SDES EASTERN CHAPTER NEWSLETTER



MARCH 4, 2016

ISSUE #48

PO BOX 1512 SIOUX FALLS, SD 57101 WWW.SDES.ORG

South Dakota Engineering Society

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

The Engineering Informer

INSIDE THIS ISSUE:

TREASURER'S REPORT	2
CALENDAR	2
CAREER OPPORTUNITY	2
FREE FIRST FRIDAYS	3-4
AWARDS BANQUET	5-6
EGGCELENT ENGINEERING	7
ANNUAL CONFERENCE	8
MEMBER BIO	9
WEBEX LOGIN	10
MISC.	10
ADVERTISEMENTS	11.13

WebEx: this month's presentation will be broad-cast 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

IMPORTANT NEWS

NEXT MEETING:

March 8, 11:45 AM @ Hancock Concrete Products, 1601 E 39th Street North

- Members will be touring the plant. Please bring a hard hat and safety glasses if you have them.

NEW MEMBERS:

Mikala Fjerstad

PRESIDENT'S COLUMN BY RAY PIERSON—PE

This month I would like to start off by congratulating the award winners from the awards banquet held last Saturday. Along with the awards, there was a great turn out of engineers and spouses. The entertainment was also enjoyable for all; well maybe some of the "volunteers" may have a different opinion. A big thank you goes out to Wes Phillips, Erin Steever and everyone that was involved in putting this event together. As I have told a few of the attendees. this is the type of event that we strive for each year and we hope to keep meeting or exceeding the expectations of all attendees.

Many of you have been notified that registration is now open online for the Annual Conference. You will all be getting a copy of the registration flier in the mail soon. The lineup of presenters is sure to match the interests of all attendees. We look forward to seeing many of you April 6-8 in Sioux Falls.

At our monthly meeting in March we will be voting on new members for the Eastern Chapter. As always, all positions are open for nominations. See the list of positions in this letter

or ask a current board member for more information. Any nominations can be sent to Ray Pierson, Lee Kafar or Myron Adam.

This month we will be having an offsite meeting on Tuesday, March 8, 2016. Hancock Concrete Products is hosting a meal and plant tour at their Sioux Falls plant. The address is 1601 E. 39th Street North. If you have a hard hat and safety glasses, please bring them along; otherwise, safety equipment will be available at the plant. Please plan to be at the plant for the meal at 11:45am with a short meeting to begin at noon and the plant tour to begin around 12:15pm. A three edge bearing test on a reinforced concrete pipe will be performed for those that would like to view the test around 1:00pm.

In the past month we gained one student member, Mikala Fjerstad who is attending SDSU. We welcome Mikala and any other students that would like to join. Student memberships are free until they graduate.

SDES Eastern Chapter President, Ray Pierson

TREASURER'S REPORT BY LANCE WEATHERLY, PE Balance as of 2/29/2016 **Previous General Fund Balance** 2/7/2016 19,786.24 Expenses: E-Week post volunteer social \$ (128.74)(128.74)Total Deposits: 1,175.00 Banquet Revenue - deposit #1 \$ Interest (February) \$ 2.25 1,177.25 Total **Total General Fund** 20,834.75 S 6,771.52 **Previous Scholarship Fund Balance** 2/7/2016 Expenses: Total Deposits: Total **Total Scholarship Fund** 6,771.52 **Total Account Balance** 27,606.27

CAREER OPPORTUNITY

The City of Sioux Falls is currently seeking qualified candidates for two open Civil Engineer positions to join the Stormwater Engineering and Project/Construction Engineering teams. The Engineering Division of Public Works supports the planning, construction, and maintenance of the City's infrastructure. The City needs Engineers to take on the challenge and rewarding endeavor of maintaining the existing infrastructure and strategic investments to the future. The City's 2016-2020 Capital Improvements Plan includes \$556 million of construction and maintenance activities, the challenges and rewards are waiting for the right candidates!

Please click the following link https://www.siouxfalls.org/human-resources/employment/career-opportunities.aspx to be directed to position information, job description, and web based application portal. The application deadline is March 9th, 2016.

IMPORTANT CALENDAR ITEMS



EASTERN CHAPTER MEETINGS:

- March 8, 11:45 @ Hancock
 Concrete, 1601 E 39th
 Street North
- No April Chapter Meeting
- May 10, 11:30 @ Pizza Ranch on 41st Street

SDES Annual Conference

April 6-8 @ Downtown Holiday
Inn, Sioux Falls

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

ENGINEERING WITH FREE FIRST FRIDAYS AT THE KIRBY SCIENCE DISCOVERY CENTER BY ERIN STEEVER, PE

Engineers constantly discover ways to improve our lives. Eight SDES South Dakota Engineering Society (SDES) volunteers sought to inspire students of all ages at the Kirby Science Discovery Center (KSDC) at the Washington Pavilion located in Sioux Falls, South Dakota on the evening of February 5, 2016 in the newly renovated Stage Science area.

