BRIDGING INDUSTRY, STUDENTS AND FACULTY.

DCMME FALL CONFERENCE & POSTER COMPETITION

“MANAGING SMART MANUFACTURING”

10.30.2015 RAWLS HALL

Dauch Center for the Management of Manufacturing Enterprises
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In this newsletter, you will find a summary of our 2015 Fall Manufacturing Conference hosted by DCMME, the Dauch Center for the Management of Manufacturing Enterprises at the Krannert School of Management at Purdue University. Our theme for the October 30 conference was “Managing Smart Manufacturing”. Our goal was to foster a vibrant discussion of the benefits of leveraging new tools – 3D printing, robots, the Internet of Things, drones, augmented reality to fast response – and how these can generate a competitive US manufacturing environment. I hope you will enjoy the summaries of the talks presented and some videos created by center graduate assistants that are posted on the center website. Please let us know if you would like more information or connections with our speakers.

Thank you to all of the faculty who moderated discussions with speakers – they represent the breadth of Krannert’s faculty interests in manufacturing and supply chain management. We hope to build on this interdisciplinary perspective as we evolve the center’s activities. We are also focused on creating a significant digital presence for the center. With funding from CIBER, and with graduate student assistance, we have already created over 200 blogs regarding the next conference that will be hosted by the center on January 29, 2016 – a focus on TPP – the recently signed Trans-Pacific Partnership and its impact on the Global Supply Chain. Please mark the date and plan to attend the conference – details will be forthcoming on the center website.

We look forward to helping you connect with industry and welcome you to become part of the center’s activities as we work to be a bridge between industry, students and faculty. Please contact us at dcmme@purdue.edu or email me at aiyer@purdue.edu to enable us to develop an excellent center.

Sincerely

(Ananth V. Iyer)

Professor Ananth Iyer
Susan Bulkeley Butler Chair in Operations Management
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MANAGING SMART MANUFACTURING

FEATURED SPEAKERS

THANK YOU CENTER PARTNERS & EVENT SPONSORS
INDYCAR named Will Phillips as Vice President of Technology in March 2011, responsible for overseeing the direction and implementation of the technical rules package for the next generation of Verizon IndyCar Series car and their enforcement starting with the 2012 season. Additionally, Phillips chairs the IEC and IAC (INDYCAR Engine Committee and INDYCAR Aero Committee), groups of representatives from the Verizon IndyCar Series manufacturers that meet several times a year to discuss goals and emerging technologies while developing a roadmap for the future. Phillips, of the United Kingdom, served as engineering director for Patron Highcroft Racing in the American Le Mans Series, which won the LMP championship in 2010. He also has held senior engineering positions in North American racing with de Ferran Motorsports, PacWest Racing, Herdez Competition and Rocketsports. Phillips was responsible for the design, development and delivery of the Reynard 02S sports car. Additionally, he contributed to chassis design and development for March’s 1989 & 90 Porsche Indy, the 1991 Fondmetal Formula One car and 1992 Venturi Larrousse Formula One car. Phillips as a race engineer has worked with current Verizon IndyCar Series drivers Ryan Hunter-Reay, Simon Pagenaud and previously Alex Tagliani, Danny Sullivan, Scott Sharp, Nigel Mansell and Teo Fabi among others.

Daniel Louks joined INDYCAR as Engine Support Engineer in November 2011, responsible for data collection, analysis, and inspections of Honda and Chevy Engines for Rules compliance. Louks, from Lebanon, Indiana, received his Bachelor of Science in Aeronautical and Astronautical Engineering from Purdue University in 1998. Following graduation, Daniel started his career working with drag-racing chassis manufacturer McKinney Corp. as an extension of research work he performed during his studies at Purdue. He continued the work with a variety of research & development projects including on-board data acquisition, CFD analysis, aerodynamic design, and custom software designs. He has held data engineering positions in IndyCar Racing since 2001, and during his tenure with racing teams has worked with current Verizon IndyCar Series drivers Ryan Hunter-Reay, Takuma Sato, and Graham Rahal, among others.

Russell Hillenburg was born into fabrication. In 1967 his grandfather founded Woven Metal Products (WMP), of which he is now President. As a third-generation family business owner, Mr. Hillenburg has seen the growth of WMP over the years and the evolution that has occurred from a fabrication facility making custom metal parts, into the solutions provider of today, working with all major licensors in the oil and gas processing industry. Mr. Hillenburg began as an Operator/Worker at WMP and worked through the ranks of Field Superintendent, Administrative VP, and on to President of the company. The field time gave him invaluable experience that he still calls upon today when dealing with clients or helping to anticipate problems in the field. Mr. Hillenburg has personally cultivated or created many of the licensor relationships to which WMP can credit its success, such as Haldor Topsoe, Axens and UOP. WMP works with the majority of end-users, refineries and chemical plants all over the world, but calls Alvin, Texas home, the site of the company’s fabrication facility. Customers often call upon Mr. Hillenburg as a subject matter expert in refining and chemical plant equipment. In recent years, Mr. Hillenburg also eliminated the Field Installation Division of WMP, allowing it to focus on what it truly does best, specialty fabrication. He has segmented
Tomás Díaz de la Rubia is Purdue University’s chief scientist and executive director of Discovery Park. In this position, his responsibilities include building upon Discovery Park’s foundation of excellence which has enabled high-impact research that crosses traditional academic boundaries. He works closely with the faculty and deans to help catalyze Purdue’s many strengths and build on its legacy of interdisciplinary research with global impact and public-private partnerships. Before coming to Purdue, Díaz de la Rubia served as innovation leader and a director in Deloitte’s energy and resources industry practice in Washington, D.C., working with Fortune 500 energy and manufacturing companies to identify and capitalize on business opportunities arising from potentially disruptive, innovative new technologies. Prior to joining Deloitte, Tomás was the chief research officer and deputy director for science and technology at the Lawrence Livermore National Laboratory (LLNL) in California where he was responsible for the long-term health of the science and technology foundations of the laboratory’s $1.6 billion research program. From 2002-2009 he was an associate director at LLNL, leading its chemistry, materials science, life sciences, and energy and environmental sciences organizations, as well as its $60 million basic materials science, chemistry and biology programs with the Department of Energy’s Office of Science. As a scientist and researcher, Díaz de la Rubia led LLNL’s Computational Materials Science Group, investigating fundamental and applied materials science problems with an emphasis on multiscale phenomena and varying applications from radiation damage to semiconductor materials to materials in extreme environments. For his research, he partnered with the Department of Energy, Defense Advanced Research Projects Agency and other federal agencies as well as industry leaders Bell Labs, Intel, Applied Materials and others. Díaz de la Rubia has published more than 150 peer-reviewed articles and has co-edited several books and conference proceedings. He is a fellow of the American Physical Society and of the American Association for the Advancement of Science and served as an elected member of the board of directors of the Materials Research Society, and vice-chair of the division of computational physics of the American Physical Society. He holds a bachelor’s degree (summa cum laude) and a doctorate in physics from The State University of New York, Albany.

