



SPARK AWARD

Reates Curry, Ph.D.

FORD MOTOR COMPANY

For demonstrating the unique power and energy of mentorship, especially to women and underrepresented minorities who dream of changing the world through STEM.

Reates Curry, Ph.D., is a technical expert at Ford Motor Company's Research and Innovation Center (RIC) in Dearborn, Michigan. Her focus is human-machine/computer interaction with an emphasis on developing safe and efficient in-vehicle systems and technologies. She is a member of the VIRTual Test Track EXperiment (VIRTTEX) laboratory, which houses one of the world's most advanced driving simulators. She has co-authored more than 55 technical reports, conference papers, and journal articles, and her technical achievements have twice been recognized with Ford's prestigious Henry Ford Technology Award.

When she joined Ford in 1995, Dr. Curry was RIC's first African-American female Ph.D., and it was not unusual for her to be mistaken for an administrative assistant. Gracefully navigating such situations helped her build respect among her colleagues, and deepened her determination to be a successful and visible female role model and mentor in the STEM (science, technology, engineering, and mathematics) area.

Her talent for mentoring emerged early. In 1989, her efforts in the Washington, D.C., schools were recognized with the U.S. Black Engineer of the Year Award for Community Service, and that was only the beginning. She has also mentored young men, demonstrating what women engineers can accomplish, laying a foundation for them to respect, hire, work with, and promote women in STEM. At RIC, Dr. Curry has often acted as an unofficial "welcoming ambassador" to new employees she encounters, and this mentoring aptitude has led to her most recent affiliation with Ford's Women in Product Development mentoring circle,

where she is currently officially co-mentoring nine women engineers.

On a professional organization level, Dr. Curry has recruited, mentored, and/or presented at more than 15 National Society of Black Engineers conferences. She also represented Ford as a recruiter at the 2002 SWE annual conference.

At Ford, Dr. Curry has coordinated and hosted High School Science and Technology Program (HSSTP) sessions in collaboration with Ford's Sigma Xi chapter and the Detroit Area Pre-College Engineering Program. She has also been a summer-intern mentor to both high school and college students.

Dr. Curry's enthusiasm for hands-on STEM activities has led to her developing simple mousetrap car and balloon-powered vehicle kits for the HSSTP and RIC's annual Take Our Children to Work Day, for which she recently established a "Hackathon" activity featuring multilevel, kid-friendly programming challenges. This past summer, Dr. Curry coordinated a Girl Scout volunteer trip to Guatemala where they built and repaired furniture for a preschool as well as re-plastered an outdoor wall for them.

She holds a B.S.E.E. from the University of Missouri, an M.S.E.E. from Purdue University, and a Ph.D. in biomedical engineering from Rutgers University.

In her spare time, she enjoys volunteering as troop camper for her daughter's Girl Scout troop, and has coached her son's Little League Baseball team. Dr. Curry, her husband, and two children live in Ann Arbor, Michigan.

SPARK AWARD

Erica Messinger

KEYSIGHT TECHNOLOGIES

For leadership that creates environments in which women engineers can flourish, and for spirit and commitment that only grows stronger with time.



Erica Messinger is director, worldwide university program for Keysight Technologies, where she provides strategic vision and leadership for the company's multilayered engagements with universities and academic research institutions, working across all levels of Keysight to optimize investment in the "education ecosystem." This includes placement of Keysight solutions among the next generation of engineers, impacting research partnerships with universities, grants, recruiting, marketing, and growing sales in the education market.

Messinger moved into this position in early 2016, bringing with her more than 17 years of experience in various technical, marketing, and business roles, including applications engineer, sales channel management, business development, and program management within Keysight, Agilent Technologies/Hewlett-Packard. Her involvement with SWE dates back to her undergraduate studies.

Early in her career, Messinger was the youngest employee to participate in a pilot mentoring circle, in which each participant played both mentor and mentee to others. Ever since, she has been an outspoken advocate for bidirectional mentoring.

When Keysight spun off from Agilent in 2014, Messinger formed the Keysight-SWE Enterprise Program (KSWEET) to build investment in women engineers. Its impact continues to grow. All major U.S. Keysight locations now host monthly sessions to build community among women, sharing learning experiences from the virtual content from SWE's 2015 annual conference. Building on this success, Messinger has taken KSWEET worldwide, and hundreds of women have benefited. Keysight is now a sponsor for WE Europe, with participants both attending and speaking on panels there and at WE India.

Messinger also seeks out senior women within Keysight for internal panel discussions that respond to mentoring questions from employees across the Americas, Europe, and Asia, encouraging them to share their wisdom and experiences with women at every level of the organization.

Furthering her commitment to building communities, Messinger leads mentoring circles with university students, "wisdom groups" for early-career women, and empowerment circles with peers in the community.

Messinger has represented Keysight within SWE since 2003. She has recruited, and led delegations to SWE conferences since 2004, work that has resulted in many mentoring relationships that extend well beyond the conferences. By 2015, Keysight's SWE delegation had grown to 48 women.

Over the years, Messinger has initiated Keysight's involvement as a leading sponsor of the SWE Rocky Mountain Section's GESTEM event; launched a strategic partnership that provided after-school kits to SWE for use in STEM outreach, impacting 8,000-plus students; and delivered workshops, such as Leading with Authenticity, Trendy Stress?!, and I'm Perfect: Why Isn't Everyone Else? at SWE conferences.

Messinger holds a B.S. in electrical engineering with an international minor in Japanese studies from the University of Illinois at Urbana-Champaign and an MBA from the University of Colorado. She has been a long-standing SWE member since she first began her undergraduate studies.

She enjoys reading food blogs; volunteering in the community; dancing with her partner, Jason; and spending time with their young son and daughter.



SPARK AWARD

Carolyn Moore

EXXONMOBIL CHEMICAL COMPANY (RETIRED)

For being a catalyst for change; and for inspiration, encouragement, and support that spans the lives and careers of countless women engineers.

Carolyn Moore retired from ExxonMobil Chemical Company with more than 30 years of experience in manufacturing, technology, business planning, and commercial management. Her leadership resulted in consistently high earnings, through price elasticity management, arbitrage, and high-value product placement. She was known as an executive leader who worked effectively across cultures and organization levels, leading global business and technology organizations.

The first in her family to gain a college education, Moore graduated *summa cum laude* from Texas A&M University in 1980 with a B.S. in chemical engineering. She began her career as one of the first female engineers at ExxonMobil's Baytown chemical plant. She worked her way up to operations manager, often the first woman in each role on the way. Her results-oriented work ethic gained her respect, despite the challenges women faced at the time. Independently, Moore worked to upgrade the skills and abilities of women engineers and professionals in the Baytown area, later engaging the use of ExxonMobil facilities and executive leaders in professional development events. This network has since evolved into a company-sponsored Women's Interest Network (WIN), which offers a broad range of career development, networking, and community outreach activities.

Moore remained at the forefront of women's advancement in the chemical industry, helping shape changes in its culture and supporting other women in

their career goals. Often, she mentored more than 10 people at a time, surprising many who had no idea that an executive could be interested in them. As a female executive, she sponsored young women engineers, helping them develop their careers. She rallied support for flexible workplace policies and advocated for open-mindedness in career opportunity decisions.

In part, Moore's impact on women engineers stems from her drive for building corporate networks that support them with personal and professional development. She was a co-founder and sponsor for three women's organizations at ExxonMobil, all of them active and flourishing. She co-led a companywide diversity and inclusion conference in 2009 and sponsored ExxonMobil Chemical Headquarters' staff support committee. She is a founding member of the company's Women's Leadership Team, whose networking embrace includes Asia and Europe.

