

DAAG 2017 CONFERENCE

March 15-17 New Orleans, Louisiana, USA



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Conference

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Day 1: Wednesday, March 15

Society of Decision Professionals Workshops

WORKSHOP 1: Value-Focused Decision Making

Instructor: Ralph Keeney

Time: 8:00am – 12:00pm

Abstract:

This workshop addresses five key aspects of good decision-making:

- thinking about first things first, specifically identifying your values for any decision to describe what you hope to achieve before beginning to solve it.
- taking more control of your decision problems that occur, by creating alternatives better than those initially available,
- being a proactive decision maker, by creating your own decisions, referred to as decision opportunities, to raise your quality of life above where it currently is,
- removing constraints of others on alternatives that you desire to pursue, and
- providing a consistent guide for all of your decisions by describing how to identify, organize, and use your strategic life values.

Good decision-making requires skills that can be practiced and improved. Concepts and procedures to develop the decision-making skills mentioned above are thoroughly described and illustrated by numerous real applications.

About the Workshop Leader

Ralph Keeney

Ralph L. Keeney received Ph.D. from the Massachusetts Institute of Technology. He is Research Professor Emeritus of Business Administration, Duke University, and Research Professor Emeritus of Industrial and Systems Engineering, University of Southern California. His areas of expertise are the decision sciences, risk analysis, and systems management. He is an authority on decision analysis, decision making with multiple objectives, and value-focused thinking. During his professional career, Dr. Keeney has consulted on a wide range of decisions including corporate management problems, public policy, environmental problems, and energy decisions. He has been a consultant for several organizations including Fair Isaac, Seagate Technology, American Express, British Columbia Hydro, Pacific Gas and Electric, BC Gas, Kaiser Permanente, Hewlett-Packard, the Electric Power Research Institute, Greater Vancouver Regional District, Energie Baden-Wuerttemberg AG (Germany), Ministry of Public Works (Mexico), International Institute for Applied Systems Analysis (Austria), U.S. Department of Energy, U.S. Environmental Protection Agency, U.S. Department of Homeland Security, and U.S. Army Corps of Engineers. Professor Keeney's books, which have been translated into numerous languages, include *Decisions with Multiple Objectives* with Howard Raiffa (1976, 1993), *Value Focused Thinking: A Path to Creative Decisionmaking* (1992), and *Smart Choices: A Practical Guide to Making Better Decisions*, with John S. Hammond and Howard Raiffa (1999). He recently received an honorary doctorate from the University of Waterloo in Canada and is a member of the National Academy of Engineering of the U.S.

WORKSHOP 2: Valuing Information – Sharpening Skills

Instructor: Ellen Coopersmith and Luis Mendoza

Time: 1:30pm – 5:00pm

Abstract:

Businesses are often faced with technology advances which have the potential to “change the game” ...execute their business in a better, faster or cheaper manner. Unfortunately, risk is often associated with the use of some new technologies, making the decision to deploy difficult. When this occurs, testing or piloting the technology prior to full scale implementation may be considered. This workshop introduces a practical, repeatable approach to framing and evaluating test or pilot decisions. Faced with a new technology case example, attendees will practice framing testing options, with different costs associated, forecasting the amount of risk/uncertainty reduction associated with each and valuing the business case for the different tests considered.

Takeaways from the workshop:

- Understanding of the fundamentals of valuing information
- Step-wise workflow to value of information (VOI) decision problems
- Means to conduct “uncertainty reduction” assessment interviews
- Introduction to uncertainty reduction vs. test cost plots
- Decision trees to value test options considering 100% reliable and imperfect information tests

Who should attend this workshop?

Decision analysts, planners and managers supporting testing, piloting or other information /de-risking decisions.

About the Workshop Leaders

Ellen Coopersmith

Ellen Coopersmith is the founder of Decision Frameworks and a Petroleum Engineer with a degree from the Colorado School of Mines. She is based in Houston, Texas, and specializes in Decision Analysis consultation, facilitation, training, and implementation. Prior to founding Decision Frameworks in 1999, Ellen spent 16 years at Conoco, where she led their implementation of Decision Analysis in Upstream for five years. She is an accomplished technical and managerial facilitator, as well as a published and invited speaker on both the implementation and the technical elements of Decision Analysis. Ellen's passion for and focus on Decision and Risk Analysis is on skill development and on making framing, uncertainty analysis, and valuing information easy day-to-day asset management tools in our client industries.

Luis Mendoza

Luis Mendoza-Natividad joined Decision Frameworks in 2013 as a lead consultant. He holds a B.S. in Industrial Engineering from Texas A&M University, M.S. in Systems Engineering from the University of Texas at Arlington, and completed course work toward a Ph.D. in Operations Research and Decision Analysis from the University of Texas at Austin prior to joining the company.

Luis' current focus in decision analysis is decision/strategy framing, value-of-information analysis, and economic modeling and probabilistic analysis. His recent consultation includes project strategy development in acreage acquisition, exploration and appraisal, and business venture structuring. Luis' prior experience in healthcare includes the application of management sciences in decision support at the Baylor Healthcare System in Dallas, TX.

WORKSHOP 3: Building Organizational Decision Quality

Instructors: Carl Spetzler and Mazen Skaf, Strategic Decisions Group

Organized by: Bruce Judd, Strategic Decisions Group

Time: 1:30pm – 5:00pm

Abstract:

In a workshop setting, participants will learn principles and best practices for building organizational decision quality (ODQ). In facilitated breakout group sessions, we will discuss the challenges that we foresee or have faced in our own organizations, with an opportunity to learn from each other.