Eric Matteson, Plant Leader, Lafayette Engine Facility, GE Aviation

Eric was born in Buffalo, New York. He attended the Rochester Institute of Technology and graduated with a B.S. degree in Electrical Engineering in 1994. He started his career with GE in 1992 with GE Power Systems in Schenectady, NY, and later joined GE Fanuc in 1994 as an application engineer in Albany, NY. In 1996, Eric moved to GE Fanuc HQ in Charlottesville, VA, where he held various roles including 3 years in a dedicated Six Sigma Black Belt role leading business critical projects. In 2005, Eric accepted the role as Program Leader at GE Aviation in Durham, NC. He led several jet engine assembly programs through periods of significant growth and expansion. Currently, Eric is leading the new GE Aviation Lafayette site start-up project, positioning this new facility to begin production operations in January of 2016. Eric is married to Jacqueline, and has 3 children: Gabriel 20, Zachary 18, and Erica 17. He likes water sports, outdoor activities, and being creative with his hands. Most of all, he enjoys spending time with his family and friends.
As a manager for Caterpillar Inc., Stacey DelVecchio leads an engineering pipeline transformation project to ensure the best engineering talent is available to meet enterprise needs. She is also responsible for the engagement strategy with professional external organizations, as well as the science, technology, engineering, and math education (STEM) strategy. In her more than 23 years with Caterpillar, DelVecchio has worked in process and product development for nonmetallic components, production support for paint and process fluids, and the build and start-up for a green-field facility in China. A certified Six Sigma Black Belt, she earned that classification by working on projects that included lean manufacturing, failure analysis, and employee engagement. Previously, DelVecchio was the hose and coupling engineering manager, as well as the new product introduction manager for Cat Fuel Systems. Most recently, she managed the project management office for Caterpillar engines with responsibility for the project management of all new product introduction programs, continuous improvement projects, and cost reduction project in the division. A SWE life member of the Central Illinois Section, DelVecchio holds a B.S. in chemical engineering from the University of Cincinnati. Her previous SWE experience includes the Corporate Partnership Council, strategic planning committee, conference programming board, awards committee, and Society treasurer. She served as the SWE president from July 2012 to June 2013. DelVecchio’s volunteer efforts have earned her many local community and SWE awards. In her leisure time, she enjoys scrapbooking, reading, and visiting national parks. She lives in Peoria, Ill., with her husband, Kerry, and their cats, Abe and George.

Roy Vasher began his career at Ford Motor Company in Dearborn, MI. He served as Information Systems Manager in Ford Division and Finance Staff. During his 19+ years at Toyota, Roy developed deep insight and experience on how to integrate Information Technology to support lean processes by serving as General Manager, Information Systems. Roy led a cross-functional team to streamline and integrate Toyota’s vehicle supply chain to reduce Order-to-Delivery lead-time and optimize vehicle inventory – leading the industry in these innovations. Roy is currently Assistant Professor of Management at Purdue University. Roy is also a Lean Consultant and President of RPV Consulting, LLC. He co-authored Toyota’s Supply Chain Management: A Strategic Approach to Toyota’s Renowned System.
Alexander Nazarov is a Product Chief Engineer at Cummins Distribution Business Unit. After the acquisition of North America Distribution Network, he became a part of the leadership team and has played a major role in the development of a central ecosystem. The ecosystem will link together systems, processes, between various functions within a single distributor, and complete North America distribution network. The focus has been to provide enough information about the product to ultimately enable global legendary customer support. Alexander has more than 10 years of business-building experience. He led in the hiring and coaching of a successful, self-motivated team and developed system processes to support engineering, manufacturing quality, sourcing and service. He has lived and worked in United States, Russia, and Singapore. Alexander’s leadership experience has grown because of the diverse opportunities in Russia and Singapore, the technical general management role, and a strong upper management team. He credits his divergent exposure within the business as one of the keys to success in forming strategic partnerships with cross-functional leaders. Alexander holds a Master Degree in Electrical Engineering from Purdue University. He also graduated from the Leadership Skills Program and Management Accounting Program at Singapore Institute of Management.

Mr. Robert L. Nida, also known as Bob, has been Vice President of Organizational Development at Wabash National Corp. since February 27, 2014. Mr. Nida has been Vice President of Business Development at Wabash National, Inc since February 2008. He served as vice president and general manager, retail at Wabash National since 2008. He is employed at Wabash National Trailer Centers. He served as corporate senior vice president at Accuride Corporation in Evansville, Ind. He was Senior Vice President of Accuride Wheels, Gunite & Brillion Iron Works at Accuride Corp. since August 10, 2005. He served as Senior Vice President Gunite & Brillion Iron Works at Accuride Corp. from December 2006 to December 2007. He served as Vice President–Technology at Accuride Corp. since July 2002. Bob has a Black Belt in Six Sigma and holds certifications as a Quality Systems Auditor for QS9000 and TS16949. He is in the final dissertation stage of his Ph.D. in Organizational Leadership at Regent University’s School of Global Leadership & Entrepreneurship. Mr. Nida holds a B.A. in Sociology from Bridgewater College and a Masters in Total Quality Management from Friends University.
Mr. Phillip’s and Mr. Louks spoke about Smart Data and the role that computers play in technology in the INDYCAR Series. The series can have up to 33 drivers on track at the same time, and they compete on road and street courses, as well as ovals. There are currently 11 teams in the INDYCAR Series, and at any point during a race there are upwards of 150 engineers directly involved in the running of a race. Will & Daniel provided an overview of some of the computer systems that are actually on an INDYCAR. Examples include the Pi Logger Box that has over 50 sensors and 1,000 parameters and a McLaren Engine Control Unit that has over 40 sensors and 200 parameters. Per car, they record 1-2 GB of data per event. The analysis of this data and real time calculations are then used to provide essential performance related feedback to the engineers of the cars on track. This information is extremely valuable because it allows the teams to adjust and improve their cars to perform better, and increase the possibility of winning a race and the industry. Participants received a glimpse of the future of manufacturing – as the cost of sensors and data acquisition devices drop, more and more devices, from passenger cars to refrigerators and washing machine to machine tools, will generate lots of continuous data that will be routinely used to optimize their performance. Seeing how all of this comes together in the heat of the race provides a fascinating look at this industry as a harbinger for SM in Indiana.
Joey Meisberger is a second year MBA student at Purdue University’s Krannert School of Management with concentrations in Operations and Supply Chain Management. Originally from Indianapolis, IN, Joey completed his undergraduate degree at Purdue University, where he earned a Bachelor of Science in Mechanical Engineering Technology. Prior to coming back to Purdue, he worked for 1 year as a contract Mechanical Design Engineer for Sikorsky Aircraft and almost 4 years as a Mechanical Design Engineer for Juno Lighting Group. In his time as a contractor for Sikorsky he researched and designed engineering changes for their commercial and military helicopters, primarily dealing with their Blackhawk platform. In his time at Juno Lighting Group he designed over 25 new product commercial LED lighting fixtures and spearheaded 7 major new product launches as the lead engineer. During the summer Joey did his internship at Emerson Climate Technologies in Sidney, OH, where he was an Air Conditioning Sales and Marketing Intern. He created an OEM Account Readiness Tool for the Department of Energy’s new commercial regulatory changes. He also justified multiple new product compressor business cases and optimized a compressor Kanban and inventory stocking plan for FY 2016. He not only utilized his engineering background and operations and supply chain knowledge in his time at Emerson, but he also developed strong sales and marketing skills while contributing to one of the leaders in the HVAC industry.

