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# SWE~Charlotte-Metrolina Chronicle

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## "Engineers are Cool!"

By: Angela Berry

Our semi-annual Junior Girl Scout Badge Event was held on February 23, 2008 in association with E-Week. Typically, this event has 50 Girl Scout participants. However, due to a miscommunication about dates with the Hornet's Nest Girl Scout Council there were only 18 enrolled. Unfortunately, only 12 Junior Girl Scouts from two troops showed. Adapting as engineers do, we revised our schedule of sessions on the day prior to the event. On the day of the event, halfway through the morning, we learned that one of our two troops had received further misinformation that the event ended at lunch time and had to leave. So, we actually even revised the schedule on the day of the event to account for only being 7 Girl Scouts to participate in the two afternoon sessions. Despite all the hiccups with scheduling, all of the volunteers and Girl Scouts had a great time learning about Chemical, Mechanical, Structural, Electrical and Civil engineering. Each of our five sessions on a different type of engineering was led by a member of the professional section with assistance from



**Volunteers for "Engineers are Cool!"**

*Kneeling: Brittney Kinsey; Front Row (L-R): Crystal Freeburg, Karen Herbert, Chris Cathcart, Kerrie Goforth, Amie Sparnell (UNCC), Rebecca Turner (UNCC), Erin Johanning (UNCC); Back Row (L-R): Sandra Kolvick, Mandi Brigman, Erin Day, Angela Berry, Morrisa Barber (UNCC), Jennifer Burley (UNCC)*

other members and Collegiate Section members from UNC-Charlotte.

Kerrie Goforth tackled leading the Chemical Engineering session on polymers or 'Slime' with the enthusiasm of a Girl Scout herself. Kerrie started her sessions with a brief discussion of engineering and chemical engineering in general. She then moved on to discussing polymers and polymerization giving examples of polymers and discussing the importance of them. After the brief talk, the Girl Scouts made two types of slime:

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# President's Corner

By: Mandi Brigman

It seems like just yesterday I was writing my first President's Corner and introducing myself as the new Section President. Time has flown by and it is now time for me to write my last President's Corner. In the next newsletter you will be reading about the ideas of the new incoming President and Executive Council.

I want to thank you all for giving me this opportunity to lead the Charlotte-Metrolina Section. I have met many wonderful people over the past year and I hope each of you continues to be active with SWE at the local or national level. SWE is a great organization and it wouldn't exist without members like you.

I would especially like to thank each of the current and future officers for the

tremendous amount of time and energy they dedicated to this section. We have made great strides in the area of communication through the

development of our quarterly newsletter and the updated version of our website. In outreach, we have continued our tradition of working with the Charlotte Hornet's Nest Girl Scouts to teach them about science and engineering during E-Week. In the area of professional development, we have joined with the Duke Energy Women in Nuclear (WIN) organization to sponsor a three part PD seminar led by Jill Tietjen, CEO of Technically Speaking and founding member of the Charlotte-Metrolina SWE Section.

I'm so proud of the things this section has accomplished in the past year. The members that comprise the officer slate for FY09 are amazing, dedicated women. I can't wait to see how they build on these accomplishments in the future.

# "Illuminations: Women Collaborating to Enlighten the World"

Region D Conference 2008

Miami, FL By: Jennifer Braganza

Stepping onto the lush greenery that makes up the University of Miami makes it no surprise that most students who step on campus choose to go there. It also made it a warm and lovely tropical host for the 2008 Region D Conference. Several members from the Charlotte-Metrolina section, including Chris Cathcart, Jacey Rogers, and myself, joined the over 200 participants that attended the conference. On Saturday morning, Chris Cathcart presented her workshop, "Managing and Motivating Teams," to attendees while enjoying the glorious morning.

The keynote speaker from IBM shared her experiences and introduced attendees to new technology emerging from the company. One particular device she highlighted was an electronic translator that she could speak into in English and it translated what she said into Iraqi Arabic. Since most of us could not tell the difference, it was a good thing there was someone there who spoke Iraqi Arabic and could tell us the device worked! These devices were sent to our troops in Iraq in December.