Lee Kaffar and Dan Kvasnicka, with HDR, created a comical skit to engage the audience by asking where we can find engineering among our favorite animated cartoons. Scenes of a bumpy, poorly paved road in Disney Pixar's Cars®, runways in Disney Pixar's Planes®, and a 'simple' ice bridge from Disney's Frozen® connected the audience to engineering using familiar scenes. Each cartoon example was followed by real-life engineering projects, including animated Civil 3D video of a raised roadway interchange project.





SDES Events Coordinator, Erin Steever PE, with Banner Associates, and FFF Director Dixie Strande, with the KSDC and Washington Pavilion, pulled together seven activities to provide tangible engineering experiences for the 658 visitors (346 youth) that evening. Seismic Shakeup was a popular activity and visitors found themselves developing structures of wooden skewer members and modeling clay connections, paper was thrown into the mix as

an added complexity. The structures were then tested on the earthquake table where engineers like Kent Johnson PE, Banner Associates, engaged discussion about successes and failures of the simple creations.

Upstairs on the fourth floor of the Washington Pavilion, Ken Allendar PE of Allendar Innovative Solutions, attracted visitors to construct folded paper columns. These are similar to massive composite water towers or grain silos. KSDC staff pre-folded and cut slits into scrap paper left over from another activity to provide a re-use for the material that would have otherwise been discarded.





Kari Drake, a sales engineer at ADS Pipe, moved in on friction and what makes the best roadway surfacing. Kids ran Matchbox cars over surfaces of felt, corrugated foil, a half-circle paper tube, pushpins with rounded heads, sand paper, and smooth cardstock. They found that not all surfaces provided similar results, and they were surprised that the half-circle paper tube was one of the fastest lanes, but were also drawn to the pushpin bumpy lane as their favorite.

Technology isn't always a focus of public outreach, and we wanted to change that this year. First, mechanical engineers use 3D printers to develop, modify and fix equipment. At FFF we used it to print of a replica of the nearby dinosaur skull. Several other pieces were on display and volunteers discussed some of the cool items they've designed and printed on their own 3D printers.

(CONTINUED ON PAGE 4)

FREE FIRST FRIDAYS (CONTINUED)



Second, virtual reality glasses can be used to show project owners, developers, and financers what their building or site layout can look like by converting Civil 3D design files into virtual reality 360-degree scene through light weight lenses that utilize your smart phone.

Visitors at the KSDC stepped into the new Farmhouse Fraternity house vestibule in Brookings, SD, a design by structural engineers and architects at Banner Associates, Inc. A printed floor

plan and section view of the house were reference to show how useful advances in technology can benefit a project. After walking in the virtual reality house, an owner can offer feedback that they may not have thought of with a printed floor plan. For example, could a window placement be shifted 2 feet so that near-blinding morning sunlight isn't directed onto couch dwellers in the living space, or is the vestibule providing that awe inspiring attraction to newcomers, even down to the paint color selection. Kids and adults alike were impressed by this technology that engineers and drafters are utilizing. Here, Lance Weatherly, engineer for the City of Sioux Falls, is testing the virtual reality glasses out for the first time.





NASA and space exploration is a fantastic springboard to engineering. By asking how can we keep our astronauts (aka. Marshmallows) safe during a lunar landing, kids constructed a lunar lander of paper cups (astronaut's cabin), cardboard and cardstock (platform), straws (lander support structure) and folded index cards (springs). Each design was tested with a freefall drop of roughly 18 inches. Visitors applied basic engineering principles to this hands on activity as engineers and KSDC science minded volunteers encouraged them to identify what makes an efficient or better design to protect their marshmallows.

How many feet did you get? The younger kids always enjoy measuring, and we used our own feet to measure a piece of tape on the carpet. We then discussed why

the two findings (my feet vs. your feet) were different, the importance of standard units of measure, and how we use this information as engineers in scaling plans to accurately dimensioned construction.



Volunteers and visitors to the KSDC had a fabulous, engaging time and we're so happy we could join in on the action and help the Nation celebrate engineering!

