It has been a great year for SWE-MN. It is hard to believe that FY14 is coming to an end and am writing my last article as SWE-MN President. We have accomplished a lot as a section over the last year giving our membership opportunities to network and develop their professional career, along with giving back to the community. “Make Connections. Make History.” Our theme this year was reflected in everything we did as a section.

I am thrilled by successful elections across the society and pleased that there is a full EC to transition to and start off FY15. I would like to thank all the Executive Council and Advisory Council members for their leadership and commitment to SWE-MN. Huge thanks to all of the volunteers that made an impact to so many students and adults in our community through Outreach and Professional Development. All this would not have been possible without the support and generous donations from our sponsors.

At the SWE-MN year-end Awards Banquet on May 22 we reflected on all our accomplishments this year, celebrated the success with our sponsors, recognized SWE-MN 2014 class of scholarship recipients, congratulated our section and its members’ achievements, and presented the SWE-MN section awards. A recap for this is captured under the Awards portion of the newsletter.

It has been a privilege to be the president of SWE-MN this year and an honor to serve you. Please check out the picture collage on the next page by Sherri Leu that captures SWE-MN accomplishments.

~Kalyani

president@swe-mn.org
Thanks SWE-MN for a wonderful year!
What is an Engineer?

When I started to ponder this question, even though I have been an engineer for 10+ years, I realized that I have never looked up the definition.

The definition of Engineer, according to Merriam-Webster, is:

♦ a person who has scientific training and who designs and builds complicated products, machines, systems, or structures: a person who specializes in a branch of engineering
♦ a person who runs or is in charge of an engine in an airplane, a ship, etc.
♦ a person who runs a train

Although I was of the impression, before I was 16 years old, that engineers only ‘drove trains’ or ‘built bridges’, inspired by my high school chemistry teacher, I quickly learned that the world of engineering was so much more.

So, What is an Engineer, What do Engineers do?

♦ At the core, engineers apply the principles of science and mathematics to develop economical solutions to technical problems. Our work is the link between scientific discoveries and the commercial applications that meet societal and consumer needs.
♦ We develop and market new products...from chemicals to computers from power plants to helicopters from pace makers to children’s toys.
♦ In addition to design and development, we work in testing, production, or maintenance. We supervise production in factories, determine the causes of component failure, and test manufactured products to maintain quality.
♦ We also estimate the time and cost to complete projects. We can be responsible for major components or entire projects.
♦ We use computers extensively to produce and analyze designs; to simulate and test how a machine, structure, or system operates; to generate specifications for parts; and to monitor product quality and control process efficiency.

This is just the tip of the iceberg. Engineers work on everything and thankfully CAN DO anything. Inspired by the FY14 SWE-MN Banquet keynote address by Elizabeth Bierman, SWE President Elect, I would like to share her thoughts on what makes an individual ‘engineering material’. I personally could not agree more!

Ideal Traits of an Engineer

♦ Ethically Grounded
♦ Service Mentality - Engineers serve the public and humanity
♦ Takes a Collaborative Multidisciplinary approach
♦ Self-starters but appreciative of experience
♦ Global in Thinking
♦ Cultural Dexterity
♦ Mobile and willing to travel globally
♦ Understands what the challenges of the 90% are
♦ Good Communicator

Happy Spring!
Thank you to all SWE-MN members who voted in this year’s election.

Election Results:

President: Tricia Walker
Vice President: Rachel Borchers
Secretary: Nicole Bartelt
Treasurer: Lindsey Roberts McKenzie
Section Representatives: Lynn Davenport, Holly Kimball, Lesley Wyckoff

Congratulations to these ladies - stay tuned for more FY15 news this summer!

FY14 Sponsorship

CONGRATS TO THE FY15 ELECTED OFFICERS

For more information on how to become a SWE-MN Sponsor, check out our Sponsorship Opportunities [here].
Spring Networking Event and Voting Party Recap

Special thanks to Boston Scientific for hosting a great Spring Networking Event and Voting Party. There was a great group of men and women from Boston Scientific and SWE-MN who spend the evening visiting with one another, enjoying delicious food and supporting the SWE-MN and Society Elections. Thanks to Holly Kimball for organizing this event!
Outreach News

As this fiscal year comes to a close, it’s time to step back and recognize how much we accomplished through our Outreach team and volunteers. We had three fantastic, successful Signature events: Girl Scout Patch Day; Spark, Slime, Speed; and Wow! That’s Engineering, averaging about 50 volunteers per event. In addition, we were able to support 18 smaller events throughout the year, with usually just 1-2 or a handful of volunteers. Some of these events were bigger, serving 1000+ kids, while others were smaller, classroom type settings, with or without experiments. At the same time, we had to turn away 26 requests for SWE participation due to lack of volunteers.