Though Moore retired in 2013, she continues to provide guidance, perspective, and support. She is a role model to men and women leaders, inspiring those who need a guiding light, and maintaining lasting friendships.

A breast cancer survivor, Moore is a strong advocate for awareness. She is a five-year Susan G. Komen Houston Race for the Cure Pink Honor Roll member. She is active in her church and currently participates in an entrepreneur mentorship program. She also enjoys politics, baking, and reading.

SPARK AWARD

Jeff Redmon

CATERPILLAR INC.

For extraordinary leadership and initiative in mentoring women engineers, helping them to define success and find opportunities; and for fostering a supportive and inclusive corporate culture.



Jeff Redmon is global engineering talent and competency manager for Caterpillar Inc. He is responsible for developing and managing processes for engineering STEM outreach, recruiting, career planning, knowledge management, and training and competency development supporting more than 10,000 engineers globally.

Though Redmon had already mentored a number of men and women in his career, his desire to impact the success of women engineers took hold when SWE's Central Illinois Section asked him to speak on career planning in 2007. His interaction with the attendees was so well received that he was nominated to attend the Society conference. Ever since, Redmon has focused much of his professional and personal time to support others in their career planning and development.

In 2012, Redmon assumed his current role at Caterpillar, where he has direct influence on the tools and processes that drive the development of the company's engineers. In the last four years, he has initiated a career-planning process for Caterpillar product developers and personally talked to more than 1,000 engineers (including some 250 women) about career planning. His mentorship of hiring managers at Caterpillar has led to women representing 30 percent of the company's engineering workforce.

Due to his mentoring relationships, Redmon appreciates the value of flexible work schedules for women engineers. At Caterpillar, he continues to champion that flexibility and has attracted high-performing women to his team. As a result, Redmon was asked to

be a career-planning panelist at the Society's 2015 annual conference, and obtained certification through the Council for Adult and Experiential Learning to become an ongoing career counselor.

Redmon's STEM initiatives at Caterpillar include leading a 2014 expansion of the company's product-development STEM focus, from high school through college, to kindergarten through college in 2014. Simultaneously, he brought STEM leaders from across the company together to develop a STEM advisory council. This council now guides Caterpillar's STEM strategy to align groups, position Caterpillar's messaging for STEM, lobby global government associations effectively, and mobilize Caterpillar volunteers globally. This successful alignment allowed Redmon to pilot the first corporate Introduce a Girl to Engineering Day program at Caterpillar in 2015, with plans to expand its reach in 2016.

Redmon participated in the White House STEM Advisory Council 2014, is recognized as a thought leader at Caterpillar, and was recently selected to lead a work stream on the advancement of women for the Caterpillar Women in Leadership program.

He earned a B.S. in chemical engineering from the Rose Hulman Institute of Technology. He is active in his community, and enjoys serving as a volunteer judge for FIRST® LEGO League and Robotics regional competitions.

In his leisure time, Redmon enjoys bicycling, music, guitar playing, entertainment-related electronics, photography, and his two granddaughters.



EMERGING LEADER

Lindsay M. Forsyth

CHEVRON CORPORATION

For exemplary technical knowledge; for process innovation and international project management skills and strategic vision; and for a deep drive to develop, recognize, and mentor talent.

Lindsay M. Forsyth is the project engineering manager for Chevron's Tengizchevroil LLP Future Growth Project, a \$36.8 billion international consortium based in Atyrau, Kazakhstan and one of Chevron's largest projects. In this leadership role, Forsyth provides strategic direction and oversight to a diverse, 10-person supervisory team that applies the principles of project management to effectively manage the schedule, scope, execution, and provision of engineering deliverables.

In 2006, Forsyth joined Chevron's Houston Energy Technology Company business unit as a liquefied natural gas process engineer. While there, she designed a new, more efficient gas liquefaction process that was considered for a patent. She authored a paper on the subject and presented it at both the AIChE Spring Meeting and the AspenTech Global Conference.

Two years later, Forsyth transferred to Chevron's Mid-Continent Alaska (MCA) business unit to become a facilities engineer for a newly acquired West Texas gas plant. She successfully led the plant's cultural and operational shift to the "Chevron Way" of doing business, oversaw the facility's plant turnaround, and managed the timely completion of the engineering design phase for its expansion. She also recognized and developed a member from the prior team, who has since become a leader in that business unit.

In 2010, Forsyth earned an MBA in international project management from The University of Texas at Dallas and immediately applied those skills as MCA's new capital stewardship advisor. She modified the unit's decision-making practices and developed a training program to improve the Business Unit's project

management skills. Her efforts helped the business unit more effectively manage and grow its project portfolio, earning it a Gold ranking within Chevron's Gold Standard Assessment — its first in five years.

In 2012, Forsyth was promoted to module engineer for Chevron's Tengizchevroil Future Growth Project, in the United Kingdom. She was responsible for integrating and coordinating all phases of work: engineering, in the UK; fabrication, in Korea; and final assembly, in Kazakhstan.

Upon meeting her objectives, she was promoted, in 2014, to an area project engineer within the same project. After successfully completing that assignment, she advanced, a year later, to her current position as project engineering manager.

Forsyth graduated from Texas A&M University in 2002 with a B.S. in chemical engineering. That year, she began her career with J. Ray McDermott Engineering LLC in Houston, where she focused on conceptual design for off-shore development processes.

Forsyth was active in SWE in college, served as SWE's Houston Area Section president as well as other leadership positions, and is currently co-lead of Chevron's SWE steering team. She believes in developing talent and is currently mentoring several Chevron employees.

Before leaving Houston, Forsyth had volunteered at the Houston Food Bank and for Special Olympics Texas. Today, she actively supports programs at her local church. Forsyth enjoys traveling and spending time with her husband, Tyler, and her two children, Liam, 3 years old, and Landon, 8 months.

EMERGING LEADER

Allison Goodman

INTEL CORPORATION

For leadership and expertise in solid-state memory technology and software/hardware integration; for finding creative solutions to complex problems; and for mentoring and encouraging others.



Allison Goodman, principal engineer for Firmware Architecture, leads the team that develops solid-state drives (SSDs) at Intel Corporation's Non-Volatile Memory Solutions Group (NSG). Goodman sets the technical direction for 10 Intel product segments and teams of approximately 200 firmware developers and validation engineers. Her team determines the features and code structure for each product in Intel's Enterprise SSD lineup.

Enterprise SSDs are high-performance, commercial-grade drives that offer data integrity, reliability, and longevity superior to personal models. Goodman ensures that each new enterprise generation of SSDs meets Intel's standards for reliability, performance, and energy efficiency. To anticipate shifting marketplace requirements, she remains engaged with key customers such as Amazon, Facebook, Microsoft, Alibaba, Dell, HP, Oracle, and IBM.

Three years ago, at Intel's request, Goodman created the team she now heads. Earlier, she handpicked, mentored, and groomed five engineers to serve as lead systems engineers on another team. Positions on her teams are now some of the most respected and sought after in the division.

Goodman has been involved in SSD development from the beginning. As a systems integrator and product technical lead for Intel's storage memory group, she developed Intel's first Enterprise SATA SSD, which went on to capture 70 percent of the market and make Intel the industry leader. Goodman has played a key role in creating almost every Intel SSD that has helped the

business unit grow from a single product and component business, with sales in the millions, to the \$3 billion operation it is today. Goodman and her teams have created SSDs that are four- to 10-times higher quality.

