DAAG 2014 CONFERENCE ABSTRACTS

SESSION 1 – KEY NOTE SPEAKER – RON HOWARD

50 YEARS OF DECISION ANALYSIS

Professor Ron Howard - Management Science and Engineering, Mgmt. Science in the Graduate School of Business by courtesy at Stanford University.

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.

Session 2 & 3

How do we make DA ubiquitous? We have succeeded in improving DQ for complex and important decisions through a skilled DA consultant model, but this leaves a lot on the table. We need to expand our repertory. The next two sessions 2 & 3 on Embedded DA and DA skills, explore two major approaches to scaling DA and making I ubiquitous.

Session 2 – UBIQUITOUS DA#1: EMBEDDED DA

Chair: David Matheson, SmartOrg, Inc.

Jay Anderson - Eli Lilly, Matt Kurtz - Chevron, Somik Raha - SmartOrg

Embedded DA focuses on delivering valuable results from a routine business process that has been designed so that Decision Quality is achieved without requiring expert decision analysts. After some introductory remarks by the session chairman, David Matheson of SmartOrg, we will turn to three short case studies from **Jay Anderson of Eli Lilly**, **Matt Kurtz of Chevron,** and **Somik Raha of SmartOrg** that each explore contrasts between traditional and embedded DA. Then we will have a group exercise to identify and describe practices of embedded DA and contrast them to practices for traditional DA. Be prepared to think through your own situation through a new lens!

Session 3 – UBIQUITOUS DA#2: DECISION SKILLS

Chair: Pat Leach, Decision Strategies, Inc.

DA Skills focuses on brining decision participants to a minimum level of understanding of DA so that they naturally improve the quality of decisions and know when to seek help.

Carl Spetzler – Strategic Decisions Group

Teaching Decision Skills to the Front Line

The many mid-level decisions that are made by front-line managers have a tremendous impact on the overall performance of an enterprise. Most of those mid-level decisions will be made in a couple of meetings over a couple of hours – and without the assistance of a decision professional. What understanding and skills should the front-line have to reach DQ. We will present a curriculum that we believe serves this training need and what we chose to include/exclude in the MOOC: DQ 101 – an on-line course that requires about 10 to 15 hours to complete.

Paul Wicker – Decision Strategies, Inc.

Decision Analysis Applied to Volumes of Decisions

If you have a thousand decisions to make, how do you decide what level of DA or analytical rigor each decision should receive? Decision Strategies recently addressed this issue with the purchasing department of a client that was challenged by their Board to add more strategic thinking and DA to their day-to-day decision-making processes. This was daunting; purchasing organizations are faced with hundreds of decisions as markets, supply, demand and order volumes fluctuate. The method developed can be used as a model for applying a DA approach to large volumes of decisions.

William J. Haskett – Decision Strategies, Inc.

Stranger in a Strange Land: Decision Support Techniques on the Project Management Planet

This is a case study of the quest of a multi-billion dollar mega-project to bring its cost and schedule variance under control. The standard deterministic advocacy and objective approach to risk management had resulted in consistent failing of project mileposts and what they interpreted as extreme cost overrun. While a complex risk register had been created, initial attempts at uncertainty modeling lacked any sort of Subject Matter Expert de-biasing, valid range estimation with cross-element correlation, or consistent event dependency. Phase-one assistance provided a reliable estimation process, interview skills training of influencers and local decision support personnel, and elicitation of a new ostensibly more valid cost and schedule forecast.

Session 4 – DA IN HEALTHCARE TREATMENT DECISIONS

Chair: Rob Kleinbaum, Rak & Co

Larry Neal, Chevron

Decision Analysis and Medical Decisions – A Personal Journey

In the fall of 2012, I was diagnosed with prostate cancer. In this time of need, I fell back on the decision analysis skills I had developed over 25 years of analytical work. The structured and logical approach helped tremendously with the difficult decisions I had to make. With the clarity generated using the decision tools, I headed into the treatment phase with a very high degree of confidence in my choices and an unambiguous understanding of the landscape before me then, and now. This presentation highlights the successes, mistakes, pitfalls, and lessons learned from this lifetime experience.

Jeffrey Keisler, University of Massachusetts Boston

Hindsight is 20/20

Following an injury, I faced a series of medical decisions. I certainly wanted them to be rational decisions and used my DA knowledge as best I could. In this talk, I will reflect on how that process went and what I learned about decision analysis from it.

Rob Kleinbaum, Rak & Co
Ian Mutchnick, MD, MS, Korsair Children's Hospital

A DA on the Use of Anti-coagulants for Children with Traumatic Brain Injuries (TBI) or "I Really Hate Bleeding!"

The protocols for using anti-coagulants for adults with TBI are well established but there is still no consensus on the decision rules for children. The trade-off is the risk of a blood clot versus the risk of uncontrolled bleeding in the cranial cavity. We use decision analysis to shed insight on the risk/reward profiles of the different choices. But the interesting story here is not the treatment decision, but how hidden assumptions and fears affect doctor's decisions and perceptions of risks. Another issue is that trauma surgeons, who take the lead in developing the protocols, and neurosurgeons, who bear the costs if something goes wrong, have different perspectives on the relative risks. These have important implications for physician acceptance of change and innovation. For decision consultants, it is a powerful example of how proper framing requires different approaches than are typically used.