One of the overriding missions of SWE-MN is K-12 outreach, to inspire the next generation of engineers, and provide positive female role models in engineering. To accomplish this, we need your help! There are a number of annual events where SWE-MN should have a presence, and we have either not participated, or under-participated, for the last several years. The handful of dedicated event leads cannot do all events, so we’re looking for others to step forward to take the lead on some of these events. Please find something that strikes a chord with you, and step forward to lead one of these events:

- STEPS Camp – Summer 2014
- MISF Teacher Forum – Aug 14, 2014
- Stem Day at the Fair – Aug 21, 2014
- E4 (Excellence in Elementary Engineering Education) – Nov 18, 2014
- Da Vinci Fest, Stillwater – Jan 2015
- Student Creativity Festival – Jan 13-14, 2015
- Minneapolis Public Schools STEM Expo – Feb 2015
- Tech Fest – Feb 28, 2015

If there are outreach events you are participating in, we’d love to know about them. In addition to the big three signature events, if everyone in SWE-MN were to volunteer for one smaller event, we could significantly increase the impact of SWE, our mission, and the future of engineering! Please contact outreach@swe-mn.org for more information about any of these, or other, events. Thank you for all you do!!

THANK YOU

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2014 Certificate of Merit Program Recognizes 171 Outstanding Young Women in Minnesota High Schools!

Submitted by Naomi Brill, SWE-MN Certificate of Merit Coordinator

The SWE Certificate of Merit program is designed to honor high school girls with outstanding achievement in STEM subjects. Award recipients must have completed three years of science and three years of mathematics with distinction, and they must be active citizens in their school and/or community. They may also be recognized for completion of Project Lead the Way courses in engineering and technology. We provide their school with a certificate of recognition which is presented to the student at the school’s year-end awards ceremony. This year, we sent 171 certificates to students at 87 different schools in Minnesota – the highest school participation and the most students ever recognized in a given year. What a way to mark the 20th year of our program!

Our Certificate of Merit program provides us with an annual survey (albeit anecdotal) of the career aspirations of Minnesota’s academically prepared girls. **WE RECEIVED 114 RESPONSES TO OUR QUERY “WHAT IS YOUR INTENDED COLLEGE MAJOR?” 48% INDICATED ENGINEERING!** Many of them further indicated a specific discipline within engineering including mechanical, electrical, chemical, civil, biomedical, industrial and architectural engineering.

Guidance counselors, teachers, and school administrators statewide nominate our Certificate of Merit recipients, and the girls self-identify their intended college major. The trend of Minnesota certificate recipients indicating high interest in STEM disciplines for college studies has been steadily increasing since our 2009 survey. **INCLUDING THE FUTURE WOMEN ENGINEERS, AN ABSOLUTELY ASTOUNDING 97% OF THE STUDENTS WHO IDENTIFIED A COLLEGE MAJOR INTEND TO FOCUS THEIR STUDIES IN A STEM FIELD!**

Congratulations all!
2014 Scholarship Program Facts and Acknowledgements

Submitted by Erica Girard and Naomi Brill, Scholarship Committee Chairs

We’ve announced the recipients of our 2014 scholarships, presented them to you at our awards banquet, and closed out another program year. Here are a few fun things to know about our scholarship program:

- The 2014 recipients represent our 17th class. We started creating our scholarship program in 1993, and presented our first scholarship, the original Minnesota Section Scholarship, worth $500, in 1998.

- We received a new record of 83 applications, with at least one application coming from each of the 10 schools we serve in Minnesota, North Dakota, and South Dakota.

- Those 83 applicants were studying 16 different engineering disciplines.

- We disbursed 16 scholarships with a total value of $19,000.

- Since 1998, we have disbursed 125 scholarships with a total value of $155,200.

- Three of our 2014 sponsors participate (and continue to participate) because SWE Minnesota members engage their employers. A very special thank you to Sarah Steffen of General Dynamics AIS, Charlene Willenbring and Allison Pedersen of UTAS AeroSpace systems, and Allison Lunde of Barr Engineering. If you’d like to see your company’s name among our list of sponsors, we’d be happy to help you make that happen!

- We received additional help this year, in various forms, from Kalyani Mallela, Julie Long, and Jacalyn St. Dennis and we extend our appreciation and thanks to them.

Thank you and Congratulations!!
The Minnesota Section proudly announces our Section and Corporate Partnership

Fall 2014 Scholarship Recipients

For Fall Semester 2014, the Minnesota Section of the Society of Women Engineers has awarded 16 tuition-based scholarships, totaling $19,000. We congratulate the following recipients, and gratefully thank the following corporate sponsors for their partnership in making this program a success! Check out our corporate partners' websites for more information about these great companies.