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Below left: Chris Cathcart presents "Managing and Motivating Teams" workshop.



Below: Jennifer Braganza presents "Communication: Mission Impossible" workshop.

Jennifer Braganza and Jacey Rogers were also presenters at the conference. Jennifer presented two workshops entitled "Taming of the Shrew" and "Communication: Mission Impossible" while Jacey presented Leadership Modules. The Career Fair at this conference was one of the largest (and most crowded) I have ever seen with over 20 organizations participating.





## Women's Wellness

By: Crystal Freeburg

Our March meeting focused on Women's Wellness with guest speaker Shira Capellini from Wellness Coalition America. Shira gave a great presentation on total body wellness and what we can do to help improve our overall health. We learned practical lifestyle changes that we can make to improve our health, including better ways to move, fuel, maintain

and rest our bodies. If you would like more information on total body wellness visit [www.wellnesscoalition.com](http://www.wellnesscoalition.com) for health related articles and interactive tools.

Right:  
Speaker  
Shira Capellini



## Professional Development Seminar

The Society of Women Engineers Charlotte-Metrolina Section joins with Women in Nuclear to host a Professional Development Seminar on May 1, 2008 from 12:00pm to 4:00pm.

The Society of Women Engineers Charlotte-Metrolina Section joins with Women in Nuclear to host a Professional Development Seminar on May 1, 2008 from 12:00pm to 4:00pm at the Duke Energy Customer Resource Center (3201 International Airport Drive, Suite 100, Charlotte, NC 28208).

Jill S. Tietjen, P.E. will be leading three interactive workshops entitled:

» *Steps to Leadership Success*: Seven steps that you can embrace to enhance your leadership style.

» *Networking or May I Help You?*: You can get jobs, board seats, or just things done through networking. Jill's first rule of networking - help the other person first - underlies this topic about one of life's secrets.

» *Volunteering: Cornerstone to Career Success*: Those volunteer activities don't just keep you busy - in them you learn key skills that can help you in your career.

Jill Tietjen, President and CEO of Technically Speaking, Inc., is an engineer, speaker, and author. She is a consulting engineer in the electric utility industry performing generation and transmission planning work and frequently serves as an expert witness. She gives motivational speeches to large and small audiences around the country. Her books and articles cover technical topics, non-traditional careers for women, and historical women. She is a graduate of the

University of Virginia and the University of North Carolina at Charlotte as well as a licensed professional engineer in Colorado.

Ms. Tietjen regularly speaks on women in engineering, historical women in engineering and science, and leadership topics. Her introduction to engineering textbook, *Keys to Engineering Success*, was published by Prentice Hall in 2001. She is the co-author with Betty Reynolds of the *Setting the Record Straight* series of which three volumes have been published. She has written articles for and been profiled in *SWE: Magazine of the Society of Women Engineers*, *Graduating Engineer*, *U.S. Woman Engineer*, *Woman Engineer*, and *Engineering Horizons*. She served as the 1991-1992 National President of the Society of Women Engineers (SWE). As Jill S. Baylor, she is a contributing author to the 1995 book *She Does Math!*

Ms. Tietjen has received numerous awards and honors including the 2001 Woman in Technology Award from the Women's Foundation of Colorado, Subaru, and News4; Tau Beta Pi's Distinguished Alumna Award, and she was named a Woman of Distinction by Girl Scouts Mile Hi Council. Ms. Tietjen serves on a number of non-profit boards and is currently Chair of the Board for Girl Scouts Mile Hi Council. She is a member of the Board of Directors for the Geor-

gia Transmission Corporation of Tucker, Georgia. Ms. Tietjen is a Commissioner on the Engineering Accreditation Commission of ABET, Inc., and serves as the Western Zone Vice President for the National Council of Examiners for Engineering and Surveying. She is a Fellow Life Member of SWE and a Senior Member of the IEEE Power Engineering Society. Ms. Tietjen is listed in *Who's Who in Engineering*, *Who's Who in Science and Engineering*, and *Who's Who in Technology*.