Session moderated by Dr. Karthik Kannan, Professor of Mgmt. Website: http://www.krannert.purdue.edu/faculty/kkarthik/

Karthik Kannan is a Professor at Purdue’s Krannert School of Management. He has proposed the concept of “Design for Instincts” as a way to organize businesses in the current age. His research focuses on the same “Design for Instincts” theme. Specifically, he studies how different aspects of information technology may be used to exploit human instincts and biases in order to nudge/manipulate behavior. He works on three primary research streams: pricing using auctions of information goods, pricing of data networks, and economics of information security. His papers have been accepted in several leading conferences and journals in the information systems area, including Management Science, Information Systems Research, Workshop on Information Technology and Systems, Workshop on Information Systems Economics, International Conference on Information Systems, and Conference on Information System and Technology. His papers have won the Best Paper Awards in the 10th and the 15th Annual Workshop on Information Technology and Systems. He currently serves/has served as an Associate Editor for Management Science, Information Systems Research, and MIS Quarterly. He is a member of AIS and INFORMS. He is also a CERIAS Fellow and Krannert’s Faculty Fellow. At Purdue, he teaches the IT course in the MBA programs (in the regular, weekend, and Exec Ed MBA). He has also been a visiting faculty member at GISMA and ISB. Previously, he taught the undergraduate core course as well as a database course. Prior to joining Purdue, he obtained his PhD in information systems, MS in Electrical and Computer Engineering, and MPhil in Public Policy and Management all from Carnegie Mellon University. Before joining the graduate school, he worked with Infosys Technologies for a couple of years. His undergraduate degree is in Electrical and Electronics Engineering from NIT Trichy (formerly, REC Trichy).
Russell Hillenburg presented Woven Metal’s insight into Smart Business. According to Russell, there are three important keys to a smart business, namely, the people, its evolution and its vision. People: The people aspect of a smart business encompasses the following points. First, the team. The team that works for you matters a lot. In this regard, you need the right people at the right place. By creating the right environment, you get the best people, and they stay for a long time if they are fulfilled. Secondly, the Customers: Woven Metal Products prides itself on its customer focus. WM provides unique solutions and a very high service level for each of its customers. According to Russ, speed and service is the key for growing a huge customer base, and that is the WM philosophy. Thirdly, the vendors. Given the high service and speed requirements for WMP customers, it is necessary to have a close relation with vendors to provide the same service level. Evolution: Constantly evolving in today’s world is the key, and Russ states that following areas are key for evolution. 1. Personal: Long term development of people is important to ensure that people are motivated and that they are ready for any new challenges coming up. 2. Technology: In the ever changing environment, one has to be abreast of latest technology and adapt it to improve on their product, process or service. 3. Machine: To make sure that WMP can service all customer urgencies, they keep a lot of spare capacity with their machines and often upgrade or buy new machines to ensure the same. Vision: As per Russ, a business must have a long term vision for what it wants to be and how it will achieve it. A vision consists of the following parts: 1. Goals: An organization must have clear defined goals on what it needs to achieve. 2. Financial: The organization should have strong financial knowledge and all decisions should be made keeping the financial aspects in mind. 3. Training/Implementation: For development of its resources and achieving its vision, there should be a strong training and development program for the people and implementation of new technology.

-Akshit Bajpai, DCMME Center GA
Akshit Bajpai
MBA 2016 | VP of Technology and Administration- Krannert Graduate Students Association | VP of Case Competition- Krannert Operations Club

Akshit is a first year MBA student at Purdue University’s Krannert School of Management with concentration in Operations and Finance. He is from India, where he graduated as Mechanical Engineer from University of Pune and worked for 5 years in Supply Chain Management for Honeywell Turbo Technologies. Akshit handled various roles in Supply Chain in Honeywell and most recently handled dual responsibilities of customer planner and Demand and Production Planner, where he was responsible for customer demand management of selected customers and also participated in global processes for total sales planning, production and Inventory planning for his plant. Within Krannert, Akshit is Vice President of Technology for Krannert Graduate Students Association and Vice President for Case Competitions for Krannert Operations Club. During the summer Akshit interned with Techshot Lighting in Greenville, Indiana. There he worked on preparing an export plan and work on financial projections and operations setup for local orders for Techshot Lighting. Akshit utilized his knowledge of operations, finance and strategy to achieve his internship goals.

Session moderated by Dr. Susan Watts, Professor of Mgmt.
http://www.krannert.purdue.edu/academics/Accounting/Professor-Susan-Watts-page.asp

Susan Watts is currently a Professor of Management in the Krannert School of Management at Purdue University. Her research focuses on the effect of information and competition in markets. Most recently, her efforts have been focused on understanding voluntary disclosures made by firms—what triggers them and how they affect stock prices and product market competition. She has also continued to study firms’ decisions to engage in socially responsible activities and how those decisions affect product market competition as well as disclosure and assurance decisions made by rival firms. Some of her earliest papers use experimental economics methods to study information dissemination in asset markets. Her work has been published in various journals including Journal of Accounting Research, Journal of Accounting & Economics, The Accounting Review, Rand Journal of Economics, Management Science, Review of Accounting Studies, Contemporary Accounting Research, Journal of Management Accounting Research, Journal of Economics & Management Strategy, and others. She has been named a Purdue University Faculty Scholar and a Krannert Faculty Fellow.