Much of Goodman's early career was spent in validation engineering and management. She was directly responsible for developing the strategy and software for white box testing that Intel uses to test its SSD products. And she helped bring the Centrino™ platform — the first Intel processor ever used to run an Apple® laptop — to market. Her efforts earned Goodman the Intel Achievement Award, the company's highest honor.

In 2015, Intel again recognized Goodman's technical and leadership contributions by promoting her to principal engineer. Goodman is now one of only six principal engineers in her technical specialty area. That distinction places her in the top 1/10 of 1 percent of all women working in technical roles at Intel.

A highly active SWE member since her first year at university, Goodman also has served on several non-profit boards. She actively encourages K-12 students to consider STEM careers and mentors both young people and her peers.

Goodman graduated *cum laude* from Cornell University in 2003 with a B.S. in electrical and computer engineering, and she was certified as a project management professional in 2006.

In her spare time, Goodman enjoys chasing after her young daughter; walking their dogs; and spending quality time with her husband, Brett.



EMERGING LEADER

Christina Bishop Jackson, Ph.D.

HONEYWELL

For broad technical and managerial expertise, uncommon leadership ability, and drive to improve processes; and for efforts to mentor peers and encourage future engineers.

Christina Bishop Jackson, Ph.D., was recently named integration program manager for SPS (Safety and Productivity Solutions), Honeywell. Previously, she was the senior engineering manager for the Systems Group at Callidus Technologies, part of Honeywell UOP, running a 12-person global team of specialists in structural, mechanical, and quality engineering and in static equipment, rotating equipment, and piping engineering. The team, which she helped form in 2015, is part of a major business transformation at Callidus aimed at improving its ability to deliver quality-engineered products to customers.

Dr. Jackson's group set and supported new quality design and fabrication standards and provided proposal assistance and detailed engineering for three key product lines: Flare, Thermal Oxidizer, and SCR.

Since joining Callidus in 2007 as a project engineer, Dr. Jackson has advanced rapidly through the ranks by repeatedly taking on, and successfully completing, challenging new assignments. She has been aided in these pursuits by strong leadership and communication skills, by a team approach to problem-solving, and by her ceaseless fascination with process improvement.

A Six Sigma black belt, Dr. Jackson operates in a state of constant process improvement. Many of the projects she has led and completed on time have benefited significantly from her tireless efforts to improve the project team's own operating efficiencies. Her prior roles at Callidus have included SAP technical deployment lead, SAP advisor for international deployments, global quality manager, special projects engineer, and project engineer.

Dr. Jackson earned her Six Sigma green belt in 2008 by introducing a new quality-control and customer sat-

isfaction tracking system. She earned her black belt two years later, by completing a project that analyzed the tracking system's accumulated data. Customer on time to request (OTTR) scores rose from 60 to 89 percent as a result of her work.

She has been active in training and advancing her fellow engineers. In 2014, she received Honeywell's Top Green Belt Mentor award for directly mentoring and certifying more than 40 company engineers as Six Sigma green belts and she continues that work today.

Her science, technology, engineering, and mathematics (STEM) outreach efforts have included volunteering for 14 years at Brownie Day events, speaking at local school career days, and hosting and presenting at the DiscoverE: Engineers Week annual student breakfast. She's also a trustee for the Tulsa Engineering Foundation and serves on its scholarship committee for students entering engineering school.

Dr. Jackson holds a B.S. and a Ph.D. in chemical engineering from The University of Tulsa. She has been published in *Electrochimica Acta*, is a life member of multiple academic honor societies, and has presented technical papers at national and international chemical engineering gatherings. In 2011, both DiscoverE and AIChE recognized her in the New Faces of Engineering program.

A SWE member since college, Dr. Jackson has held elected office in both SWE's professional and collegiate sections and has served on several Society-level committees.

In her free time, she enjoys teaching Indian, Asian, and molecular gastronomy at a local culinary studio and teaches engineering as an adjunct at The University of Tulsa.

EMERGING LEADER

Jaime Gray Nelson

BOOZ ALLEN HAMILTON

For energetic, engaging leadership; for a multidisciplinary approach to problem-solving based on broad and deep technical expertise; and for efforts to mentor and develop others.



Jaime Gray Nelson, program manager and lead associate for Booz Allen Hamilton, currently leads a team within the technology and strategy consulting firm's GRIDIRON program at the National Reconnaissance Office (NRO). Nelson's team provides systems engineering and financial management leadership to guide the NRO's transition to a managed service infrastructure. Nelson's current role relies heavily on her previous experience leading a team of 20 Booz Allen staff who provided systems engineering oversight and guidance across the NRO as part of the corporate systems engineering directorate (SED).

In addition to leading her firm's contributions, Nelson ran a 30-person technical team focused on fielding the next generation of a reconnaissance spacecraft. The team's primary responsibility was to provide comprehensive systems engineering guidance and project oversight to the multiple organizations designing and developing components (e.g., spacecraft, communications, data processing, networks) to support the overall mission. Nelson's team led the assessment of overall system maturity throughout the acquisition life cycle, from early design through development, test, and deployment.

Prior to her satellite focus, Nelson's team successfully captured and organized enterprise-wide requirements for a standard set of desktop services in support of the emerging intelligence community information technology enterprise (IC ITE). In recognition of their work, Nelson and her team were named NRO Chief Information Officer's Team of the Quarter.

For the past 13 years, split equally between work at Booz Allen and Science Applications International Corp. (SAIC), Nelson has specialized in projects to integrate communications and enhance information sharing among agencies of the United States intel-

ligence community. She has steadily increased her technical knowledge and skills with each new position. Her expertise and her proven ability to gain the trust and support of stakeholders at all levels are best exemplified by Nelson's leadership of the Joint Architecture Working Group — which created the first standardized IT architecture model for all U.S. intelligence organizations. For the work she led, Nelson earned numerous awards, including NRO system engineering Director's Team of the Year and the DNI (director of national intelligence) Collaboration Leadership award.

Nelson came to engineering late in her academic career, and her approach to systems engineering work has been influenced by her prior training in psychology and theatre. She is known as a client-focused, results-oriented leader with an energetic and engaging style and a talent for finding innovative solutions to business challenges. She's also proven herself to be a skilled communicator, who can recast complex technical concepts in ways easily understood by people at all organizational levels.

She currently serves as mentor to four Booz Allen engineers and SWE members. She has served as the firm's SWE finance/budget lead for the past three years and has helped grow membership in its SWE corporate partner group.

Nelson received a B.A. in cognitive science and psychology from the University of Virginia; an M.A. in human factors and applied cognition from George Mason University; and an M.S. in engineering management and systems engineering from The George Washington University.

When she isn't singing with her church choir, Nelson enjoys spending time at home with her husband and two young children.



EMERGING LEADER

Siobhan Nyikos

THE BOEING COMPANY

For consistently strong leadership and technical expertise, leading to multiple patents and a Boeing proprietary solution; and for commitment to continuing education, mentoring, and community involvement.

Siobhan Nyikos, network security engineer at The Boeing Company in Seattle, leads the cybersecurity certification integration effort between Boeing Commercial Airplanes and government regulatory bodies. She also provides cybersecurity engineering oversight for global aircraft tracking system design changes affecting Boeing commercial aircraft and is an active member of the Radio Technical Commission for Aeronautics (RTCA) special committee on aeronautical systems security.

Nyikos has earned the designation of certified information systems security professional (CISSP), a prestigious credential that reflects multidisciplinary expertise in program management, technology, regulations, and standards. The certification qualifies her to design, engineer, implement, and manage information security solutions to defend against increasingly sophisticated cyberattacks. She is currently using her knowledge to help streamline operations by creating a single network security process for six models of Boeing commercial aircraft that aligns closely with industry aircraft security process.