Session 5 – CASES IN GOVERNMENT PORTFOLIO DECISION ANALYSIS

Chairs: Igor Linko, US Army Research & Development & Jeffrey Keisler, University of Massachusetts Boston

Jonathan Schuldenfrei, Deloitte

Portfolio decision analysis for U.S. Navy energy projects

This talk will present a recent application of Multi Attribute Decision Analysis in the context of the Department of Defense (Navy). The agency was seeking to prioritize its portfolio of energy projects taking into account cost savings as well as soft benefits including environmental sustainability and energy reliability to critical assets. The portfolio selection problem was further complicated by regulatory requirements and complex project interdependencies. Deloitte developed a desktop analytics tool to help stakeholders decide which projects to fund. In addition to the tool, the frame, constructed scales, outcomes, and resulting business case improvements, will be discussed.

Jason Link, Ecosystem Management

Decision Analysis Tools and Fisheries

Natural resource management, such as is done for living marine resources, is usually done with very limited human (i.e., technical, data, analytical, fiscal, and even political) resources. Hence the need to prioritize is critical. Here I describe the general protocols and procedures executed in fisheries management to familiarize decision analysis practitioners what the main issues are in the field. Then I give examples of portfolio and risk analyses that have been or are beginning to be done in a fisheries context, to better and more efficiently use limited human resources and to identify key areas of risk. I conclude by noting the main lessons learned, beyond just technical details of the decision analysis, and how those could be applied to other fields.

Igor Linkov, US Army Engineer Research and Development

From Risk to Portfolio and Resilience Analysis for Emerging Threats

In response to rapidly changing threats posed to increasingly complex socio-technical systems, many in the government and private sector have called for protection through risk-based standards. However, given the nature of these dynamic and uncertain threats, traditional risk assessment techniques may not be sufficient. Instead, there is a critical need for an integrated approach in which decision analytic techniques are used to assess evidence-based data with the values and preferences of decision makers. This presentation will illustrate needs and applications of decision-analytical tools, including portfolio analysis for solving complex challenges presented to US Army Corps of Engineers Risk and Decision Science Team. Case studies will include risk-based prioritization of chemicals and nanomaterials, use of Value of Information and portfolio tools to guide research and select management alternatives in environmental and infrastructure applications. Finally, the need for transition from risk to resilience will be discussed.

Session 6 – SURPRISING VALUE CREATED BY FRAMING

Chairs: Ellen Coopersmith, Decision Frameworks - Matt Fitch, Chevron - Jerry Lieberma, Endeavor Management

Ellen Coopersmith, Decision Frameworks

Feeding the Frame – the Power of Oracle Trees and Other Tools to Feed the Frame

Our traditional framing steps are robust and continue to serve us and the managers and teams we support well. But what other tools are out there that "feed the frame" and when might they be useful? The "Oracle Tree" is one such tool, which is dead easy to use and provides vast insight to certain decision problems. This short presentation will introduce the beloved oracle tree, and demonstrate its simple use, insight and richer frame which resulted in a case study format.

Somik Raha, SmartOrg

Experimenting with Values

What is the purpose of your organization? What is the purpose of your life? In an incredible story, these questions got us unstuck in a framing exercise where we were unable to make any progress with the traditional DA framing tools. Exploring intrinsic purpose is unfamiliar territory, and we were amazed by how much it unlocked the creative juice of an organization, gave dignity to their work and transformed their frame. Along the way, a $2 million portfolio turned into a $30 million portfolio. That story, and other experiments in mapping the values of organizations will be shared. A reformulation of the six elements of decision quality along the head and heart dimensions will also be offered.

Jim Weller, Endeavor Management

The value of simple elegance - Framing during Project Execution

While Decision Analysis has become more accepted to use on large strategic decisions, such as design alternatives on oil and gas mega projects, would taking time to apply the same Decision Analysis approach on a myriad of smaller decisions during project execution be accepted by project manager or decision executive? Not likely! What if a simple elegant Decision Analysis approach during project execution took little time or effort, would it be accepted? Could it add significant value? Might there be other applications?

Charles Alsdorf, Deloitte

Decision Framing: Let's Improvise

As decision analysts, we often state managers "open Excel too soon," meaning they put together the business case without doing a thorough job framing the decision. But gathering a stakeholder team and asking framing questions does not automatically yield robust framing results. The corporate culture, governance and incentives can get in the way. Using improvisation games developed by actors and applied to business leaders can help create the environment for more productive (and fun) group framing discussions. Based on a case study from the mining sector in South Africa, we will provide an example of how improvisation and role playing can yield surprising and important insights about the risks underlying a $100million mine expansion decision. When the board of directors was presented with the results of this analysis, they were surprised by the insights and requested all major capital projects be evaluated this way.

Jerry Lieberman, Endeavor Management

Why Calculate the Value Proposition?

Early in Framing it can help to develop a clear and explicit understanding of the project value proposition, namely a clearly thought out and articulated description of the value proposition with a rough value calculation. This can be a "back of the envelope" calculation to a simple DA financial model with a few key attributes. Uses include decisions on continuing the project and prioritization in a project portfolio. It can also dramatically change the project structure. These ideas are illustrated with a specific example.

Session 7 – INCENTIVE SYSTEMS – FACILITATED DIALOGUE

Chairs: Reidar Bratvold, University of Stavanger & Dave Matheson, SmartOrg

Session 8 – NEXT BIG CHALLENGES FOR DECISION PRACTITIONERS

Chair: Pat Leach, Decision Strategies

Session 9 – DAAG BUSINESS MEETING & PLANNING DAAG 2015