



# Society of Women Engineers

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## Society of Women Engineers Minnesota Section

Diversity of Thought

**Volume 20, Issue 6**

**Special Edition 2007**

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# President's Report

## Elizabeth Bierman

Welcome to a special edition of the SWE-MN newsletter! The Society of Women Engineers has been very busy!

We had a successful WOW! That's Engineering Day on June 3<sup>rd</sup>. Over 100 girls and 60 parents got involved to learn more about engineering and get inspired about the field.

We have also been involved with a new program with the Bloomington School District called *Engineer@School*. Inspired by the Career Guidance co-chairs, **Cassie Piippo** and **Krista Johnson**, along with **Anita Hall**.

We also had our annual awards banquet on May 24<sup>th</sup> at Lindey's Steak House. This was a wonderful event to highlight our scholarship winners, SWE-MN section winners and thank our corporate sponsors.

None of these events would be possible without the hard work and dedication of our WOW! That's Engineering Planning Team, **Krista Johnson**, **Erin Penne** and **Allison Pedersen**, and along with our Awards and Recognition Chair, **Cathy Krier**. SWE-MN really went above and beyond this year with all our activities and honors.

In addition to all these events, we nominated four SWE-MN members for National SWE Individual Awards in the areas of Distinguished New Engineer and Emerging Leader.

Please read on to hear how each of these events went and all the wonderful opportunities we provided to the community!

Elizabeth

## Member News



### Congratulation to SWE-MN Member Cathy Krier!

Cathy is currently the Chair of Medtronic  
Women's Council.

In 2006, the Society of Women Engineers launched a program called “Wow! That’s Engineering!”. In 2007, the SWE-MN section was selected to host one of these signature events. On June 3, “Wow! That’s Engineering!” was held at the University of St. Thomas. This event was designed to encourage middle and high school girls to become more interested in engineering and technology. To support the initiative, Mayor Chris Coleman proclaimed June 3<sup>rd</sup> as “Wow! That’s Engineering! Day” in St. Paul.

“Wow! That’s Engineering!” brought the engineering achievements of women to life as girls interacted with leading female engineers and participated in activities designed to spark interest in the engineering field. To kick off the day, companies came to show off their technologies in a program called *Engineer-Ware*. The girls and their parents could talk to each of the companies and “touch” the technology. A special thanks to the following corporations for their participation in *Engineer-Ware*: **Boston Scientific, Cypress Semiconductor, General Dynamics Advanced Information Systems, Honeywell, IBM and Lockheed Martin**. An inspirational speech was given by **Tricia Walker**, SWE-MN member and Accellent employee, where she talked about engineering being everywhere and the impact that engineering is making on society. As the “Wow! That’s Engineering!” main event, girls performed several exciting hands-on experiments.

The experiments performed included:

- **Deep Sea Divers** – The principles of flotation, air pressure and density were introduced in this activity. Students built their divers using balloons, paper clips and weights, then placed them in a one-liter bottle for ‘deep sea diving’. The session included some measurement and data collection and produced many great questions for the students to home.
- **Invisible Forces** – For hundreds of years we have been fascinated by the mysterious behavior of magnets, compasses and electricity. Students had the opportunity to study these behaviors and ‘see’ the invisible forces at work. They also built their own electric motors.
- **Solar Energy** – The earth has many sources of energy. From renewable sources like the sun and the wind, non-renewable ones like coal and oil, the Earth provides our need of energy to warm our homes, power our factories and keep our cars moving. Students explored the energy provided by the sun by constructing a vehicle that utilized a solar panel, motor and other components to power their alternative energy car.


The experiments used were Agilent AfterSchool kits. These kits, offered by Agilent and National SWE, were very easy to use since all of the parts and instructions were included.

The girls even made lip gloss – they learned that engineering involves more than working behind a computer!

A parent program was also conducted to teach parents how to encourage their daughter to pursue this field. Approximately 60 parents in attendance. Numerous positive comments were received from both students and parents!