EASTERN CHAPTER SDES/ASCE AWARDS BANQUET AND AWARD WINNERS BY WES PHILIPS, PE

Over 80 SDES and ASCE members and their guests attended this year's awards banquet at the Hilton Garden Inn last Saturday evening. We had six worthy project nominations for Outstanding Engineering Achievement this year:



Minnehaha County Replacement Structure, Prestressed Inverted-T Girder with Composite CIP Deck. Submitted by Civil Design Inc.



Link Snacks, Inc. (LSI) Wastewater Pretreatment Facility. Submitted by Banner Associates, Inc



Elm River Intake Protection and Channel Improvements Water Treatment Plant. Submitted by Clark Engineering



SDDOT I-229/26th Street (Exit 5) Environmental Assessment and Finding of No Significant Impact Submitted by HDR, Inc.



Garfield Avenue Bridge Replacement in Dell Rapids, SD. Submitted by SEH



South Dakota Ellsworth Development Authority Wastewater Treatment Facility. Submitted by SEH

This year's winners were the South Dakota Ellsworth Development Authority Wastewater Treatment Facility and Link Snacks, Inc. (LSI) Wastewater Pretreatment Facility.

AWARDS BANQUET (CONTINUED)



Al Murra accepting the award on behalf of SEH for the South Dakota Ellsworth Development Authority Wastewater Treatment Facility.



Dave Odens and Dennis Rebelein by the award winning Link Snacks Wastewater Pretreatment display.



Kurt Peppel awarding the "You Rock" People's Choice Award for Engineering Project of the Year to Al Murra with SEH for the Garfield Avenue Bridge Replacement Project.



Kristin Lerdal from Sioux Falls was one of the recipients of a \$2000 engineering scholarship from our chapter. She plans to attend South Dakota School of Mines and Technology and major in Civil and Environmental Engineering.



Jason Kjenstad was awarded the honor of Engineer of the Year



Travis Clark was awarded the honor of Young Engineer of the Year

Award winners from the Eastern Chapter will advance on to the state competition. State awards winners will be announced at the SDES Conference on April 6-8 in Sioux Falls.

EGGCELLENT ENGINEERING: HUMPTY DUMPTY HOT RODS! DESIGN CHALLENGE AT THE WASHINGTON PAVILION BY ERIN STEEVER, PE

Disappointed that you weren't able to help with E-Week activities? Here's another chance, either get your kids involved or serve as a volunteer during the challenge. Contact Erin Steever (erins@bannerassociates.com) or Lynn Jones (ljones@washingtonpavilion.org) for more information and the registration form.



Design Challenge 2016

Eggcellent Engineering: Humpty Dumpty Hot Rods!

In a Nutshell an Eggshell:

Join us for Design Challenge 2016, where teams are challenged to design, build and test a race car that will protect its "driver": an egg.



Saturday, April 2, 2016 at the Washington Pavilion

Compete for the title of Hot Rod Champion: Design and build a fast race car, with appropriate safety equipment, that can safely carry its driver (Humpty Dumpty) through a series of distance trials and crash tests.

How to get involved

- Participation is as simple as registering to let us know you're in! Anyone is eligible to register a team – schools, community groups, and families are all welcome.
- Please fill out the attached registration form and submit it to the Pavilion by March 15, 2016.
- Schedules for April 2 and set-up details will be sent to teams by the 2nd week of March.
- Judging protocol and rubrics will be provided after team registration is received.

Age Categories

K-2nd | 3rd-5th | 6th-8th | 9th-12th

Teams with members that span multiple age groups will be placed according to its oldest members.

Team Size

Teams should have at least 2 and up to 5 individuals

Cost

There is no cost to participate in Design Challenge. Cost of materials for the Hot Rod should not exceed \$10.

Deadline for Registration: March 15, 2016

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REGISTRATION IS OPEN FOR THE ANNUAL CONFERENCE

56TH ANNUAL SOUTH DAKOTA ENGINEERING SOCIETY CONFERENCE



April 6-8, 2016

Holiday Inn City Centre Sioux Falls, SD







Go to www.sdes.org to register. Early registration deadline is March 25th.

GETTING TO KNOW YOU Member Bio

LANCE MAYER

DGR Engineering 2909 East 57th Street, Suite 101, Sioux Falls, SD 57108 Phone: 605-339-4157 Fax: 605-339-4175

Degree:

SDSM&T—Civil Engineering

Favorite Quote:

"Better to remain silent and thought a fool than to speak out and remove all doubt." ~ Abraham Lincoln

Favorite Fortune Cookie Saying: "Your problem just got bigger. Think, what have you done." ~ My 10 year old son got that fortune.