Professor Watts’ teaching interests include financial and managerial accounting, and she has taught a Purdue Honors Program project course on corporate social responsibility and ethics. She also teaches and works closely with doctoral students on their research and is the area academic advisor for the doctoral program in Accounting. She was included in Purdue University’s Book of Great Teachers in 2008 and was awarded the Purdue University Charles B. Murphy Teaching Award in 2004. She is a fellow of the Purdue University Teaching Academy and has participated both as a senior faculty member and a junior faculty award recipient in Purdue’s Teaching for Tomorrow program. She has also received several School-wide teaching awards at Purdue. Before joining Purdue, she was a faculty member at Indiana University-Bloomington where she also received university, school and department teaching awards.
Dr. Tomás Díaz de la Rubia is currently the Chief Scientist and Director of Discovery Park at Purdue University. He holds a PhD in physics from The State University of New York, New Albany. On October 30, 2015 he spoke on the topic of a growing world population and how technology will help to facilitate and manage that growth. By the year 2050 the world’s population is expected to reach 9.6 billion. With this dramatic growth comes many challenges that will face our global society. An aging population, the rising cost of healthcare, global pandemics, and sustainability are just a few of these issues that will have to be addressed. The exponential growth of today’s technology is a major resource that will have to be used in order to find solutions to these growing problems resulting from an increasing population. By 2030 60% of the population is projected to make up the middle class. This translates into large populations migrating towards large cities and the growth of said ‘Mega Cities’. This growth will undoubtedly result in the demand for the most basic human necessities like energy, food, and water. Interconnected devices will be a major part of business, society, and life as we way in which society benefits from these advances. Indeed, the future discoveries and innovations that will help solve society’s 21st century grand challenges will emerge not just from advances in the physical and life sciences, but from the convergence of these disciplines with exponentially advancing digital technologies. Tomás explored some examples of how this convergence is leading to new innovation business models, and how it is being exploited by companies worldwide to offer new products and remain competitive.
know it in this unprecedented growth of the future. Smart devices will help to connect millions of users and aid everyone from entrepreneurs to educators. Big data analytics will help to predict trends and manage a massive population. Drones and smart devices will help to grow the sufficient amount of food to feed the world. New alloys and metals will help to make buildings, cars, and devices lighter, smaller, and more compact. Dr. Tomás went on to discuss how technology has grown exponentially over the past few decades. He noted that super computers 30 years ago were housed in large warehouses, whereas today they fit in our pockets. This exponential growth in technology is what is necessary to keep pace with our ever-growing population. With the birthrate of millennials much lower than that of the baby boomers this technology will be needed not only to manage the growing population, but care for and assist the aging population.

-Matt Jung, DCMME Center GA
By highlighting GE’s business branches, Mr. Eric offered insightful information about GE. With more than 50K technologists, the company is able to manage its seven branches including Aviation, Power and Water, Transportation and Healthcare. The focus of his presentation was to describe the way manufacturing is evolving within GE’s walls. The enterprise is aware of the new trends in the market such as 3D printing, desktop design and virtual manufacturing. The physical and digital worlds are currently converging when the advanced manufacturing meets industrial internet. The more collaborative and efficient these become, the greater is the chance for GE to increase its productivity. To reflect an estimated number, 1% of productivity savings represents more than $500MM for GE. Returning to virtual manufacturing, GE is currently focused on developing a network that will be fully connected, automated, predictable, and unstoppable. It will be like a factory that never stops. There will be feedback loops within units that will help to improve design and production. All of these will translate into a better experience for the end consumer. Mr. Eric also introduced GE’s App Store that he expects will deliver an unprecedented efficiency and speed in manufacturing. Predixtm will serve as the platform for supply chains to collaborate in the cloud. This will enable better communication among the different branches that shape the business. Predix Cloud will drive the next phase of growth for the Industrial Internet and enable developers to rapidly create, deploy and manage applications and services for industry. With $4B in software revenues in 2014 and projected software revenues of $6B in 2015, GE continues to grow its investment in software. The Industrial Internet is generating data twice as quickly as any other sector. With investment in infrastructure expected to top $60 trillion over the next 15 years, the number of devices connected to the Internet will continue to swell, generating an unprecedented collection of data and analytics. Built for Predix, the cloud platform for the Industrial Internet, Predix Cloud is designed to provide a highly secure infrastructure for this next phase of growth,
which will generate a new level of insight, asset performance management (APM) capabilities and innovation in the developer community.

-Pablo Martinez, DCMME Center GA

Session moderated by Dr. Ananth Iyer, Susan Bulkeley Butler Chair in Operations Management, Professor of Mgmt. http://www.krannert.purdue.edu/directory/bio.asp?username=aiyer

Professor Iyer is the Susan Bulkeley Butler Chair in Operations Management at the Krannert School of Management. He is also the Director of Purdue NExT (a University wide modular online interactive courses for global distribution) and Director of the DCMME & GSCMI Centers. He was the Associate Dean for Graduate Programs (2011-2013) and Director of DCMME (Dauch Center for the Management of Manufacturing Enterprises) and the founding Director of GSCMI (the Global Supply Chain Management Initiative) (2006-2011) at the Krannert School of Management. Previously, he was Purdue University Faculty Scholar from 1999-2004. His teaching and research interests are operations and supply chain management. Professor Iyer’s research currently focuses on analysis of supply chains including the impact of promotions on logistics systems in the grocery industry, and analysis of the impact of competitors on operational management models and the role of supply contracts. His other topics of study include inventory management in the fashion industry, effect of supplier contracts, and use of empirical data sets in operations management model building. He has four books ranging from a textbook on Managing Supply chains to trade books on Toyota Supply Chains, Supply Chains on the Silk Road and Orchestrating Supply Chain Opportunities. His published works (with co-authors listed in the publications list) include “An Approach to Identifying Beneficial Collaboration Securely in Decentralized Logistics Systems, MandSOM (to appear); Efficient Supply Chain Management at the US Coast Guard using Part Age Dependent Supply Replenishment Policies”, Operations Research, 2006; “A Principal Agent Model for Product Specification and Production”, Management Science, 2005; “The Logistics Impact of a Mixture of Order Streams in a Manufacturer-Retailer System”, Management Science, 2003; “The Supply Chain Impact of Smart Customers in a Promotional Environment” with Huchzermeier and Freiheit, MandSOM, 2002; “Inventory Cost Impact of Managing Lead Times using Priority Queues based on Demand Uncertainty;” Naval Research Logistics, 2002; “A Logistics Model in a Promotion Sensitive Grocery Environment” with J. Ye, Networks, 2001; “Assessing the Value of Information Sharing in a Promotional Environment” with J. Ye, Manufacturing and Service Operations Management, 2000; “Quick Response in Manufacturer Retailer Channels” with Mark Bergen, Management Science, 1997; “Backup Agreements in Fashion Buying - The Value of Upstream Flexibility” with G. Eppen, Management Science, 1997; and “Separating Logistics Flows in the Chicago School System” with D. Elsenstein, Operations Research, Vol. 44, No. 2, 1996. He was the FMC Scholar in 1990-91. He has served as a Department Editor of Management Science, Associate Editor of Operations Research, is on the editorial boards of Operations Research Letters, IIE Transactions, the ECR Journal and Manufacturing and Service Operations Management editorial board, and member of INFORMS. He was president-elect of the MSOM Society of INFORMS in 2001-02 and served as president for the year 2002-03. Prior to joining the Krannert faculty in 1996, Professor Iyer taught at the University of Chicago. He has been affiliated with the Production and Distribution Research Center at Georgia Tech, and a consultant to Dayton Associates, Sara Lee, Turner Broadcasting and others. He served his Chicago community as a pro bono consultant to the Chicago School System and the Chicago Streets and Sanitation Department. He blogs about Global Supply Chain Management at http://avijer10.wordpress.com/author/avijer10/
Stacey DelVecchio discussed the experience that Caterpillar Inc. has had implementing Smart 3D Printing in the manufacturing environment. As Additive Manufacturing Product Manager at Caterpillar Inc., Stacey has led interesting engineering pipeline transformation projects as well as coordinated the engagement strategy with external organizations. As certified Six Sigma Black Belt, she has worked in projects that include lean manufacturing and data analysis. During her presentation Stacey explained the challenges related to building engagement and knowledge while implementing strategic projects such as Smart 3D printing. To expose employees to the new technology, the management team offered nomadic printers at their facilities in order to allow workers to experiment with the processes, suppliers, materials and software. This phase of the project took place in 6 locations of the organization during 6 months. Through this pilot, the company learned the importance of starting small and moving up in the technology ladder. The process was improved after gathering feedback in an internal website built to share questions and failures that the employees faced after experimenting with 3D printing. This project pushed the organization to evaluate the cost of 3D printing versus the realization of benefits that this technology provides. Stacey DelVecchio showed unique use cases that Caterpillar experimented while implementing 3D Printing in their manufacturing activities. Some of these processes include design verification, gauging, manufacturing aids, casting aids, and production. The scale of the designs that Caterpillar uses in the manufacturing procedures represented a challenge and an intense learning process for the employees exposed to the 3D Printing technology.