 Society of Women Engineers

# WOW! That's Engineering!



# First Annual SWE-MN Awards and Recognition Banquet

*Cathy Krier*

*SWE-MN Awards and Recognition Chair*

The first annual Minnesota Section of the Society of Women Engineers (SWE-MN) Awards and Recognition Banquet was held Thursday, May 24, 2007 at the rustic Lindey's Prime Steak House. This was the first time the banquet has been held for SWE-MN since 1989. The banquet was filled with representation from our highly appreciated sponsors, good food, shared conversations and a great reason to get everyone together. It was a time to reflect on the many individual and group accomplishments supporting SWE. Thank you to the many people that expressed their satisfaction with the program and food. Many old friends were reacquainted while new friendships were made. We would like to thank Lindey's Prime Steak House owners and staff for providing this group with such wonderful service, food and a comfortable place to meet. I'd also like to share a special thank you to **Elizabeth Bierman** and **Patricia Walker** for their various contributions in making the banquet such a huge success!

The Program - Honoring Women in Engineering

SWE-MN Scholarship Recipients:

**Ann Majowicz**, \$2,000 Banner Engineering Scholarship

**Erica Delin**, \$1,500 Boston Scientific Scholarship

**Kerstin Diesch**, \$1,000 Goodrich Corporation Scholarship

**Elaine Reeves**, \$1,000 General Dynamics Advanced Information Systems Scholarship

**Kathleen Breeggemann**, \$1,000 General Dynamics Advanced Information Systems Scholarship

**Janette Spann**, \$1,000 General Dynamics Advanced Information Systems Scholarship

**Sarah Panzer**, \$1,500 Lockheed Martin Scholarship

**Erin Mann**, \$1,000 Lockheed Martin Scholarship

**Nicole Jackson**, \$1,500 MTS Systems Corporation Scholarship

**Adaeze Okoye**, \$1,000 Polaris Scholarship

**Elizabeth Donnay**, \$1,500 Toro Scholarship

**Martha Dufresne**, \$1,000 SWE-MN Section Scholarship

SWE-MN Sponsors:

**Banner Engineering**

**Ecolab**

**Goodrich**

**Lockheed Martin**

**MTS Systems**

**Rosemount**

**Toro**

**Boston Scientific**

**General Dynamics Advanced Information Systems**

**IBM**

**Medtronic**

**Polaris**

**3M**

**University of St. Thomas**

## SWE-MN 2007 Section Awards:

### **Key Contributor – Angela Neidermire**

For providing continuity and stability inside our Section for a period of several years and being vital to our organizational success.

Angela continues to help out SWE-MN in every aspect. She always volunteers for outreach events and supports our section in new endeavors as well.

### **Most Active New Member – Melissa Boom-Coburn**

For numerous contributions to the section with less than two full years of membership within our Section.

Melissa became involved with our section this year at National Conference. She continued to stay involved by participating in numerous events and planned a joint meeting with SWE and IIE.

### **Bravest Volunteer of the Year – Anita Hall**

For throwing caution to the wind and being willing to undertake unfamiliar and challenging tasks to better our Section.

Anita was a vital member in establishing a new outreach program called Engineer@School. Without her help, this program would not have been as successful as it was!

### **Most Dedicated Member – Holli Pheil**

For attending meetings regularly and volunteering for several specific projects.

Holli is always willing to step out and help our section. She is a great resource for us for both outreach and professional development programs. She has served in leadership role for SWE-MN for many years now and continues her support.

### **Significant Achievement – Krista Johnson and Cassandra Piippo**

For organizing the Sparks, Slime and Speed Event – an event that made a significant contribution to the long-term goals of our Section.

Krista and Cassie did another stellar job this year with Sparks, Slime and Speed. This event was held during E-week at the Science Museum of Minnesota and reached over 750 people! It's truly a SWE-MN signature event.

## SWE-MN 2007 Section Awards continued:

### **Professional Spirit – Charlene Knealing**

For being passionate about SWE's mission and consistently representing the Section in a positive, professional manner.

Charlene serves as our counselor to the University of Minnesota collegiate section and shows her passion for SWE by helping the collegiate students. She is a great resource for both our section and theirs. She also is very involved with our section, helping out with many programs.

### **Most Innovative New Program – Cathy Krier**

For planning our first annual awards banquet – a program new to the Section that addresses Section goals.