The workshop is built on these elements:

- A pre-course survey of all participants
 - What is the current level of ODQ within your domain in the organization?
 - What are the biggest challenges to achieving higher levels?
 - What types of decisions could benefit most
 - “Strategic” decisions that are very complex, they are worked on for weeks or months, and they shape the future of the organization
 - “Significant” decisions that are important or complex but merit only a few hours of work before they are made
- Presentations by the instructors with these themes
 - What is organizational decision quality?
 - What does it take to achieve it?
 - What are the benefits?
- Breakout group discussions on overcoming challenges identified in the survey
 - Participants will be grouped by the type of challenges they face
 - Further segmentation will be based on participants’ roles in organizations
 - Aspiring practitioners trying to sell their boss on decision quality
 - Internal consultants selling the concept to the organization’s leaders
 - Because the results of the survey will not be known until near the time of the workshop, the content of each breakout group discussion will be established immediately prior to the workshop
 - Facilitators for each breakout group will be chosen based on breakout content and facilitators’ experience levels
 - There will be a short report-back to all participants by the facilitator from each discussion
- Short case studies from organizations that have been recognized for their achievements in ODQ (for example, Raiffa-Howard Award winners)
 - The case-study presenters will be selected from among the Society’s most experienced practitioners

- The presenters and topics will be based on major themes identified in the survey or those anticipated before final survey results are in
- The case studies will be limited to 15-20 minutes each, in most cases following the breakout sessions
- Presenters should include “encouragement and cautions” on ideas reported back from breakout discussions
- Summary and Wrap-up by workshop leaders
 - The case-study presenters will be selected from among the Society’s most experienced practitioners
 - The presenters and topics will be based on major themes identified in the survey or those anticipated before final survey results are in
 - The case studies will be limited to 15-20 minutes each, in most cases following the breakout sessions
 - Presenters should include “encouragement and cautions” on ideas reported back from breakout discussions

Summary and Wrap-up by workshop leaders

About the Workshop Leaders

Carl S. Spetzler

For four decades, Dr. Carl Spetzler has helped top management create innovative new strategies that deal with the complexities of uncertainty and risk over long time horizons. Dr. Spetzler is chairman and CEO of Strategic Decisions Group and program director of the Stanford Strategic Decision and Risk Management certificate program. He frequently leads executive seminars and briefings and has published papers on strategic management, planning, and decision analysis. Dr. Spetzler received an MBA and a PhD in economics and business administration and BS in chemical engineering from the Illinois Institute of Technology (IIT). He serves on the boards of IIT and the Decision Education Foundation. In 2004, Dr. Spetzler received The Ramsey Medal, the highest honor awarded by the Decision Analysis Society of INFORMS for lifetime contributions to the field. In 2006, he was elected to the SRI Hall of Fame for his leadership in the growth of decision analysis at SRI. He is a Fellow in the Society of Decision Professionals.

Mazen Skaf

Dr. Mazen A. Skaf, partner and managing director with Strategic Decisions Group (SDG), has extensive experience in strategy, corporate development, decision process transformation, and risk management. He has advised clients in a variety of industries including energy, technology and communications, and pharmaceuticals. As several of his successful clients in the private sector took on cabinet-level appointments in the public sector, he has had the opportunity to work with them on transformative policy design in economic development, optimal resource allocation, and public-private partnerships. Dr. Skaf holds a BS summa cum laude in mechanical engineering from the University of Texas and an MS and PhD in engineering-economic systems from Stanford University. In 1998, he was elected Fellow of the Stanford Center on Conflict Resolution and Negotiation. In 1999, Dr. Skaf and his client Donald W. Spillman from Shell Offshore, Inc. received the first INFORMS Decision Analysis Society Practice award for their work in portfolio management. He is also a Fellow of the Society of Decision Professionals. Skaf is a Wall Street Journal Expert Panelist on topics related to energy. His research and work have been featured in The Wall Street Journal, CNBC, Bloomberg Businessweek, and several other publications.

DAAG Welcome Reception and City Tour at NOLA Brewery

Time 5:45pm – 9:00pm

Day 2: Thursday, March 16

Registration & Breakfast

Time: 7:30am-8:00am

Welcome

Time: 8:00am – 8:30am

Session 1: Culture

Time: 8:30am – 10:00am

Chair: Eyas Raddad, Lilly

Pat Leach: Building and Nurturing the Company Culture You Want

Abstract: Developing and sustaining a positive company culture is devilishly difficult due to a number of factors, including the fact that different types of people (liberals, conservatives, and libertarians) weight and interpret basic human values very differently. In addition, Chip and Dan Heath have shown that evidence alone very rarely causes someone to change his or her mind; there must also be an emotional appeal that makes people feel good about what they have decided to do or believe. This presentation will focus on several approaches (from Jonathan Haidt, the Heath brothers, David Snowden, and Katherine Rosback) to dealing with these complexities, so as to develop and sustain a healthy work atmosphere in one's company.

Patrick Leach has over thirty years of experience in industry and consulting, ranging from New Orleans to Indonesia, Scotland, and Houston. He joined Decision Strategies Inc. in 2004 as a Senior Consultant, and was CEO of the company from August of 2011 through July of 2016. He now works as an independent strategy consultant.

Pat is the author of *Why Can't You Just Give Me the Number?* - An executive's guide to using probabilistic thinking to manage risk and to make better decisions, which is now out in its Second Edition. He was also a Distinguished Lecturer during 2012-2013 for the Society of Petroleum Engineers (SPE). He has written numerous pieces in his blog, *The Decision Point*, regarding the need to move toward sustainable business practices and how to use the principles of decision analysis and behavioral economics to develop strategies to do so.

