

# DECISION LINE

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## PRESIDENT'S LETTER

### Progress on Realizing the Promising Future



*Jatinder (Jeet) N. D. Gupta,  
College of Business,  
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After hard work throughout the academic year, summer is the time to relax, rejuvenate, and catch up in work and chores at home. It is also an opportunity to take some time off with family and friends. Therefore, I hope everyone is enjoying the warm days of summer and perhaps making progress on their personal and professional summer goals. In this spirit, the DSI Board of Directors, Home Office and various committees have been working hard to pursue the agenda items reported in the May 2017 President's Letter.

#### *A progress report of various activities*

Following the framework of alignment, agility, accuracy, accessibility, and adaptability that I suggested in the 2017 President's Letter, I would like to describe the progress made in a few initiatives under way as well as to provide an update on various activities to move DSI forward.

**DSI strategic goals and objectives:** To be aligned, agile and accurate, your DSI Board of Directors have continued the strategic planning process initiated last year under Funda Sahin's leadership. In June 2017, the Board participated in a two-day strategic planning session to create a five year plan that will outline goals with priorities, identify energy and resources required, improve efficiencies and effectiveness of operations, and set milestones for their achievement. This plan will include both short and long term goals and create a clearly defined roadmap and key performance indicators for incoming and future DSI leadership. A special vote of thanks to our Facilitator for this strategic planning session, Caron St. John, who volunteered her time and expertise to assist us in mapping our future.

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# DECISION LINE

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**DEADLINES:** October 2017 issue .....September 10<sup>th</sup>  
January 2018 issue.....December 10<sup>th</sup>

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## Vision Statement

Decision Sciences Institute creates, develops, fosters, and disseminates knowledge to improve managerial decisions for global progress.

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## Mission Statement

Decision Sciences Institute develops scholars, who produce, use, and disseminate knowledge primarily within and across information systems, analytics, and supply chain management to improve decisions involving systems, technology, and processes.

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As facilitators in teaching decision making, our job has been to help our students to learn how to make better decisions under different circumstances. One of the most prevalent cases that we use is decision making under uncertainty. These days, more than ever, we are facing an environment that information is imperfect and there exists an abundance of uncertainty about the future. Our representatives (the DSI board) that lead our organization are no exception. They have to make decisions about the future of DSI under uncertainty that will hopefully lead DSI to a better and brighter future and lead DSI to a level above others. How successful they are time will tell. It is important that you share your thoughts and ideas with them. Our collective thoughts and how we want to see the future of our organization will depend on how much we participate. To this end, the President's letter highlights the strategic focus that the DSI leaders are working on. They are *DSI strategic goals and objectives, Implementing decisions, DSI constitution and bylaws revisions, DSI Publications, information technology systems, enhancing accounting processes and program, expanded role of regions, and improving communications with members*. Furthermore, the Board is inviting you to participate in the life of your organization by serving as a volunteer, participating in our Annual Conference as presenters, session chairs, and many other capacities that are available. The President's letter will provide more details about all the aforementioned ideas.

One of the many ways that we prepare our students to be better decision makers is to help them to learn about cross-cultural understanding. With this in mind, the *International Issue* features a timely article by Professor Patricia Tehami. The article, titled "Enhancing Students' Cross-Cultural Understanding and Employability Through Storytelling," discusses how

cross-cultural training helps students to realize their shortcomings and find ways to better understand how to improve their cross-cultural understanding. This types of learning helps everyone (including our students) to be better and more effective decision makers as well as enhance their employability.

If you are a junior faculty and active in DSI, please ask a colleague or your doctoral mentor to nominate you for the prestigious Carol J. Latta Memorial DSI Emerging Leadership Award for Outstanding Early Career Scholar. If you are a mentor or know of young and upcoming scholars, please nominate them for this award. The section on Carol J. Latta Memorial DSI Emerging Leadership Award for Outstanding Early Career Scholar describes the process and dateline for applications and nominations to be sent to the DSI Home Office.

Vivian Landrum, DSI Executive Director, provides a few details about various workshops that are planned for this year's conference in Washington DC. Interesting workshops include Behavioral Research and Experimentation in Operations Management, International Live Case Workshop, Paradigm for Parity in Advancing Women Leadership in Supply Chain and Operations Management, and Presenting Business Analytic Results to Senior Managers. These are but just a few. In addition to scholarly workshops, Ms. Landrum gives us a glimpse of some worthy destinations in Washington DC. These are hidden gems that you should set aside some time to visit. Among these are the Library of Congress, the Spy Museum, the Eastern Market and much more. In another section of this issue, Ms. Landrum provides us with a brief report on the composition of DSI membership. It appears that although we have representatives from across the globe in our list of membership, by far the majority

are from the USA. As of writing of this issue, there are 1392 members in DSI. However, only about 19% of our total membership are from countries other than the USA and they represent 43 countries. If we plan to make DSI a truly global organization we need concerted efforts to increase global membership. Under the *In the Classroom Feature*, an article by Professor Pamela Rogers, titled "Emotional Intelligence and the Business Student," shares that in addition to specific discipline-based skills such as accounting, finance, marketing, and others, students need to have additional skills that make them employable. Some of these skills are Problem-Solving, Team Building, Critical Thinking, and others. She argues that in order for our students to be truly career ready, they must have these skills. Matthew Drake, the editor of *Decision Sciences Journal of Innovative Education (DSJIE)*, provides us with an update on the status of DSJIE over the past 12 months. He provides statistical data in terms of number and types of submission to this journal. In this piece, he describes specifics about the journal such as raising the profile of DSJIE, special issues and invites readers to connect with the journal and get

involved by following DSJIE on social media such as Twitter and LinkedIn. He encourages readers to incorporate insights from the articles published in the journals in their classrooms.

We all heard and watched news about the Volkswagen scandal. Professor Kirsten Rosacker, the feature editor of the Book Review, provides her take on a book authored by Jack Ewing titled: "Faster, Higher, Farther: The Volkswagen Scandal." She concludes by stating "The book offers a detailed account of the ongoing Volkswagen diesel scandal and the significant efforts directed at saving the company. It covers a wide range of topics, including but not limited to: Corporate Governance, International Trade, Operations Management, Environment Protection, the Auto Industry and it is a worthy read for anyone interested in the ever-changing landscape of international business environments."

The *Research Issue* features an interesting article titled: "An individual approach for optimizing bra design process to improve bra fit." Authors Professors Ariya "XuXu" Amoozgar-Montero and Edgar Rodriguez Ramirez propose a new system for measuring bras which combines new

technology such as 3D scanning and use of parametric modeling. They argue that their approach provides a system for designing bras that are specifically tailored to fit each individual.

In addition to special features and articles presented in this issue, we have showcased announcements and call for papers from European DSI, Northeast DSI, and Western DSI. We encourage you to send your research articles or work-in-progress to one of these conferences.

As always, I ask that you share your research, opinions, ideas, and comments with me at [mebrahimpour@uri.edu](mailto:mebrahimpour@uri.edu), or you may send it to the feature editors as shown in this section. We are always looking for thought-provoking and thought leadership articles and ideas that may not be looked upon favorably by traditional research journals.

I am looking forward to reading your articles for inclusion in Decision Line.

Maling Ebrahimpour, PhD Editor

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## President's Letter Continued

We hope to have the final DSI Strategic Plan ready to share with the membership during fall 2017.

**Implementing decisions:** As I stated in an earlier communication, one of our challenges has been the process of implementation for decisions made. While we are quite good at making decisions to move DSI forward, we are not effective in implementing and operationalizing those decisions to gain advantage from them. Now that we have a strong Home Office staff, Vivian Landrum as an able and committed Executive Director, the support and leadership of the Board, the hard work of the DSI Committees, and the availability of clear and well-defined strategic goals through the strategic planning process, I am confident we will enhance our

organizational performance and increase value to our members and the decision sciences profession.

**DSI constitution and bylaws revisions:** To be aligned, accurate and adaptable requires an up-to-date and timely constitution. Therefore, for about three years, the Board of Directors have been involved in discussing and revising the DSI constitution and bylaws. As a result of the hard work of the Board, we now have a draft of the revised constitution (that includes the necessary bylaws) that is being finalized to be sent to the members for their comments and suggestions. We intend to send the proposed draft of the revised DSI constitution to the members in September and discuss it at the Annual Conference in November 2017 in

Washington DC. Following this discussion, we will request the members to approve the revised constitution draft early in 2018. Following the approval of the revised constitution, we will finalize the revision and update of the Policies and Procedures to implement the revised constitution.

**DSI Publications:** As I shared in my earlier communication, to be adaptive and responsive to ever-changing needs require us to improve the quality of our publications. Therefore, the Board of Directors and the editor-in-chiefs of DSI publications have been working hard to prepare plans to enhance the quality of the publications and perhaps clarify and redefine the scope and editorial structure of the publications. Further, we are



## PRESIDENT'S LETTER

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working on developing plans and activities for including Decision Sciences journal in at least one of the three indices: Financial Times, Business Week, or UT Dallas List.

**Information technology systems:** To be agile, accurate, accessible and service-oriented requires appropriate information systems that will provide timely, accurate and integrated information. Therefore, with the help of an information technology expert, the DSI Home Office has been hard at work to acquire and develop the needed information technology systems.

Significant progress continues on the development of our DSI IT processes. As a result of these efforts, a restructured website and an improved member management system are near completion. We expect to unveil both in mid-July and we anticipate the new systems to be more user friendly while capturing much needed data that can define and delineate our broad member base including the member's affiliation with a specific region. Ultimately, we will also be able to host each region on our DSI website.

**Enhancing accounting processes and program:** In order to be financially responsible and more easily comply with the legal requirements of our non-profit 501(c)(3) status, the Home Office is transitioning from the Sage accounting program to QuickBooks for the new fiscal year starting July 1. This move will provide DSI with a more cost-effective system that allows for process streamlining and an increased flexibility in reporting. The additional ability to interface with other systems and easier financial management and tracking will enable the Home Office to serve the needs of the DSI regions much more effectively and efficiently.

**Expanded role of regions:** As I shared in my previous letter and as I visited various regional conferences and had discussions with the regional officers and board of directors, it became quite clear that regions are an integral part of DSI and provide an essential outreach, one of the important and significant core values to our members and the decision sciences profession. During these discussions, it also became

evident that the regions play an essential and significant role in reaching out to those members who, in addition to sharing their research results are primarily interested in instructional innovations and teaching pedagogy. Therefore, I had suggested to each region to enhance their activities to include programs in these areas, both at their regional conferences and through focused webinars, online sessions, and short workshops throughout the year. These expanded regional activities will also make DSI more accessible and adaptive in service to its members and the decision sciences profession. We are working on expanding capabilities to implement this extended role of the regions in the upcoming months and the year.

**Improving Communications with Members:** During my visits to the regional conferences, I heard the need for expanded and improved communications with members. To handle this issue and to learn about the services and activities members want from us, we are planning to conduct a survey of our DSI membership. While the Board of Directors is working on strategies and tactics to enhance and improve communications with members, we would like to hear ideas for (a) the types of communications needed; (b) the mode of communications; and (c) the frequency of such communications. Working together, we can improve and enhance the quality and quantity of communications needed for us to be effective and efficient in achieving the DSI strategic goals.

### ***An invitation to participate***

Finally, I take this opportunity to extend an invitation to everyone to participate in our Institute's activities and programs.

- **Serving the Institute:** DSI is our Institute, created by us, for us and as such nurtured by us. Each one of us is the owner of this Institute and has a 100% stake in its success. DSI will prosper and move forward only if we all contribute in success in significant ways. Therefore, I invite everyone to get involved in various DSI activities

by presenting papers at the conferences, publishing in our journals, serving on various committees and on editorial boards, holding board positions, persuading and nominating our members for various volunteer positions, and participating in various networking opportunities including being mentored or mentoring students and junior faculty members. This will also ensure that DSI is aligned, agile, accurate, accessible, and adaptable for every one of us.

- **DSI annual conference:** The DSI 2017 Annual Meeting is set for November 18 – 20 at the Washington Hilton in Washington, D.C. Over 1170 submissions were received and we anticipate this conference to be one of the best yet. Three excellent keynote speakers, several new workshops and consortia's offered and a wide range of research and teaching tracks ensure this conference will benefit those from all disciplines. Supplement with the excellent networking opportunities, knowledge gained from meeting with exhibitors, and award presentations and we have a must attend event. I look forward to see everyone there.

Above all, as I shared with you earlier, the water is warm and the swim is enjoyable. It is accessible to everyone and is quite adaptive, agile, aligned, and accurate. Thus, I renew our earlier invitation to everyone to jump in and have a good time.