A brief history... I was born and raised in Sioux Falls, SD where I attended Cleveland Elementary and Whittier Junior High before graduating from Lincoln High School in 1992. After graduation and a summer of Post 15 baseball, I packed up my Yugo and headed west to the SD School of Mines and Technology. I studied Chemical Engineering for the first 2 years I was in school before deciding to major in Civil Engineering. During my time at SDSM&T I was involved in in a number activities and organizations which included becoming a member of Triangle Fraternity in 1994. After graduating from SDSM&T in 1997, I began working full time at DGR Engineering where I am still employed today.

I met the love of my life, Jenny Lichter, in the fall of 1992; however, I got stuck in the "friend zone" for the next 6 years. Not sure exactly what changed her mind but, fortunately, Jenny asked me out in the spring of 1998 and we were married in the fall of 1999. We bought a house shortly thereafter on the east side of Sioux Falls where we have been ever since.

Our marriage has blessed us with four great kids and not much free time. We have a 3rd grader, 5th grader, 7th grader and a freshman in high school who are involved in a number of activities (piano, band, chorus, basketball, volleyball, track, baseball, softball, tennis, etc.).



A LITTLE BIT MORE ABOUT OUR MEMBER OF THE MONTH:

Family: My wife Jenny is an Algebra I teacher at Washington High School. My children are Garrett (15 and driving), Abbie (13 and thankfully not driving yet), Charles (10) and Harold (8)

Hometown: Sioux Falls

Job Title and Years With Firm: Civil Engineer - almost 19 years

My Normal Breakfast: Lately it's been either nothing or things that aren't good for me.

Last CD Purchased: People still buy CDs? My last iTunes purchase included some Fetty Wap and One Direction.

Last DVD (movie or game) Purchased: Indiana Jones: The Complete Adventures

Hobbies: Slowpitch Softball, Fantasy Football and Throwing Darts

What do you collect? I would say sportscards and anything Incredible Hulk...my wife would say EVERYTHING.

Pets: Freshwater Fish (Jack Dempseys, African Cichlids, Raphael Catfish, African Featherfin Catfish, etc.)

Favorite beverage: Long Island Ice Tea Favorite TV Show: Brooklyn Nine-Nine

Favorite Season: Fall - I just like the fall weather.

People may not know about me... I can do doubles with a jump rope pretty well. A few guys around the office lost a little cash because they didn't know (or believe) that I

could:)

What made you want to be an engineer? When I was a senior in high school and wasn't sure what to do, my dad told me that since I'm good at math and science I should look into Engineering. He said that they usually where collared, button-up shirts and nice pants on the construction site so they probably make a lot of money.

What do you like best about being an engineer? I enjoy being a Civil Engineer because no matter what people sometimes think, when all is said and done we really do make things better.

What are you looking forward to in the next year? Having date nights with my wife and attending my kid's sporting events, recitals and concerts. I'm also looking forward to losing weight (not that I'm really going to do it...just figured maybe I would be more accountable if I publicized it).

I hate it when... People smoke cigarettes around the playground at the park or while being spectators at outdoor kids games.

Favorite Place to Visit and Why: Rapid City and the Black Hills. I have so many great memories out there from college and just love all the beautiful scenery and activities we can do as a family while visiting. It also has my favorite Chinese Restaurant...the Golden Phoenix.

2015-2016 OFFICERS AND CHAIRPERSONS

Officers

President Ray Pierson, PE
President Elect Kurt Peppel, PE
Vice President Jonathan Wiegand, PE

Secretary/Treasurer

Lance Weatherly, PE
Chapter Director(2nd term)

Craig Lauritzen, PE

Chapter Director(1st term) Joshua VandenBos, EIT

State DirectorBen Scholtz, PEPast PresidentRyan Johnson, PE

Committees

Nominating Committee Lee Kaffar

Mathcounts Phil Gundvaldson, PE

Scholarship Lance Mayer, PE

Events Coordinators

eWeek Erin Steever, PE

STEMS Girls Erin Steever, PE

Free First Fridays Erin Steever, PE

Winter Social Gabe Laber, PE

Golf Outing Gabe Laber, PE

Awards Wes Philips, 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.

Webex Login Instructions

- 1. Navigate your internet browser to:
- https://sdes-eastern.webex.com
- 3. 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.

PDH Documentation

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

For any and all newsletter articles, additions, edits, corrections, and important dates contact:

JOSHUA PETERSON, PE CITY OF SIOUX FALLS, PUBLIC WORKS 224 W NINTH STREET PO BOX 7402 SIOUX FALLS, SD 57117-7402 605-367-8616 ipeterson@siouxfalls.org

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



















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