Cathy took the challenge of creating an awards banquet for our section this year. This was a new program for our section that had not been active since 1989. It was so successful that we honor Cathy with this award.

### **Most Reliable Contributor – Jenna Rendon and Lisa Schmalhurst**

For always completing tasks in a timely manner and regularly attending Executive Council and professional development meetings.

Lisa and Jenna are new to the SWE-MN executive council this year but you would never know that with the success they brought to the membership committee. SWE-MN has over 240 members and will add an additional representative to the national council next year. Thanks for your commitment and hard work to SWE-MN.

### **Cornerstone Award – Julie Long**

For numerous contributions to the section with more than ten years of membership within our Section.

What hasn't Julie done for our section? She is a vital member to our section helping out with everything from bylaws, to outreach events, to speaking at our Spring Professional Development Seminar! Many of our section successes are due to Julie's involvement. I am honored for her to receive this award.

## ***SWE-MN and Medtronic nominated Cathy Krier for Emerging Leader in Quality***

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Cathy Krier is a Medtronic Corporate Commercial Release Manager in the Corporate Quality, Regulatory and Clinical organization. Medtronic is a global leader in medical technology driven by the Mission to contribute to human welfare by the application of biomedical engineering to alleviate pain, restore health and extend life for millions of people around the world. Today, about every five seconds, a Medtronic product saves or substantially improves a life somewhere in the world.



Cathy's career with Medtronic started in January 2000 and progressed with increasing responsibility to the current influential corporate role as a Commercial Release Manager. Cathy spent the first six years of her career with Medtronic as a dedicated resource within Cardiac Rhythm and Disease Management. She led many teams in establishing the overall approach and implementation of quality and reliability assurance activities. Cathy demonstrates emerging leadership qualities with solid technical competence, passion in striving without reserve for the greatest reliability and quality of Medtronic products, and commitment to creating a productive, respectful workplace.

Cathy provides oversight on a variety of project teams that operate with a collective development budget of \$39M. These teams are designing breakthrough products and therapies to relieve the suffering caused by neurological diseases and disorders. She possesses an innate ability to influence project and business strategy through interactions between the Corporate Quality, Clinical and Regulatory organization and sector leadership. She integrates diverse pieces of information when promoting guidance and support for the project teams. She communicates corporate requirements directly through consult and by providing corporate training on four specific corporate quality policies at six different Medtronic locations.

In addition to training, Cathy's leadership allowed her to obtain organizational support to establish the Women Exchange Mentoring Program for the Medtronic Women's Council (MWC). She has authentically influenced the attraction, development and retention of diverse employees.

Prior to Medtronic, Cathy was a Field Service Engineer responsible for Ohmeda Anesthesia and BOC Group Gas Delivery Systems supporting electro-mechanical gas and agent delivery systems, ventilator breathing systems and monitoring equipment. Cathy transitioned her customer experience into the area of quality in 1997. As a Quality Assurance Engineer, she contributed technical services to customers and core team support to Manufacturing, Operations, Supply Chain and Product Development groups.

Cathy has a strong reputation as an excellent role model for a number of reliability and quality engineers at Medtronic and within the industry. Her commitment and dedication to her profession not only shows through her technical achievements, but also in her community involvement in organizations such as: The Society of Women Engineers, Society of Hispanic Professional Engineers and Northern Voices.

Cathy has been an active member of SWE for more than ten years volunteering for local executive council leadership positions in two different sections. She delivers and champions technical and informational presentations relating to the medical device industry for students and professionals in all career stages at regional and national conferences.

Cathy obtained her bachelor's degree in Biomedical Engineering from Milwaukee School of Engineering and MBA from Capella University.

## ***SWE-MN nominated Julie Long for Emerging Leader in Manufacturing & Construction***

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Julie M. Long, PE is an Acting Senior Civil Engineer for the City of Bloomington, Minnesota. She directs and participates in the planning, design and construction of various projects for the City of Bloomington including the Pavement Management Program (PMP) and other state and federal aid road projects. She insures conformance to City standards and the needs of the citizens in the most cost-effective manner. In her position with the City, she oversees a staff of thirteen employees and a construction budget that varies between 11 and 14 million dollars each year.