Jatinder (Jeet) N. D. Gupta  
DSI President  
College of Business  
University of Alabama in Huntsville

# In Memoriam Marc J. Schniederjans, Ph.D. 1950-2017

By Ken and Julie Kendall, Rutgers University

It is with great sadness that we note the passing of Dr. Marc J. Schniederjans.

Marc passed away at the age of 66, at his home in Lincoln, Nebraska on July 18, 2017 after battling a yearlong illness. He was a lifelong member and friend of the Decision Sciences Institute. Marc was named a Fellow of DSI in 2006 and served as President of DSI from 2014-2015. He was the Wheaton Battey Distinguished Professor of Business Supply Chain Management and Analytics at the University of Nebraska-Lincoln in the College of Business Administration. Marc, who was born in St. Louis, Missouri, earned his Ph.D. and MBA from Saint Louis University. Before joining UNL in 1981, he taught at the University of Hawaii at Hilo, the University of Missouri at St. Louis, and the University of Nebraska Omaha.

Marc was a leader. Marc's areas of expertise included supply chain management, business analytics, lean management, ecommerce, and outsourcing. He served as a journal editor and was active on editorial review boards or advisory boards of over 40 journals. Marc was a leader in offering a variety of Web-based courses and his experiences are documented in several empirical studies, one of which was published in the *Decision Sciences Journal of Innovative Education (DSJIE)*. Among his outstanding service contributions to DSI, Marc served as Doctoral Dissertation Award Competition Coordinator, Professional and Faculty Program Coordinator, and as Program Chair for the Annual Meeting as well as Program Chair for the Midwest Region. Earlier this year Marc co-edited a special issue of *DSJIE* on *Developing Executive Education Programs with Online Distance Education*.

Marc was a beloved professor and won numerous teaching awards. He was an honorary member of the Golden Key honor society, the Alpha Kappa Psi business honor society, and Alpha Iota Delta, the international honor society in the decision sciences and information systems. He won the University of Nebraska Recognition Award for Contributions to Students and the College of Business Distinguished Teaching and Distance Teaching awards multiple times.

Marc was a prolific scholar. In his lifetime, Professor Schniederjans published more than a hundred journal articles including those in *Decision Sciences*, *Production and Operations Management*, and *European Journal of Operational Research*, and has authored or coauthored twenty three books including *Reinventing the Supply Chain Life Cycle*, published by the Financial Times Press, *Business Analytics: Principles, Concepts and Applications*, by Pearson, and *E-commerce Operations Management (2nd edition)* published by World Scientific Publishing.

Marc was a great colleague. Each of us published an article with Marc during our careers, but we were in different disciplines. As President of DSI, Marc was a strong advocate of the interdisciplinary nature of DSI.

Marc was a terrific friend. He would drop everything to help us if we were in need. We enjoyed his sense of humor and his eagerness to help out at a moment's notice. Marc loved spicy food and the Fourth of July. We were all great friends and solved a lot of problems during our long *Risk* and *UNO* games over the years.



Marc is survived by his devoted wife of 45 years, Jill, who is a retired schoolteacher; two adult daughters (both of whom were his co-authors from time to time); Ashlyn who is a CFP in New York City; Dara, a Ph. D. who is an assistant professor of supply chain management in Kingston, Rhode Island, one adult son, Xan, who is an electronic medical records specialist in Lincoln; two sons-in-law, Aaron and Chris, a grandson Miles, and countless Ph. D. students and friends. One of the many contributions Marc unselfishly made to improve his community was to donate two large, strikingly beautiful, original abstract metal sculptures to the Lincoln Airport to ease travelers' journeys as they said goodbye to family members or greeted them on their return.

<https://cba.unl.edu/people/mschniederjans/>

MINOO TEHRANI, EDITOR, Roger Williams University

# Enhancing Students' Cross-Cultural Understanding and Employability Through Storytelling

by Patricia Tehami, EM Strasbourg Business School-University of Strasbourg

## Introduction

The Organization for Economic Co-operation and Development (OECD) is currently working on a measurement tool designed to assess Global Competency as part of the PISA 2018 (Program for International Student Assessment). This survey is administered every three years to 15-year old pupils in around 80 countries (OECD, 2016). This new initiative should serve as a reminder that at the tertiary education level, globally minded business schools should ever more strive to fulfil their mission of preparing students with the appropriate knowledge, skills, attitudes, and values to operate effectively in a complex global environment.

Both AACSB (2016) and EQUIS (2016) accreditation frameworks require business schools to develop "intercultural sensitivity". In addition, businesses are increasingly seeking work-ready graduates trained to answer the needs of a global work environment and economy.

EM Strasbourg Business School (University of Strasbourg, France) has long placed a strong emphasis on its students' global competency and intercultural sensitivity through long-term mobility by offering one-year study abroad exchange programs to all students as early as 1994. This commitment to extending cross-cultural education to all has given rise to network partnerships for dual-degree programs. The latest is a multi-university dual-degree program, which was launched in December 2013 and is called SCRIBE 21 (Sustainable Regional Advantages in International Business for EU-- in the 21st Century).

This partnership has brought together EM Strasbourg Business School in France, the University of Adelaide and the University of Western Australia in Australia, the Corvinus University in Hungary, and Ca' Foscari University in Italy. It is jointly funded by the European Commission's Industrialized Countries Instrument - Education Cooperation Program (ICI-ECP), and the Australian government. Its overarching purpose is to enhance students' cross-cultural professional competencies and to create business synergies between Europe and Australia in the 21st century.

SCRIBE 21 features a one-year study-abroad exchange period complete with three International Intensive Weeks and a three-month professional internship. The three International Week sessions focus on enhancing students' cultural understanding and self-discovery.

As part of the final International Intensive Week for the second SCRIBE 21 cohort (17 students), which took place in Perth, Australia, in January 2017, I ran a two-hour workshop entitled "Distinctive Expat Stories – Storytelling your Way through Job Interviews". The specific approach to the workshop was a response to requests by the organizers to focus on culture and employability.

## Workshop Design and Dynamics

The workshop aimed to test a new approach to assist students to utilize their cross-cultural and self-discovery acquired knowledge to better communicate in a global work environment. To achieve this goal, the workshop was based on two main



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foundations:

1. Guiding students (Deardoff, 2011) to clearly describe their overseas learning experiences and how such experiences can enhance their employability across diverse cultures.
2. How connotative narrative structures can be efficiently used to allow both decoding and encoding of cultural and personal messages.

From metaphors to full-blown literary works, connotative narrative structures can assist students to develop their own understanding of foreign cultures and to utilize their acquired narrative competency for job-searching purposes. Specifically, metaphors are imagery-based narrative structures that rely on connotation to provide concrete representations of abstract ideas. Similarly, fables, literary and tribal myths as well as literature in general -if taken as a representation of worldviews- rely on connotative narrative structures.

Lakoff and Johnson (2003) argued, “human thought processes are largely metaphorical”. (Carpenter, et al., 2012) contended that metaphors are “an effective creative strategy for learning about the unknown and gaining a perspective on it”. As a result, this central mental mechanism is often relied upon as a creative learning tool in university courses across all disciplines.

In this workshop, the concepts lending themselves to explanations based on metaphorical constructs were foreign cultures. Gannon (2004) resorted to the heuristic power of cultural metaphors for “understanding easily and quickly” foreign cultures and cultural paradoxes to better understand intrinsic differences.

Since metaphors only highlight certain sets of cultural features while ignoring some others, metaphorical associations are open-ended and malleable. Reporting on application exercises for management students and practitioners, Gannon (2011) stated, “a metaphor is only as good as the value it creates in providing new insights and increased understanding”. For instance, he himself put forth two metaphors for China (the Family Altar and

the Great Wall) and developed one common metaphor, with variations to the theme, for two different cultures (the Spanish and the Portuguese Bullfight).

The wide explanatory and interpretative potentials of cultural metaphors is further highlighted in the questions that Gannon provided at the end of his paper (2011). The questions are designed to prompt students to:

1. Discuss the relevance of the proposed metaphors;
2. Produce their own alternative metaphors for their home countries;
3. Imagine what metaphors foreigners may associate to their countries.

In allowing for different cross-cultural viewpoints, cultural metaphors undoubtedly provide a powerful learning tool. Exercises on cultural metaphors in addition to complementary practice on cultural dimensions (Hall, 1990; Hofstede, 2010) have been extensively utilized in management courses to increase students’ awareness of cross-cultural issues in the field of management (Altman et al., 2012).

Moving beyond metaphors, the workshop added a literary dimension to the cross-cultural investigation developed through Gannon’s cultural metaphors. Literature is sometimes used as a compelling means to teach the fundamentals of leadership (Badaracco, 2006). My workshop relied on the idea that well-selected, full-blown literary works can also help to identify enduring cultural traits and to provide inspiring models for students to shape and enrich their job-searching communication.

Given my own familiarity with French and English language literatures, I selected literary works originally written in French and English. I considered that two fables by 17<sup>th</sup> century writer Jean de La Fontaine, “The Funeral of the Lioness” and “The Cicada and the Ant” (1668), would provide a fit framework enabling students to understand the high levels of “Power Distance” and “Uncertainty Avoidance” in Hofstede’s surveys. I also referred to a part-fiction, part-documentary novel by British travel writer and novelist Bruce Chatwin, *The Songlines* (1987). The book

offers an insightful approach to Australian Aboriginal thinking as well as a compelling philosophical enquiry into the nomadic streak in human kind.

In order to allow for full participation, readings and handouts were sent to the students prior to the workshop. In the first part of the workshop, the seventeen participants were divided into three bi-national groups based on their home/host country exchange situation. The groups were required to negotiate their understanding of the home/host country’s cultural specificities with a view to producing an alternative cultural metaphor based on Gannon’s book.

Having established this metaphorical ground, the students were then asked to individually track some red lines, which they were not ready to cross, in terms of “Power Distance” and “Uncertainty Avoidance”, the two main dimensions exemplified in La Fontaine’s fables.

In the second part of the workshop, the students practiced communicating on their newly enhanced cross-cultural skills and attitudes. To this end, they were reminded of the basic components and core structure of professional stories. In addition, some overarching cross-cultural skills were highlighted (e.g. code switching and resilience) in order to avoid disorderly lists of soft skills and lack of focus and consistency.

One last area for further investigation involved taking a cue from the Australian Aboriginal ‘tjuringa’, as described in the second literary artefact selected for the workshop: “an oval-ended plaque, carved from stone or mulga wood and covered with patterns which represented the wanderings of its owner’s Dreamtime Ancestor”. The students were asked to think of their own ‘tjuringa’, the knowledge associated with their journeys across countries and spaces and with the new mental paths criss-crossing their global minds.



## Conclusions

SCRIBE 21 is a selective program through which students face challenging mobility experiences (Jones et al., 2016). In my workshop, the students all performed the required pre-workshop assignments and demonstrated strong engagement and creativity. At the end of the session, they all felt better equipped to produce creative and consistent narratives about their individual cross-cultural experiences. They better understood how structure and insight was key to effective communication about their experiences overseas. The focus of the workshop on communication therefore addressed a two-fold need among students:

1. To bridge the gap between their theoretical knowledge of cultures and cross-cultural interactions and their actual experience of cross-cultural challenges;
2. To communicate in an individually distinctive manner in order to enjoy higher credibility as global thinkers and doers.

Interestingly, through one of the workshop discussions, participants came to the realization that they did not simply have to adapt to their host country's culture, but to increasingly international campus environments. This is an undisputable fact of today's academia that needs to be further taken into account in study-abroad programs. Lastly, using connotative narrative structures as a catalyst for communication is particularly appropriate for students for whom storytelling techniques are not integral to mainstream professional communication in their home countries.

Evidently, cross-cultural awareness and competence is an on-going process. The connotative narrative approach provides a fit medium for progressive training over the whole duration of extended global programs. Students could thus be better empowered to see their stories evolve as their cross-cultural knowledge and competencies are further enhanced. Such personal progress should undoubtedly be evaluated at regular intervals and not only

on a one-off basis. This could bolster collaboration for course design and research between participating universities.

In sum, connotative narrative structures are useful in generating insightful interpretations that prompt students' reflective thinking and enhance their communication skills. Such learning and teaching tools should be appropriately utilized to assess two related aspects of study-abroad learning outcomes, creative reflective thinking and reflective verbal communication.

## Acknowledgements

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# Carol Latta Memorial Award for Outstanding Early Career Scholarship

**Deadline: October 3, 2017**

## Award Information

The Carol Latta Memorial Award for Outstanding Early Career Scholarship recognizes a scholar in the early stages of his or her career in the field of Decision Sciences and who has contributed to the Institute and its goals over the recent past. The award is presented at the Annual Meeting of the Decision Sciences Institute each November. The awardee receives a plaque and a \$500.00 honorarium.