In recognition of her expertise and trusted leadership, Boeing has made Nyikos an authorized representative in training for cybersecurity, under its initial delegated Federal Aviation Administration (FAA) authority. When she completes her training, Nyikos will be authorized to review and approve plans to test and certify airplanes for network cybersecurity.

A Future Technical Leader in The Boeing Company's Engineering Excellence Career Partnership, Nyikos is working to become a Boeing Associate Technical Fellow so that she can further expand her influence in the areas of technical and business innovation.

She has worked for Boeing's Joint Unmanned Combat Air System program, its P-8 Poseidon maritime surveil-

lance aircraft program, and its Advanced Air Traffic Management program. She advanced rapidly in each of her roles by demonstrating outstanding technical and leadership skills. Before joining Boeing in 2004, she worked as a computer scientist for the Naval Air Systems Command in China Lake, California.

A Chicago native, Nyikos graduated from the University of Illinois at Urbana-Champaign in 2002 with a B.S. in applied mathematics and a minor in computer science. She attended the University of Southern California while working full time at Boeing, graduating in 2010 with an M.S. in systems architecting and engineering. The following year, she completed The Boeing Company's emerging leaders development program.

Nyikos has two patents pending. One involves a "Flight Data Recorder Streaming Solution Using Inmarsat." The other is for "Verification of Trustworthiness of Position Information Transmitted from an Aircraft via a Communications Satellite." Nyikos also has an intellectual property disclosure for "Method for the Cybersecurity Testing Module of an FAA Certification," which Boeing maintains as a proprietary solution.

She has trained and mentored Boeing interns and employees. She also has successfully coached SWE members in the CISSP-credentialing process and has been a mentor to Raisbeck Aviation High School students since 2009. She regularly visits the school to share her experiences in engineering and cybersecurity with students and to encourage them to pursue careers in STEM.

Nyikos lives in Kent, Washington, with her husband, their 2-year-old daughter, and her trained therapy dog. She spends her spare time in the company of family and friends and likes to take the dog twice a month to visit senior residents at an assisted-living community.

EMERGING LEADER

Kelly Griswold Schable

THE BOEING COMPANY

For outstanding leadership; for technical and problem-solving skills that complement personal initiative and strategic vision; and for dedication to advancing and supporting women engineers.



Kelly Griswold Schable, features sales strategy senior manager for Boeing Commercial Airplanes (BCA), is responsible for forming and leading a new internal team to help Boeing capture the commercial airlines features market. Schable's team meets with customers to translate technical benefits of existing features into dollars and cents savings for the airlines based on their operational needs. Team members also try to uncover unmet needs and requirements, which they bring back to the company to assess their feasibility, and then help cross-functional technical teams rapidly develop them into product features that give The Boeing Company a competitive advantage. The team uses feature value customization as a sales strategy for existing features and a way to discover and fast-track development of important, new aircraft capabilities.

Schable successfully used this strategy in her two previous positions with Boeing. As BCA's regional marketing director for Brazil and then later Canada, she worked closely with technical teams to give a Brazilian airline's existing Boeing fleet an enhanced short-field performance capability. Schable provided engineering the requirements to design the technology so that it could be incorporated as standard equipment on Boeing's new 737 MAX fleet. She then sold the customer on Boeing for its fleet expansion. The airline was so impressed with Schable's approach and with Boeing's solution that it placed an order for more than 60 new 737 MAX jets.

A 12-year Boeing career, highlighted by significant technical achievements, including a patent, repeated organizational innovations, and a growing reputation as a problem-solver and effective cross-discipline collaborator, prepared Schable for her current position. She has twice been selected to participate in accelerated Boeing learning and leadership programs reserved

for candidates with exceptional leadership potential. In 2005, Schable was one of six Boeing engineers to participate in its formal engineering rotation program. The experience, which included eight-month assignments to three Boeing engineering organizations, gave her the systems technical expertise and global understanding of engineering product and process development she would need to successfully implement her features sales strategy.

In the Joint Unmanned Combat Air Systems Program, Schable worked on configuration control, risk management, and requirements development. At Boeing's Phantom Works research and development center, she helped develop and led testing for a data tracking tool to support a more efficient air traffic system. Her work earned her a U.S. patent. For BCA's 737 program, Schable ran a pilot project to assess the feasibility of adding a new radio frequency identification capability into the 737 production system. She compiled lessons learned and best practices for using the technology and published a paper about it.

Schable actively supports the success of her peers. She co-founded and led the Puget Sound new-hire organization, REACH, and created and led Boeing's early-career engineering development program, Opportunities for New Engineers. Schable also has served on SWE's board of directors and is a past president of the Puget Sound Engineering Council.

She holds a B.S. in aerospace engineering from the University of Illinois at Urbana-Champaign and an M.S. in systems architecture and engineering, with a specialization in engineering management, from the University of Southern California. In private moments, Schable enjoys traveling, running and cycling, working on her pilot's license, skiing, and spending quality time with her husband and young daughter.



EMERGING LEADER

Laura Schafer

EMERSON PROCESS MANAGEMENT

For far-reaching technical skills in the oil and gas industry, evidenced by patents, publications, and thought leadership; and for dedicated mentoring and the ability to inspire innovation in others.

Laura Schafer, vice president of oil and gas for Emerson Process Management's flow division, in Boulder, Colorado, leads customer acquisition and product development efforts on a global scale. Since joining the division in 2012, her innovative approaches and leadership have produced a record number of strategic projects with customers. In addition to developing new devices, Schafer has promoted software upgrades as a faster, cheaper way to deliver vital, new hardware capabilities to customers.

One upgrade, which enabled a single-phase flowmeter to perform multiphase functions, has resulted in more than 2,000 sales. Schafer developed the equations and product messaging and provided technical training to maximize sales and end-user satisfaction. Another software upgrade dramatically improved multiphase flow performance for equipment on a transmitter platform.

Schafer has led efforts to use Coriolis flowmeter data to improve hydrocarbon allocation measurement. She won top paper recognition for her talk on the subject at TUV NEL's Americas Workshop in 2014. She also championed development of two new flowmeters. The first device helps direct hydrate inhibitor injections to prevent hydrate plugs from forming inside subsea pipelines. Such plugs can cost oil/gas companies more than \$1 million a day in lost production. The other device is a flowmeter rated at 15,000 psi. It helps regulate chemical injections that protect deepwater wells from corrosion and other flow-related issues.

During her participation in Schlumberger's Tech and Field Engineering program, a training process designed to professionally develop candidates with demonstrated technical leadership skills, Schafer gained her oil-field

experience. In 2002, she began a two-year deployment as a field engineer on Schlumberger rigs in the South China Sea, followed by an assignment as a product developer in Sugarland, Texas. Next, she completed a management rotation in Southeast Asia where she first oversaw 26 well services labs and then directed a large, diverse, regional customer support organization. Her final assignment, in 2010, was as a well-services operations manager, in Kalimantan, Indonesia.

Five new products and processes Schafer helped develop during her employment with Schlumberger now bear U.S. and international patents.

Schafer represents Micro Motion on the Tulsa University Separation Technology Projects review board; serves on the company's innovation board; and is a respected advisor across Emerson for assessing the technical soundness and marketability of new ideas.

She has continued to explore ways to apply Coriolis technology to improve drilling operations safety and efficiency, and she routinely speaks about responsible fracking in the University of Colorado Boulder's course on energy and public policy. Schafer was invited to speak about "Innovation in the Workplace" at this year's SWE iCon16 Rocky Mountain Section event.