The Section will provide certificates for 4 PDH credits. The cost of this seminar is free for WIN Members & Duke Energy employees, \$40 for SWE Members, \$50 for Non-members. The fee is payable to SWE-CM via PayPal. Register on our website by April 25, 2008. A \$10 late-registration fee will apply after April 25. A PayPal invoice will be sent, as appropriate, to the email address provided during registration.

A flyer is available for posting/sharing on our website. For more information, you may contact our webmaster or one of the SWE-CM Event Coordinators:

Mandi Brigman

Mandi.Brigman @ swe.org

Chris Cathcart

Chris.Cathcart @ swe.org

## Get Ready, Get Set, Stamp!

By: Kerrie Goforth

The Society of Women Engineers Charlotte-Metrolina Section held a "Stamping 101" class as its April 2008 event. On April 13, five members met at the home of Stampin' Up Independent Demonstrator Kim Cagle to learn the basics of stamping. There was a \$5 fee that each attendee paid directly to Kim for the materials of the three projects we made. While demonstrating the two greeting cards and a candy 'bag', Kim gave us tips and directions on stamping in general. The candy 'bag' also included

'decorating' the candy that went inside with stamped address labels. After the demonstrations, the attendees were allowed time to complete each project at their own pace and order. For those more interested, Kim elaborated on

other classes that she teaches including scrapbooking. For more information or a class schedule, you may visit Kim's website ([kimcagle.stampinup.net](http://kimcagle.stampinup.net)).



Left: (R-L) Mandi Brigman, Jennifer Braganza, and Kerrie Goforth watch and listen as Kim Cagle demonstrates ones of the cards.



Above: Projects made at Stamp Class.

## E-Week Contest Winner

By: Mandi Brigman

A challenge was issued in our last issue to submit activities or outreach ideas for National Engineers Week. Congratulations to Regina Guyer for winning our E-Week contest for sending in an idea for the best way to spread the word about science and engineering. Regina's event "Water Experiences" was held for the entire first grade at Winecoff Elementary School. The event focused on water with an opening discussion on engineering, science, and environmental issues; breaking into 4 parallel classroom sessions covering topics of water and environmental issues.

Congratulations Regina for winning the E-week contest and thanks for all the hard work you put into developing such a fantastic outreach event for these children!

## 2008 DES Award

The Distinguished Engineering Service Award is presented annually by the Society of Women Engineers Charlotte-Metrolina Section to an individual who best exemplifies the engineering profession through leadership and service as judged by the selection committee from submitted nominations.

The judging criteria evaluate the contributed time and effort in one or more of the following areas: Public service, Public Awareness, Professional Development and Leadership, and Other – as specified by the nominator.

Nominee's volunteer efforts must be: current, an investment of substantial personal (uncompensated) time, personal and direct, and public service.

The award will be presented at the Society of Women Engineers Charlotte-Metrolina Section Awards and Recognition Banquet held in June 2008.

Nominations must be received by Selection Committee no later than **15 May 2008**. A link to more information and the nomination form is on the main page of our website.

Electronic submissions preferred. Nominations should be sent to the SWE-CM Section. For additional information or any questions, please contact Mandi Brigman at [Mandi.Brigman@swe.org](mailto:Mandi.Brigman@swe.org) or (803) 237-8284.

## Section Bylaws Update

By: Kerrie Goforth

Our Bylaws draft was submitted to the Bylaws Chair on February 1. During February and March, additional revisions were made per suggestions by the Bylaws Chair. A final draft was submitted on March 25. According to the Bylaws Chair, our draft, with the latest revisions, should be approved at the Bylaws Committee meeting in April. We will be notified of approval by the Bylaws Committee and the draft will

be posted on our website for Section membership review and approval. Hopefully, the call to vote for approval can happen concurrently with Officer Elections. Upon approval by the Section, a final version will be sent to the Bylaws Committee and National Secretary for final approval. Our revised bylaws will be in effect once approved by the National Secretary. We anticipate having our bylaws update completed by the end of this fiscal year.