## Eligibility

To be eligible:

- A candidate being nominated must be a current member of the Institute in good standing who received his or her terminal degree (e.g., Ph.D., DBA, etc.) within the past five (5) years.
- The nomination should come from a faculty member or academic administrator

who is also a member of the Institute in good standing (no self-nominations).

- The nomination must include a recommendation letter on official university letterhead and a current curriculum vita (CV) of the candidate.
- The recommendation letter (no more than five pages) should explain why the candidate deserves to be recognized in terms of (a) impact of scholarship on the field of Decision Sciences, (b) excellence in teaching in the field of Decisions Sciences, and/or (b) contributions and service to the Institute.

## Submissions

The nomination letter and candidate CV should be emailed to [info@decisionssciences.org](mailto:info@decisionssciences.org) with *Carol Latta Memorial Award for Outstanding Early Career Scholarship* in the subject line. Once received, a confirmation email will be sent

to both the nominator and the candidate to acknowledge receipt.

## Deadline

All nominations must be received by October 3, 2017.

## Selection Committee

The Selection Committee includes the:

- Immediate Past President (Selection Committee Chair)
- VP for Member Services
- VP for Professional Development
- VP for Global Activities
- Recipient of the previous year's award

The Carol Latta Memorial Award for Outstanding Early Career Scholarship Committee and the DSI Home Office look forward to receiving qualified candidates for this prestigious award.

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KATHRYN ZUCKWEILER, EDITOR, *Midwestern State University*

# Emotional Intelligence and the Business Student

by Dr. Pamela Rogers, *Cameron University*



*Dr. Pamela Rogers is an Associate Professor of Operations Management and Assistant to the Dean in the School of Graduate and Professional Studies at Cameron University. With publications in journals such as the International Journal of Production Research and the Decision Sciences Journal of Innovative Education, her research focuses on manufacturing and supply chain management topics in addition to business education. She has reviewed for conferences and journals including Decision Sciences, International Journal of Production Research, International Journal of Production Economics, and Midwestern Business and Economic Review. She earned a PhD in Operations and Supply Chain Management from the University of North Texas. Since joining DSI in 2002, she has served on the Southwest DSI board (2013-present) and the Alpha Iota Delta board (2009-present). [progers@cameron.edu](mailto:progers@cameron.edu)*

In the January 2017 Decision Line, Kathryn Zuckweiler discussed transferrable skills and college graduate preparation for the workforce. As she discussed, transferrable skills have multiple defining names and depend on the genre. Additionally, she stated defining exactly what they are and how to teach them remains elusive.

The U.S. Department of Education (n.d.) uses the term employability skills. Corporate and higher ed terminology includes transferrable or soft skills (Princeton University 2017; Samuel 2016). Still another term is non-cognitive competencies (Schanzenbach 2016). The term emotional intelligence (EI) is more

common in organizational behavior and psychology research (Salovey & Mayer 1990). The term social emotional learning (SEL) is used widely in K-12 (CASEL n.d.). With the lack of consensus on defining these skills, it is not surprising that many graduates do not know what is expected of them to thrive in the workplace (National Network 2015).

Employers are seeing employee soft skill deficiencies including: working with others, verbal/written communication, problem solving, critical thinking, and coping with stress (Fischer 2013; Fisher, 2012; Hart Research Associates, 2013). Traditionally, many of these skills were

taught by parents, religious entities, and indirectly through schools. Shifts in societal expectations, where every student is “exceptional”, has contributed to this predicament. Regardless of the reason, we need to find solutions and teach students the skills needed to thrive in their careers.

Evidence seems to show a growing number of students have social emotional (SE) skill deficiencies (Durlak et al. 2011). Therefore, K-12 is implementing SEL since studies show that early learning of these skills aid academic performance (CASEL n.d.). The Collaborative for Academic, Social, and Emotional Learning, CASEL, is the nation’s leading organization advancing the development of academic social and emotional competence for K-12 students. Other notable research entities regarding SEL include The Partnerships in Education and Resilience (PEAR) Institute at Harvard and The Yale Center for Emotional Intelligence both of which have developed K-12 SEL curricula. SEL is used in K-12 to communicate skills and characteristics students need to be successful academically and as a member of society. At least 12 foundations have provided funding for K-12 implementation (CASEL n.d.).

EI was first defined by psychologists Peter Salovey and John Mayer who considered EI a subset of social intelligence involving “the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them, and to use this information to guide one’s thinking and actions” (Salovey and Mayer 1990, p. 189). The most widely used definition of SEL is “the process through which children and adults acquire and effectively apply the knowledge, attitudes, and skills necessary to understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions” (CASEL n.d.).

The purpose of this article is to look at the characteristics of SEL and EI relating to college graduates and employability.

EI has four competencies with self-awareness as the basis for the other three:

self-management, social awareness, and social skill (Goleman 2000). Daniel Goleman, who is best known for his 1995 book *Emotional Intelligence*, was a co-founder of CASEL at Yale University (now at the University of Illinois at Chicago). As a result, CASEL’s core competencies mirror higher education conversations and corporate concerns regarding recent graduates entering the workforce and employees in general. SEL competencies mirror those of EI with the addition of decision-making. CASEL’s five competencies are:

- Self-awareness: identifying emotions, accurate self-perception, recognizing strengths, sense of self-confidence, and self-efficacy.
- Self-management: impulse control, stress management, self-discipline, self-motivation, goal setting, and organizational skills.
- Social awareness: perspective-taking, empathy, appreciating diversity, and respect for others
- Relationship skills: communication, social engagement, building relationships, working cooperatively, resolving conflicts, and helping and seeking help.
- Responsible decision-making: problem identification, situation analysis, problem-solving, evaluation, reflection, and ethical responsibility.

CASEL’s inclusion of decision-making to the EI competencies is valuable since problem-solving and decision-making skills are skills recent college grads lack according to employers (Fischer 2013; Fisher 2012; Hart Research Associates 2013). In addition, K-12 students are not developing EI competencies either. Research indicates students could improve their EI through modeling by adults. To remedy this deficiency, some school districts are collaborating to implement skills training for adults (CASEL n.d.).

Evidence of these competencies in K-12 has been divided by monetized vs. non-monetized benefits. Potential monetized benefits include: increased academic performance, reduced absenteeism, improved retention, reduced discipline

issues, and reduced medical costs. Non-monetized benefits include: quality of classroom processes, student motivation, self-efficacy, decision-making skills, and social competence (Belfield et al. 2015).

Longitudinal research shows kindergarteners with stronger EI skills are more likely to graduate from high school and college (Jones et al. 2015). EI competence can increase the likelihood of high school graduation, readiness for postsecondary education, career success, positive family and work relationships, better mental health, reduced criminal behavior, and engaged citizenship (Hawkins et al. 2008).

Until all K-12 systems include SE training, students will continue to arrive at universities without these skills. Business students, in particular, need these skills to be successful in a competitive global workforce. Before implementing EI in the curriculum, higher ed faculty must receive professional development regarding teaching EI skills, learning how to model that behavior throughout the higher ed environment, and creating an EI based organizational culture. This culture includes infusing EI principles into every level of the curriculum and facet of the college experience.

To begin implementation of EI into the higher ed curriculum, the following courses seem to be obvious starting points for business students: university life/freshman seminar, introduction to business, business communication, and business policy/capstone. However, each professor should consider how to include EI in every course. Ultimately including EI in every course across university campuses should elevate student’s learning, understanding, and evidence of the EI competencies.

An example of implementing EI in a course where students learn to create spreadsheets could be a short discussion when a student needs help with a spreadsheet formula. The professor poses the question, “What would you do at your job if your spreadsheet formula was not working?” Using responsible decision

making, the student should be able to identify the problem and possible solutions such as researching formula syntax on the internet or the software's help system. Another option would be using relationship skills; asking a co-worker for help. By knowing EI skills, the student manages stress because they recognize when and where to seek assistance (self-management).

Multiple employer surveys consistently show a growing divide between applicant abilities and skills sought by employers (Fischer 2013). Harvard economist David Deming (2016) estimated, between the years 1980 to 2012, jobs with routine tasks decreased 10%, while jobs with social tasks increased 15%. The Brookings Institute found that workers born in the 1980s who demonstrated higher social skills are more likely to be employed (Hamilton Project 2016).

The National Association for Colleges and Employers (NACE) annually surveys employers regarding skills employees need. In 2016, the top five skills were: leadership, ability to work in a team, written communication skills, problem solving skills, and verbal communication skills.

Another survey found that applicants often have technical prowess but lack adaptability, communication, decision-making, and problem solving skills (Fischer 2013). A 2012, Fortune Magazine (Fisher) survey of employers found the most sought after skills were:

- Problem-solving (49% ranked No. 1)
- Collaboration (43%)
- Critical thinking (36%)
- Communicate clearly & persuasively in writing (31%)
- Technology (5%) last in rank

According to a 2013 Hart Research Associates study of C-level executives, vice presidents, and business owners, 93% said soft skills weighed more heavily than academic credentials. The following three areas were listed as needed soft skills: critical thinking, clear communication, and complex problem-solving. More than 75% of those surveyed said they want colleges

to place more emphasis on improving communication skills and applying knowledge in real-world settings. The majority of respondents said while employers are looking for specific soft skills, for long-term career success, graduates need both field-specific knowledge and those skills transferable across a wide range of positions. In comparing employers' views to those of job seekers, a 2013 study by Wakefield Research and Bryant & Stratton College found 80% of the 18-34 year old's surveyed felt they possessed all the skills, experience, and education necessary to advance in their careers or obtain their next job. Additionally, 84% of that group thought soft skills would not have a significant impact on career advancement.

In a recent discussion with a colleague about a recruiting visit in a major metropolitan area, they stated one firm's recruiter mentioned they often hire non-business students. Previous business student hires were perceived as being arrogant, unable to work well on teams, and lacking critical thinking skills. It is possible that the perception of arrogance in business students is due to an impression that an undergraduate degree in business means full knowledge of the field. When the firm hired non-business students, those hires were perhaps less likely to project a know-it-all image to the employer since they were hired outside their degree specialization.

For many universities, career readiness or professional development course are not common. Career preparation training is frequently seen as the responsibility of career services departments or via online resources. Universities must determine the best ways and places to integrate these skills in the curriculum. One university spent two years discussing where and how to integrate EI in the entire curriculum (Atlay and Harris 2000). Faculty must model these skills for students to understand what EI should look like in a professional setting. Students need to be convinced of the value employers place on EI skills perhaps through earlier introduction to workplace experiences, i.e. internships, mentoring, shadowing, etc.

Business faculty could provide additional interaction with entities outside the university through guest lectures, workshops, and panel discussions.

Assuming that EI skills are common sense and do not need to be taught in business courses will contribute to college graduates who continue to struggle to understand expectations in work environments.

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MATTHEW DRAKE, EDITOR, Duquesne University

## Decision Sciences Journal of Innovative Education Editor's Update



Matthew Drake ([drake987@duq.edu](mailto:drake987@duq.edu)) is an Associate Professor of Supply Chain Management and the Harry W. Witt Faculty Fellow in Supply Chain Management in the Palumbo-Donahue School of Business at Duquesne University. He has been the editor-in-chief of the *Decision Sciences Journal of Innovative Education* since November 2016. His research has appeared in journals such as the *European Journal of Operational Research*, *Omega*, the *International Journal of Production Economics*, *Naval Research Logistics*, *OR Spectrum*, *Business Horizons*, the *Journal of Business Ethics*, and *Science and Engineering Ethics*. He has recently published several case books on business analytics with Pearson/FT Press.

As I continue through my first year as editor-in-chief of DSJIE, I wanted to take this opportunity to update *Decision Line* readers about the state of the journal over the past 12 months.

### Manuscript Statistics

For the 12 months ending on May 29, 2017, DSJIE received a total of 78 submissions. 32 of those submissions were empirical articles, 26 were conceptual articles, and 20 were teaching briefs. This suggests a relatively even split of submissions between the different types of articles that the journal

publishes. Out of these 78 submitted manuscripts, 39 of them (50%) were desk-rejected due to their lack of fit with the journal's focus. A total of 16 articles were accepted. Out of the 78 articles submitted in the past 12 months, 67 of them currently have a final decision. Thus, the overall acceptance rate was 23.9%.