A mentor to young women engineers, Schafer has been known to reach across organizations and countries in order to place her protégés in their next technical roles.

She earned a B.S. and M.S. in chemical engineering and petroleum refining from the Colorado School of Mines and lives in Boulder. Schafer enjoys hiking the mountains of Colorado and stretching her culinary skills when she's not hopping the globe for work or vacation.

EMERGING LEADER

Rashi Tiwari, Ph.D.

THE DOW CHEMICAL COMPANY

For expertise in materials science, with a strong focus on collaboration across disciplines and departments, leading to product innovation; and for dedication to training and developing talent.



As head of The Dow Chemical Company's Sealants and Specialty Packaging group, Rashi Tiwari, Ph.D., leads a five-person team that manages one of Dow's largest portfolios of performance plastics. She is also North American leader for Dow's Pack Studios program, a global initiative with a presence in six cities on four continents. Pack Studios' mission is to bring technical experts, customers, and original equipment manufacturers (OEMs) together to resolve product issues and to explore customer-driven solutions.

In the Sealants and Specialty Packaging group, Dr. Tiwari is responsible for keeping the innovation pipeline full, meeting business-performance goals, and keeping the department properly aligned with developments elsewhere in the Performance Packaging business unit. Her Pack Studios responsibilities include managing global communications, raising the program's visibility, engaging more customers and OEM partners, and sharing best practices with leadership at all Pack Studios locations.

Since joining Dow in 2012, Dr. Tiwari has collaborated with product development teams in several business units, sharing her technical knowledge and expertise to explore potential product enhancements. She worked with Dow Solar on its award-winning solar shingles; Dow Electronics and Telecommunications on radio frequency filters; and Dow Water and Process Solutions on water filters for produced water application.

In 2014 and 2015, Dr. Tiwari initiated 20 new projects that increased collaboration between Materials Science and Engineering, in Core R&D, and Dow's plastics business. Those efforts have produced exciting new test applications for shrink films, stretch films, and stretch hood films. The new capabilities have given Performance Packaging greater insight into real-world

product uses, improving both product development and customer service efforts. For her contributions, Dr. Tiwari has received 10 Dow internal recognition awards, including four bronze, two silver, and three gold ratings.

A skilled team leader, Dr. Tiwari was selected to lead the successful 2014 global rollout for Dow's award-winning, plastic-packaging technology, PacXpert™. She built, trained, and led a 15-person team of expert technical leads and deployed them around the globe to help Dow licensees improve sales support and help customers successfully transition to the new pouch format. As a direct result of Dr. Tiwari's efforts, first-year sales exceeded projections by 91 percent.

Prior to joining Dow Chemical, Dr. Tiwari earned a Ph.D. in mechanical engineering, specializing in electroactive polymers, from the University of Nevada, Reno. She completed postdoctoral work at the Cornell University, focusing on sensors, actuators, and energy harvesting.

Dr. Tiwari has been listed as an inventor on 10 patent applications, has authored two books, published scores of scientific papers in peer-reviewed technical publications, and has presented at more than 40 technical conferences. She holds elected member positions with IEEE and ASME and serves on the editorial board of the *Journal of Intelligent Materials Systems and Structures*.

A SWE member since 2004, Dr. Tiwari has served in a variety of capacities at the local, regional, and Society levels, most recently as the vice president-external for the Houston Area Section. Dr. Tiwari loves to travel with her family and friends, read, and paint. She is a proud mother of a 3-1/2-year-old and has been happily married for 11 years.



EMERGING LEADER

Tracy Van Houten

JET PROPULSION LABORATORY

For outstanding technical leadership and expertise; for the ability to manage large, multidisciplinary teams; and for tireless efforts mentoring today's and tomorrow's women engineers.

Before NASA launches its planned 2020 mission to Mars, detailed tests, simulations, and analyses must be run to ensure that more than 100,000 items connected to the mission's various flight components are in good condition and functioning properly. As project verification and validation (V&V) lead for the mission, Tracy Van Houten and her team of eight systems engineers at NASA's Jet Propulsion Laboratory (JPL) in Pasadena, California, oversee all aspects of the test program that determines the "mission readiness" of all project equipment, systems, and personnel.

Joining JPL in 2004 as a deputy systems engineer, Van Houten has advanced rapidly, becoming a systems engineer for the lab's conceptual design group, Team X, in 2004 and its lead systems engineer two years later. Team X turns science concepts into practical designs for spacecraft and spacecraft systems, and then readies them for bidding.

In her first decade with JPL, Van Houten participated in, or held lead systems engineering positions on a number of major projects. She helped with several lunar, planetary, and astrophysics mission proposals; served as a flight systems engineer developing the concept for the Jupiter Europa Orbiter mission; and worked as surface operations V&V systems engineer for the Curiosity rover that landed on Mars in 2012. Later that year, Van Houten volunteered to plan and run the complex system test campaign for the Soil Moisture Active Passive (SMAP) mission, which is currently inventorying the water content of Earth's soil.

She excelled as system test lead for the SMAP mission, whose system test campaign was highly successful

and completed ahead of schedule. The following year, she was made flight system V&V lead for the Mars 2020 project. At the same time, she took on the design and implementation of a new software package to streamline requirements management, V&V testing, and compliance. JPL subsequently adopted the program for use across the laboratory.

Van Houten was the youngest employee ever selected for the lab's prestigious systems engineering on-the-job training program. She also is one of only 29 employees out of more than 5,000 chosen for JPL's yearlong Leadership Mentoring Program.

A SWE member since her first year as an undergraduate, Van Houten has served the Society in a number of roles. She has consistently helped young women choose and succeed in STEM-related careers. She has successfully mentored and been an advocate for more than 30 JPL interns, early-career hires, and midlevel employees. Van Houten currently heads JPL's new team to recruit women engineers to the laboratory, and performs STEM-related outreach at local public schools. She was named a SWE Distinguished New Engineer in 2012.

Van Houten earned a B.S. in aerospace engineering, aeronautics concentration, from California Polytechnic University, San Luis Obispo, and an M.S. in aeronautical engineering, systems engineering, and architecting focus from the University of Southern California.

She lives in Pasadena, California, with her husband, Kevin, and their two young children.

EMERGING LEADER**Janet Willett**

JOHN DEERE

For outstanding design innovations and expertise in technical and project management, for inspirational leadership and collaborative problem-solving, and for continual efforts to mentor and encourage others.



Janet Willett is product line management team engineering lead for John Deere's highest horsepower tracked-tractor program (9RX), a new large tractor product program. As team lead, Willett is responsible for creating the tractor's specifications, engineering design, and product safety standards. She leads the engineering team for the six different functional divisions of the tractor, indirectly managing a team of more than 22 tractor product design engineers and supervisors.

When Willett accepted her current position in 2014, the 9RX project was at risk of missing its February 2016 production date. Willett would need to get the project back on schedule, even as she made new design changes, verified performance, and demonstrated product reliability. She met the challenge by rallying her staff, building a strong team environment, and quickly mastering all project technical details. Her efforts produced a tractor that performed well in field tests and flowed seamlessly on the production line.

In her 15 years with John Deere, Willett has proven herself to be a high-performing engineer, leader, and collaborator who brings out the best in others and delivers results that succeed technically and practically. Her six patents and three Enterprise awards testify to her powerful creative and problem-solving abilities.