## Annual Awards and Recognition Dinner

June 12, 2008, 6:30PM

Our annual Awards and Recognition Dinner will be held on Thursday, June 12, 2008 at 6:30PM. Please complete the survey on our website to help us plan the location and other details.

The outgoing Executive Council will be honored and the incoming Officers and Committee Chairs will be announced

and installed. The 2008 Distinguished Engineering Service Award recipient will also be recognized and presented with her award.

Once details are confirmed, an Evite will be sent for RSVP purposes.

Contact Mandi Brigman (Mandi.Brigman@swe.org) or our webmaster for more information.

## Carowinds Education Days

April 3, 2008; 11:00AM-4:00PM

May 16, 2008; 9:00AM-12:00PM

"Be on hand as "Experts" in the field or about to enter the field of Engineering conduct class at selected rides from 9 am to 12 pm. Trained in advance by our park engineers and ride mechanics, these instructors will enlighten your students on the many different dynamics and principles used to design, develop, build and operate the park's rides. Your students will learn the real life dynamics of science and math within the context of something they naturally relate to... Fun!" - Carowinds

On April 3, six members participated in the "behind the scenes" training at Carowinds. In addition to the six SWE members at the training were students from York Technical College in Rock Hill, UNC Charlotte students, and students from Wayne Community College

as well as a few Duke Energy employees. We learned specifics on several rides including Hurler, Drop Zone, Whitewater Falls, YoYo, Afterburn, Knight Hawk, Phantom Flyer, and the Carousel. The volunteers were even allowed to ride the YoYo and Knight Hawk during training.

Volunteers are allowed to visit the park at their leisure after their talks end on May 16. Carowinds will provide each volunteer with an Education Day T-shirt and two tickets to return to the park on another day. Carowinds is also advertising the Society of Women Engineers on their website.

You may view the Carowinds publication that was distributed to area schools or our flyer for posting/sharing on our website. If you'd like to volunteer (training is not required for practicing engineers), contact Mandi Brigman (Mandi.Brigman@swe.org) or our webmaster.

Region D. The sessions will be planned to address working together as a team, identifying personality styles for use in communication and interaction, and collaboration between Sections during goal setting.

DiSC assessments will most likely be used for the personality assessment since they focus on workstyle.

The plan is to give Sections a jumpstart on organizing their SWE year goals, assist them in completing the paperwork, and allow collaboration among the Sections.

## Upcoming Events

Details for each of the following events can be found on the Calendar of Events page of our website.

**April 15** – Slate of FY09 Officers announced

**April 16, 7:00PM** – Executive Council Finance Meeting

**April 17, 6:30PM** – AIChE Meeting

**April 30** – UNCC Senior Design Expo; Petition Candidates due

**May 1, 12:00PM-4:00PM** – Professional Development Seminar

**May 1-25** – Officer Elections (& potentially Bylaws approval)

**May 14-15** – NC Water Quality Forum

**May 15** – DES Award Nominations due

**May 16, 9:00AM-12:00PM** – Carowinds Education Day

**June 12, 6:30PM** – Annual Awards & Recognition Dinner

**July 26** – Region D Leadership Retreat

## Slate of Officers for FY09

Mandi Brigman served as the Section's Nominating Committee Chair this year and presents the following slate of officers for FY09.

**President:** Chris Cathcart

**Vice President:** Sandra Kolvick

**Secretary:** Jennifer Braganza

**Treasurer:** Kerrie Goforth

**Section Representative:** Angela Berry

**Alternate Section Representative:**

Crystal Freeburg

Per Section Bylaws, any Section member may petition to be added to the slate by April 30. Should any member desire to serve and run for office, contact our webmaster or Mandi Brigman at Mandi.Brigman@swe.org.

