numerous faculty and staff recruiting committees.

Examples of University Service at Illinois

Executive Committee of the College of Engineering (2011-2014): Industrial and Enterprise Systems Engineering (IESE) department representative to the Engineering College. This assignment involves multiple sub-committees.

Chair Evaluation Committee of IESE department chair (2013)

Faculty Recruiting Committee (Numerous years)

Department Seminar Committee (2011, 2012)

Student Group Mentoring at the University of Illinois

1. Faculty Advisor : Gamma-Epsilon Student Group (2005-2014)
2. Faculty Advisor : Alpha-Pi-Mu Student Group (2006-2014)

Other Honors and Awards

- **University of Illinois Faculty Scholar award, 2012.**

- **NSF CAREER Award, Decisions with Multiple and Dependent Objectives. 2008.**

- **Department of Industrial and Enterprise Systems Engineering, Outstanding Teachers' Award, 2009.**

- **UIUC List of Teachers Ranked Excellent by Their Students,** University of Illinois at Urbana-Champaign, Fall 2004, Spring 2005, Fall 2005, Spring 2006, Fall 2006, Spring 2007, Fall 2007, Spring 2008, Fall 2008, Spring 2009, Fall 2009, Fall 2011, Fall 2013.

- **Best Student Paper Award.** (April 2003). Best student paper award for the paper "Utility-Probability Duality" presented at the PRISMS conference, Berkeley, California

- **Student Scholarship Award.** (August 2003), Maximum Entropy Conference, Jackson Hole, Wyoming.

- **Volunteer of the Year.** (July 2003). The Decision Education Foundation. Menlo Park, CA.

- **Department Service Award** (June 2000), Stanford University, Department of Management Science and Engineering.

- **Student Scholarship Award.** (August 2002), Best student paper award for the paper "Maximum Entropy Utility" presented at the Maximum Entropy Conference, Moscow, Idaho.

- **Outstanding TA Award** (June 2001), Stanford University, Department of Management Science and Engineering.

Professional Societies

- *Senior Member*, Institute for Electrical and Electronic Engineers (IEEE).

- Member Institute For Operations Research and Management Science (INFORMS).

Volunteer Work

In 2004, Led the Gifted Youth Program for the DEF, a non-profit volunteer organization that helps youth make better decisions about their lives. The program involved designing a decision skills course and teaching it to high school students. The course emphasized both the emotional and logical aspects of decision making. The Gifted Youth team was composed of Ronald Howard, Carl Spetzler, and Steve Tani from Strategic Decisions Group.

The Champaign County Juvenile Detention Center (JDC), reached out with decision skills to the Champaign County Juvenile Detention Center. Organized several sessions on decision making to the residents to help them make better decisions about their lives. Also organized and taught several workshops to the correctional officers at the Champaign County Juvenile Center. Currently working with, "The Peer Ambassadors Group", a selection of role model teens who will learn decision skills and then teach it to teens at the JDC.

Sample Lectures Taught (Videotaped)

Available upon request.