Pat has a B. Sci. degree in Geomechanics from the University of Rochester and an MBA from the University of Houston. He is a Charter Fellow in the Society of Decision Professionals, and holds memberships in the SPE, the International Society of Sustainability Professionals, the Decision Analysis Affinity Group, and the Institute for Operations Research and Management Science.

David Thompson: Culture and Decision Making in the Context of Alliances; Observations and Technique

Abstract: The culture of decision making within an organization necessarily changes, once an alliance is formed with another company. Making decisions in an alliance is always more complicated, however, alliances can be more effective than going it alone. The role of culture in alliance decision making will be explored along several key dimensions by someone who has personally managed billion dollar alliances over a 25 year career in the pharmaceutical industry.

David Thompson, CA-AM, is the Chief Alliance Officer at Eli Lilly and Company in Indianapolis, IN, and sits on the Board of Directors for the Association of Strategic Alliance Professionals (ASAP). David is an internationally recognized alliance architect and alliance builder, specializing in making alliances productive and profitable with a track record of: designing and operating effective and efficient alliances; successfully managing and negotiating alliance conflict; and developing high performing alliance management teams. David has published over 20 articles, conducted numerous training seminars, speaks and consults regularly on the topic of alliance management for pharmaceutical and non-pharmaceutical based companies.

Eyas Raddad: The Intersection of Culture and Quality Decision Making

Abstract: The quality of decision making is a function of the quality of the process, which in turn is a function of the context, norms and habits of individuals and organizations. The culture of individuals and organizations heavily influences these determinants. This talk will build a framework of culture and decision making based on the intersection of two frameworks: Quality Decision Making, and Dimensions of Culture. The speaker will also share personal experiences where intercultural competency was influential in elevating organizational decision making!

Eyas Raddad is a Sr. Research Advisor at the early drug development engine, Chorus. He received his B.S. of Pharmacy with honors from the University of Jordan, Amman, Jordan, his Ph.D. in Pharmacokinetics/Pharmaceutics from the University of Georgia, Athens, Georgia, USA, and more recently an M.B.A. from the Massachusetts Institute of Technology, Cambridge, USA.

He helped advance more than 50 novel therapeutics in discovery and development stages, where he utilized various modeling techniques to aid decision making. His current research focus includes translational therapeutic research and the application of quantitative and decision analytic methods in drug research. Eyas is also a champion of diversity and inclusion. He chairs an Employee Resource Group called Africa, Middle East and Central Asia (AMECA) at Lilly, and is a vocal leader of inclusion in the city of Indianapolis!

Session 2: Risk Assessment and Management

Time: 10:30am – 12noon

Chair: *Phil Beccue, White Deer Partners, Inc.*

Rob Lazenby: Refining Tier 3 Case Study

Abstract: New regulations are often the impetus for change within refineries, and the optimal solution may not be the obvious one. This case study will explore the selection of the Preferred Alternative for a Canadian refinery's strategy to meet new Tier 3 gasoline specifications. The presentation will show how the project team's use of DA techniques led to the selection of a solution that was not originally identified and simplified the analysis required to support the decision.

Rob Lazenby is a Consulting Decision Analyst in the Downstream Technology & Services department of Chevron Energy Technology Company. Rob has been a Chevron employee for 31 years and has held a wide variety of positions, primarily in the downstream petroleum realm. In addition to providing Decision Analysis support, Rob has practical experience with Facility Design, Project Management, Refinery Operations, Oils Planning, Refinery Process Modelling, and Linear Programming. Rob has a Bachelor of Applied Science (Mechanical) degree from the University of British Columbia and is a registered Professional Engineer with the Province of British Columbia, Canada.

Cari DeLoa: The Opportunity and Challenges of Predicting Employee Turnover

Abstract: Increasing employee retention starts with understanding why they leave in the first place. The ability to identify the most relevant risk factors and key attributes that influence employee attrition can be extremely beneficial to organizations in uncovering potential problem areas and implementing business strategies that help retain key talent and mitigate regrettable turnover.

The discussion will focus on the constructs included in Genentech's predictive turnover model, the pursuit of available data that reflect those constructs, and the opportunities and challenges associated with the model and its usage. By applying predictive analytics to employee-related data, we can drive decisions that enhance people and business outcomes, and improve the employee experience.

Cari DeLoa is member of the People Analytics team at Genentech, a leading biotechnology company that discovers, develops, and commercializes medicines to treat patients with serious or life-threatening medical conditions. In her role as data engineer, Cari is responsible for building and maintaining the data infrastructure that enables a data-driven approach to informing Genentech's people practices, programs and processes.

Cari's passion for fueling drug development began at the University of California, San Francisco School of Medicine where she conducted lab and clinical research, and gained experience with generating, managing and modeling complex and heterogeneous datasets. She initially joined Genentech in 2007 as a member of the Biometrics group and applied her database and data warehousing skills to Genentech's oncology, neurology and immunology programs in both early and late-stage development. Cari's transition into People Analytics was driven by a strong appreciation for the people who are dedicated to preserving and improving the quality of human life.

Cari is a published author and a frequent speaker at industry conferences, at professional development forums, and across all levels of the Genentech/Roche organization. She has a degree in Molecular and Cell Biology with an emphasis in Neurobiology from the University of California, Berkeley.

Phil Beccue: Oil Market Disruption Risks

Abstract: Estimating the size and duration of potential future oil disruptions are critical to determining the value of the U.S. Strategic Petroleum Reserve (SPR) and its desired size. We will discuss a recent risk assessment given by leading geopolitical, military and oil-market experts who provided their expertise on the probability of different events occurring, and their corresponding link to major disruptions in key oil market regions. A structured framework developed through decision and risk analysis techniques provided an efficient method to quantify the complexity surrounding oil disruption scenarios in a transparent and traceable logic.

