## EASTERN CHAPTER NEWSLETTER



## SDES MEMBERS OF THE

APRIL 10, 2015

ISSUE #42

PO BOX 1512 SIOUX FALLS, SD 57101

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

The

Engineering Informer

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WebEx: this month's presentation will be broadcast on WebEx so please plan on tuning in on the web if you can't be here in person! See the instructions on how to use WebEx on page 6 of this newsletter.

## I M P O R T A N T N E W S

#### NEXT MEETING:

April 14th, 11:30 AM @ Pizza Ranch on 41st Street

- John Walters of Construction Support Serviceswill talk about the critical path method for project delivery.

#### **NEW MEMBERS:**

• Dennis Odens, Banner Assoc.

## PRESIDENT'S COLUMN BY RYAN JOHNSON-PE

Dear Eastern Chapter Members,

My term as president ends June 30<sup>th</sup>! I've enjoyed my time as president. To say it's been a great experience is an understatement. Thanks to all the board members, committee chairs, and everyone that volunteered to make my life easy and this organization a continued success. I challenge all of you to volunteer, you'll be amazed at the personal growth you'll experience! Ray Pierson is the next president and I look forward to him taking our organization to the next level.

Our next monthly meeting will be April 14th from 12:00 to 1:00 at the 41st Street Pizza Ranch. Our presenter will be John Walters. PMP and President of Construction Support Services, Inc (CSSI). CSSI is a Minnesota corporation that provides project management, CPM scheduling and claims analysis for owners, engineers and contractors. John's presentation will be on the critical path method for project delivery and its many benefits. Be sure to take advantage of this opportunity! As always, come early to eat and socialize with your peers.

Our last meeting, before adjourning for the summer, will be at Elmwood Golf Course May 12<sup>th</sup> from 12:00 to 1:00. Come early to enjoy a burger and brat lunch which will be served starting at 11:30 for about \$10 each. Mark Wiederrich from Goldsmith Heck Engineers will present on the Golf Course re-design and airport runway improvements project. Budget a little extra time to participate in a golf cart tour of the project after the presentation. A survey will be sent the week before to finalize the lunch count.

Thanks again to Dave Burwitz and Mike Gutenkauf from Clark Engineering who presented on the Spring Creek Drainage Improvements project at last month's meeting. This project was a candidate for the People's Choice award and received many votes.

Please help me in welcoming new member Dennis Odens from Banner Associates.

Have a great spring and thank you!

Ryan Johnson

TREASURER'S REPORT

BY LANCE WEATHERLY, PE

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## IMPORTANT Calendar items

#### **EASTERN CHAPTER MEETINGS:**

- April 14, 11:30 @ Pizza Ranch on 41st Street
- May 12, 12:00 @ Elmwood Golf
  Course

Balance as of	4/9/2015		
Previous General Fund Balance 3/6/2015		\$	19,392.11
Expenses:			
speaker lunch - March	(10.69)		
Stampede social tickets	(180.00)		
Banquest Expense - Venue	(3,595.79)		
Stampede social tickets	(48.00)		
WebEx (March)	\$ (51.94)	~	(2.000.40)
Total		\$	(3,886.42)
Deposits:			
Banquet revenue	625.00		
Banquet revenue	50.00		
Interest (March)	\$ 2.37		
Total		\$	677.37
Total General Fund		\$	16,183.06
Previous Scholarship Fund Balance 3/6/2015		\$	7,836.45
Expenses:			
Total		\$	-
Deposits:			
Golf Outing Deposit #6	\$ 75.00		
Total		\$	75.00
Total Scholarship Fund		\$	7,911.45
Total Account Balance		\$	24,094.51

#### HUMOROUS SIGNS TO LIGHTEN YOU DAY



To add a calendar item, please contact Josh Peterson at JPeterson@siouxfalls.org

## STATEWIDE MATHCOUNTS COMPETION-JESSE Morris, EI

Pierre, SD – March 14, 2015 – A team of middle school Mathletes<sup>®</sup> from Mickelson Middle Schools in Brookings won the state MATHCOUNTS competition. The top individual was Akshay Choudhry from Patrick Henry Middle School in Sioux Falls.

Members of the winning team are: Zachary Kofford, Caitlyn Nielson, Donovan Kreul and Marina Du, coached by Shannon Renkly.