Ballots will be distributed to Section Members on May 1 to be submitted by May 25. FY09 Officers will be announced and installed at the Awards & Recognition Dinner.

## Region D Leadership Retreat

July 26, 2008

Since the Georgia Tech Collegiate Section won the bid for the Region D Conference 2009, Charlotte-Metrolina

has agreed to host the Region D Leadership Retreat this summer instead.

The retreat is a one-day event filled with training workshops designed to help build the leadership of Sections throughout



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The highlight of the conference, at least for me, was

the Award's Banquet which was hosted by the President of the University of Miami, Ms. Donna Shalala, at her historic Coral Gables home. The lovely dinner was outside by the pool with a live band playing from the patio. Ms. Shalala made a gracious host as she circled the crowd making sure everyone enjoyed the fresh espresso machine and chicken paella for dinner. The Charlotte-Metrolina Section was recognized by Region D Governor Harmony Myers with the Region D Newsletter Award.

On Sunday, many enjoyed the beach picnic but I took the opportunity to take

*Below: Award's Banquet hosted by the President of the University of Miami, Ms. Donna Shalala*



*Above: Career Fair at Region D Conference 2008*

a brief tour of Miami including a Cuban lunch before heading back to Charlotte.



*Above: Chris Cathcart accepts the Region D Newsletter Award on behalf of the Section.*

## FY08 Leadership Team

### President:

Mandi Brigman  
Duke Energy  
Mandi.Brigman @ swe.org

### Vice President:

Crystal Freeburg  
W.K. Dickson & Co. Inc.  
Crystal.Freeburg @ swe.org

### Secretary & Section Representative:

Kerrie Goforth  
Goforth Residence  
Kerrie.Goforth @ swe.org

### Treasurer:

Erin Day  
STV/Ralph Whitehead Assoc.  
Erin.Day @ swe.org

### Alternate Section Representative:

Chris Cathcart  
Lee Products, Inc.  
Chris.Cathcart @ swe.org

## Change in Secretary

*By: Mandi Brigman*

On February 14, 2008, Cheryl Kinchen, Secretary, officially requested that she be relieved of her SWE responsibilities due to emergent family health issues. Cheryl has been a great asset to the Executive Council and the section. I am very grateful for all the hard work she has put into our section this year, especially in the creation of the section newsletters. Please keep Cheryl and her family in your thoughts and prayers during this hardship.

On March 7, 2008, Kerrie Goforth was approved to fill the position of Secretary for the remainder of FY08 via nomination by the Executive Council and special election by the Section membership.



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Gloop and Super Slime. The slimes were made from the same materials (glue and borax solution) but the materials were mixed in different ratios. This allowed the girls to see how materials can be mixed to form different properties and characteristics. After they made their polymers, the girls then performed a set of tests on each to determine their properties so they could test a pre-made unknown and determine which slime it was. This emphasized how engineers have to perform tests and know the properties of the materials with which they work and how they can use tests to resolve unknown situations. The tests included a description and a slime rating (1 = not slimy to 5 = very slimy), a slow poke test, a quick poke test, a slow pull test, a quick pull test, and a bounce test. Although both slimes felt very similar, they did have a slightly different texture. They performed fairly equally during the tests except for the pull tests. Gloop breaks or tears distinctly almost immediately when pulled while Super Slime can stretch almost across the room! Based on their test results, the girls were successful in identifying the unknown(s). For the most part, the girls really enjoyed this session, although some wish we had had gloves for them to wear! They really got MESSY!



Above: Super Slime (polymer) in progress during the Chemical Engineering Session



Above: Scouts made (& ate) chocolate asphalt and concrete (not pictured) in the Civil Engineering Session.

Our Civil Engineering session was led by Crystal Freeburg. The girls learned about civil engineering through a session called 'Chocolate Asphalt'. The session taught the girls what asphalt is made of by making their own chocolate asphalt using ingredients such as melted chocolate, walnuts, coconut, oats and sprinkles. Each ingredient represented a real component of asphalt. They each mixed their own asphalt batch and then used their version of the steel drum roller to make their road as smooth as possible. Once their roadway hardened and cooled they were able to eat their chocolate asphalt. Core samples of asphalt and concrete were available for them to see and pick out the different components of each material.