Phil Beccue is the founder of White Deer Partners, Inc., a consulting firm specializing in the application of decision analysis, financial modeling, portfolio optimization, and risk analysis to strategic business problems. As a decision analysis practitioner and consultant, Phil has helped companies develop corporate and asset strategies and improve portfolio management and business operations. Phil was a consultant with Applied Decision Analysis for 9 years, and led internal teams at Amgen and Baxter for 12 years in portfolio management and decisions analysis projects.

Phil's consulting and executive teaching include work for international corporations, small businesses, and government agencies. He has trained over 1000 managers and senior executives on the principles and

processes of strategic decision-making. He is a frequent speaker in executive decision programs, won the Decision Analysis Practice Award, is a contributing author of *Advances in Decision Analysis*, a founding fellow of the Society of Decision Professionals, and served on the leadership council of the Decision Analysis Society. He has received degrees from Westmont College in liberal arts and Stanford University in Management Science Engineering.

Lunch / Practice Award Presentation

Time: 12:00pm – 1:00pm

Soy to the World: A Bayesian Method for Selecting Elite Varieties of Soybean

Authors: Joseph Byrum, Jack Kloeber, Tracy Doubler, Greg Doonan, Craig Davis, Peiran Zhao, Emilia Silebi
Presenters: Jack Kloeber, Emilia Silebi, and Peiran Zhao, Kromite LLC

Abstract: In agriculture R&D, a new variety's genetic contribution to higher yield is difficult to separate from factors of soil, insects, weather, or agronomic practices. Varieties are therefore grown at multiple locations, downselecting over 4 years. Syngenta, in collaboration with Kromite, has developed a generalizable method which helps soy breeders find the genetic winner using science and Bayesian updating. The increased accuracy leads to better decision making and higher yield.

Jack Kloeber is a retired LTC who began Decision Analysis work at BMS and then J&J after retiring from the Army. He is past president of SDP and is the Principal of Kromite LLC. Jack received his Ph.D. in Economic Decision Analysis from Georgia Institute of Technology and Master's in Industrial Engineering from Lehigh University.

Emilia Silebi began Decision Analysis work as a Statistical Consultant at Kromite LLC. She graduated from Lehigh University with a Master's Degree in Statistics.

Peiran Zhao began Decision Analysis work as an Analyst at Kromite LLC. He graduated from Lehigh University with a Master's Degree in Industrial and Systems Engineering.

Session 3: Facilitation and Collaboration

Time: 1:30pm – 3:00pm

Chairs: Pat Leach, Independent Consultant

Elayne Ko & Charles Persinger: The Value and Danger of “Story” in Getting to Commitment to Action

Abstract: At times, clarity and robustness of analysis does not translate to commitment to action; needless to say, the underlying reasons can be numerous and wide-ranging. This presentation explores the potential value of integrating “story” to augment Decision Analysis tools to facilitate the process towards commitment to action; in addition, the presentation highlights the potential dangers “story” can pose to the ability to achieve overall decision quality. The presenters will include their observations, illustrative examples and approaches as decision analysis practitioners at two different pharmaceutical companies and they also seek to engage the Decision Analysis community as they further explore this topic.

Elayne Ko currently holds a Director position at the Portfolio and Decision Analysis (PDA) group within Pfizer, Inc. She has over 15 years of experience in applying decision analysis to investment decision-making under uncertainties. Her focus is primarily within the pharmaceutical industry; in particular, drug research and development (R&D) decisions, long-term planning, and disease area/portfolio prioritization. She works with both the R&D teams and senior management making funding decisions. Elayne has worked – in the consulting and corporate settings – across several industries including healthcare information technology, oil & gas and mining. Prior to Pfizer, Elayne held positions as Portfolio Manager at Siemens Health Services Strategy Group, Manager at Deloitte Financial Advisory Services LLP, and Senior Consultant within the Applied Decision Analysis group of PricewaterhouseCoopers. Elayne obtained a BSc in Management Sciences and MSc in Decision Sciences from The London School of Economics.

Charles Persinger is a Research Advisor in Decision Sciences at Eli Lilly and Company. Charles joined Lilly's Decision Sciences department in 2002 after being exposed to the field while getting his Master's in Business Administration. He has 15 years of experience consulting with teams and decision makers across Lilly on complex and challenging drug-development decisions. He also currently leads the department's Decision Consulting practice and probability assessment process. Prior to his MBA and joining Lilly he was an engineer designing golf clubs at Mizuno and Ben Hogan. He is a "Lead Practitioner" in the Society of Decision Professionals and holds a B.S. in Engineering Science and Mechanics from Virginia Tech, an MBA from Duke University and a Professional Certificate from the Strategic Decision and Risk Management program at Stanford.

Karen Jenni: Facilitating collaboration across disciplines and organizations to enable integrated science modeling.

Abstract: The U.S. Geological Survey conducts and publishes assessments of the Nation's natural resources: energy and mineral, water, and biological resources. Enhanced information is needed to make societal choices and decisions: each of these assessments provides valuable data for land managers, although the different focuses, scale and scope, and analytic approaches make simple integration of results impossible. We will discuss the use of decision quality principles and tools that we are using to increase collaboration and integration as we develop an enhanced set of products - a multi-resource analysis -through integrated modeling of the full suite of natural resources and the economic and societal values associated with those resources.