As an editor, I like to emphasize the timely processing of articles under review. The 67 articles that have completed the review process in the past 12 months averaged 30.2 days in process before the initial decision

was made. This represents a fast turnaround, but it is skewed by the number of desk-rejected articles, which only averaged 3.31 days in process before the decision was made. If those articles are removed from the analysis, the average time until the initial decision increases to 67.7 days. I intend to work with the associate editors and the reviewers to reduce this time to give authors a faster turnaround.

## Raising the Profile of DSJIE

The main objective that I have as the editor of DSJIE, which is supported by the DSI Board of Directors, is to raise the profile and reputation of the journal worldwide. Several initiatives and strategies are currently in process to meet this objective.

In late 2016, DSJIE was indexed on the Emerging Sources Citation Index (ESCI), a database within the Web of Science that was established in 2015. Journals in the ESCI must be peer-reviewed and meet other publishing requirements that are similar to those of other Web of Science databases. The ESCI can be thought of as a stepping stone for journals that meet a certain level of quality as they are reviewed and evaluated for other, more established databases such as the Social Science Citation Index (SSCI). I am currently working with the publishers at Wiley-Blackwell to submit DSJIE's application in the next few months for consideration for indexing within the SSCI.

Another way I am looking to raise the profile and awareness of the journal is to attend other conferences outside of the DSI umbrella and discuss the journal with presenters and attendees who may not be familiar with DSI or the journal. This summer I will be attending the annual Research in Management Learning and Education (RMLE) Unconference that has historically been co-sponsored by DSJIE along with other leading management education journals. I will also be attending the IFORS Triennial meeting, where I am participating in a panel of editors to discuss our journals and what we look for in quality submissions. I expect to continue attending as many conferences as possible over the next year to expand the reputation of DSJIE beyond the DSI community.

## Special Issues

The January 2017 issue of DSJIE was a special issue focusing on the development of executive education programs with online distance components. The issue included a total of six articles, one empirical and the rest conceptual research. The current special issue in process highlights research presented at the 2017 DSI regional meetings. It is slotted for publication in January 2018. Several manuscripts are under review, and I am extending the initial submission deadline to June 30 if there are any other authors who would like to submit a manuscript for consideration. The full call for papers is posted on the journal's website ([www.dsjie.org](http://www.dsjie.org)).

I am currently reviewing a proposal for a special issue for 2019, and I hope to have the call for papers ready for release by the end of the summer.

## Connect with DSJIE

In addition to the journal's website listed above, I have recently launched several social media accounts for the journal. My goal is to post information related to the journal's operations such as new issue announcements and calls for papers, but I also plan to highlight past articles as well as current news related to the teaching of the decision sciences.

I encourage you to follow DSJIE on Twitter at @DSJIE\_Editor and on LinkedIn at <https://www.linkedin.com/groups/12043845>.

## Looking Forward

I am looking forward to another year of working with all of those committed educators that make DSJIE what it is. I cannot thank the DSI Board of Directors and my associate editors enough for the help and patience that they have given me during my first year as editor. I would also like to thank all of the reviewers who have tirelessly pored through manuscripts and have provided excellent feedback to authors that has resulted in significant improvements to the articles that have been published in the journal. Thanks as well to the authors who chose DSJIE as the outlet to disseminate their research. I hope you look

upon your published work with pride. And of course, I also need to thank former editor Vijay Kannan, with whom I still discuss questions and ideas long after his official term as editor concluded.

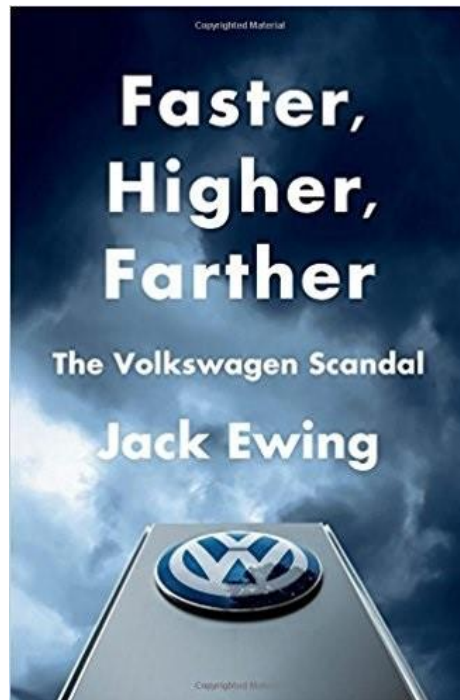
I would like to invite any *Decision Line* readers who have not been involved with DSJIE to consider taking an active role in contributing to the journal. I hope that DSJIE is at the top of the list of outlets when you consider publishing education-related research. I invite you to register as a manuscript reviewer (<https://mc.manuscriptcentral.com/dsjie>), as it is always helpful to get different perspectives on submitted manuscripts. And above all, I invite you to read the articles published in DSJIE and think about incorporating the insights into your classrooms. Improving our effectiveness as decision sciences educators is ultimately what this journal is all about and why I remain excited to be a part of it.

## Book Review: Faster, Higher, Farther: The Volkswagen Scandal by Jack Ewing



Kirsten (Kris) Rosacker, PhD, CPA, CMA. Assistant Professor of Accounting and Business Law Minnesota State University-Mankato  
Kirsten teaches individual taxation and

corporate taxation. Her current research interest focus on tax complexity, corporate governance and project management.



Ewing offers an informative history of Volkswagen tracing its early days to Adolf Hitler through the ongoing story of the emissions scandal. The first Volkswagen factory (Volkswagenwerk) was built near Fallersleben Germany, a sparsely populated area with access to rail and the Mittelland Canal. It would be used to build the “people’s car” designed by Ferdinand Porsche a self-taught engineer; however, before “mass production” of a German automobile could begin the factory was utilized to produce primarily military products. Interestingly, the factory used primary slave labor until World War II (WWII) ended.

In 1945, as WWII reached a conclusion, “British troops took over the factory” and protected its machinery from being taken

by other triumphant counties as reparations. Britain renamed the nearby city Wolfsburg, a name which it holds today. In December, production of consumer-oriented products resumed to put local Germans to work as well as method to foster a democratic East Germany (p. 16). The factories survival was precarious as materials were scarce; however, the factory was whole and fully functional having avoided extensive bombing during WWII and extensive looting after WWII.

In October 1949, British authorities turned control of Volkswagen over to the German Government. The company contracted with the Porsche family and Porsche Design Company for design and development rights. At that time, the company had 10,000 employees and manufactured 4,000 automobiles per month, representing 50 percent of Germany’s vehicle production. (p. 21). Without a doubt, Volkswagen played a huge role in Germany’s postwar recovery. “In 1949, 15 percent of the vehicles produced in Wolfsburg were sold abroad” (p. 21). The company would remain state owned until 1960.

In the 1950’s Volkswagen begin exporting automobiles outside of Europe. In 1956, 43,000 Beetles and 6,700 Volkswagen vans were marketed in the United States (US) (p. 33). An advertisement created by Doyle Dane Benbach, a New York based agency, helped create Germany’s image for scrupulous technique and engineering, “preoccupation with detail means that the Volkswagen lasts longer and requires less maintenance, by and large, than other cars” (p. 34). Sales continued to increase,

during the 1960's, "Volkswagen was the best-selling foreign-made auto in the [US]" (p. 35). A self-deprecating advertisement series reinforced the image of high quality alongside a truly fun spirit and ownership experience – Volkswagen's were both unique in looks and value.

Ultimately, multiple worldwide legal and economic factors converged to slow Volkswagen's sales. The US Clean Act of 1970 required all automakers to meet strict emission standards by 1975 and 1976. Foreign manufacturers, specifically those in Japan began to expand their automotive products into the US increasing competition significantly. Concurrently, the oil crisis of 1973 led to increased fuel prices and a need for more fuel-efficient vehicles. Volkswagen struggled to extend its product offerings and build an automobile as popular as the Beetle which had reached the point of market saturation. They introduced the Passat sedan, Sirocco and compact Golf; however, the company had a hard time keeping up with Asian auto makers "in the market for fuel-efficient, reliable, affordable cars" (p. 47). Germany adopted *Mitbestimmungsgesetz 1976* also known as the German Codetermination Act 1976. These laws gave Volkswagen employees a tremendous amount of power over the management of the company. For example, employees maintained control over who was elected chief executive. On January 1, 1993 Ferdinand Piech, the Grandson of Ferdinand Porsche, became Volkswagen's Chief Executive Officer (CEO). At that time, Volkswagen ranked 15<sup>th</sup> in terms of automobiles imported by the US, the world largest automobile market at that time. Piech wisely sided with Volkswagen employees who allowed him to operate the company as he deemed appropriate.

Piech used his strong engineering background to focus on enhancing Volkswagen's production operations. While his grandfather studied and applied the Ford Motor company's concept to Volkswagen's manufacturing processes years earlier, Piech applied the Toyota concept of Kaizen to enhance and improve the entire design and manufacturing processes. Additionally, Piech increased

the use of platform strategy within Volkswagen. Specifically, many car models used the same parts and components which allowed Volkswagen brands to reach economies of scale. However, platform strategy also came with great risk, if a part or component was defective, this defect impacts many models of automobiles. Piech also enhanced the Volkswagen brand by adding more style to the vehicles. For example, following several design changes, the Golf was referred to as the "Poor Man's BMW" (p. 55). Piech remained Chief Executive Officer of Volkswagen until 2002. During his time as Chief Executive Officer, Volkswagen measures of profitability and productivity improved. However, Volkswagen still fell behind Toyota on most of these measures.

Importantly, during the 1990's while Piech focused on improving efficiency and cost cutting measures, US regulators increased their enforcement of environmental laws. Previously, emissions testing had taken place in a controlled predictable (inside a building) environment. Now, regulators and scientists within the US changed to testing of fuel emissions in non-controlled, more robust environments. This new testing process revealed that several General Motor automobiles had "defeat devices" which allowed the vehicles to maintain operating performance while emitting harmful pollutants when their climate control system was operating. Regulators had not been testing automobiles with the air conditioning system running. General Motors agreed to pay \$45 million dollars for installing the "defeat devices." In 1998, seven large truck manufacturers admitted to using a "defeat device" that shut down emissions controls during highway driving and they were required to pay over \$1 billion in fines and restitution in aggregate. These "defeat devices" had previously allowed them to pass emissions test when in a controlled environment. The use of a "defeat device" or more precisely an "auxiliary engine control device" was not illegal if its use and purpose was reported to the EPA prior to utilization.

In 2002, Piech became chairman of the

supervisory board. "Under German corporate law, the supervisory board oversees the chief executive ... and has the power to remove him" (p. 97). Allowing a former Chief Executive Officer to become part of the organization's supervisory board is very risky from a Corporate Governance perspective. Bernd Pischetsrieder was Chief Executive Officer from 2002 through 2006 and in January 2007 Martin Winterkorn was named to this position which he held until 2015. Within a year of taking over, Winterkorn announced a plan to make Volkswagen the leading automobile manufacturer in the world, Volkswagen sought "world domination" (p. 112). Additionally, diesel fuel and a "clean diesel" marketing campaign became vital components of this strategy. While diesel fuel leads to fuel efficiency, it also leads to high toxic emissions – a truly difficult combination.

In Spring 2013, students from West Virginia University tested the fuel emissions of a diesel Passat, a diesel Jetta and a diesel BMW SUV. The vehicles passed EPA standards when tested in a controlled lab-setting. However, when the vehicles were tested in a non-lab setting, the diesel Passat and diesel Jetta exhibited nitrogen oxide emissions that were simply "off the charts" (p. 3). This was the beginning of the widely reported Volkswagen scandal, which threatens the future of the company. The book offers a detailed account of the ongoing Volkswagen diesel scandal and the significant efforts directed at saving the company. It covers a wide range of topics, including but not limited to: Corporate Governance, International Trade, Operations Management, Environment Protection, the Auto Industry and it is a worthy read for anyone interested in the ever-changing landscape of international business environments.

The book (ISBN-13: 978-0393254501) Published by W. W. Norton & Company (May 23, 2017) has 352 pages and costs \$16.93.