The second and third place teams are from Patrick Henry Middle School of Sioux Falls and Southwest Middle School of Rapid City, respectively.

The top four individuals from the State Competition will represent South Dakota at the 2015 Raytheon MATHCOUNTS National Competition in Boston, Massachusetts, May 7-10. The four team members are Akshay Choudhry (Patrick Henry Middle School – Sioux Falls), Alan Zhu (Southwest Middle School – Rapid City), Donovan Kreul (Mickelson Middle School – Brookings) and Caitlyn Nielson (Mickelson Middle School – Brookings). The coach for South Dakota's team going on to compete at the national competition is Shannon Renkly (Mickelson Middle School – Brookings).

In our increasingly technological society, those students who do not begin developing strong problemsolving, logical thinking and analytical abilities in middle school will face an uphill battle later in life if they wish to pursue a medical, scientific, mathematical, engineering or technical career. As a national math enrichment, coaching and competition program designed to improve math skills among U.S. students, MATHCOUNTS prepares students for future career opportunities and success. More than 6 million students across the U.S. have participated in MATHCOUNTS programs.

The state program is sponsored by the South Dakota Engineering Society and 3M. Leadership at the local levels of the MATHCOUNTS Competition Series is provided by members of the South Dakota Engineering Society of the National Society of Professional Engineers.

The National Sponsors of MATHCOUNTS are Raytheon Company, Northrop Grumman Foundation, U.S. Department of Defense, National Society of Professional Engineers, Phillips 66, Texas Instruments Incorporated, 3Mgives, CNA Foundation, Art of Problem Solving and NextThought. MATHCOUNTS was founded by the National Society of Professional Engineers, National Council of Teachers of Mathematics and CNA Foundation.

Additional information on MATHCOUNTS is available at <u>www.mathcounts.org</u>.

## MATHCOUNTS®

## STATE MATHCOUNTS PICTURES

#### 2015 State Competitors and Coaches





Second Place Individual-Alan Zhu, Southwest (Rapid City)



First Place Team-Mickelson



First Place Individual—Akshay Choudhry, Patrick Henry



Third Place Individual–Donovan Kreul, Mickelson





## Eastern Chapter

## SOUTH DAKOTA ENGINEERING SOCIETY

Member National Society of Professional Engineers

April 6, 2015

Jared Baumann 8.2 Science Teacher Patrick Henry Middle School 2200 S 5<sup>th</sup> Street Sioux Falls, SD 57105

Dear Mr. Baumann

SUBJECT: Patrick Henry donation request.

The Eastern Chapter of the South Dakota Engineering Society (SDES) is proud to present you with a donation of \$200 to support Science, Technology, Engineering, and Mathematics (STEM) education projects.

The SDES is member organization of the National Society of Professional Engineers (NSPE). NSPE is a member-centric, nimble, future-focused and responsive organization, serving as the recognized voice and advocate of licensed Professional Engineers. The state chapter boasts over 460 members with over 270 registered Eastern Chapter members!

Thank you for reaching out to us and good luck with all your future endeavors.

Sincerely,

ayon W Johnson

Ryan Johnson, PE SDES Eastern Chapter President Elect.

Enclosure - SDES Eastern Chapter \$200 donation to Patrick Henry Middle School

## EASTERN CHAPTER FEATURED IN PE MAGAZINE!

From the March 2015 Issue of PE Magazine

## **Reaching Out for Engineering**

To reach the next generation, engineers try sharing more than just the profession.

#### BY MATTHEW McLAUGHLIN

C eeing a young girl's face light up after she had been called to the stage is something that has stuck with Lance Weatherly, P.E.

"She had other siblings in the audience, and you could tell they wanted to go up on stage as well," he says. "Then when she got off the stage, she went and ran back to her parents and was all excited and talking to them about how fun it was."

What makes Weatherly's experience so important is it didn't take place at a magic show or a Taylor Swift concert but an engineering event held by the South Dakota Engineering Society at the Kirby Science and Discovery Center. The girl was called on stage to participate in an activity about surveying.

"We set up some surveying equipment and went through a very simple surveying procedure," Weatherly says. "She was just tickled that we gave her a hard hat to put on, gave her a safety vest to put on, and went through this surveying activity with her."