Matt Kurtz: Panel Discussion- Collaboration Between DA and Functions – the evolution of DA relationships within the organizations it supports

Debora Achang, Chevron
Jay Andersen, Eli Lilly
Elayne Ko, Pfizer
Frank Koch, Koch Consulting

Abstract: During this panel discussion, Decision Analysts from various industries and generations will discuss the ways in which DA has evolved over its history to best engage and inform decision makers. We will feature early career, mid-career, late career, and retiree perspectives and will encourage dialogue with the audience.

Matthew Kurtz is currently the Cost Engineering and Project Services Manager for Chevron's Tahiti Vertical Expansion (TVEX) Project. He has served in this role for three and a half years prior to which he worked

as a Decision Analysis Advisor in Chevron's Gulf of Mexico Business Unit. Matt has had assignments in Finance, Planning and Strategy, Decision Analysis, and Major Capital Projects and is passionate about high quality decision making, remaining actively involved in the Society of Decision Professionals even though no longer working as a Decision Analyst.

Session 4: Information Value

Time: 3:30pm – 5:00pm

Chair: *Jeremy Brann, Shell*

Pete Naylor: Making Better Appraisal & Development Decisions Using Decision Risk Analysis & Value of Information

Abstract: Behavioural science suggests that human nature favours decisions that satisfy (good enough is good?), not necessarily those that optimise. Often value is left on the table, particularly when risks & uncertainties are involved. More than fifty years ago an approach was born which helps to overcome this human limitation, namely Decision Risk Analysis (DRA), which helps us to optimise not just survive.

DRA is a structured process involving both facilitation and modelling that helps stakeholders optimise their decision making in the face of risks and uncertainties. Decisions come in all sorts of shapes and sizes and so does the best way to optimise the chosen value measures. This presentation introduced DRA and then focuses on one item in the toolkit known as Value of Information analysis (VOI). VOI is an acronym used by many, but maybe understood by few. The when, why and how of VOI will be explained, so hopefully, by the end of this talk the listeners will expand the ranks of the 'few'.

If you are facing a number of decisions where outcomes are uncertain and there is an opportunity to acquire additional information which costs money and/or time, then you should consider undertaking a VOI analysis and this talk will be of interest to you.

Pete Naylor has a Physics BSc, a Chemical Engineering PhD and is a Chartered Scientist, a Chartered Engineer and a Fellow of the Institution of Chemical Engineers. He has more than 32 years of experience in oil & gas and for the past 17 years has led DRA studies to optimise significant investment decisions. He also leads Project Risk Management studies helping managers to achieve their objectives on time and budget. Pete has worked within integrated teams on major decisions including field appraisal and development strategies, refurbishment of facilities and asset integrity management. He has presented widely and has published more than 40 papers.

He lives by the sea and likes most water sports, cycling and spends his free time socialising with friends and family.

Emily Pindilli: The Value of Streamgage Information: A case study evaluating the use and value of streamgage data for culvert design and operations

Abstract: Streamgages provide geospatial streamflow information that delivers extensive benefits for purposes as diverse as issuing flood warnings to monitoring environmental conditions to determining recreational potential. This presentation will describe a case study that considers the use and value of

streamflow information for the design and operation of culverts. The analysis considered the full chain of information from collection of data to processing and dissemination to its use in decision-making.

Dr. Emily Pindilli is an Economist and the Natural Resource Economics theme lead at the U.S. Geological Survey's Science and Decisions Center in Reston, Virginia. She has a B.A. in economics from James Madison University, a M.S. in environmental science and policy from George Mason University, and a PhD in environmental policy focusing on environmental economics from George Mason. Dr. Pindilli has nearly fifteen years of experience specializing in economic and policy analysis to support energy and environmental projects. At USGS, she focuses on a diverse portfolio of environmental and informational economics research topics including: the value of scientific data; ecosystem services assessment and valuation; methods to integrate multi-disciplinary analyses to support land use decision-making; lifecycle analyses of resource development and conservation; and environmental markets. Dr. Pindilli utilizes standard and innovative approaches to conduct non-market valuation. Most recently, Dr. Pindilli completed a primer on biodiversity and habitat markets. She is currently pursuing research on quantification tools and enabling information to support biodiversity and habitat markets. Dr. Pindilli has ongoing work looking at the value of the USGS streamgage network. This includes considering the users and benefits of streamflow information for engineering, recreation, and water consumption. She is principle investigator (PI) on a project assessing the ecosystem services and values associated with the Great Dismal Swamp National Wildlife Refuge which includes the analysis of recreation, carbon sequestration, wildfire mitigation, and flood avoidance. This project considers both baseline and potential future services given different scenarios. She is conducting similar work at the Ding Darling National Wildlife Refuge and for the Chesapeake Bay watershed focusing on floodplain ecosystem services. Dr. Pindilli recently completed an economic analysis of the costs of agricultural best management practices and the potential for nutrient trading in the Chesapeake Bay watershed. Her work is focused on integrated ecologic-economic analyses and incorporating the social and earth sciences into decision-making.

Paul Papayanou: Beyond Traditional VOI

Abstract: Traditional VOI, as it is typically taught and practiced, often mischaracterizes the situation and decisions to be made. In turn, a difficult, complicated, time consuming, and typically unreliable set of assessments need to be made, and a Bayesian flip is required for the analysis. By properly framing the choices to be made after the potential gathering of information, one can often collect a different set of assessments more easily, which simplifies the process and provides more reliable analysis built on a better frame.