VIVIAN LANDRUM, EXECUTIVE DIRECTOR, Decision Sciences Institute

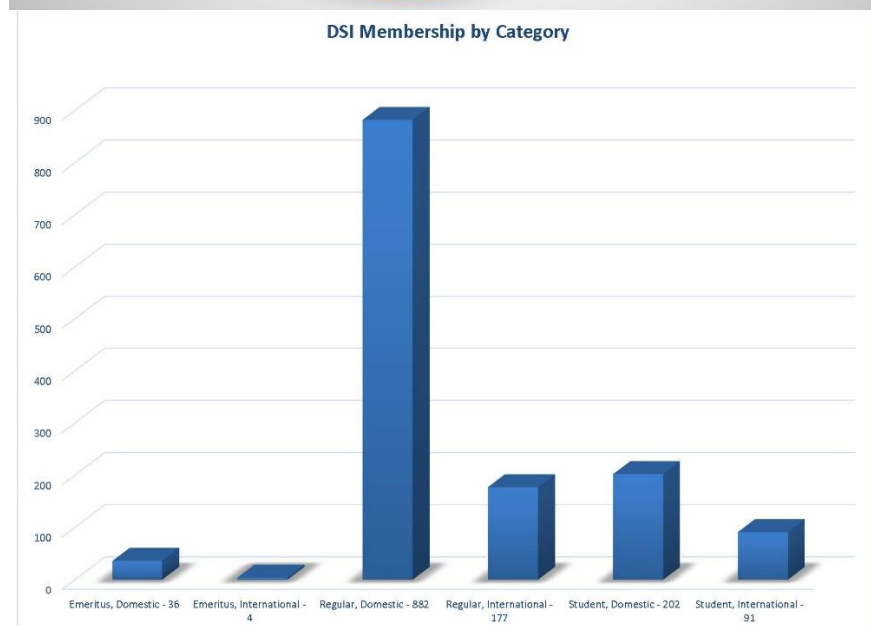
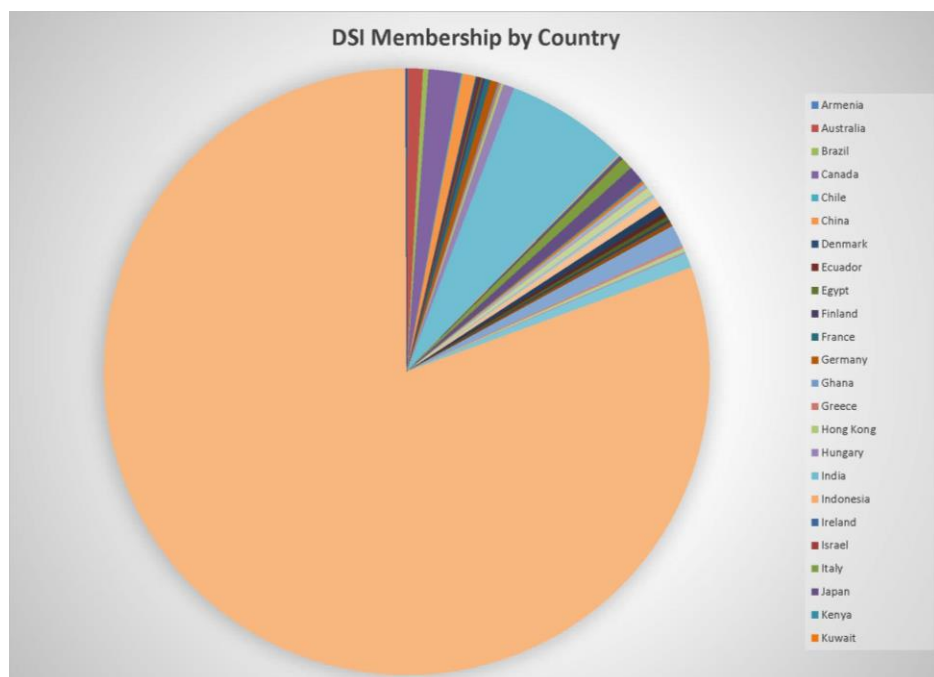
## DSI Member Breakdown

DSI continues to enjoy a robust membership with 1392 members at the close of our 2016-2017 fiscal year. Regular Domestic members define the majority with 63%, Student Domestic at 15%, Regular International at 13%, Student International at 7% and our respected

Emeritus Domestic and International at 3% and .3% respectively.

DSI truly is a global organization with members based in 43 countries around the world. While the United States defines the mainstream with 1115 members (81% of

our membership), India boasts 91 members and is our second largest representative nation. Please view the chart for our complete country listing. We are proud to enjoy the support of these diverse people and cultures and know this only enhances our value and assets for our members.



VIVIAN LANDRUM, EXECUTIVE DIRECTOR, Decision Sciences Institute

# DSI 2017 Annual Meeting Workshops

The 2017 Annual Meeting of the Decision Sciences Institute  
Washington Hilton, Washington, D.C.  
November 18 – 20



We are pleased to announce this year's Annual Meeting has received a record number of submissions. Over 1170 submissions for papers, abstracts, awards, panels and workshops ensure this year's conference will span a wide range of disciplines and initiate conversations that ask, and then attempt to answer, thought-provoking questions. Adding to the conversations will be the keynote speakers, Sridhar Tayur, Ralph Keeney and Bill Stainton. (For more information on these speakers please refer to the May issue of *Decision Line* or go to the DSI website.)

Below we highlight the informative and insightful workshops planned, several of which are new this year.

### Behavioral Research and Experimentation in Operations Management

#### Leader



Bret Moritz,  
Pennsylvania State  
University

This workshop will discuss research in behavioral operations management (BOM) and the state of the field. Topics, questions and methods best suited to BOM will be

deliberated. This year will feature an extended discussion on techniques for conducting experiments. This includes practical principles of good experimental design and implementation.

### International Live Case Workshop

#### Leader



Frank Montabon,  
Iowa State University

Studying abroad and live cases are two very valuable education experiences for today's students. Separately, they can be a challenge to prepare. Combining them into one course is thus even more challenging. This workshop will walk participants through multiple models of delivery for this exciting concept.

### Paradigm for Parity in Advancing Women Leadership in Supply Chain and Operations Management

#### Leader



Aleda Roth,  
Clemson University

Women are increasingly entering operations and supply chain management (SC/OM). Yet the pace of advancement of promising women into leadership roles is too slow. This session develops multiple paradigms of the challenges and opportunities for the SC/OM field to bring

gender equality into its upper echelons — Full Professor rank, Endowed Chair, Professional Society Fellows, Sr. Editorial Leadership, etc.—by 2025. Senior female and male academic scholars will discuss the issues and strategies for changing the dynamics. We will conclude with a challenging agenda that has the potential to make the 2025 goal a reality.

### Presenting Business Analytic Results to Senior Managers

#### Leader



Subhashish Samaddar,  
Pennsylvania State  
University

One of the major challenges faced by an analytics team or specialist in the industry or in the academics is to be able to frame, present, contextualize, and communicate the results of their analysis to a very highly important audience – the C-suite members or the senior management of an organization. In this workshop, we describe and demonstrate effective ways of presenting and communication the results to this audience effectively. We offer effective methods, including but not limited to just visualization, and real examples of various situations where a particular way of presenting astronomically changes the overall effectiveness. We have gathered real examples over the years working with our client companies. Audience can take away our demonstration and apply in their own work to improve their presentation effectiveness right away.

## DSI 2017 ANNUAL MEETING

### Best Practices in Planning a U.S. Regional DSI Conference

#### Leader



Suzanne Smith,  
Presbyterian College

Each of the five regions in the United States Decision Sciences Institute holds an annual conference. This panel will bring together representatives from each of these regions to share ideas about best practices in planning and hosting a successful conference. Topics will include marketing strategies to maximize attendance, maximizing use of the local area through plant tours or other local speakers, pros and cons of holding a joint conference with other similar professional organizations, motivating your team of track chairs, optimizing communication with participants, and finding the best deals for hotels and catering. Panelists will share inside tips based on what they have learned from recent experience.

### How to Review to Become an Editor for a Journal

#### Co-Leaders



Cheri Speier-Pero,  
Michigan State  
University



Dan Guide,  
Pennsylvania State  
University

Would you like to become an editor of a journal in your discipline one day? This workshop is designed to help scholars understand what reviewers can do to make themselves stand out and potentially be

tapped for editorship of a core disciplinary journal. Participants will interact with workshop leaders who are former and current editors of major disciplinary journals in the decision sciences to uncover what to do and what not to do in how they complete their reviewing tasks.

### How to Publish in Top Tier Journals

#### Co-Leaders



Asoo Vakaria,  
University of Florida



Srinivas Talluri

This workshop is for doctoral students and faculty who wish to publish in top-tier journals. Publishing in these journals is in part science, in part art and using appropriate strategy in writing, positioning and engaging with reviewers. You will hear from scholars who will share with you ideas that will help you succeed.

### Meet the Editors of DSI Journals

#### Co-Leaders



Cheri Speier-Pero,  
Michigan State  
University



Matthew Drake,  
Duquesne University

Get up close and personal with the editors of the Decision Sciences Institute journals. The editors will share their insights into

what they are looking for and how to successfully position your work to be published in DSJ or *DSJIE*.

### Meet the Editors of Non-DSI Journals

#### Co-Leaders



Dan Guide,  
Pennsylvania State  
University



Joe Sarkis, Worcester  
Polytechnic Institute

The purpose of this panel is to tap the perspectives of the editors of the leading journals across several disciplines that are encompassed within the Decision Sciences Institute – information systems (MISQ), innovation and technology management (IEEE TEM), operations management (JOM), and supply chain management (JSCM/JPSM). Editors will share their perspectives on the current state of research in their disciplines, the publication process in their journals, and future trends and directions.

### Publishing in DSJ

#### Co-Leaders



Ram Narasimhan,  
Michigan State  
University



Manoj Malhotra,  
University of South  
Carolina

Publishing in DSJ is one of two workshops to help new authors successfully publish

## DSI 2017 ANNUAL MEETING

their research in official journals of the Decision Sciences Institute. The goal of this workshop is to help authors develop manuscripts suitable for submission to the journal.

### Eligibility:

#### To be eligible for consideration:

1. Author or author teams must not have previously published in *DSJ*.
2. Submitted manuscripts must not be under publication consideration at any journal before November 30, 2016.
3. Each author or author team can submit one and only one manuscript to the workshop. If more than one is submitted, the first one will be the default to be considered.

### Submission Requirements:

- CV for the author and/or all members of the authoring team.
- Manuscript.

### Submission Procedure:

- All submissions must be received by **July 15, 2017**.
- Submissions must be emailed to Prof. Manoj Malhotra, at malhotra@moore.sc.edu and Ram Narasimhan at narasimh@msu.edu.
- A submission, once accepted, will be paired with one or more members of the editorial team (e.g., an Associate Editor or a Reviewer). Communications can then occur between the author(s) and the selected editorial team members.
- Author(s) will meet with the selected editorial team member(s) at the 2017 Annual Meeting of the Decision Sciences Institute to work on finalizing their submissions to *DSJ*.

- Finalized submissions are expected to be submitted to *DSJ* for formal review soon after the 2017 Annual Meeting of the Decision Sciences Institute.

## CONFERENCE REGISTRATION

	<u>Early</u>	<u>Regular</u>	<u>Late/Onsite</u>
<u>Deadlines/Register By:</u>	<u>Sept. 15</u>	<u>Oct. 30</u>	<u>Nov. 1 - Nov. 30</u>
Regular Domestic/International Member	\$420	\$520	\$570
Emeritus Member	\$200	\$225	\$250
Student Member	\$125	\$150	\$175

*As a reminder, attendees of the DSI Annual Meeting are required to be Decision Sciences Institute members.* For information to join or renew your DSI membership, please go to [DSI.ORG](http://DSI.ORG).

## HOTEL RESERVATIONS



The host hotel for the 48<sup>th</sup> Annual Meeting is the Washington Hilton, located at 1919 Connecticut Ave., NW. This Embassy Row Hotel puts you in the center of the most vibrant neighborhoods in DC, including Georgetown. Urban adventure awaits right outside the hotel lobby. The DSI contracted nightly room rate is \$189 per person.

Register early to receive the greatest value. When making your hotel reservations for the November DSI 2017 Annual Meeting, use the secure online reservation portal found on our DSI website. We are aware that several companies, including Expo Housing Services and Exhibition Hotel Management, have been attempting to intrude on our upcoming conference by redirecting our event's contracted hotel rooms with the Washington Hilton to their

organization, despite them having no connection whatsoever with DSI. They are claiming to have better rates and one

representative is on record as stating he was from the "DSI Reservation Team." This is totally false. They are attempting to 'pirate' our hotel rooms and can cause harm to our conference.

DSI has a long and valued relationship with Hilton Hotels and Resorts and this partnership provides us better hotel rates year over year. This year we are contracted with the Washington Hilton and they are providing excellent rates and services. In addition, our conference receives additional perks, such as food and beverage enhancements, as we reach defined levels of occupancy. **Please do not engage with any representative of these types of companies.**

**Reservations must be made by October 18 to receive the contracted rate.** Visit the DSI website and make your reservations today.

For more information on the DSI 2017 Annual Meeting please visit [decisionsciences.org](http://decisionsciences.org).