The girl's experience, however, is one not many engineers had growing up. Nor is it one many kids have even today, which is probably why engineers like Weatherly, who weren't really exposed to engineering before college, are making an effort to change that.

In addition to the statistics everyone knows by heart at this point—the embarrassingly low number of women engineers and the even lower number of minority engineers—*PE* magazine's recent interest group surveys found a huge chunk of employers will be experiencing engineering shortages in the next five years due to retirements, if they're not already. Forty-five percent of respondents in the Professional Engineers in Industry survey indicated their employer is or will experience engineer shortages due to retirements in the next five years, and in the Professional Engineers in Government survey, the number was 50%.

For many engineers and even nonengineers, the statistics are a clear call to action. The next generation needs their attention.



SYSTEMS ENGINEER CATHERINE MANCUSO, FAR RIGHT, WALKS MEMBERS OF THE COOL GIRLS SCIENCE AND ART CLUB THROUGH A BIOMECHANICS ACTIVITY. COOL GIRLS SCIENCE AND ART CLUB

and sharing with them their love of engineering."

## Big Partnerships

For several years now, the South Dakota Engineering Society and the Kirby Science and Discovery Center at the Washington Pavilion in Sioux Falls have partnered for an engineering event in February, the month of Engineers Week. The event is held on the first Friday of the month, when admission to the Kirby Science and Discovery Center is free.

"Free First Friday is especially beneficial because on a regular Friday night they wouldn't have as many patrons, but it's free and open to anyone," says NSPE member Erin Steever, P.E., SDES events coordinator. "They have so many more people that come on Free First Friday, so it's just a fabulous opportunity to reach out to hundreds of people."

Prior to partnering with the Kirby Science and Discovery Center, SDES's Engineers Week outreach event was held in a booth at a mall and reached far fewer people.

"I think our record is 1,300 people for three hours," says Kirby Science and Discovery Center Director Erica Lacey. Through the partnership, SDES is able to reach more people and, because admission is free, it can still reach people of all economic backgrounds. "[Free First Friday] allows us to open our doors to the underserved population in our community, folks who may not otherwise be able to access what we have here, and [SDES] is really great at welcoming those folks through the door

Each year, Kirby Science and Discovery Center staff and SDES engineers collaborate to create an engineering experience built around hands-on activities and the SDES engineers themselves. One of this year's activities included measuring everyday items from home using engineering and architecture tools.

"Unless you're giving the kids an opportunity to be able to touch something or have a hands-on experience, I think they kind of really disengage," Weatherly says. "When I see a kid that's very excited and they've got a big smile on their face, it's when we let them touch an object or they're doing something with us, an actual activity versus just sitting there and lecturing them."

## EASTERN CHAPTER FEATURED IN PE MAGAZINE (CONTINUED)

It's not just about the activities though. In the same way kids respond positively to hands-on activities, they respond positively to real, live people.

"I think kids become most curious when there's a living person in front of them who can talk about their lifestyle and their passions as well as also comment on the science behind what they're doing," Lacey says. She points to the Kirby Science and Discovery Center's after school programs as an example. In that setting, instructors are often asked as much, if not more, about themselves as the content.

Engineers like Weatherly and Steever, for their part, are happy to oblige young people's interest.

"I didn't have this opportunity when I was growing up, so I think it's just a lot of fun" Steever says. "I would have definitely appreciated being able to test out and do all of these different activities and experiments when I was younger."

Engineers in South Dakota aren't the only ones who weren't introduced to engineering in their formative years, but to the delight of many young girls in Boulder, Colorado, they aren't the only ones trying to change that either.

#### **Grass Roots**

For two years, systems engineer Catherine Mancuso has volunteered with the Boulderbased Cool Girls Science and Art Club, an afterschool STEAM (science, technology, engineering, art, and math) club for elementary school girls. It's a program the young professional, who earned her bachelor's degree in 2009, says wasn't available to her growing up. Like Weatherly, she wasn't introduced to engineering until she got to college.

"We were never exposed to anything like this when we were younger," Mancuso says of herself and a female friend from MIT. "So when we heard of [Cool Girls], we thought that it was a great opportunity for these kids to get to see things that we probably didn't get to see until we were about 20 years old."

Mary Golden, a science editor and writing instructor with an academic background in organizational development and public policy, is the founder and director of Cool Girls, but the club is led by its students. Though adults facilitate, students decide what STEAM topics they want to study at the beginning of each semester and invite mentors, like Mancuso, to help them.