-Gisela Condado, DCMME Center GA
Gisela Condado is a second year MBA student at Purdue University’s Krannert School of Management with concentrations in operations and supply chain management. Originally from Venezuela, Gisela graduated as Summa Cum Laude Production Engineer and later worked for 3 years in the supply chain department of multinational companies such as Cargill and Novartis. Most recently as demand planner at Novartis, Gisela represented the supply chain single point of contact of 12 international plants located in North America, South America and Europe, as well as participated in cross-functional teams in domains such as strategic purchasing, sales & operations planning (S&OP), global launching and inventory management. During the summer, Gisela worked as an Operation Manager Pathways Intern at Amazon, where she had the opportunity to manage the initial stages of a new self-service tool that will support customers solve their problems in a targeted and fast way, while reducing operational costs for Amazon. This position gave her the opportunity to successfully coordinate 10 cross functional teams at Amazon and find a professional fit in the peculiar working hard and having fun culture of the company.

Session moderated by Dr. Dan Hirleman, Chief Corporate and Global Partnerships Officer, Office of the Exec. Vice President for Research & Partnerships

E. Daniel Hirleman Jr. joined Purdue as Chief Corporate and Global Partnerships Officer in 2014 where he is responsible for substantially growing research and education partnerships with the private sector, and for strategic global partnerships with nations, institutions of higher education, NGOs and companies. He also oversees the Global Policy Research Institute as well as Purdue's International Programs operation that currently serves over 9,000 students and scholars. Hirleman studied mechanical engineering at Purdue University and received a BSME, graduating in 3 years with a 4.0 GPA, followed by MSME and Ph.D. He received Howard Hughes Doctoral and NSF Graduate Fellowships, did six industry internships, and was a visiting researcher at the Technical University of Denmark. He joined Arizona State University as faculty in Mechanical and Aerospace Engineering where he received teaching and research awards and held multiple administrative positions culminating in associate dean for research. He then served as William E. and Florence E. Perry Head of Purdue ME, leading that School as it grew to over 500 graduate and 1300 undergrad students, developed BS/MS, BS/MBA and direct-to-Ph.D. programs, tripled sponsored research, and completed a $142M Capital Campaign providing for scholarships, fellowships, endowed professorships, and two new ME buildings. He has received: the INEER International Achievement Award in 2006; the Hon. George Brown Award for International Scientific Cooperation in 2008; and the 2009 Charles Russ Richards Memorial Award of ASME/Pi Tau Sigma. He is a Fellow of ASME and chaired the Advisory Board of Engineers for a Sustainable World. Just prior to rejoining Purdue he served for four years as the second dean of the School of Engineering at the University of California, Merced. Hirleman has about 200 technical publications, 6 U.S. patents, and has presented 80 invited lectures in 14 countries. His current research involves laser-based sensors used in detection and identification of cells and colonies for bio-hazard characterization, high-throughput screening, and stem cell diagnostics. His work in particle and flow diagnostics, semiconductor manufacturing, and global engineering is also recognized. Ten inventions/technologies developed in his lab have been licensed to the private sector and/or are in commercial products. His work has been supported by 70 grants from 31 companies and 10 government agencies (total funding of over $21M). He is married to Laura Kennedy Hirleman, M.C., who counsels in private practice and in their church. They have 3 children. He served on the Board of a Purdue Campus Ministry and was founding President of nonprofit Kairos Ministries, which provides worship services, counseling, and tutoring in Phoenix area jails. For stress relief he plays racquetball, and has won numerous university open (ASU, Purdue) and state age-division championships (AZ, CA, IN) as well as medaling twice in his division at the National Championships.
At the recent DCMME Fall Operations Conference, Roy Vasher, Assistant Professor Management at Purdue University, gave a very interesting presentation on one of his latest endeavors, the HDS (Home Delivery Service) RoboFS program. This program is revolutionary in the supply chain industry, utilizing intelligent vision and mobile/articulated robots to reduce labor and total fulfillment costs, while simultaneously enhancing the supply chain capabilities. This patented program is an end-to-end solution from receiving to load through a fully automated system. How exactly does the RoboFS work? There are five main parts of the RoboFS process. The first is receiving, in which containers are sorted into trays and compartments. After reception comes transportation. Small mobile robots move the stacks of trays to the storage location quickly and efficiently. These robots are not only safe but also people aware, resulting in a hazard free environment. At the storage location, autonomous robots manage the received trays and store them in low cost, non-precision, dense shelving. When one the stored items is needed, it is packed and kitted at the vision-guided robotic pick station, where it is later loaded via conveyer, mobile robot, or pallet. How is this different than any other supply chain system? RoboFS is the first end-to-end solution with integrated automation and software, utilizing a modular, software-defined, articulated and highly accurate automated system. What are some of the benefits? One of the most appealing aspects of the RoboFS program is the unlimited SKU count possibility resulting from the tray-based system. These trays also allow flexible outbound orders or any size, in which mixed-SKUs and cases can be integrated. Complementing the unlimited SKU count possibility is the flexible flows of the RoboFS. The mobile robots used for the transportation of goods are easily programmed and are without bottlenecks or single points of failure. As well as being easily programmable, these robots are also articulated, with product size and shape being handled via software. Being software based, the robots

Smart Robotics

Roy Vasher’s talk discussed innovative approaches to use robots for kitting parts for automobile assembly - enabling custom kits to synchronize with line sequences. Such innovative robot assistance can enable increased personalization of manufactured products without increasing costs. Incorporating robots effectively and economically is one of the key challenges in Managing Smart Manufacturing.
are predictable and reliable, and the software can be continuously improved for accuracy and speed. Even with all of the software and robotics, theft is an outlier event because of the inexpensive cameras as well as RoboFS RFID and weight scales. With all of these benefits what isn't there to like? RoboFS seemed to me like the supply chain of the future, and it was amazing to learn from Roy and his experiences.