She began her career at BRW, Inc. in 1993 as a Consultant I working with the corporate real estate group. In this position, she worked with others to provide total project delivery with integrated professional services to expedite the development schedule of various clients. This position exposed her from the very beginning selection of potential real estate, to the development of the plans and specifications to the construction of the project.

Julie stayed with BRW as it first merged with Dames and Moore in 1996 and again when the company was acquired by URS in 1999. Throughout this time she continued her work on corporate real estate projects while expanding responsibilities to include civil engineering design services on a variety of bus rapid transit and transit oriented developments in addition to brown field redevelopments.

In 2003, Julie left URS/BRW for a position with the City of Bloomington as a Civil Engineer for Street Design and Construction. In this role she worked on the PMP program and touched approximately one thousand residents of Bloomington each year with the construction program. Julie was also responsible for completion or assistance with various components of the State Aid street system, which in Minnesota provides return of some gas tax revenues to the City if the requirements are met.

Julie joined SWE in 1992 while in college and served as her collegiate section Treasurer. She has remained a very active member, serving on the SWE-MN Executive Council for over ten years. She has served as section President, Vice President, Secretary and Section Representative as well as a number of other committee chair positions including Scholarship, Newsletter Editor and Professional Development Co-Chair. In addition to her section level activities she has been active on the regional and national levels and currently serves as the Region H Treasurer and the National Procedures Committee Chair.

Besides her SWE involvement, Julie has taught religious education to seventh and tenth graders, volunteered at Clean Water and Environmental Fairs and spoken to a variety of youth on pursuing an engineering career.

Julie holds a Bachelor of Science degree in Civil Engineering from Rensselaer Polytechnic Institute and is a registered engineer in the state of Minnesota.

## ***SWE-MN nominated Erin Penne for Distinguished New Engineer***

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Erin Penne is a Principal Systems Engineer for General Dynamics Advanced Information Systems in Bloomington, MN. She is currently in a job rotation as a Manufacturing Project Engineer. In this position she operates as the manufacturing focal point for all repair activities for the Advanced Mission Computer on the F/A-18 and AV-8B aircraft and also for the repair and production activities for the Data Storage Product line.



Erin began her tenure at General Dynamics as a Test and Integration Engineer on a space computer program and wrote and performed acceptance test procedures on the products. She then went on to be a Test and Integration Engineer on an Intelligent Munitions System where she was in charge of the integration testing of wireless nodes and subcontractor sub-systems. She also managed the emulator software effort to provide an easier integration and testing environment. During acceptance testing of the system, she was in charge of compiling the test report and all the data that was to be sent to the customer upon completion.

Erin has also worked as a Systems Engineer at Honeywell and Rockwell Collins. At Honeywell, she worked on military aircraft avionics and a howitzer user interface display from 2001-2003. At Rockwell Collins, she worked on military helicopter avionics in the Integrated Applications group under the Government Systems division from 2000-2001.

Erin has been involved with the Society of Women Engineers since 1994 when beginning her education at Iowa State where she held various leadership positions on the executive council. When she moved to Cedar Rapids after graduation, she was instrumental in chartering the SWE East Central Iowa Section. Erin has served as Section Representative, Section Secretary, Section Vice President and Section Membership Chair at the various sections she has been involved in. Currently in FY07, Erin holds the position of Vice President for SWE-MN.

Erin has also been involved at the Region and National level. At the National Level, Erin has been involved in judging for the webpage award and is currently on the Membership Committee where she serves as a Region Membership Chair and participated on the Career Mapping Task Force. At the Region level, Erin has served as the webmaster for a year and is currently the Region Membership Coordinator. Erin's community activities complement her SWE activities very well. She has been on the planning committee for the Making Strides Against Breast Cancer Walk in Minnesota for the past three years. For two years she has been a confirmation guide at church for a group of eight junior high girls and has volunteered in the nursery for various events.

Erin has a BS in Aerospace Engineering and a Masters in Systems Engineering from Iowa State University.

## ***SWE-MN nominated Allison Pedersen for Distinguished New Engineer***

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Allison Pedersen graduated from the University of North Dakota (UND) with her Bachelors of Science in Electrical Engineering in 1998. While at UND, Allison was active in the collegiate SWE section, serving as Outreach Chair, Membership Chair and President.