"I have a lot of hands-on, real-life experience that I get to share with the girls," Mancuso says. Through "shoot-from-the-hip question-and-answer sessions," girls can see what it's like to be an engineer, why it's so exciting, and why they might want to consider it as a career.

"One of the strengths of Cool Girls is that we bring mentors, such as women engineers, in to work side by side and demystify [STEM]," Golden says. Additionally, she believes, mentors demystify their professions as well.

Like Lacey at the Kirby Science and Discovery Center, Golden thinks kids respond to real people they can relate to. It's so important to her in fact, she tells all of the Cool Girls mentors to open up about their lives and not just their work.



A KIRBY SCIENCE AND DISC OVERY CENTER VOLUN-TEER HELPS CHILDREN WITH AN ACTIVITY THAT COM-BINES MECHANICAL AND BIOMEDICAL ENGINEERING AT AN EVENT THECENTER HOLDS IN PARTNERS HIP WITH THE SOUTH DAKOTA ENGINEERING SOCIETY

The similarities between the club and the Kirby Science and Discovery Center don't end there. Cool Girls also focuses on hands-on activities and experimentation, following what it calls the 80:20 rule. When the club meets, girls have discussions or do activities 80% of the time and mentors talk for no more than 20% of the time.

The program's art component also makes it more than a traditional STEM program, says Mancuso. "After [a lesson] we'll do a related activity that's either a low-cost science/engineering experiment that's related to the presentation that we just went through with the girls or we'll do some kind of an arts activity."

It may not seem like much to talk about engineering to a group of 10 to 12 girls, but even if the larger impact on the world is unknown, the impact it has on those students is undeniable. Mancuso sees students go from sitting in the corner confused or bored to excited almost every time she visits Cool Girls.

"Something about it just clicks, and they get really excited and start firing off questions," she says. "[Then] you know that you found something that really interests them, and maybe something that they can hold on to and a reason that they'll keep focusing on science and engineering and mathematics."

Golden sees it too, when the girls in the club take on their own projects outside of the club. Some have even started their own businesses using what they've learned.

"That's one of the things I love about having engineers with us," she says. "They're all about making things happen and helping people."

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## GETTING TO KNOW YOU Member Bio

HDR Enginering 6300 S. Old Village Place, Suite 100 Sioux Falls, SD Phone: 605-997-7740 Fax: 605-997-7747

## LEE KAFFAR

Degree:

STI—Civil Engineering Technology

Favorite Quote:

"Stay consistent in your habits, and always push yourself to do more!" from the article 5 Questions To Ask Yourself Every Morning To Advance Your Career A brief history... I grew up in small town Trent, SD (home of Steve's bar and a post office) with a population of 250 people the year I graduated. I am the youngest of 4 siblings, so life was always crazy growing up. Let's just say I was the well behaved child who never got into trouble.

I graduated from Flandreau Public High School in 2003, and STI in 2005. During my schooling with STI, I interned with HR Green to get some experience under my belt. I started my first job in the engineering industry with WLE. I worked with them for 1 year before going back to work with HR Green. I remained there from 2006-2011. From then on, I've been employed with HDR while continuing my education through SDSU to complete my undergraduates degree in Civil Engineering.

My wife and I are High School sweethearts. We have 2 beautiful children and feel very blessed. Haiden is 4 and loves hunting/fishing/sports just like dad. Madison is 3 and is our little diva/drama queen/princess/tomboy all rolled into one. We most recently moved to Dell Rapids in December 2014 and still settling in. Our family now within 15 minutes from us which at times is very convenient.



## A LITTLE BIT MORE ABOUT OUR MEMBER OF THE MONTH:

Family: Angie (wife), Haiden (son 4), Madison (daughter 3)

Hometown: Trent, SD

Years with firm: 3 years, 7 months

**Favorite Room in Your House:** Definitely the Garage- We just moved to Dell Rapids, so I have some work to do to make it my man cave again, but I'll get it done.

**Normal Breakfast:** A strong cup of coffee on the weekdays, scrambled eggs on the weekends.

Last CD Purchased: (Larry the Cable Guy) A Very Larry Christmas - I'm a big fang of comedy!

Last DVD Purchased: Frozen- Kids have taken over my TV.