Banner Engineering Scholarship

Amelia Gagnon, an electrical engineering student at the University of North Dakota is the recipient of the $2,000 Banner Engineering Scholarship. Banner Engineering is the sensor market leader with the broadest line of products and solutions in the nation. See www.baneng.com for more information.

Barr Engineering Scholarship

Miranda Anderson, a civil engineering student at the University of Minnesota Duluth, is the recipient of a $750 Barr Engineering Scholarship.

Jennifer Soltys, an environmental and ecological engineering student at the University of Minnesota Twin Cities, is the recipient of a $750 Barr Engineering Scholarship. Barr Engineering Company is an employee owned consulting firm providing engineering and environmental services to industrial clients in power, mining, refining and manufacturing, and to attorneys, government agencies and natural-resource-management organizations. Barr’s 700 engineers, scientists and technical specialist help clients develop, manage, and restore natural resources across the Midwest, throughout the Americas, and around the world. For more information, visit www.barr.com.
Caterpillar Global Paving and Caterpillar Foundation Scholarships

Jennifer Barstow, a civil engineering student at North Dakota State University, is the recipient of a $1,000 Caterpillar Global Paving and Caterpillar Foundation Scholarship.

Anne Christensen, an industrial engineering and engineering management student at South Dakota School of Mines and Technology, is the recipient of a $1,000 Caterpillar Global Paving and Caterpillar Foundation Scholarship.

Caterpillar is the world's leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives. Please visit www.caterpillar.com.

Covidien Scholarship

Sarah Vanderheiden, a biomedical engineering student at the University of Minnesota Twin Cities, is the recipient of the $1,000 Covidien Scholarship.

Covidien is a $10 billion global healthcare products leader dedicated to innovation and long-term growth. Covidien creates innovative medical solutions for better patient outcomes and delivers value through clinical leadership and excellence. See www.covidien.com.

General Dynamics AIS Scholarships

Cecilia Boettcher, a computer science student at South Dakota State University, is the recipient of the $1,500 General Dynamics AIS Scholarship.

General Dynamics AIS is a leading provider of transformational mission solutions in command, control, communications, computers, intelligence, surveillance and reconnaissance. For more information, visit www.gd-ais.com

GE Women’s Network Engineering Scholarship

Ria Chakraborty, an electrical engineering student at the University of Minnesota Twin Cities, is the recipient of the $1,500 GE Women’s Network Scholarship.

The GE Women’s Network supports the professional development of women working at GE by sharing the wisdom of successful women role models: www.ge.com/company/culture/people/womensnetwork.html GE works on things that matter: the best people and technologies taking on the toughest challenges, to find solutions in energy, health and home, transportation and finance.

Hormel Foods Scholarship

Karissa Horbal, a food engineering student at the University of Minnesota Twin Cities, is the recipient of a $1,000 Hormel Foods Scholarship.

Syntyche Koumaglo, an electrical engineering student at St. Cloud State University, is the recipient of a $1,000 Hormel Foods Scholarship.

Hormel Foods is a multinational manufacturer and marketer of high-quality, brand-name food and meat products for consumers throughout the world. For more information, visit www.hormelfoods.com.
LORAM Scholarship

Anne Mayer, a mechanical engineering student at the University of North Dakota, is the recipient of the $1,500 LORAM Scholarship. LORAM is one of the leading suppliers of track maintenance machinery and services in North America and the global market. They deliver advanced equipment, innovative solutions, and unrivaled customer service to maintain and improve railway infrastructure. See www.loram.com for more information.

Medtronic SWEnet Scholarship

Melissa Cassel, a chemical engineering student at the University of Minnesota Twin Cities, is the recipient of a $1,000 Medtronic SWEnet Scholarship. Michelle Sauvageau, an electrical engineering student at North Dakota State University, is the recipient of a $1,000 Medtronic SWEnet Scholarship. Elia Zanella, a mechanical engineering student at the University of Minnesota Twin Cities, is the recipient of a $1,000 Medtronic SWEnet Scholarship. SWEnet is a professional network of Society of Women Engineers members who work at Medtronic, the global leader in medical technology, working to change the face of chronic disease. These dedicated women have donated their time and talents to create this scholarship opportunity. For further information on Medtronic, see www.medtronic.com.

UTC Aerospace Systems Scholarship

Rachel Smith, a mechanical engineering student at North Dakota State University, is the recipient of the $1,500 UTC Aerospace Systems Scholarship. UTC Aerospace Systems is one of the world’s largest suppliers of technologically advanced aerospace and defense products. UTC is committed to helping original equipment manufacturers of aircraft, helicopters, engine manufacturers, and airlines to develop and maintain safer, lighter, more reliable and more efficient aircraft and other platforms. For more information, visit www.utcaerospacesystems.com.