After graduation, Allison accepted a position at Goodrich Corporation, Sensors and Integrated Systems (SIS) Division, where she continues to work today. During most of her eight years at Goodrich Corporation, Allison has worked with Air Data Systems. These safety critical systems read pressure and temperature from outside of an airplane and calculate parameters like airspeed and altitude to send to the pilot. Building from her software verification and development experience, Allison has demonstrated outstanding technical achievement and value creation with Goodrich SIS as a project lead for two programs. Through her work on Air Data products, she not only saved the company significant costs by representing the software team while leading efforts to create a common product architecture that supports multiple diverse aircraft, she was also instrumental in the introduction of Goodrich Corporation's first solid state inertial system product. To recognize her technical and leadership abilities, Allison received two Goodrich SIS awards, the *Team Value Creation Award* and the *Team Technical Achievement Award*.

Allison's commitment to her profession parallels her commitment to her community outreach and SWE. She volunteers in her community raising funds for the American Cancer Society and creating excitement for science and engineering at Lakeville elementary and high schools.

Throughout her career, Allison has stayed active in SWE. In the SWE-Minnesota Section, she has held numerous Executive Council (EC) positions, including Professional Development Co-Chair, section representative to the Council of Representatives and President. Some of her most significant accomplishments within SWE-MN are creating the first of many outreach kits and as section President, focusing on EC development, in order to encourage accountability and promote a unified, professional EC. Based on Allison's outstanding performance in positions she has held, she received two SWE-MN section awards. In FY00, she received the SWE-MN *Bravest Volunteer of the Year Award*, an award that recognizes volunteer(s) who were willing to undertake challenging tasks to better the section. In FY03, she received the *Key Contributor Award*, SWE-MN's highest level section award, given to recognize a section member who has provided continuity and stability for a period of several years and has been vital to organizational success.

Allison is also active regionally and nationally in SWE. She has served as the Region H Nominating Chair and has led the COR Procedures FIG efforts to completely rewrite the COR Procedure based on the newly revised Society Bylaws. Allison is currently serving as the SWE Career Guidance Chair. Her main focus is to define the Society's career guidance strategy and align all career guidance programs and partnerships with this strategy. Also, under her leadership, several programs are being developed or revamped, including *Wow! That's Engineering!* and the Hoffman program.

Allison enjoys spending time with her dog, husband, family and friends. She enjoys hobbies such as scrapbooking.

## Engineer@School Program Succeeds with Bloomington 4<sup>th</sup> & 5<sup>th</sup> Graders

“...I liked all the hands-on projects. I don't like just listening to teachers talking, I want proof it's right. Thanks a ton.” — Spencer 4<sup>th</sup> grader

SWE-MN's Career Guidance Committee launched a new program designed to inform, excite and influence children to take STEM (Science, Technology, Engineering and Mathematics) courses. **Anita Hall** led a dynamic pilot program with 4th and 5th graders at Dimensions Academy and Washburn Elementary in the Bloomington Public Schools.

Engineer@School brings working engineers right into the classroom to lead kids in hands-on engineering activities. These activities link science and math classroom instruction to real world applications. The program kicked off in February with a field trip to our partner, *The Works*, where the kids had an afternoon to explore. Every month after that Engineer@School presented one in-class program. Thanks to the diversity within SWE, the classes got a chance to meet with engineers from a variety of disciplines and a variety of careers.

Thanks to the General Mills Foundation for the financial support. A big thanks to the following SWE members for sharing their enthusiasm and real life engineering experiences with the kids – and for bringing additional volunteers from their company:

**Allison Pederson**

**Anita Hall** who also brought Mark Burns, Samih Zaman and Timothy Tomczyk

**Cassandra Piippo**

**Krista Johnson**

**Lindsey Roberts** who also brought Kathryn Sarnecki and Susan Severa

If you are interested in more information about this program, especially if you are interested in volunteering, please contact Anita Hall at [anita.hall@genmills.com](mailto:anita.hall@genmills.com).



October 25-27

SWE 2007 National Conference

Visit our website at [www.swe-mn.org](http://www.swe-mn.org)



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CHANGE SERVICE REQUESTED