-Taylor Haws, DCMME Center GA

Session moderated by Dr. Gemma Berenguer, Assistant Professor of Mgmt.
http://web.ics.purdue.edu/~gberengu/
Professor Berenguer joined Krannert School of Management as an assistant professor in June 2012. She received her Ph.D. Degree from the University of California at Berkeley before joining Purdue. She also holds an undergraduate degree in Mathematics from the Universitat Politècnica de Catalunya, an MS in Economics from the Barcelona Graduate School in Economics, and a MEng in Logistics and Supply Chain Management from the Zaragoza Logistics Center. Her research interests include integrated supply chain design problems, nonprofit supply chain management, and environmentally responsible operations and policies. She has experience collaborating with nonprofit organizations in the solar cooking industry and she is currently involved in a project that studies productivity improvement for health provider organizations in sub-Saharan Africa. Professor Berenguer teaches operations management and sustainable and socially responsible operations in the undergraduate and MBA programs. She is a member of INFORMS, POMS and MSOM.
Mr. Nazarov spoke about how customer expectations are evolving and how a corporate ecosystem can help deal with this issue. His presentation started by describing how products are more and more complex every year, which is increasing customer expectations of products. Customers currently require technical services, complete solution integration, design support from beginning to end, and field support of their product. He stressed the fact that access to information is key so that companies can provide their customer with all of the services that they require. From there Alexander spoke about how a synchronized product design flow can help meet customer expectations. He stressed that input to a global system, including product specifications and installation/service requirements, can help to meet customer expectations. Having easy access to all of this information, whether it is at a distribution center or a location at a different global location, is vitally important so that they can meet their customer’s expectations. This information also needs to flow from engineering, to supply chain, and to marketing throughout all points of product design to ensure that they actually meet their customer’s needs. Finally he spoke about how governmental regulations can affect customer expectations. He provided specific examples, including emission compliance and arms traffic regulations that showed how their customer’s expectations and requirements changed due to government regulations. These government regulations are becoming more stringent, and corporate ecosystems can protect companies from potential lawsuits and penalties.

-Joey Meisberger, DCMME Center GA
Joey Meisberger is a second year MBA student at Purdue University’s Krannert School of Management with concentrations in Operations and Supply Chain Management. Originally from Indianapolis, IN, Joey completed his undergraduate degree at Purdue University, where he earned a Bachelor of Science in Mechanical Engineering Technology. Prior to coming back to Purdue, he worked for 1 year as a contract Mechanical Design Engineer for Sikorsky Aircraft and almost 4 years as a Mechanical Design Engineer for Juno Lighting Group. In his time as a contractor for Sikorsky he researched and designed engineering changes for their commercial and military helicopters, primarily dealing with their Blackhawk platform. In his time at Juno Lighting Group he designed over 25 new product commercial LED lighting fixtures and spearheaded 7 major new product launches as the lead engineer. During the summer Joey did his internship at Emerson Climate Technologies in Sidney, OH, where he was an Air Conditioning Sales and Marketing Intern. He created an OEM Account Readiness Tool for the Department of Energy’s new commercial regulatory changes. He also justified multiple new product compressor business cases and optimized a compressor Kanban and inventory stocking plan for FY 2016. He not only utilized his engineering background and operations and supply chain knowledge in his time at Emerson, but he also developed strong sales and marketing skills while contributing to one of the leaders in the HVAC industry.

Session moderated by Dr. John W. Sutherland, Professor and Fehsenfeld Family Head, Department of Environmental and Ecological Engineering
http://web.ics.purdue.edu/~jwsuther/

Dr. John W. Sutherland is a Professor and the Fehsenfeld Family Head of Environmental and Ecological Engineering at Purdue University. He received his B.S. and M.S. degrees in Industrial Engineering, and his Ph.D. in Mechanical Engineering from the University of Illinois at Urbana-Champaign (UIUC). Dr. Sutherland was one of the first researchers in the U.S. to pursue environmentally responsible manufacturing. He has investigated such issues as dry or near-dry machining, mechanisms for airborne particulate formation in cutting operations, development of environmental profiles for manufacturing processes, logistics for bio-fuel production, and strategies for closing material loops in product life cycles, including recycling and remanufacturing. His research has been supported by the NSF, EPA, DOE, and such companies as Ford, GM, Caterpillar, General Dynamics, and Boston Scientific.

Dr. Sutherland has mentored over 80 students to the completion of their graduate degrees, including 22 PhD students. He has published over 300 papers in various journals and conference proceedings. Dr. Sutherland is also a co-author of the textbook, Statistical Quality Design and Control: Contemporary Concepts and Methods. He is a Fellow of the Society of Manufacturing Engineers (SME), the American Society of Mechanical Engineers (ASME), and the International Academy for Production Engineering (CIRP). His recognitions include the SME Outstanding Young Manufacturing Engineer Award (1992), Presidential Early Career Award for Scientists and Engineers (1996), Society of Automotive Engineers (SAE) Ralph R. Teetor Educational Award (1999), SME Education Award (2009), Outstanding Lifetime Service Award from the North American Manufacturing Research Institution of SME (2010), the SAE International John Connor Environmental Award (2010), and the ASME William T. Ennor Manufacturing Technology Award (2013).
Every company throughout the world is faced with several of the same questions and problems year in and year out. Two questions in particular are very pertinent to the development and success of each employee, and in turn, the company. How is value created in manufacturing organizations? Who creates the value? At the recent DCMME Fall Operations Conference, Bob Nida, Vice President of Organizational Development at Wabash National, shared some key factors that help answer these very questions. “Value-creating growth” is a learned skill that entails an aggressive approach to creating long-term value for shareholders through leadership commitment and development. What does this mean for you as the employee? It means that as you consistently strive to be committed to the company, its goals, and its leadership, you will add value to yourself as an employee (i.e. promotions), to your team, and to the company as a whole. What does it mean for your manager? The manager’s role is two-fold; they must not only emulate the same dedication to the job and company, but must look for these key traits in their employees to continuously build the success of the team and company. “Workforce” is the diverse group of individuals who, in a perfect world, all have “value creating growth”. The complexities of management come from the diversity of the workforce (especially in today’s global economy), and managing each individual with their respective “value level”. The key, as explained by Bob, is finding the “smart employees” in the company. These are the employees that not only have value-creating growth, but help build a successful workforce in whichever position they find themselves. How does a company find these “smart people”? While IQ is important, it is not the determining factor. Trust levels and willingness of the individual worker to emulate value-creating growth are two key components. With several “smart people” working together, a successful workforce is built and goals are achieved. Is it possible for employees to develop into smart people? Bob provided very conclusive evidence that yes, each employee has the ability to develop into a “smart employee”. Bob argued that leadership development can play
a key role in this process, and should not be limited to the top of the organization. The last point that I really enjoyed from Bob's presentation was his statement that “take charge” individuals exist at all levels of the company, both hourly and salary. As an organization these individuals need to be found, given opportunities to grow, and then strategically placed to not only use their skills effectively, but to inspire those around them to undergo the same transformation process. Imagine what would happen if this was practiced at all levels in a company. The increase in success would be almost instantaneous. As students, future employees, and even current employees, Bob's discussion applies to all of us. If we can learn to have “value creating growth” and become “smart employees”, the future is bright for all of us.