The Minnesota Section Scholarship

Amelia Lijewski, a bioproducts and biosystems engineering student at the University of Minnesota Twin Cities, is the recipient of the $1,500 Minnesota Section Scholarship. This scholarship is funded by an endowment of the Minnesota Section of SWE.
FY14 SWE-MN Awards Program Recap

On Thursday May 22nd, SWE-MN celebrated the end of another successful fiscal year by recognizing our sponsors, scholarship recipients and volunteers. Without all of our sponsors, we would not have been able to conduct such great outreach programs, professional development events and so much more! Our volunteers are a vital part of our daily world in SWE-MN. Thank you to all who have given up your weekends, lunch hours, evenings after work and more to help SWE-MN achieve our goals! Check out the pictures from the great event held at the Tournament Players’ Club in Blaine.
FY14 SWE-MN Awards Program Recap Continued

The Awards Banquet also provided us the opportunity to congratulate once more the many individuals who deserving received recognition for their personal and professional accomplishments this past year. Congratulations again!

In FY14, SWE-MN received these awards:

- Region H Membership Retention Award - Large Section
- Region H Membership Recruitment Award - Large Section
- Region H Membership Growth Award - Large Section
- Region H Continuous Improvement Award for SWE-MN Open House
- Region H Distinguished Service Award - Elizabeth Bierman
- Membership Recruitment Award
- Outreach Memorandum of Understanding Award

In FY14, the following SWE-MN Members were awarded these recognitions:

- Naomi Brill– SWE Fellow
- Charlene Willenbring—SWE Distinguished New Engineer
- Sara Beck - SWE New Face of Engineering
- Kalyani Mallela– SWE New Face of Engineering
- Charlene Willenbring - MFESTS New Engineer of the Year

As a SWE-MN tradition, the President and Vice President awarded these special recognitions:

- Erin Penne - Corner Stone Award
- Cathy Krier - Key Contributor Award
- Holly Kimball– Going Above and Beyond Award
- Lesley Wyckoff - Professional Spirit Award
- Lynn Davenport - Most Dedicated Member Award
- Jesse Narr - Most Active New Member Award
- Leah Johnson - Most Reliable Contributor Award
- Erin Lamke and Jessie Sheehan - Bravest Volunteer of the Year Award
- Communications Committee (Nicole Bartelt, Holly Kimball, Sherri Leu, and Lesley Wyckoff) - Significant Achievement Award
- Membership Committee (Claire Rydeen and Kristin Horvath) - Most Innovative New Program Award
- Erica Giard and Naomi Brill - Outreach Award
Section Representative Update

With schools ending and summer changing how many of us operate, this time of year also means a change in fiscal year and leadership for SWE. We have had a wonderful year serving as your section representation to the region. Thank you so much to Kalyani and the rest of the EC for the excellent events. It was been an amazing year as our group was trying some new things as well as keeping some of our strong traditions.

The change in fiscal year also means that it is time to renew your membership (or join!). The year starts July 1st for SWE, so there is a special early bird renewal discount--- renew in June and get $5 with the code: BIRD. C2C members---if you are graduating this year remember to update to “Transition from Collegiate to Career to Professional Member RENEWAL” so you can officially be welcomed into the SWE Professional world!

If you happen to be looking for an end of year teacher thank you gift, SWE offers a great deal for K-12 memberships for only $20. How excited would your kid’s teacher be to have access to all of our amazing resources, kits and connections??

SWE is pleased to offer membership to full-time K-12 educators. SWE’s mission includes encouraging more women to become engineers, and you can support that mission by helping reach girls. A SWE membership provides valuable K-12 outreach tools and support for you including:

- Access to SWE K-12 outreach resources and activities locally, nationally and internationally
- SWE’s monthly e-newsletter, All Together
- Award-winning SWE Magazine
- Reduced registration fees for SWE’s Annual Conference which includes:
  - K-12 Outreach Track
  - K-12 Outreach Expo
  - Career Fair
  - Support of SWE’s mission
  - Access to SWE’s outreach community
  - Discounted K-12 outreach merchandise via the SWE Store
  - Unparalleled networking opportunities with SWE members: Collegiate, professional and corporate members
  - K-12 outreach webinars

A special reduced membership rate of $20 is available to full-time K-12 educators. Take advantage of it today!

We have had an awesome year meeting so many of you! Cathy will be sharing all the strategic skills learned in SWE on a different local board this year. Lynn will continue as Section Rep next year, welcoming Lesley Wyckoff and Holly Kimball.

~Lynn Davenport and Cathy Krier
Looking for Member News:
Recently got a new job or promotion? New marriage, child, grandchild? If so, we’d love to hear about it!
Send in your exciting Member News to newsletter@swe-mn.org to be included in the next newsletter.

Welcome Marie Therese Statz!
Congrats to SWE-MN member, Angela Statz and her husband Mark who welcomed a baby girl on April 27th!

Have a wonderful and safe summer!

Congrats to all the graduating seniors!