In 2004, Willett collaborated with John Deere engineers overseas to produce a lighter yet more powerful corn head drivetrain that exceeded its weight-reduction goal. For her work, Willett earned two patents and the global John Deere Collaboration Award.

Later, Willett helped design the most innovative combine the company has ever prototyped. She gained

the required technical knowledge to lead the project through independent study, weekly consultations with electric-drive experts, and by organizing a three-day global brainstorming session with 20 John Deere experts. Her work led to three more patents and another global collaboration award.

In 2010, Willett led the design team that created an innovative high-horsepower, four-wheel drive tractor. The groundbreaking design combined new technology with proven, reliable components. Willett worked with suppliers to integrate the components into the design. Field tests exceeded expectations and Willett received a sixth patent and the John Deere Innovation Award.

At John Deere, she helped develop and implement the agricultural division's Engineering Development Program, and she routinely mentors and coaches her fellow engineers. She actively recruits talent and speaks regularly about engineering at SWE, IEEE, ASABE, and ASME events held at the University of Illinois. Willett is a member of the SWE Cedar Valley Section.

As a child, Willett discovered engineering while helping her father with projects in his small, independent casting shop. He taught her problem-solving, process improvement, and method efficiency — all skills she uses today.

She earned her B.S. degree in mechanical engineering from the University of Illinois at Urbana-Champaign.

Willett and her husband live in Cedar Falls, Iowa, with their four young children.



SWE DISTINGUISHED NEW ENGINEER

Rachel Borchers

BOSTON SCIENTIFIC CORPORATION

For bringing chemical engineering expertise, manufacturing process improvements, and quality systems to the development of innovative, more-efficient medical devices; and for long-term dedication to SWE outreach.

Rachel Borchers is a principal supplier quality engineer at Boston Scientific Corporation in the Cardiac Rhythm Management division in Arden Hills, Minnesota. She develops chemical and electronic subcomponents for use in long-term implantable, life-sustaining devices, including pacemakers, defibrillators (ICDs), and spinal cord stimulators.

Borchers joined the company in 2008 and has worked successfully across a wide variety of technologies in the supplier quality assurance group. She has collaborated with colleagues at other sites worldwide; she was quality lead on a major effort to co-develop custom-sintered aluminum foil with a strategic electrochemical supplier in Japan. For two years, Borchers worked as a supplier quality engineer in Boston Scientific's production facility in Clonmel, Ireland.

She was quality lead in the development of new primary battery chemicals, resulting in the launch of a next-generation battery in 2011 and a new chemistry battery in 2014. A key player in quality system efficiencies and business process improvements that extend beyond her immediate sphere of responsibility, Borchers led design and implementation of incoming materials non-conforming control for the company's first fully integrated materials control system.

As a university student, Borchers was an active member of the Society of Women Engineers and participated regularly in outreach events. After returning from Ireland, she quickly became involved in the Minnesota

Section (SWE-MN), plunging into outreach event planning and promotion, driving growth of SWE-MN signature events, and introducing several new hands-on experiments. She then became outreach event mentor and experiments coordinator, taking charge of the section's 20-odd experiment kits. She launched a popular mid-size outreach event that featured just two to four hands-on activities and required fewer volunteers. Borchers has served as the section's vice president, and as president, focusing on the SWE-MN strategic plan and leading the executive council.

An enthusiastic Girl Scout volunteer, Borchers has led the same group of 10 girls since 2010. Now in high school, these young women have been able to explore new ideas and test their talents in a safe environment. Borchers guided her troop in a two-year effort to raise money to travel to Costa Rica. She also applied her engineering expertise in process control to cookie sales for 30 Girl Scout troops in the St. Paul area, streamlining cookie manager training, orders, and inventory and money management.

Borchers received a bachelor of science in chemical engineering in 2006 from the Rose-Hulman Institute of Technology and is currently pursuing an MBA at the University of Minnesota's Carlson School of Management.

She and her husband, Brooks, enjoy traveling and working on their old house in St. Paul.

SWE DISTINGUISHED NEW ENGINEER

Gail Dyer

CORNING INCORPORATED

For a creative and can-do approach to solving complex technical challenges in robotics and for consistently exceeding expectations in both leadership and supporting roles in SWE.



Gail Dyer is an automation controls engineer at Corning Incorporated, where she works on programmable logic controllers (PLCs) and robots. She joined Corning immediately after graduating from Lake Superior State University in 2008 with a bachelor's degree in mechanical engineering and an associate's degree in computer science. She recently completed her master's in integrated manufacturing systems engineering while working full time.

In her relatively short time with Corning, Dyer has earned a reputation as a robot expert, and her advice on robotics is often sought. She has been key to the success of several innovative projects and was granted a U.S. patent for a method she co-devised for picking and placing hot, 3-D glass. Dyer also conducts robot simulations and risk assessments. She saved the company significant capital expenses by using simulation to show that fewer robots were needed to complete the task. She has worked on robot-programming projects in several countries, writing code for unloading machines in Mexico and PLC configurations for operations in Taiwan and Korea.

Involved with SWE since she joined in 2004, Dyer helped revitalize her collegiate section, recruiting 100 percent of the female engineering students on campus for several years. She went on to serve two terms each as section treasurer and president. She organized many fundraisers, obtained university funding that enabled

section members to travel to SWE annual conferences, and partnered with the engineering department and other professional societies to put on a Rube Goldberg competition for high school students during DiscoverE: Engineers Week.

Dyer joined the SWE Twin Tiers Section right after graduation and was elected section representative in her first year. She has held various leadership positions within the section, and during one of her most recent terms as president, the section more than doubled as a result of the employer-sponsored membership program she negotiated with Corning. Dyer has also served as a leadership coach for Region E for the last three years, previously served as the region's nominating committee chair, and is currently a Region E senator.

Active in her community as well, Dyer volunteers for the FIRST® LEGO League qualifying tournaments, serving as a judge. Last year she stepped up to be the co-director for the tournament, which had the largest number of teams to date. This year she took over as director of the tournament in her area.

She has taught preschool classes at her church since she graduated from university. Dyer also assumed leadership of the young adult program for a few years and was responsible for all the events for that age group.

In her spare time, Dyer is an avid traveler, having made her way to six continents. She also enjoys cooking, hanging out with her friends, karaoke, and doing puzzles.



SWE DISTINGUISHED NEW ENGINEER

Lesley Farah

STARKEY HEARING TECHNOLOGIES

For going above and beyond in project management, for inspiring team members to do their best work, and for generously devoting talent and energy to SWE.

Lesley Farah was recently promoted from project manager to program manager at Starkey Hearing Technologies in Eden Prairie, Minnesota. She joined the company, which designs and manufactures hearing aids, as a research and development project manager in 2013. As a project manager, she worked with cross-functional teams to plan, execute, and deliver new products. In her new role, she will work closely with sponsors, project managers, and program teams to deliver products to the market while reducing risks and maximizing program benefits.

Farah holds a bachelor's degree in mechanical engineering from the University of St. Thomas in St. Paul, Minnesota. She completed Certified ScrumMaster® (CSM) training in 2013 and project management fundamentals training in 2012.

A recent assignment was to deliver new firmware for the Muse™ hearing aids, which included a brand new platform and many new features. Farah worked on the project through every phase from inception to completion, managing teams through sprint planning, verification and validation testing, and production release. She has established herself as both hardworking and reliable, attending to details without losing sight of the big picture.

She began her engineering career with Stratasys, a manufacturer of 3-D printers and production systems. She led a project to redesign the Dimension® product line material spool, converting it from a two-piece design with screws to a one-piece design that reduced

materials and labor costs. Farah worked on all phases of the project from design to production. When initial tests revealed problems, she worked with manufacturing to conduct experiments, determined the cause, and identified a design solution. The redesigned spool was released to production and continues to be used today. The redesign resulted in significant annual savings.