-Taylor Haws, DCMME Center GA

Taylor Haws
MBA 2017

Taylor Haws is a first year MBA student at Purdue University's Krannert School of Management with concentrations in operations and supply chain. Taylor is originally from Arizona and earned his bachelor's degree in Spanish Linguistics from Arizona State University. After graduating from ASU, Taylor worked for two years at State Farm Insurance before coming to Purdue University. Taylor's most recent role at State Farm was as a Spanish Team Lead in the Express Claims Department. In this role, he directly supported a team of 10-12 Spanish Express associates, as well as 588 other Express associates in nine different locations. Taylor's main duties were to assist in solving complex claim issues as well as provide coaching for associate development. Additionally, Taylor worked directly with the Estimates, Business Process, and Underwriting departments to streamline the duties of the Express claims associates throughout the entire claims system. His position at State Farm provided great leadership, analytical problem solving, and diverse cultural communication experience.

Session moderated by Dr. Ellen Kossek, Basil S. Turner Prof. of Mgmt.
https://intra.krannert.purdue.edu/faculty/ekossek/Pages/Home.aspx

Ellen Ernst Kossek is the Basil S. Turner Professor of Management and the Inaugural Director of the Susan Bulkeley Butler Center for Leadership Excellence at the Purdue University's Krannert School of Management. Dr. Kossek teaches graduate students and managers on organizational behavior and human resource challenges. In 2014, she received the Work Life Legacy award from the Families and Work Institute for helping to advance or build the work life field and was elected President of the Work-Family Researchers Network. She was elected to the Board of Governors of the National Academy of Management, Gender and Diversity in Organizations Division Chair, and a Fellow of the American Psychological Association and the Society of Industrial and Organizational Psychology. Dr. Kossek teaches graduate students and managers on organizational behavior and human resource challenges. Her research involves leadership development and talent management of gender, multiculturalism and diversity, managing and evaluating organizational change on such topics as workplace flexibility, workplace inclusion and leader social support, stress and work-life, telework, occupational resilience, and managing human capital globally. She has published widely in referred journals on these topics, and won many awards including the Academy of Management Division’s Gender and Diversity in Organizations Sage Scholarly Achievement award recognizing an accumulated body of research that significantly advances understanding of gender and diversity in organizations. Her teaching of Talent Management of Gender and Diversity has received high student ratings for being a Master teacher. Dr. Kossek is also Associate Director of the Center for Work, Family Health and Stress of the U.S. National Institutes of Health National Work, Family and Health Network. She has received funding from Alfred P. Sloan and Gerber Foundations, U.S. Center for Disease Control and National Institutes of Health, the U.S. Department of Defense, the SHRM Foundation, state, national and international governments, and employers. Dr. Kossek currently serves on many journal editorial boards, and advisory boards in the U.S. and internationally. Her best-selling book on flexstyles and work-life patterns is CEO of Me: Creating a Life That Works in the Flexible Job Age (with Lautsch, 2008, Wharton School Publishing). She has edited or authored 8 other books on diversity, work-life and human resource management and published dozens of articles in leading journals or books. She has given dozens of keynote speeches on work-life, gender and multi-culturalism; human resource strategies and organizational change and partners on research, management education and organizational change work with employers (public, private and nonprofit) in the Asia, Europe, and Americas. She has developed an original validated assessment and workshop to increase work-life wellbeing and boundary management effectiveness and a work-for individuals, leaders and teams in the age of 24-7 connectivity. Her educational degrees are from Yale University (PhD); University of Michigan (MBA); Mount Holyoke College (psychology with honors). She has been a visiting scholar at the Kings College, London, the University of Michigan, the Center for Creative Leadership; the University of Warwick, UK, University of South Australia in Adelaide; and Harvard Business School. She is married with four children.
In a series of blogs by the Smart Manufacturing Leadership Council, there is a discussion on a shared marketplace (https://smartmanufacturingcoalition.org/shared-infrastructure/marketplace) which would be an open source area for pay as you and specific applications use software. If implemented it has the potential to decrease costs to companies substantially. We are already seeing many software packages today being repackaged as an online service with monthly subscription rates. Another aspect that it will lead to is individual or small teams developing apps and services for the users of SM applications. While this would lead to more peer to peer shared development, it will give rise to a new class of developers. Moreover, given the lesser requirements of infrastructure for developers, the costs of development will go down. What will be the regulation for mapping out such services? What does it mean for huge software developers in long run? How will they protect their interests in the long run as they will be looked upon to develop the initial infrastructure for SM?

-Akshit Bajpai, posted Oct 13, 2015
view more of Akshit's blogs at dcmme.wordpress.com

An article in Industry Week (February 27, 2015) titled “Making the Business Case for Smart Manufacturing” (http://www.industryweek.com/smart-manufacturing?page=1) describes the impact of the cyber-physical manufacturing era on the Overall Equipment Effectiveness (OEE) and discusses the main financial benefits that SMART manufacturing offers to enhance corporate return on assets. SMART manufacturing improves the OEE through guaranteeing manufacturing, labor, material and energy efficiency with expected savings in a range of 10% to 30% as well as improving availability of machines and enlightening reliability on the production process thanks to the integration of data on inspection procedures. By improving the OEE, companies increase output which can be translated into more production, higher customer satisfaction, less capital expenditure and higher product variety as key elements needed nowadays to compete in saturated markets where customers require more customized products to be available with short lead times. Will this machine – machine technological development be able to eliminate 100% of labor cost in the manufacturing environments? What could be the main risks of investing in SMART manufacturing? Is investing in SMART manufacturing a current need for companies to guarantee their sustainability in the future market?

-Gisela Condado, posted Sep 4, 2015
view more of Gisela’s blogs at dcmme.wordpress.com

Have you ever thought about the immense amount of potential uses of 3D printing? In the article, “Smart Sensory Prosthetic Links Weathers to the IoT with 3D Printing” (http://3dprintingindustry.com/2015/09/17/smart-sensory-prosthetic-links-weathers-to-the-iot/), the potential of 3D printing is stretched...
with new use in the prosthetic limb industry. The article is focused on Troy Baverstock, a 3D printing enthusiast and a student at Australia’s Griffith University. Baverstock has used his expertise in 3D printing to develop LimbU, a “3D printed add-on for prosthetic legs that is equipped with various sensors to help prosthetic users keep track of their internal and external worlds”. LimbU differs from its various competitors in that it connects to a smartphone via Bluetooth to track the intensity, speed, number of steps, as well as monitors altitude, direction, and GPS coordinates. The data collected by the LimbU also assists doctors to monitor rehabilitation efforts on a daily basis. Additionally, the covers of the LimbU come in various colors and designs. What other ways can 3D printing have an effect within the medical market? How else can 3D printing and the IoT partner to provide a better customer experience?