Above: Sandra Kolvick (left) and Morrissa Barber (UNCC, right) help build circuits during the EE Session.

The Electrical Engineering session had two activities and was led by Sandra Kolvick. The first activity was "series vs. parallel circuits" where the girls learned about how the brightness of a light bulb is affected by having multiple bulbs placed in series versus parallel with one battery, and then how the brightness of



Above: Electric Gelatin during the Electrical Engineering Session

one bulb was affected by having multiple batteries in series versus parallel. We learned to not connect more than three batteries in series because the light bulb would already be very bright! The second Electrical Engineering activity was "electric gelatin" where the girls learned about static electricity and charged particles by rubbing the balloons on themselves or the carpet to create a charge, then held the balloon over unflavored gelatin, flavored gelatin, and salt to see how the three different particle types reacted. The unflavored gelatin would stick to the balloon or stand up in towers if the balloon was held close and steady, the flavored gelatin with additives would not do anything, and the salt would move around on the plate but the crystals were too big to really

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stick to the balloon. It was fun to see that regular household items have special electrical characteristics that we never thought of before!

Section President Mandi Brigman stepped up to lead the session on Mechanical Engineering. The Girl Scouts each assembled a 'Puff Mobile' from 3 plastic straws, 4 Lifesavers, 1 sheet of paper, 2 paper clips, tape and scissors. The Puff Mobile is a sail powered car that the girls could only move by blowing on it. Each girl was given the opportunity to propel her car across the floor of the classroom on one puff of air. The winner in each session won a goodie bag.

Girl Scouts assembled chairs in the session classroom to form the towers of the suspension bridge. Rope was tied to the chairs to form the cables of the



Above: Angela Berry (left) adds the load (engineering books) to test the bridge's strength while Rebecca Turner (UNCC, back right) looks on during the Structural Engineering Session.

bridge. Each team of Girl Scouts then had to work together to cut string and tie the 'suspenders' to the rope and the poster board 'deck' to hang the deck from the cable and towers (rope and chairs). After each team completed their bridge, Angela loaded them

up with her three boxes of engineering texts to see how much weight they could hold.

After all sessions, each Girl Scout was given the opportunity to let us know what they had learned and how they enjoyed each of the sessions. The results of their surveys will help us in planning future events.



Above: Puff Mobile race during the Mechanical Engineering Session

## NC Water Quality Forum

The Environmental Assistance Office is partnering with North Carolina Division of the Environment and Natural Resources (NCDENR) - Division of Water Quality to provide a NC Water Quality Monitoring Forum at UNC Charlotte on May 14th (8:00am - 5:00pm) and 15th (8:00am - 12:00pm) at the Human & Health Services Building, UNCC.

We invite you to join us in the Queen City, Charlotte, North Carolina for presentations and discussions related to all aspects of water quality and ecological monitoring. Topics for the forum include restoration monitoring, long-term monitoring, state and federal programs and emerging monitoring needs.

NCForWater 2008 will bring together the public, regulators, consultants, and researchers involved in water- monitoring programs throughout North Carolina. The goals of the forum include:

- \* Fostering improved communications
- \* Improving information sharing
- \* Exploring new efficiencies in monitoring

The cost for this forum which is approved for PE PDH is \$95. For more information, you may visit the NCForWater website, view their brochure or contact [nCForwater@uncc.edu](mailto:nCForwater@uncc.edu) or 704/687-3968.



Above: Mandi Brigman measures the distance a Puff Mobile travelled in the race during the ME Session.

Angela Berry led the Structural Engineering session where the Girl Scouts broke out into teams to build suspension bridges. Poster board 'decks' were pre-assembled by the SWE team with holes punched along the edges for attachment points. The