Farah joined SWE in 2003 as a collegiate member, and since 2007, has become increasingly involved with the SWE Minnesota (SWE-MN) Section. She has served as outreach co-chair, newsletter editor, section representative, vice president, and president. She has been one of three leadership coaches for Region H since 2013. For her dedication to SWE-MN, Farah received the Key Contributor, Significant Achievement, Most Dedicated Member, and Most Active New Member awards.

A strong believer in outreach, Farah has connected with more than 2,000 schoolchildren each year through classroom visits, hands-on activities, and sharing her experiences as an engineer. She was recognized in 2012 by SWE as one of the five New Faces of Engineering candidates and featured in the Winter 2012 edition of *SWE Magazine*. Farah also volunteers at her church as a teacher and as an evening host for Families Moving Forward, a program that offers hospitality to families experiencing homelessness.

In her spare time, Farah enjoys travel, visiting family and friends, and spending time with her husband, Zeiter, and daughter, Cecilia.

SWE DISTINGUISHED NEW ENGINEER

Stueti Gupta

JOHN DEERE INDIA

For bringing outstanding systems engineering expertise to diverse technical problems, and for significantly furthering SWE's mission by initiating and leading the first SWE affiliate in India.



Stueti Gupta is a senior lead engineer in the Advanced Systems Engineering Group in the Asia Technology Innovation Center at John Deere India. She leads research in model-based systems engineering using SysML and develops analytical models using systems dynamics and agent-based methods to generate insights for improving products and increasing business. Since launching the Systems Engineering Circle to boost systems engineering capability at the company, Gupta has trained more than 100 design engineers. She has published one journal article and seven technical conference papers. Her paper, "System Dynamics Study of Product Delivery System," received the best paper award at the 2014 International Simulation Conference of India.

Gupta's career so far has integrated academics, hands-on experience, and research. She earned a dual degree in physics and mechanical engineering from the Birla Institute of Technology and Science (BITS) in Pilani, India, in 2005. During several undergraduate internships, she gained work experience and made valuable contributions on product design and development projects. Assigned to design a spring brake actuator and apply lean manufacturing concepts to a new product line at an automotive manufacturing company, Gupta suggested changes that reduced defects from 8 percent to 1 percent. In 2007, she completed a master's degree in design engineering at BITS, Pilani. Her research there in microelectromechanical systems resulted in two conference publications. In 2009, she earned a master's in mechanical engineering from Cornell University, and in 2012 she completed the Systems

Design and Management program at the Massachusetts Institute of Technology.

Gupta joined the Society of Women Engineers when she was a student at Cornell. After returning to India, she vigorously promoted SWE's mission to female employees at John Deere India, and in 2010 succeeded in organizing a SWE team at work under the auspices of the John Deere India Women's Network. She has organized several events for the network, including a tour of the John Deere India tractor manufacturing unit for students from Cummins College of Engineering for Women in Pune. In 2015, Gupta spearheaded the first SWE affiliate in India — Pune, Maharashtra — and recruited 20 women engineers from six different organizations to serve as the affiliate core team. SWE Pune's first one-day symposium drew 110 women engineers. Under her leadership, the affiliate has grown to 61 members representing 19 different organizations in Pune. Gupta was also a member of the planning committee for SWE's first India Symposium, held in Bangalore, India, and supported the inaugural conference, WE India 2016. Gupta, a SWE international ambassador from India since 2015, is invited to speak at various forums in the city.

An executive committee member of the International Council on Systems Engineering (INCOSE), Gupta mentored a team from Pune to participate in the organization's Systems Engineering Student Challenge, and the team earned second prize.

Gupta lives in Pune, India, and in her free time enjoys watching movies and reading to her daughter.



SWE DISTINGUISHED NEW ENGINEER

Sunita G. Lavin

GARMIN INTERNATIONAL

For exceptional people and project management skills, for enthusiastic SWE leadership, and for spirited community advocacy of STEM for women and girls.

Sunita G. Lavin attended an engineering summer camp in high school on a whim, but after using trigonometry and Java to draw an airfoil, she was hooked on engineering. Now she is a project manager at Garmin International in Olathe, Kansas, where she has worked in the aviation business segment for eight years. Lavin is responsible for planning and managing software schedules for avionics. She also manages a budget and organizes team-building activities. Lavin currently oversees seven projects contributing to Garmin's flagship G5000 glass aircraft cockpit.

Lavin began her full-time career with Garmin as a design certification engineer in aviation hardware. She performed extensive testing on several avionics units for sustainability through lightning and radiated fields. She worked on a traffic collision avoidance product from inception to final Federal Aviation Administration (FAA) submittal, quickly becoming an expert on the FAA submittal process. Her drive to meet deadlines and her ability to work with the complex FAA requirements saved Garmin the expense of doing regression testing.

A member of SWE since 2012, Lavin first became involved when she joined the Kansas City Section's second annual Introduce a Girl to Engineering Day (IGED) committee. Since then, she has held many leadership positions in the section, including president, vice president, treasurer, and secretary, as well as membership/events committee chair, iCON15 programs subcommittee chair, and professional development committee

member. She has been a Region *i* mentorship program mentee and mentor and a Region *i* scholarship judge. On the Society level, Lavin was part of the Association Management System focus group and judged for the awards committee.

Lavin's passion is community involvement, especially K-12 science, technology, engineering, and mathematics (STEM) outreach. This year marks her fourth year volunteering on the *FIRST*® Robotics regional planning committee. She is active in local STEM outreach programs, such as science fairs, family science nights, and programs geared to encourage girls to consider careers in STEM and she leads the STEM outreach initiatives at Garmin. In 2015, she received the prestigious STEMMy Rising Trendsetter Award presented by the Central Exchange, a women's leadership and networking organization in Kansas City. She has also received the coveted ATHENA Young Professional Leadership Award presented by the Kansas City Chamber of Commerce.

In 2006, Lavin earned a B.S. in computer engineering from the Jeffrey S. Raikes School of Computer Science and Management honors program at the University of Nebraska-Lincoln (UNL). She completed an M.S. in electrical engineering and an MBA in 2008, also from UNL.

Lavin lives in Overland Park, Kansas, with her husband, Peter. She enjoys running, traveling, playing the violin in local orchestras, and doing crafts.

SWE DISTINGUISHED NEW ENGINEER

Jacquelyn K. Nagel, Ph.D.

JAMES MADISON UNIVERSITY

For an innovative approach to bio-inspired design, for making a positive and lasting impact on her students, and for significant contributions to the SWE mission.



Jacquelyn K. Nagel, Ph.D., is an assistant professor in the department of engineering at James Madison University (JMU). She has eight years of academic and industrial engineering experience in product design, bio-inspired design, instrumentation and controls, factory automation, hybrid manufacturing systems, design for the factory floor, and renewable energy systems. Dr. Nagel's courses include engineering design, interprofessional innovations, mechatronics, introduction to sensors, bio-inspired design, and circuits and instrumentation.

Dr. Nagel began her career as an engineering contractor at Mission Critical Technologies in El Segundo, California, in 2010. She worked on the 12-month, Defense Advanced Research Projects Agency (DARPA)-funded Meta-II project, leading the model library development for complex defense and space systems and supporting design tool integration into the verification work flow before joining JMU in 2011.