Dr. Paul Papayanou has been using game theory and decision theory/DA approaches in academia and the business world for more than 25 years. He received a Ph.D. from UCLA and was a professor at UC San Diego and Harvard before embarking on a consulting career with SDG, in his own practices, and for the past three years with Shell, where he is Senior DA Consultant and the lead DA/DQ SME for Shell Economics. Dr. Papayanou developed and trademarked the practical application of game theory known as Strategic Gaming®, which he has employed in his work, along with traditional decision analysis, real options, war gaming, and political risk assessment, for large and small companies in oil and gas, electric power, alternative energy, the life sciences, manufacturing, consumer goods, financial services, technology, and other industries. He has taught extensively and delivered many speeches and presentations on game theory and DA, and is the author of Game Theory for Business. He has also written numerous articles that have appeared in academic journals, books, and business publications, and is the author of Power Ties and the co-editor of New Games, a special issue of The Journal of Conflict Resolution. Dr. Papayanou is a Fellow of the Society of Decision Professionals.

Dinner / Keynote- Beth Outland- Making Music: A Thousand Tiny Decisions

Time: 6:00pm – 9:00pm

Abstract: An orchestral performance is a sequence of a thousand split second decisions simultaneously executed by dozens of independently creative individuals. Whether that results in noise, notes or breathtaking artistry is built on a cultural house of cards that is constantly evolving. What do the great ensembles of the world know about transforming notes on a page to a transcendent musical experience?

Connecting people with inspiring musical experiences that meet community needs – is the driving purpose of the ISO Learning Community (LC) developed and overseen by Beth Perdue Outland at the Indianapolis Symphony Orchestra. By understanding the needs and aspirations of the community the Learning Community team designs and delivers programs that apply the unique resources of a professional symphony in creative, engaging ways that benefit the Orchestra and the city,

Beth is passionate about Indianapolis being an extraordinary place to live and work. She is a graduate of the Stanley K. Lacy Leadership Program, and serves on the board of Leadership Indianapolis, Centric Innovation Network and has served on the Steering Committees for TEDx Indianapolis and the Music Crossroads Initiative. Beth also chairs the event selection committee for the Spirit and Place Festival. Beth is the recipient of the Edna B. Lacy Award for Community Service and Creative Renewal Fellowships from the Arts Council of Indianapolis in 2005 and 2013.

Day 3: Friday, March 17

Breakfast

Time: 7:00am-7:30am

Day 3 Kick-Off

Time: 7:30am – 8:00am

Session 5: Learning and Organization

Time: 8:00am – 9:30am

Chairs: *Elayne Ko, Pfizer and Rodger Thompson, Pfizer*

Pat Leach: Combating Polarization

Abstract: Research by Max Bazerman, Dolly Chugh, P. C. Wason, and others has shown that people naturally seek out and preferentially believe evidence that supports beliefs they already hold, and they ignore, deny, and sometimes even fail to perceive evidence that contradicts their current beliefs. Cass Sunstein and Reid Hastie recently showed that when people with similar, relatively extreme views on a subject discuss that topic in a group, the views held by the group become even more extreme than the most extreme view held by any individual prior to the discussion – and there is evidence that social media significantly exacerbates this problem. This talk will discuss these issues and conclude with possible approaches to mitigating them to help teams make better decisions.

Patrick Leach has over thirty years of experience in industry and consulting, ranging from New Orleans to Indonesia, Scotland, and Houston. He joined Decision Strategies Inc. in 2004 as a Senior Consultant, and was CEO of the company from August of 2011 through July of 2016. He now works as an independent strategy consultant.

Pat is the author of *Why Can't You Just Give Me the Number?* - An executive's guide to using probabilistic thinking to manage risk and to make better decisions, which is now out in its Second Edition. He was also a Distinguished Lecturer during 2012-2013 for the Society of Petroleum Engineers (SPE). He has written numerous pieces in his blog, *The Decision Point*, regarding the need to move toward sustainable business practices and how to use the principles of decision analysis and behavioral economics to develop strategies to do so.

Pat has a B. Sci. degree in Geomechanics from the University of Rochester and an MBA from the University of Houston. He is a Charter Fellow in the Society of Decision Professionals, and holds memberships in the SPE, the International Society of Sustainability Professionals, the Decision Analysis Affinity Group, and the Institute for Operations Research and Management Science.

Chris Dalton: A "Cap & Trade" Approach to Assessing Technical Success Probabilities in Pharma

Abstract: This talk will discuss probability assessment in the context of pharma/biotech R&D portfolio management, including the role of historical data and project-specific adjustments. An approach to tailoring probabilities while respecting aggregate benchmarks will be proposed and tried out in a group exercise.

Chris Dalton is CEO and co-founder of Syncopation Software, the publisher of the DPL family of decision support software products. Mr. Dalton has over 15 years of experience consulting in decision analysis, risk analysis, real option valuation and scenario planning. He has advised a variety of blue chip clients in the pharmaceutical, electric power, and oil & gas industries in proven methods to improve performance and reduce risk. His focus is on engagements creating decision systems and processes which leverage management science and technology to improve decision quality on an ongoing basis.

Prior to co-founding Syncopation, Mr. Dalton held positions with the PricewaterhouseCoopers Valuation & Strategy group, and Applied Decision Analysis, Inc.

He holds a B.Sc. in Mathematics from Cal Poly and an M.Sc. in Applied Mathematics from Carnegie Mellon.

Chris Lang & Naoki Shimoda: On the path to Organizational Decision Quality - Successes and Challenges of an Electric Cooperative

Abstract: Golden Spread Electric Cooperative (GSEC) began its journey to Organizational Decision Quality in 2015, focused on using Decision Quality as a foundation for integrating decision making, risk management, and strategic planning. This presentation will highlight their journey thus far, with a focus on the pitfalls and successes encountered, as well as the challenges that remain in the quest to truly integrate decision quality into their corporate culture.