*Looking forward to seeing you there!*



# Hidden Gems in Washington DC – Unique Destinations to Explore

When visiting Washington, D.C. one must certainly explore the obvious attractions in one of the most popular destinations in the United States. In previous issues I have shared the most popular and recognizable landmarks and museums. However, there are other lesser-known, yet equally alluring locales that should be considered for those who enjoy a different and possibly less crowded experience. For those who feel they know Washington, D.C. and have “done it all,” I beg they take a second look by reviewing the descriptions below pulled from their websites:

## The Newseum



The Newseum promotes, explains and defends free expression and the five freedoms of the First Amendment: religion, speech, press, assembly and petition. The Newseum’s seven levels of interactive exhibits include 15 galleries and 15 theaters. Among the most memorable exhibits are the 9/11 Gallery featuring the broadcast antennae from the top of the World Trade Center, the Berlin Wall Gallery whose eight concrete sections are one of the largest pieces of the original wall outside Germany, and the Pulitzer Prize Photographs Gallery which features photographs from every Pulitzer Prize-winning entry dating back to 1942. Considered one of the most interactive museums in the world, the Newseum experience also traces the evolution of electronic communication from the birth of radio, to the technologies of the present and the future.

A special exhibit on display during November is “Creating Camelot: The

Kennedy Photography of Jacques Lowe.” Jacques Lowe was the personal photographer of the Kennedys and is known for helping create the legend of that presidency as “Camelot.” Lowe stored his negatives, more than 40,000, in a World Trade Center bank vault. All were lost in the attacks. The Newseum worked with the Lowe estate to restore more than 70 intimate and iconic images from contact sheets and prints for this exhibit.

Admission tickets required and can be purchased online or at the admissions desk. Adult, college student and senior tickets available.

## The International Spy Museum



Dedicated to espionage and providing a global perspective on this all-but-invisible profession that has shaped history and continues to have a significant impact on world events, the International Spy Museum features the largest collection of international espionage artifacts ever placed on display. The mission of the International Spy Museum is to educate the public about espionage and intelligence in an engaging way and to provide a context that fosters understanding of its important role in and impact on current and historic events. The Museum focuses on human intelligence and reveals the role spies have played in world events throughout history.

Through interactive exhibits with state-of-the-art audiovisual effects, film, and hands-on components, the International Spy Museum traces the evolution of

espionage through the people who practiced the profession and provides a context for visitors to interpret the role intelligence plays in current events. The Museum’s permanent exhibition presents the tradecraft of espionage and showcases the ingenuity and imagination of real-life spies and spymasters.

Permanent exhibits include: Covers & Legends, School for Spies, The Secret History of History, Spies Among Us, and Special Exhibit: Exquisitely Evil: 50 Years of Bond Villains. Who doesn’t want to see the Aston Martin DB5 from *Goldfinger*, the Lipstick Pistol, Jaws’ teeth from *Moonraker*, a German enigma machine from 1944, Goldfinger’s golf shoes or an authentic George Washington spy letter?

Visitors can adopt a cover, break codes, identify disguised spies and become the subjects of covert surveillance during their visit. Who doesn’t want to be “Bond – James Bond.”

## Library of Congress



The Library of Congress occupies three buildings on Capitol Hill. It is the largest library in the world, with millions of books, recordings, photographs, newspapers, maps and manuscripts. The Library preserves and provides access to a diverse and expansive collection of knowledge. It is the main research arm of the U.S. Congress and also the home of the U.S. Copyright Office.

## AROUND DSI

Visitors enter the historic Thomas Jefferson Building and can opt for guided tours, gallery talks or other on-site activities. Guided tours include: Echoes of the Great War; Thomas Jefferson: The Man & His Ideas; Exploring the Early Americas; and Music & Performing Arts. Tours are free to the public.

Docents are on hand to share the symbolic art, architecture and story of the Library.

### Eastern Market



Photo courtesy of Destination DC

Far more than a market, the Eastern Market is a community hub for the Capitol Hill neighborhood. If you are looking for a place to meet the 'locals' and experience a diverse collection of food, arts and crafts, music and antiques all under one roof, this is the place. With over 100 exhibitors, offerings include fruits, vegetables, flowers, seafood, meats and cheeses, jewelry candles, art, woodworking, photography and more. Open Tuesday through Sunday, however weekends will find most all vendors participating.

# Western Decision Sciences Institute 47<sup>th</sup> Annual Meeting

### Call for Papers

Papers are invited on, but not limited to, the topical areas listed. In addition, we welcome the submission of research abstracts. The papers are double-blind reviewed by referees and abstracts are subject to final review by the Track Chairs and the Program Chair. Accepted papers and abstracts will be published in the conference proceedings. Copyright of the papers will stay with the author(s). Paper submission acknowledges that the author will register for the conference and present, in person, the paper at the time specified in the conference program. Panels, workshops, and tutorials on current topics of interest, and other special sessions, are also planned. Please contact the Program Chair, if you are interested in any of these.

### Best Paper Awards

Accepted regular papers will be considered for the Decision Sciences and Information Systems Honor Society, *Alpha Iota Delta*, Best Paper Awards in the following categories:

- Applications
- Case Studies
- Environmental Issues
- Interdisciplinary Issues
- Theoretical Research
- Empirical Research

In addition, awards will be given for the *best undergraduate student paper* and the *best graduate student paper*.

### Important Dates

- Submissions begin: June 20, 2017
- Submission Deadline: October 1, 2017
- Notification of Acceptance: December 20, 2017
- Manuscript Submission Deadline: January 22, 2018

### Meeting Venue

The 47<sup>th</sup> Annual Meeting of WDSI will be held at the [Kauai Marriott Resort](#) on the beautiful island of Kauai in Hawaii. The conference organizing committee has negotiated a very competitive room rate for our participants to join us at this charming resort.



### Tropical Areas and Tracks

- Accounting
- Business Analytics and Data-Driven Decision Making
- Business Environment - Strategy, Policy, Law, Ethics
- Cases
- Finance and Investment
- Hospitality Management and Marketing

- Innovative Education
- International Business
- Internet and e-Business
- Management Information Systems
- Management Science and Quantitative Methods
  - Management, Entrepreneurship, and Organizations
  - Marketing
  - Military Applications
  - Modeling and Simulation
  - Operations, Logistics and Supply Chain Management
  - On-Demand and Sharing Economy
  - Public Policy and Public Administration
  - Student Papers
  - Sustainability Issues in Decision Making

# European DSI Conference

## 2018 Annual EDSI Conference in Venice and Udine (Italy)

June 3-6, 2018

*Decision Sciences for the New Global Economy*

Preparations are already underway for the 2018 EDSI conference. We are pleased to update the DSI community on this event.

### Conference Venue

The Conference will be hosted in two extremely attractive locations: Udine and Venice (Italy).

Venice is one of the best-known tourist destinations in the world. The city has an average of 18 million tourists a year thanks to its celebrated art and architecture. There are numerous attractions in Venice, such as St Mark's Basilica, the Doge's Palace, the Grand Canal, and the Piazza San Marco. The Lido di Venezia is also a popular international luxury destination. Udine is a small historical town with several squares of Venetian style: from Piazza Libertà, defined as "the most beautiful Venetian square on the mainland", to Piazza Matteotti, all surrounded by porticos, and looking like an open-air lounge. On the town hill rises the castle: from its walls, you can see the whole city, the mountains all around it, whereas to the south, less than an hour's drive away, there is the Adriatic Sea and the Ernest Hemingway's beloved town of Lignano.

In particular, the main conference venue is the Palace Toppo- Wasserman in Udine. Social events will take place at historical castle of Udine. The final plenary session of the June 6th will be organized at Ca' Foscari University in Venice.

### Submission Dates

Deadline for abstracts (Working papers) and Full Paper submission (Competitive papers): January 30, 2018

Notification of the review process: March 15, 2018



Final submission: April 15, 2018

### Conference Dates

Doctoral consortium in Udine: June 3, 2018

Conference in Udine: June 4-5, 2018

Conference in Venice, Venice tour and gondola experience (optional): June 6, 2018

### Academic Keynote Speaker of the Conference

Ram Narasimhan is a University Distinguished Professor and the John H. McConnell Endowed Professor of Business (Emeritus). He holds a B.S. in Mechanical Engineering from Indian Institute of Technology, Madras, M.S. in Industrial Engineering and Operations Research and Ph.D in Management Science from the University of Minnesota. His current research addresses strategic sourcing, buyer-supplier relationship, and supply chain leveraged innovation. He is a Fellow of the Decision Sciences Institute and a Fellow of the Pan Pacific Business Association.



He has held various leadership positions in professional associations including being the President of Decision Sciences Institute, Program Chair for Decision Sciences Institute and Production Operations Management Society, Chair of the APICS Institute for Computer Integrated Manufacturing and Chair of Operations Management Division of the Academy of Management. He is the recipient of the Distinguished Service Award from DSI, the Distinguished Global Researcher Award from the Pan Pacific Business Association,



and the Distinguished Operations Management Scholar Award from the Academy of Management. He has been a consultant and executive trainer to numerous Fortune 100 firms in strategic management, sourcing strategy, project management and process optimization. He has published over 140 articles in peer reviewed journals and is one of the most widely cited scholars in operations and supply chain management with over 13,000 citations to date.

### Plenary Session: Gucci Case Study

Founded in Florence in 1921, Gucci is one of the world's leading luxury fashion brands, with a renowned reputation for creativity, innovation and Italian craftsmanship. Gucci is part of the Kering Group, a world leader in apparel and accessories that owns a portfolio of powerful luxury and sport and lifestyle brands. A Gucci operation manager will be the keynote speaker.

### Special experiences

The standard fee includes 2 lunches, 3 dinners, 4 coffee breaks with a prizewinning handmade Italian gelato (icecream) corner, a Italian wine tasting event, an Italian liquor tasting event, Udine guided tour, transfers from Udine to Venice on June 6th.

An optional Venice tour includes a marvelous gondola experience, the Doge's Palace visit, the city tour and a light lunch in Venice. Further information can be found at our website:

<http://www.edsi-conference.org/>

You may also contact the Conference chair Marco Sartor ([marco.sartor@uniud.it](mailto:marco.sartor@uniud.it)).



# NEDSI Call for Papers

**2018 Annual Conference (47<sup>th</sup>)**  
**Providence, RI**  
**April 12-14, 2018**

## Keynote Address by Temple Grandin, Ph.D

We are delighted to have Prof. Grandin as the keynote speaker. She is a prominent author and speaker on both autism and animal behavior. Today she is professor of Animal Science at Colorado State University. She has been featured on NPR (National Public Radio) and a BBC Special – "The Woman Who Thinks Like a Cow". She has also appeared on National TV shows such as Larry King Live, 20/20, Sixty Minutes, Fox and Friends, and she has a 2010 TED talk. Articles about Dr. Grandin have appeared in Time Magazine, New York Times, Discover Magazine, Forbes and USA Today. HBO made an Emmy Award winning movie, starring Claire Danes, about her life and she was inducted into the American Academy of Arts and Sciences in 2016. In her book, The Autistic Brain, she presents research findings that will assist academics to prepare for the increasing autism-spectrum students.

## Tracks and Track Chairs

- Accounting, Finance and Economics  
Alejandrro Hazera, Ph.D. and Carmen Quirvan, Ph.D., University of Rhode Island
- Marketing, E-commerce & Social Media  
Kathleen Ferris-Costa, Ph.D., Bridgewater State and Krista Hill Cummings, Ph.D., Babson College
- Decision Support Systems and Entrepreneurship  
Roger Blake, Ph.D., UMASS Boston
- MIS, IT and Healthcare Management  
Neset Hikmet, Ph.D., University of South Caroline
- Quality, Manufacturing and Service Ops.  
Joy M. Field, Ph.D., Boston College
- Statistics, Analytics and Big Data Mining  
Matthew Liberatore, Ph.D., Villanova University and Josephine Mazzi

- Namayanja, Ph.D., UMASS Boston
- Education, Innovation and Knowledge Management  
Susan M. Bosco, Ph.D., Roger Williams University
- Supply Chain Management & Negotiation  
Pedro M. Reyes, Ph.D., Baylor University and John K. Visich, Ph.D., Bryant University
- Process Innovation and Sustainability  
Eric W. Stein, Ph.D., Penn State University
- Management Strategy and Corporate Social Responsibility  
Suhong Li, Ph.D., Bryant University
- Human Resources, Organizational Behavior and Ethics  
Keelyann B. Kowalski, Ph.D., UMASS Dartmouth
- International Trade, Global Business, and Law  
Jennifer A. Swanson, Ph.D., Stonehill College
- Transportation, Logistics and Maritime  
Adolf K.Y. Ng, Ph.D., University of Manitoba
- Undergraduate Research Submissions
- Research Briefs, Poster Presentation Competition

## Important Dates

- Submissions begin: July 01, 2017
- Submission Deadline: Full papers: December 01, 2017; Abstracts December 31, 2017
- Notification of Acceptance: January 20, 2018
- Deadline for resubmission of revised full papers: January 30, 2018

## Awards

- The best undergraduate research poster presentation
- The best graduate student papers\*  
Lead judge: Surendra M. Gupta, Ph.D., Northeastern University
- The best conference papers across all tracks\* \* Only full papers will be considered for best paper awardsM

## Call for Papers

Papers are invited on, but not limited to, the topical areas and tracks listed on the front page. In addition, we welcome the submission of research abstracts. The papers are double-blind reviewed by referees and abstracts are subject to final review by the Track Chairs and the Program Chair. Accepted papers and abstracts will be published in the conference proceedings. Copyright of the papers will stay with the author(s).