An appointment as a Madison Teaching Fellow allowed her to study deep learning, and since Dr. Nagel has pursued evidence-based methods for teaching engineering. She designs her courses to help undergraduates build skills they'll need on the job. In her circuits and instrumentation course, she introduced new modules, labs, and projects with hands-on applications and real-world problems. She has developed three technical electives: introduction to sensors, mechatronics, and interprofessional innovations, all of which incorporate real-world problems and design challenges students will encounter in the workplace. In 2013, Dr. Nagel was selected in a competitive process to attend the National Academy of Engineering's fifth Frontiers of Engineering Education Symposium for her innovative pedagogy.

Dr. Nagel's core scholarship areas are bio-inspired design, manufacturing, and engineering education, and

she has been awarded funding and published in all three areas. In 2012, she was recognized by DiscoverE and IEEE-USA in the New Faces of Engineering program for her pioneering work in using biological systems as models for sensors, instrumentation, and processes. Dr. Nagel's research has resulted in four book chapters, more than 50 publications, 20 student-led publications and presentations, and one patent disclosure.

Joining SWE as a collegiate member in 2001, Dr. Nagel served as section president, increasing membership participation and establishing a scholarship that recognized engaged participation. Following graduation, she became a member-at-large in Region E and has worked to improve recognition of this geographically dispersed section. Dr. Nagel has also held significant leadership roles at the Society level on the women in academia committee and the strategic planning committee. She is also active in IEEE and ASME, and is a member of the American Society for Engineering Education.

The first engineer in her family, Dr. Nagel earned her Ph.D. in mechanical engineering from Oregon State University and her M.S. and B.S. in manufacturing engineering and electrical engineering, respectively, from Missouri University of Science and Technology (formerly the University of Missouri-Rolla).

Active in her community, Dr. Nagel has been advocating for women in engineering through her involvement with multiple precollege outreach efforts and partnerships with educators. She and her husband, Robert Nagel, Ph.D., an engineer and faculty member, welcomed their first child, Karen, this summer. Outside of work she enjoys spending time with family, knitting, baking, sudoku, and traveling.



SWE DISTINGUISHED NEW ENGINEER

Rebecca M. Reck, Ph.D.

KETTERING UNIVERSITY

For successfully navigating a career transition from industry to academia, for innovative research in engineering education, and for leadership in fulfilling the SWE mission.

Rebecca M. Reck is an assistant professor of mechanical engineering at Kettering University in Flint, Michigan. She recently earned her Ph.D. degree in systems and entrepreneurial engineering from the University of Illinois at Urbana-Champaign. Dr. Reck's dissertation explored applications of experiential learning in engineering courses for control systems and project management. Additional research interests include control systems, mechatronics, and instructional laboratories.

For eight years, Dr. Reck was a systems engineer in the automatic flight control systems (FCS) department at Rockwell Collins in Cedar Rapids, Iowa, where she contributed to the development of the new Pro Line Fusion Flight Control System and served as the project lead for two aircraft. Her technical accomplishments at Rockwell Collins include developing autothrottle control algorithms; updating other control algorithms for the new flight control system; and maintaining a generic aircraft simulation for testing.

Not long after joining Rockwell Collins, Dr. Reck became the lead systems engineer on an internal FCS project. Later she led research and development of a new automatic landing feature for Rockwell Collins' equipment for business and regional jet aircraft. In that position, she gathered information from company experts, facilitated a three-day workshop to train other engineers on the new feature, and created a comprehensive testing and certification plan for the system. As a result of her work, she was promoted to senior-level systems engineer in 2011, leading the multimillion-dollar development program for the entire automatic flight control system for that same airplane.

After graduating with an electrical engineering bachelor's degree and a mathematics minor from Rose-Hulman Institute of Technology in 2005, Dr. Reck began taking courses toward a master's degree in electrical engineering at Iowa State University. In 2010, she completed that degree, and in 2013 left Rockwell Collins to pursue a Ph.D. at the University of Illinois. There, she initiated research on low-cost laboratory equipment to determine its effectiveness and expand access to hands-on experiments. She created a plan to use an affordable and portable laboratory kit in an undergraduate course and wrote a grant proposal to fund her research.

A SWE member since 2009, Dr. Reck regularly attends and presents at SWE annual and Region H conferences. She became communications chair of the East Central Iowa Section in 2010, launching a new website and a social media strategy for the section. She then served as the section representative for two years. At the University of Illinois, Dr. Reck was active in the GradSWE committee, organizing workshops and monthly coffee chats for engineering students considering graduate school. She has also volunteered on many SWE outreach events. Active on the Society level, she is a member of the women in academia committee and the curriculum committee.

Outside of work, Dr. Reck enjoys creating jewelry from electrical components, taking photos, and playing music. She also likes spending time outdoors including activities such as camping, visiting national parks, hiking, and biking.

SWE DISTINGUISHED NEW ENGINEER

Casey Griswold Waggy

BALL AEROSPACE AND TECHNOLOGIES CORP.

For outstanding work on mission-critical satellite systems, for leadership that enhanced the visibility and outreach efforts of the local SWE section, and for supporting the next generation of women engineers.



Casey Griswold Waggy is an aerospace engineer and currently the lead thermal engineer on the Joint Polar Satellite System at Ball Aerospace in Boulder, Colorado. She is responsible for design, analysis, integration, testing, and successful commissioning of the thermal subsystem of the spacecraft. Waggy interned with Ball Aerospace in 2007 and joined the company full time upon graduation. She executed the commissioning plan for thermal subsystem during launch of the WorldView-3 satellite and was the thermal engineer for the Electronics Product Center (EPC), managing thermal analysis, design, and testing for all EPC programs, boxes, and boards.

Her exceptional technical abilities and talent for team leadership emerged when Waggy was an undergraduate. She was team lead on a project for the Mars Balloon Scout mission. Under her guidance, the group researched and developed a conceptual design for a release mechanism of the entry, descent, and landing parachute. Her research work in the Student Space Systems Fabrication Laboratory on a structures subsystem lead C-9 microgravity experiment led to successful testing on NASA's microgravity aircraft.

A member of SWE since 2007, Waggy appreciates the interpersonal and organizational leadership skills that active SWE membership cultivates, and she enjoys promoting the Society and its mission as a member of the Rocky Mountain Section (SWE-RMS). She is currently the Region *i* lieutenant governor, responsible for mentoring and leading the region collegiate team. Waggy

also has served the section as president, representative, treasurer, and secretary. As treasurer, Waggy took charge of logistics for GESTEM — Girls Exploring Science, Technology, Engineering, and Math — a massive, annual outreach that brings 1,000 middle-school-age girls to the Colorado Convention Center to explore science and engineering. Hundreds of volunteers give workshops and interact with the attendees. Waggy streamlined procedures for the presenters, improving both quality and satisfaction in the past two years. She served as the communications committee chair for the 2016 Region *i* conference (*iCONi6*) and is the collegiate counselor for the SWE section at the University of Colorado Boulder. She was recognized by Region *i* as the FY16 recipient of the Intrepid award and was a 2014 New Faces of Engineering SWE finalist.

In addition to her SWE work, Waggy gives back to her community, volunteering as the treasurer for the Alumni Association of the University of Michigan, Denver. She also donates her time and photography expertise to Girls on the Run and volunteers with the Ball Community Ambassadors Engagement Team.

Waggy earned a bachelor's degree in aerospace engineering from the University of Michigan and a master's in aerospace engineering with a focus on bioastronautics from the University of Colorado.

Her favorite leisure activities are spending time with family and friends; skiing and hiking with her husband, Scott, and their pup, Piper; and photographing their Colorado adventures.