-Taylor Haws, posted Oct 16, 2015 view more of Taylor’s blogs at dcmme.wordpress.com

In a recent article on the website SUAS News, the potential for drones as the driving force for the internet of things is highlighted. The internet of things (IoT) is based on the central idea that devices and humans can talk to one another and relay and report information. This is done primarily through sensors “at rest” that gather information and relay it to a back end data collection center which can then be interpreted for the end user. This simple idea is quickly being incorporated to drones which are capable of a myriad of functions and provide a highly mobile component. As drones become more complex, being able to integrate them into our everyday functions and processes is becoming an increasing trend. How will unmanned drones shape the IoT? What are some of the benefits of the mobile function that drones can provide to the IoT? What types of industries will most benefit from this technology?

-Matt Jung, posted Oct 22, 2015 view more of Matt’s blogs at dcmme.wordpress.com
Brian Kennell, Tetra Pak US, CEO

As Mr. Brian says in this article, this new technology is promising to yield profitability and high efficiency to whoever embraces it. The problem is that 87% of the manufacturing business in the US is not getting into this market. There are several reasons for this situation. The top one: Capital costs. Even though those enterprises that have started incorporating smart manufacturing monitoring systems into their operations have claimed significant benefits over this implementation, it seems to be not enough to convince the majority. Smart manufacturing monitoring systems promise to offer real time adjustments to daily operations which refers to every aspect of the company including the way employees are deployed, and...
the way they communicate among different departments. The truth is that the more time that passes, the more viable and available this technology becomes for everyone.

-Pablo Martinez posted Sep 18, 2015 view more of Pablo's blogs at dcmme.wordpress.com

According to an article posted on September 10th, 2015 in The Street, (http://www.thestreet.com/story/13281861/1/5-robotics-stocks-to-watch-the-droids-you%E2%80%99re-looking-for.html) robots could soon be doing much more than just assembling your car or cleaning house, they could also be included in your investment portfolio. The Boston Consulting Group believes that the rapid growth in the robotics industry will be due to several factors. Currently robots perform roughly 10% of all manufacturing tasks, but they believe that number will jump to 25% by 2025. By the same year, they estimate that automation will cut manufacturing costs by 18-33% and increase productivity by 30% in countries such as South Korea, China, Japan, Germany, and the US. They also state that it’s not only the reduction in labor costs that’s increasing the trend in automation, it’s that the actual price of robots is decreasing over time. For example, the cost of an advanced robotic spot welder has dropped 27% since 2005, from an average of $182,000 to $133,000. The firm believes that price will continue to decrease an additional 22% by 2025. All of these factors and more are a clear sign to investors that the industrial robotics industry is going to experience rapid growth. The article projects that there are 5 robotics stocks to watch due to the growth in the automation industry. Those stocks are Google (GOOG), Yaskawa Electric (YASKY), ABB Ltd. (ABB), iRobot (IRBT), and Ekso Bionics Holding (EKSO). These companies are expected to see rapid growth through mergers and acquisitions in the robotics industry, and because they are currently industry leaders in robotics and focus on robotics innovations. Will the robotics industry actually grow like it is projected? How risky are some of the 5 stocks mentioned? Would you invest in any of these specific stocks?

-Joey Meisberger posted Sep 18, 2015 view more of Joey’s blogs at dcmme.wordpress.com
STUDENT SUMMER INTERNSHIP POSTER COMPETITION
This competition was created to benefit both industry visitors as well as students by accomplishing three primary objectives: 1) Demonstrate to industry visitors the caliber of summer projects that Krannert students can complete during an internship and provide an alternative resource for locating student candidates interested in operations and supply chain careers. 2) Provide an opportunity for graduate students to promote their talents and refine their presentation skills by marketing themselves to industry visitors. 3) Expose undergraduate and incoming 1st-year MBA students to the variety of companies and employment opportunities they might encounter when searching for internship employment themselves. Participating as judges for the competition, our industry conference guests have the opportunity to meet the competitors individually. Judges listen carefully and ask probing questions as the students articulate their internship work experience and accomplishments. We value all of our participants’ preparation and willingness to share their experiences with us at the conference. View all posters and executive summaries at dcmme.org.

Congratulations to our winners:
Grad 1st: Amy Wong; 2nd: Gaurav Kumar; 3rd: Akshit Bajpai
UG 1st: Kaila Flanagan; 2nd: Kelsey Starks; 3rd: Christine Rasquinha
DCMME CENTER VOLUNTEERS

The Center offers many occasions for both undergraduate and graduate students to experience action-based activities which give real-world experience and provide vital leadership preparation. Our events utilize and enhance their skills and provide excellent networking opportunities with potential employers.

• DCMME Fall Operations Conference
• GSCMi Spring Conference
• GSCMi Spring Case Competition

To our many student volunteers,

Thank you.

You help make our events a success.
Chien-Wen(Nancy) Cheng
MBA 2017

Nancy is a first year MBA student at Purdue University’s Krannert School of Management. With 8 years working experience, she was able to use her communication skill to work with people from different backgrounds and together solve business challenges. In her role as a senior engineer at Strategy Development Office of AU Optronics, she led a marketing intelligence team managed cross-function strategic projects. As an engineer at Manufacturing Technology Center, Nancy established her ability in manufacturing operations management and industrial marketing. The journey from a journalist to high tech manufacturing strategist demonstrates her willingness to take on challenging assignments and assume ownership to solve business problems.

Elsie Lee
MBA 2016

Elsie Lee is a 2nd year MBA candidate at Krannert School of Management, with concentrations in Operations and Marketing. She obtained her undergraduate degree from Western Michigan University, MI, with a major in Food and Consumer Packaged Goods Marketing. Elsie’s professional experience was mainly in brand and shopper marketing, and channel development in the consumer products industry.

Elsie is currently serving as VP of International Affairs for Krannert Graduate Student Association (KGSA) where she is working hard to create cultural awareness among Krannert Masters students. She is also actively sharing important professional development opportunities and industry trends as the VP of Communications for the Krannert Operations Club (KOC).

Nikita Shyamsunder Atal
MBA 2017

Nikita Atal is a first year MBA student at Purdue University’s Krannert School of Management with concentrations in operations and supply chain management. Originally from India, Nikita graduated with Bachelors in Computer Engineering from University of Pune, India and Masters of Science in Computer and Information Technology from Purdue University. Later, she worked for 3 years as a Business Analyst and Project Manager at Cummins Inc. in Columbus, Indiana.

At Cummins, Nikita became certified and experienced in Six Sigma, Lean Methodology and Project Management. She used the methodologies to improve Information Technology operations and reduce costs. She managed a team of Business Analysts to support Supply Chain and Purchasing systems across manufacturing plants located in USA, UK, India and Brazil.

Botao Sun
MBA 2017
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