To be included in the proceedings and scheduled for presentation, at least one author must **register for the conference by February 01, 2017**.

## Meeting Venue

The 47th Annual Meeting of NEDSI will be held at the newly renovated Renaissance Hotel in beautiful Providence Rhode Island on the US east coast. The conference organizing committee has prepared an enjoyable and productive conference in downtown Providence. Tours to Newport mansions and local companies are included.

About Providence:

[www.goprovidence.com](http://www.goprovidence.com)

About Rhode Island:

[www.visitrhodeisland.com](http://www.visitrhodeisland.com)

About the Hotel – Renaissance:

[www.renaissanceprovidence.com](http://www.renaissanceprovidence.com)

To receive the conference-discounted rate, reservations must be made by Friday, March 09, 2018.

About the Airport – T.F. Green (PVD):

<http://www.pvdairport.com/>

## Publication Opportunity

The authors will have the option to select to have their full paper submissions considered for publication in one of the following journals:

- International Journal of Business Excellence
- International Journal of Business Innovation and Research
- International Journal of Management



- Concepts and Philosophy
- Benchmarking: An International Journal
- International Journal of Operational Research
- Maritime Policy and Management
- Transportation Journal Special Issue (for this journal, submissions must be maritime related and submitted to the conference by August 10th, 2017)

### Message from the Chair

The 2018 NEDSI Conference will be held at the Renaissance Hotel in Providence, RI on April 12 - 14, 2018.

- On-site check-in will start on April 12th, Thursday morning at 8am.
- The sessions will start on April 12th, Thursday morning at 9am and will continue through April 14th, Saturday afternoon.

- The gala dinner, keynote and awards ceremony will be held on April 13th, Friday night.
- A complementary full hot breakfast buffet will be served Friday and Saturday mornings.

See you in Providence, Rhode Island!  
Douglas N. Hales, Ph.D.  
University of Rhode Island

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MAHYAR AMOOZEGAR, FEATURE EDITOR, University of New Orleans

## An Individual Approach for Optimizing Bra Design Process to Improve Bra Fit

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*He has worked as an industrial designer for companies including Samsung Electronics (Seoul), Sismo Design (Paris), Studio Santachiara (Milan), MDA (Mexico City) and with clients such as Philips Design (Eindhoven), Im Able (Wellington), Crown (Auckland), among many others. Edgar currently leads the Smart Interactions Design team as an investigator in the Center of Research Excellence in Medical Technologies (CoRE MedTech). Smart Interactions Design investigates how to improve people's medical conditions and management through smart devices connected to digital interfaces.*

## Introduction

It has been more than a hundred years since Mary Phelps Jacob received a patent for the first bra design that is commonly recognized as the basis for all modern bras. Over this time, though there have been a great variety in aesthetics and design features, little has been changed in the way bras are sized, fitted and manufactured. In turn, bras continue to be a source of displeasure and discomfort (Yip & Yu, 2006). Presently, bras available in the market are limited in sizes and styles; they tend to fit improperly, and at times painful to wear to the point that they have become detrimental to one's health. Most, if not all, bra sizing is still based on women's breasts being divided into a discrete alphabetized system. This is despite the fact that women's breast size is a continuum across the population, and even more specifically a woman's left and right breast may not be the same size or shape. Furthermore, the current state of bra fitting relies on only two factors: overbust and underbust size (McGhee, 2009), and bras come with incomplete information reflecting these two metrics. For example, a bra may be labeled as 12C in New Zealand (or say, 34C in the U.S.), which presumably reflects the underbust and overbust respectively, but not all the 12s are of the same length and not all the Cs are the same cup volume. Finally, bra styles and functions can be compartmentalized in three different design processes: cut and sew, molded, and seamless. However, there is more room for advancement in the bra development and "human experience" process. There is an opportunity to use current advanced technologies influence unique bra designs in order to insure better individual bra fit, whilst also acting as a medium to give the bra wearer a better understanding of their breast measurements, and how the bra fits on them.

In the recent years there has been a movement to increase female body positivity. Many brands feature a celebration of the natural female form, incorporating a diverse range of body types to transcend normative understanding of the 'perfect' shape and size. This research strives to address the

importance of individuality in bra design to increase a better bra fit for comfort and support. One of the key insights from past research is a glaring lack of female contribution and involvement in the commercial bra design and marketing with specific regard to sizing and fit. Although there has been a recent consciousness of this issue, there is still tremendous room for improvement, to allow greater input by women for a product that is essentially designed for women. The change has been slow but steady, and in the authors' opinion, one of the intriguing parts of this type of research. How can women take back the bra so they are no longer forced to fit into a designated shape or a shape that has been already designed for them? But instead, have a relationship with a bra that molds to their body the way she desires it. Contemporary bra labels have started to reach out to everyday women, and through avenues such as social media, they have let women demonstrate what a bra means to them, and how they, as individuals, want to wear it and how it should fit and feel. In other words, a level of self-empowerment has been developed through the bra and through inviting women to finally be a part of the story and help guide the process.

## Size and Fit

Adequate bra comfort and support incorporates a variety of distinct dimensions. Not only does breast size need to be taken into consideration, but also individual breast contour, density and positioning (Chen, et al., 2010). It has been suggested that at least 70% of women wear the incorrect bra size, with large breasted women accounting for most of this discrepancy (Greenbaum, et al., 2003; McGhee, 2009; McGhee & Steele, 2010; Tsarenko & Strizhakova, 2015; White & Scurr, 2012). Figure 1 demonstrates the fundamental elements of the current bra fitting system incorporate over bust and underbust size (McGhee, 2009). However, these factors are insufficient for a proper fit. Research suggests that the smallest variations in body measurements can cause a significant difference, specifically up to a three-size differential in the standard bra sizing system (Liang, 2008;

White & Scurr, 2012; Wright, 2002).

Therefore, reliance on the current bra sizing system is left wanting and inadequate for a "perfect" bra fit.

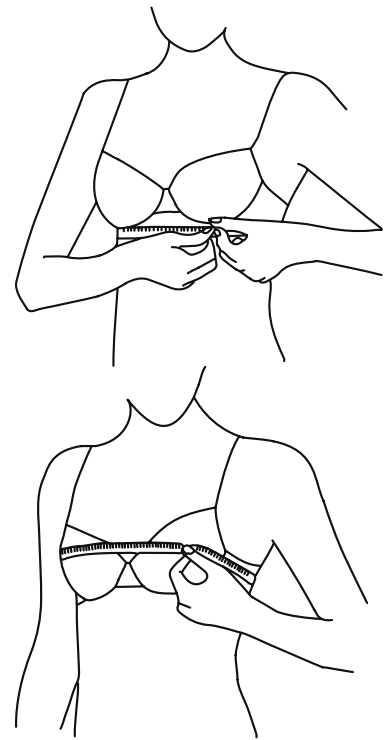


Figure 1. Traditional bra fitting measurements

Bra comfort and fit is a strongly subjective domain, and thus adherence to consumer preference is integral in determining correct bra style and fit. However, due to the variance in bra retailers' size labeling (Hardaker & Fozzard, 1997), it has been suggested that women struggle to acquire a well-fitted bra (McGhee & Steele, 2010). The bra sizing system of many bra labels are inconsistent and indeed arbitrary, leaving women without a reliable method of selection. Even if there was an agreement for a universal standard of bra sizing, millions of women who do not necessarily fit accurately into these units of increment, or more importantly do not have symmetrical sized breasts, would be left neglected and marginalized. Distinct breast shapes, bust distance and distribution of breast muscle, and density collectively must be taken into consideration for bra design and fit (Chan, et al., 2001). Not only does a well-fitted bra reduce discomfort and pain a good bra fit

also carries greater psychological significance (Mills, et al., 2014). A correct bra fit can help increase self-confidence and alter negative body perceptions, an integral aspect of psychological functioning that disproportionately impacts women worldwide.

Even if bra manufacturers followed the same standard, a particular bra will not fit two women exactly the same way, even though they may have the same bust girth and cup size (Murray & Michael, 1999). This is because these two metrics are not sufficient to assess fit of a bra, as breasts do not come in standard sizes and shapes. A perfectly fitted bra is important for not just comfort and aesthetics, but also for health. Therefore, other factors such as bust distance or distribution of breast muscle or density must be part of the calculus (Chan, et al., 2001).

### Advanced Technologies

Though many advanced technologies have been readily adopted in industry and research for decades, the rise in accessibility and drop in prices have also allowed new technologies to have a positive impact on the development and design in other areas that have traditionally avoided these processes. Literature has pointed to the potential of 3D scanner to gather breast volume, shape, three-dimensional curvature, breast outline, and many more measurements needed for bra design. Additionally, given the variability of breast shape and sizes and how pattern making is quite difficult to cater for this variability, there is a need to find manufacturing techniques that allow for individualization: 3D printing and 3D knitting.

Different advanced technologies currently play a role in bra development and experience. Advanced technologies could provide additional resources and harness the best aspect of manual design. 3D scanning offers the feasibility of accurate measurements that would cater to different body shapes and in a way provides the true customization that reflects the uniqueness of each individual. On the other hand, 3D knitting is a mass market manufacturing process, where rapid prototyping and processing is feasible.

With the complex 3D knitting capabilities, there is room for additional customizable features, such as specific knitting structure in certain parts of the bra for a more individualized fit. Moreover, the knitting of the bra allows for the use of the body scan measurements, which can influence the design structure of the bra. Ultimately, through customization in the bra system, this research hopes to increase the consumer engagement and awareness about their own bra fit and shape.

### Proposal

Unlike the social interactions associated with other fashion apparel shopping experiences, research shows the vast majority of women prefer to shop alone when purchasing intimate apparel (Hart & Dewsnap, 2000). Tsarenko & Strizhakova (2015) found that aversion to use of bra fitting services is especially prevalent amongst younger women, as they tend to rely more on the advice and assurance from peer group. Additionally, it is noted that women with larger breasts may experience higher levels of self-consciousness during bra fitting, and thereby attempt to size and fit the bras independently (Wood, 2009). Even when bra fitters are available, the high variability between experience, technique and accuracy leaves consumers with additional risk of error and may results in an ill-fitting bra purchase (Greenbaum, et al., 2003).

This research proposes an alternative to the traditional bra system, through an adaptive individual consumer centric manufacturing system of developing body specific bra. Individuality will not only be in the form of taste, preference, attitude, color and aesthetics, but also through one's inherent breast shape, structure, contours, volume, and asymmetry. The proposed bra system rearranges the traditional bra manufacturing into retail system by placing measuring the consumer as the first stage of the bra production, as shown in Figure 2, which in turn suggests that fitting into a bra will be a lot easier since the bra for purchase has been designed specifically for the individual. After the breast-measuring phase, the consumer has a variety of choice in determining the

design of the bra. By allowing the consumer to be a part of the design process also reflects the fit of the bra.