Chris Lang is currently the Vice President of Risk & Compliance at Golden Spread Electric Cooperative (GSEC) in Amarillo, Texas. Chris joined GSEC in June 2010 and has nearly 20 years of experience in power plant operations and the energy industry. He is currently responsible for a team that provides risk services to the cooperative, including enterprise risk management, enterprise compliance, business continuity, and internal audit. Additionally, Chris is responsible for the Golden Spread Decision Quality (GSDQ) program.

Prior to his current role at GSEC, Chris was the Manager of NERC Compliance, responsible for all aspects of GSEC's and its Members' Electric Reliability Organization (ERO) compliance programs.

Before joining GSEC, Chris served as a commissioned officer in the United States Navy, running nuclear power plants onboard submarines and land-based training facilities, and teaching sailors and officers electric and steam plant operations. Chris also taught submarine combat tactics, intelligence-surveillance-reconnaissance, ship driving, and SEAL delivery and retrieval.

Chris holds a Bachelor of Science degree in Electrical Engineering from the University of Texas at Austin, and a Master of Business Administration from West Texas A&M University in Canyon, Texas.

Mr. Shimoda leads SDG's Global Energy and Environment Practice. He has 22 yrs of consulting experience, especially in the areas of strategy development, asset/project portfolio evaluation, and risk management in various parts of energy value chain including upstream & midstream Oil and Gas, Power Generation, Transmission and Distribution, Trading and Marketing, and Retail. Mr. Shimoda frequently works with both U.S. and Japanese clients in the energy and commodities sectors. He also works with companies in a range of other industries from pharmaceutical to electronics to automotive, advising them on R&D strategy, portfolio evaluation and business strategy development.

Before joining SDG, Mr. Shimoda was a systems engineer at Nippon Telegraph and Telephone Corporation. Mr. Shimoda received an MS in engineering-economic systems from Stanford University and a BS in electronics and telecommunication from Waseda University in Tokyo, Japan.

In addition to his role at SDG, Shimoda is vice president of strategy for ORENCO Hydropower, Inc., a startup venture of SDG. Founded in 2010, ORENCO Hydro develops low-cost, low-impact hydropower generation assets at existing dams and waterways. It assembles and manages a portfolio of hydro projects and provides engineering, equipment procurement, and financing for ongoing projects.

Session 6: Portfolio and Strategy Development

Time: 10:00am – 11:30am

Chairs: *Leslie Lippard*

Nick Wallat: Nexen's Long Lake Business Continuity Program – Strategic Change from Emergency

January 15, 2016 marked “One of the Darkest Days in Nexen’s History”, in which an explosion at the Long Lake Oil Sands Facility claimed the lives of two employees. Following this tragic incident, the Business Continuity Program was started to assess strategic go-forward options for Long Lake.

This talk will highlight some of processes, methodologies and analysis that drove strategic change from an emergency situation.

Nick Wallat is a Decision Analysis Practitioner for Nexen Energy based in Calgary, Alberta, Canada.

Nick began his career developing a technical foundation in petroleum engineering within Nexen’s Oil Sands Division. He decided to broaden his view on business (and life!) through moving across the globe to embark on an MBA in Barcelona, Spain. Returning to Nexen, Nick led capital planning and capital management for Oil Sands during the time oil prices dropped from \$110/bbl to \$50/bbl. Nick joined Nexen’s DA team in 2015 and while he is a relative newcomer to the community, Nick appreciates the structure, logic and rigor that Decision Analysis brings to our toughest problems.

When he’s not solving problems for Nexen, Nick can likely be found talking about beer, tennis or basketball, likely over a beer.

Leslie Lippard: The relationship between Portfolio and Organizational Development- A Case Study

Abstract: Process and Culture are intertwined—changing one brings about changes in the other. This talk will use case studies to examine the relationship between the two and to highlight some opportunities and challenges.

Leslie Lippard is an Associate Director with Genentech’s Research and Early Development Portfolio and Pipeline Planning Group. Since joining Genentech in 2014, she has split her time between working on development strategy and organizational change.

Prior to joining Genentech, she was an entrepreneur(Codornices Consulting, SageSpring Partners), a market researcher (AlphaDetail, now Quintiles), a strategy consultant (SDG) and an Engineer (Xerox, Spectra Physics). When she is not in the office, she can be found running, teaching kid’s judo or keeping bees on her roof.

Lunch / Laboratory Sessions

Time: 11:30am-1:00pm

Chairs: Jim Felli

Lab A: Frank Koch: The Power of Decision Skills. We will explore experiments that bring Decision Quality in the general population, including experiments that have been done and those that might be done. While we will share experiences collaborating with the Decision Education Foundation, our broader frame will be how we, as individuals and as a professional society, might increase the awareness and the impact of Decision Quality by supporting people in making choices.

Lab B: Carl Spetzler: Assessing Organizational Decision Quality (ODQ). The Board of Examiners for the Raiffa-Howard Award has approved an assessment instrument that will be used to guide the evaluation of applicants for the Raiffa-Howard. This tool will also be made available from the SDP website to be used by any organization that wants to assess their state of ODQ on their organization's journey. We will demonstrate the assessment instrument. Then we will engage the participants in this LAB session in assessing the state of ODQ in an organization that they know well.

As SDP members become familiar with the instrument, they will be able to use it to identify gaps and plan their organizational journeys.

Lab C: Brian Putt: Probabilistic Analysis and Decision Making – Brian Putt will discuss through examples using Excel, the need for probabilistic analysis over deterministic decision making. Value is achieved by understanding the expected value rather than the “most likely” or most discussed deterministic value. Alternatives have different risk distributions that need to be understood to make a good decision(s). Also, when properly framed to include potential development options or information gathering opportunities, additional value can possibly be gained.