**Hobbies:** Playing baseball, football, golfing, running 5K's while pushing my kids in a double stroller, open water fishing, ice fishing, hunting small and large game, woodworking

What do you collect? I enjoy trying new hobbies/sports. I find though that I like to have every piece of equipment needed for everything, and my wife said I tend to get in to all of the expensive hobbies.

**Best Personality Trait:** I'm a go-getter and I have a strong work ethic

Pets: Harrison- our 105lb yellow lab, and Max- my wife's dog

Pet peeves: Organization- ask anyone that knows me well

Favorite beverage: Water, and blue yummies

**Favorite TV Show:** Outdoor channel on Sunday mornings, Call of the Wildman (Turtle Man)

Favorite Season: Fall- coming into hunting season/ harvest time

**People may not know...** My family has always been aviation enthusiasts; starting with the purchase of my parents first aircraft when I was in High School. Wanting to pass the same passion down to my kids I'm considering getting my pilots license.

What made you want to be an engineer? I'm still working toward becoming an Engineer, but I'd say seeing an idea come to fruition and the teamwork that it takes to get from the starting point to the end product.

What do you like best about being an engineer? I like to be very precise and technical and I enjoy being able to use advanced technology to create projects.

**Describe an achievement from the past year you are proud of.** Being recognized by my peers with an internal award for "process improvement" two of the three years at HDR.

What are you looking forward to in the next year? My wife Angie and I haven't taken an vacation since we were married in 2008. We plan to take the kids to Disney World in September for a well needed vacation and are all super excited!

#### We are on the web

http://www.sdes.org/

#### 2014-2015 OFFICERS AND CHAIRPERSONS

Officers				
President		Ryan Johnson, PE		
President Elect		Ray Pierson, PE		
Vice President		Kurt Peppel, PE		
Secretary/Treasurer		Lance Weatherly, PE		
Chapter Director(2nd t	erm)	Travis Clark, PE		
Chapter Director(1st te	erm)	Joshua VandenBos, EIT		
State Director		Kristen Gundvaldson, PE		
Past President		Phil Gundvaldson, PE		
Committees				
Nominating Committee	e	Paul Korn, PE		
Mathcounts		Phil Gundvaldson, PE		
Scholarship		Lance Mayer, PE		
Events Coordinators				
eWeek		Erin Steever, PE		
STEMS Girls		Erin Steever, PE		
Free First Fri	days	Erin Steever, PE		
Winter Socia	I	Gabe Laber, PE		
Golf Outing		Gabe Laber, PE		
Awards		Brad Ludens, PE		
Audio/Visual IT		Chad Stensland, PE		
Newsletter		Joshua Peterson, PE		
Membership List		Myron Adam, PE		

## SDES MISSION STATEMENT

SDES is the state society of engineers from all disciplines that promotes the ethical and competent practice of engineering, advocates licensure, enhances the image of its members, and advocates legislation and public policy for the betterment of human welfare and the profession. For any and all newsletter articles, additions, edits, corrections, and important dates,

<u>CONTACT:</u> JOSHUA PETERSON, PE CITY OF SIOUX FALLS, PUBLIC WORKS 224 W NINTH STREET PO BOX 7402 SIOUX FALLS, SD 57117-7402 605-367-8616 jpeterson@siouxfalls.org

## Webex Login Instructions

- 1. Navigate your internet browser to:
- 2. https://sdes-eastern.webex.com
- Select the meeting date from the calendar in the "Browse Meetings" Window.
- 4. Click the "Register" link by the monthly meeting.
- 5. Fill in your first name, last name, email address and hit the "Register Now" button at the bottom.
- 6. A registration email will be sent with all the information to log into the meeting.



For all State Society membership information and other business, contact:

Gail Boddicker, Executive Director SDES Rapid City, SD 57709 605-394-6674 Gail.Boddicker@sdsmt.edu

## PDH Documentation

Sign-in sheets for Eastern Chapter meetings are posted on the SDES website for members to use for PDH documentation. Go to <u>www.sdes.org</u> to









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To advertise in this publication, contact Joshua Peterson at: jpeterson@siouxfalls.org or 367-8616.

The cost is \$75 for a standard business cardsize advertisement for one year.

Thank you to all of you who continue to generously support the Eastern Chapter of SDES.