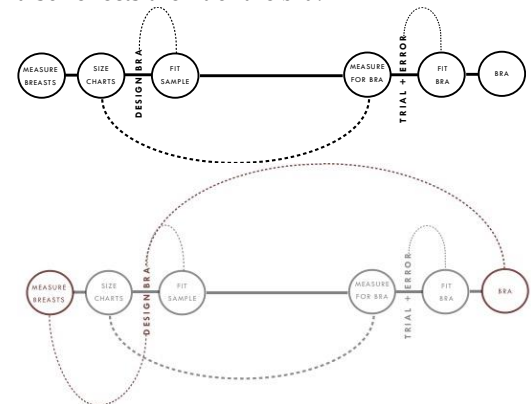


Figure 2. Traditional bra design system (above) and proposed bra system

### Methodology

#### 3D SCANNING

3D scanning has been validated as an effective method for breast imaging. Unlike other breast imaging techniques, the 3D scanner has the ability to create accurate surface images of the complicated breast contour. The scanner is able to capture a 3D breast models, which can be later analyzed to obtain the necessary measurements for bra design. Apparel researchers are relying more and more on body scan technology to overcome the disadvantages of manual anthropometry (Kim, et al., 2014), such as human error. One of the most ideal aspects of using 3D scanning for body imaging is its ability to store data for 3D models, where it allows for access to additional body measurement data without recalling a person back. In this research, 3D scanning technology was used to obtain accurate breast images of a number of volunteers. Each participant was asked to stand in a relaxed position with their hands on their lower waist, while the lead author captured the breasts and upper torso data, using a hand-held scanner. Figure 3 displays the 3D scanned data of the participants. Once scan data had been acquired, each scan was examined and any unnecessary imaging, such as the participant's partial image of head or arms, were removed from the scanned model.

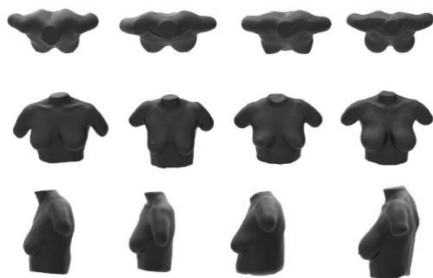


Figure 3. 3D scanned data of four self-determined 12D (34D) bra sized participants.

### PARAMETRIC MODELING

The parametric CAD software, Rhino Grasshopper, was used to extract the body data and appropriate measurements obtained from the 3D scanner. Through this software, the 3D model is manipulated and analyzed to assess accurate breast measurements needed specifically for the bra design process. Grasshopper is a parametric-based software within Rhino 3D system that allows the user to apply the same measuring processes for each 3D scanned model that is inputted into the program, instead of measuring manually each time. The software stores the designed formula needed to extract the measurements. The Rhino Grasshopper software was used to create a series of parametric “definitions” that will help standardize the process of identifying the necessary landmarking points, as well as group these points in order to extract accurate breast measurements for better bra fit and individualized design. Initially, based on the past research of Lee, et al. (2004), several landmarking points are identified manually (e.g., Bottom Breast Point [BBP], a point along the inframammary fold of the breast) on the scan, which form a baseline. Additional points are automatically placed according to the designed Grasshopper definition list, which depends on the placement of the first manual points. This insures that when a new scan is inputted into the system, the measurements will not need to be recalculated, as long as the first manual landmarking points are placed correctly and consequently all other measurements should follow accurately as well. The landmarks and anatomical reference points include: Upper breast point (UBP), upper breast point A (UBPA), center shoulder

point (CSP), the bust point (BP), front armpit points (FAP), inner breast point (IBP), outer breast point (OBP), side waist point (SWP), the bottom breast point (BBP), front center point (FCP), and front neck point (FNP). These points help establish a clear understanding of how to reference the breast and are vital in developing accurate measurements and designing adequate bra fit. For example, the breast outline, which is the curve that defines the boundaries of the breast, is obtained through the landmarking points, OBP, BBP and IBP. The breast outline is a necessary measure to help design the underwire as well as the bottom bra cup shape.

Though some points and measurements for a bra design will be static, many measurements will be highly variable and dependent on the bra style and specific design, such as the band or strap design. Figure 4 shows the static and flexibility of the landmarking points. The fixed landmarking points are necessary to obtain the accurate breast measurements for the bra design, however there are a number of points which can be altered and positioned according to the user’s desired bra shape. For example, the cup design depends on, the Inner Breast Point (IBP), Upper Breast Point A (UBPA), Outer Breast Point (OBP) and BBP, where the IBP and UBPA positioning can be variable depending on what type of cup style is preferred by the bra wearer. Sliders are designed in the Grasshopper definition to control the movement of these variable points in order to allow for easier adjustments and user-friendly designing. In other words if the designer would like to change a part of the design, e.g. the back band region, of the bra, he/she would choose the slider that controls that specific area of the band design. All the other points will adjust accordingly to make sure that the bra design always adapts back to the 3D scanned model.

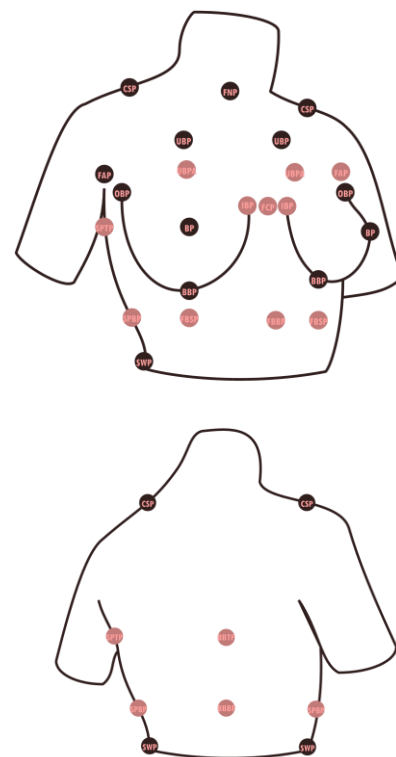


Figure 4. Breast landmarking points highlighted to demonstrate fixed and variable positioning

Figure 4. Breast landmarking points highlighted to demonstrate fixed and variable positioning

Figure 5 displays modeling in the Rhino Grasshopper software to utilize the input, the 3D scanned model mesh (point A), and set the manual landmarking points that are then used to develop the additional landmarking points automatically and corresponding breast measurements needed for individualized fitted bra design. For example, the top right box (point B) contains a set of definitions that set the automated landmarking point (UBPA) and determine the measurements needed for the right breast for the right bra cup design (BP to BBP; BP to IBP, BP to OBP; IBP to BBP to OBP; IBP to UBPA to OBP) based upon the selected relevant manual points (BP, IBP, and BBP) and the relevant automated point found in the box on the top left (OBP) (point C). Highlighted in bright blue is the process of obtaining the Outer Breast Points (OBP) parametrically through the programming of a specific definition sequence to create this formula. The OBP can be calculated through the midpoint of the Front Armpit Point (FAP) and the intersection of FAP



and the Side Waist Point (SWP), and the horizontal line passing through the BBP (Lee, et al., 2004). So, the OBP is unique to the position of the BBP, FAP and SWP of both right and left breast, and thus must be considered be evaluated separately.

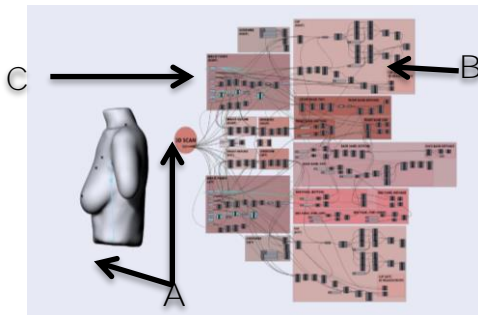
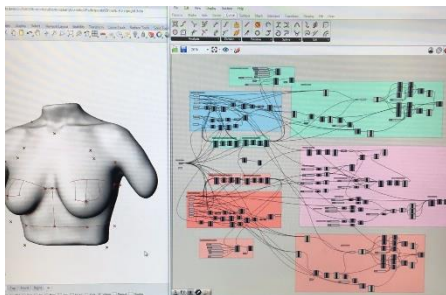


Figure 5. Automated landmarking of the OBP; Grasshopper to bra design



Using the landmarking technique described above, we were able to draw outlines of the different contours of the breast shape in order to further examine these variances, as shown in figure 6.

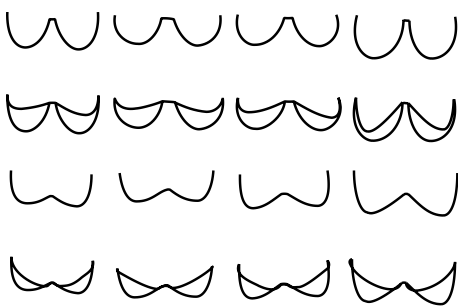


Figure 6. Sketch of landmarking points utilized for underline and bust line comparisons

The first set of sketches outlined the points OBP to BBP to IBP for each breast, where a line is drawn through these points to create an underbust line, a line that is used to measure and design the underwire shape.

The points between the two IBP are also connected in this sketch to outline the front band distance. The second set looks at the points drawn from OBP to BP to IBP for each breast. This can be understood at the bust point line. When the first set and second set are combined and viewed from a perspective angle it becomes quite interesting. Here, the differences between bust heights are examined. One can notice that each participant has a different bust point (BP) altitude and angle. Moreover, for each participant there are different BP heights between the right and left breast.

### Discussion

Most bra design and manufacturing companies are seeking better ways of making bras that are aesthetically pleasing, are affordable and meet the changing demand (as well as body shape and contour) of their customers. The gap between what the users of bra need and require and what the bra manufacturers (and designers) provide is wide. And although this paper and its associated larger research by itself cannot revolutionized the process or even the culture of bra designing, manufacturing in one side and bra fitting and selection on the other, it has opened new avenues of exploration for developing a process and concept for this important garment.

This research focused on developing an overall system for a more accurate bra design, instead of focusing on the product alone. The bra, consequently, becomes part of a life-long service system that is able to adapt to both physical and personal desire of the bra wearer. The research has led to the design of a bra fitting and design system that allows each user to be measured for her unique contour and individual body shape. Due to the symbiotic relationship between bra fit and bra design, the project's system has been designed parametrically in order to digitize the measuring process to insure that the points of measure adapt to each new scan and each woman is treated uniquely. The data accumulated would help produce tailored bra designs in order to insure a more precise bra fit. This research hopes to inspire future bra designs to utilize advanced digital

technologies to facilitate improved bra fit through bra design, as well as, insure that the bra wearer is part of the conversation and has a say about this integral part of her everyday intimate attire.

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Keown, Arthur J.  
Khumawala, Basheer M.  
Kim, Kee Young  
King, William R.  
Klein, Gary  
Koehler, Anne B.  
Krajewski, Lee J.  
LaForge, Lawrence  
Latta, Carol J.\*  
Lee, Sang M.  
Luthans, Fred  
Mabert, Vincent A.  
Malhotra, Manoj K.  
Malhotra, Naresh K.  
Markland, Robert E.  
McMillan, Claude\*  
Miller, Jeffrey G.  
Monroe, Kent B.  
Moore, Laurence J.  
Moskowitz, Herbert  
Narasimhan, Ram  
Neter, John  
Nutt, Paul C.  
Olson, David L.  
Perkins, William C.  
Peters, William S.  
Philippatos, George C.  
Ragsdale, Cliff T.  
Raiffa, Howard\*  
Rakes, Terry R.  
Reinmuth, James R.  
Ritzman, Larry P.  
Roth, Aleda V.  
Sanders, Nada  
Schkade, Lawrence L.  
Schniederjans, Marc J.\*  
Schriber, Thomas J.  
Schroeder, Roger G.  
Simone, Albert J.  
Slocum, John W., Jr.  
Smunt, Timothy  
Sobol, Marion G.  
Sorensen, James E.  
Sprague, Linda G.\*

Steinberg, Earle  
Summers, George W.\*  
Tang, Kwei  
Taylor, Bernard W., III  
Troutt, Marvin D.  
Uhl, Kenneth P.\*  
Vakharia, Asoo J.  
Vazsonyi, Andrew\*  
Voss, Christopher A.  
Ward, Peter T.  
Wasserman, William\*  
Wemmerlov, Urban  
Wheelwright, Steven C.  
Whitten, Betty J.  
Whybark, D. Clay  
Wicklund, Gary A.  
Winkler, Robert L.  
Woolsey, Robert E. D.  
Wortman, Max S., Jr.\*  
Zmud, Robert W.

\*Deceased

In order for the nominee to be considered, the nominator must submit in electronic form a full vita of the nominee along with a letter of nomination which highlights the contributions made by the nominee in research, teaching and/or administration and service to the Institute. Nominations must highlight the nominee's contributions and provide appropriate supporting information which may not be contained in the vita. A candidate cannot be considered for two consecutive years.

### **Send nominations to:**

Chair of the Fellows Committee Decision  
Sciences Institute  
C.T. Bauer College of Business 334 Melcher  
Hall, Suite 325  
Houston, TX 77204-6021

[info@decisionssciences.org](mailto:info@decisionssciences.org)

**DSI 48th Annual Meeting**, November 18 – 20, 2017 in Washington, DC. Program Chair Kathryn Stecke, [KStecke@utdallas.edu](mailto:KStecke@utdallas.edu).

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