Lab D: Somik Raha: A New Approach to Decision Quality: Purposeful and Meaningful Decisions

Decision Quality (DQ) has focused exclusively on clarifying and achieving our purpose while treating the heart solely as a source of biases that need to be circumvented. We build on the good work of DQ by according equal importance to both the head and the heart, or purpose and meaning, and offering an updated framework that integrates the two dimensions. This lab has been designed for those who are familiar with essential DQ elements as well as those who have never engaged with DQ. It offers an experiential introduction to the head and heart dimensions of decision-making in a reflective manner and engages participants on how they might apply it in their work, and how they might further improve the framework. Participants will need to bring their headphones and their laptop or tablet.

Session 7: Coaching and Knowledge Transfer

Time: 1:00pm-2:30pm

Chairs: Jordan Stephens, Intel and Jenn Harrington, Intel

Rodger Thompson: I learned about DA from That!

Abstract: This talk will cover lessons learned from over 20 years of DA practice. Some of the tips that will be covered are:

- Risky risk profiles
- How to show a decision “bush” (don’t)
- How to effectively share strategy tables with senior management
- Optimal number of decision metrics to show
- Making the point up front
- Making sure to use the DA snaking process...

Rodger Thompson is the Sr. Director / Team Leader for the Innovative and Essential Products Business Unit in Pfizer’s Portfolio & Decision Analysis (PDA) group. This group is accountable for supporting key decisions, tradeoffs, and strategies across the organization.

Rodger has extensive experience in both the Oil & Gas and Pharmaceuticals industries, spending 20 years at the Atlantic Richfield Oil Company, 2 years at Amgen, and 16 years at Pfizer. He has led structured Decision Analysis (DA) efforts for projects such as optimal oil field development, how to optimally upgrade to double-hulled tankers for the Alaskan North Slope fleet, helping drug development teams build effective strategies, and running major Pfizer-wide strategic planning efforts.

Having been involved in applied DA in the industry setting for about 20 years, Rodger’s current duties include leading and coaching a team of Decision Analysts who are responsible for developing optimal drug development strategies from the early, “First in Human” stage to launch strategies for new marketed drugs.

Len Falsone: A Quest for World Class DA & DQ: Sustaining Positive Change

Abstract: This Organizational Case Study will summarize our DQ journey to date. It will include our approach to making change happen, key steps we have taken, and a compilation of coaching and knowledge transfer vehicles we have found useful to sustain positive change. We hope you will find some practices applicable in your own situations.

Len Falsone has directed the decision analysts in Shell’s Upstream Americas business since 2006 as a senior member of the global Economics Discipline Leadership Team. With Shell since 1982, Len has progressed through numerous engineering, operations, management and senior leadership roles in technical, operations, commercial and corporate organizations. His decision professional experiences span the entirety E&P activity. He has been a leader in improving and transforming decision-making across the business. Len is a licensed Professional Petroleum Engineer including SPE Certification, and is a Fellow of the Society of Decision Professionals.

Margaret Barrett: Coaching - An Approach to Decision Facilitation

Abstract: Across the spectrum of decision facilitation tools/approaches, which are in your DA toolbox, which do you use most often, and are how effective are these in transferring your knowledge to develop strong internal decision capabilities and leaders? From the perspective of a Coach & Decision Specialist, this session will focus on defining and drawing distinctions between Coaching, Mentoring, and Consulting approaches, as well as exploring potential impacts of one’s approach as a Decision Analyst.

Margaret Barrett is a Senior Decision Specialist with Intel Corporation. Since joining Intel in 1996, Margaret has followed a breadth career path, enjoying many roles in manufacturing, software & services, finance, market research, product and project management, operations management, leadership pipeline analysis, and talent development at the world's premier semiconductor manufacturer. In her current role in Intel's Decision Quality Program Office, Margaret is part of a team of decision professionals who assist leaders across Intel in addressing their most significant strategic challenges.

Margaret's 20-year Intel career has spanned systems manufacturing factory planning & scheduling, software enabling & program management, strategic planning, operations management, development insights & market research in sales & marketing, executive talent management – analysis & strategy, consumer client platform decision-making, and talent pipeline architecture, development.

Prior to joining Intel, Margaret started a small business designing and creating bridal gowns, later adding a retail business supporting hundreds of weddings over 17 years.

Margaret earned her Bachelor of Science degree in Business & Administrative Studies at Lewis and Clark College, Entrepreneurial MBA at Babson College's Olin School of Business, and Strategic Decision Making & Risk Management Certificate at Stanford University.

A certified Hudson Institute Coach and active Mentor to many, Margaret's passion is investing in the development of herself and others.

Endnote: Bryan Everly

Time: 3:00pm-4:00pm

As Chief Technology Officer at Next Gear Capital, Brian Everly is responsible for directing all aspects of information technology including architecture, security and compliance, application development, infrastructure and program management.

Brian has more than 30 years of experience in the information technology sector. He previously served as Vice President, IMM Engineering & Test for Aprimo, an integrated marketing software and applications company in Indianapolis. Everly has also served as Sr. Director of Development for ExactTarget, Inc. and was managing partner for PeopleStrategy, LLC. in Fishers, IN.

A veteran of the U.S Air Force, Everly received a Bachelor of Science in Computer Science from Indiana State University.

Wrap-Up and Close

Time: 4:00pm – 4:30pm

Walking Ghost Tour – Optional

Time: 8:00 – 10:00pm (Meet at the Hotel Lobby at 7:30pm)