# The Engineering Informer

March 6, 2019

MEMBERS OF THE

#### **NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS**

SDES EASTERN CHAPTER NEWSLETTER

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



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WebEx: next 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 18 of this newsletter.

#### **IMPORTANT NEWS**

#### **NEXT MEETING:**

Tuesday, March 12th at 11:30am at Pizza Ranch on 41st Street

#### PRESIDENT'S COLUMN

BY LANCE WEATHERLY, PE

National Engineer's week activities and snow were trending in February! Free First Friday, snow, Chapter meeting, snow, Banquet volunteering, snow, MathCounts, snow, Action Arts Science Program, snow, SDES/ASCE Banquet, snow<sup>2</sup>. Thank you to all the SDES volunteers for their time and making our events a success!

February 1st, the Eastern Chapter volunteered at the Washington Pavilion – Kirby Science Discovery Center to expose a number of the 701 attendees of Free First Friday to engineering.

February 12<sup>th</sup>, Shannon VerHey, PE presented to 36 attendees at the Chapter business meeting on Construction Manager At Risk project delivery. If you see Shannon, please thank him for agreeing to present on short notice after returning from a week's vacation.

On February 20<sup>th</sup>, Kurt Peppel orchestrated Eastern Chapter volunteers to wake up early and serve the breakfast meal at The Banquet.

February 21st, Krista May commanded the attention of middle school students including a nail-biter count-down round for the chapter MathCounts competition to send some well-deserving individual and team Mathletes to the State competition.

February 22<sup>nd</sup>, Action Arts and Science was in full force! Phil Gundvaldson visited the Harmony after school program and shared with young minds how engineers use traffic modeling software. Nick VanWyhe and Lee Kaffar brought a watershed model to Laura B. Anderson Kids Inc. attendees and demonstrated natural terrain erosion.

February 23<sup>rd</sup>, E-week culminated in the SDES/ASCE awards banquet planned by Jed Reimnitz to celebrate the engineering profession, recognize scholarship recipients and provide a few awards. Following the Awards Banquet, the ~60 attendees enjoyed the evening with colleagues and friends participating in Casino Night entertainment with drawings for some great prizes. Reminder, next year's awards banquet entertainment will be dueling pianos so plan to attend!

March 12<sup>th</sup>, the next Eastern Chapter business meeting is planned at the 41<sup>st</sup> Street Pizza Ranch starting at noon with presentation to follow. I encourage you to show up around 11:30am and socialize with your colleagues and connect with unfamiliar faces. Nadim Wehbe, Phd, PE, SDSU Civil Engineering Department Head, John M. Hanson Professor of Structural and Construction Engineering, MPC Program Director and enthusiastic mentor will be presenting on the SDDOT/SDSU joint research project on new detailing of joining adjacent girders of double-tee bridges. A reminder, if unable to attend chapter meetings, you can participate via WebEx with instructions can be found within the newsletter.

April 24-26, it's not too early to start planning to attend the 2019 Annual conference hosted by the Central Chapter in Pierre.

I forgot to mention previously, Gabe Laber was approved by the SDES State Board to fill the vacated State Secretary/Treasurer position. Thank you Gabe for your continued volunteerism!

Please take the time to read through the informative newsletter for other news and thank your SDES volunteers for their contribution. I hope to see you at the upcoming Chapter meeting.

#### TREASURER'S REPORT

BY JOSH PETERSON, PE

Previous General Fund Balance 02/01/2019: 38,416.75 Deposits: Interest \$ 11.13 Newsletter Ads \$ 75.00 Donations Received for The Banquet \$ 410.00 Awards Banquet Revenue \$ 1,325.00 1,821.13 Total: Expenses: Webex Subscription \$ (52.19)Donation to The Banquet \$ (410.00)Awards Plaques \$ (236.43)Awards Banquet Entertainment \$ (1,282.50)Awards Banquet Prizes \$ (537.96)Total: (2,519.08)Total General Fund Balance: 37,718.80 Previous Scholarship Fund Balance 02/01/2019: \$ 6,305.77

Previous Scholarship Fund Balance 02/01/2019: \$ 6,305.77

Deposits:

Total: \$ -

Expenses:

Scholarship Committee Expenses \$ (188.98)

Total: \$ (188.98)

Total Scholarship Fund Balance: \$ 6,116.79

Total Account Balance 03/05/2019: \$ 43,835.59



#### **IMPORTANT CALENDAR EVENTS**

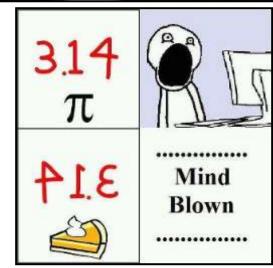
### **Upcoming Events:**

March 12th, Eastern Chapter Meeting at Pizza Ranch
 Nadim Wehbe, Phd, PE, SDSU Civil Engineering
 Department Head, John M. Hanson Professor of
 Structural and Construction Engineering, MPC
 Program Director



**March 2019** 

Su	Mo	Tue	We	Th	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						





Dear Mumbers of the Eastern Chapter of the SD Engineering Society.
Thank you so much for your very generous donation in honor of Jody. The amount of low, support and thoughtfulness we have received during this difficult time has they been humbling and greatly appreciated.

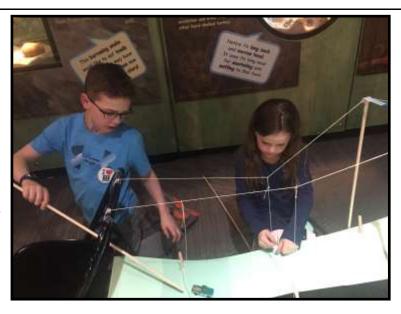
We wish to acknowledge with sincere thanks the kind expression of your sympathy.

The family of
Thank you again + God Bliss,
Trany Page

## COMMUNITY ENGAGEMENT/OUTREACH IN CELEBRATION OF E-WEEK ERIN STEEVER, PE

We kicked off our E-Week engagements early this year with the return of our involvement in Free First Friday's at the Kirby Science Discovery Center here in Sioux Falls.

The event was a hit, and luckily, the weather was in our favor! Warm temperatures on Friday, February 1, 2019 brought out the masses. 701 guests walked through the doors of the Science Center on Friday evening. In southeastern South Dakota, I can't think of a better way to connect with and educate the general public about the wide range of opportunities a career in civil engineering holds than this single event. We're so grateful to the Washington Pavilion for their continued partnership with SDES for E-Week outreach!





Along with the high attendance, we had record breaking volunteers and engineers with their families at the event. It was pretty fun to see the creations that were built and explored. SDES volunteers were joined by students from New Tech High and volunteers from the ASCE Easter Branch.

Four civil engineering activity stations were brought into the Science Stage area of the KSDC for the event: A Suspension Bridge building activity, an interactive Diverging Diamond Interchange model, a climbing engineer motion art activity, and an engaging engineering matching game.

Our first suspension bridge undertaking was managed by Abby Nelson's seven year-old daughter, and assisted by Lee Kaffar for the evening. We see a promising future for this young lady to follow in her mom's footsteps as a successful engineer.

The mock 41<sup>st</sup> Street and I-29 Diverging Diamond Interchange canvas was the talk of the evening. While the

engineers explained the exciting and driver-friendly changes that will take place at this interchange in the near future, the younger kids tested it out with matchbox cars. Nearby, they had the opportunity to design their own interchange using pencil and paper.

We also had a real safety harness to supplement an active art project, a climbing engineer made out of paper, straws and a penny for weight. We found this activity worked better with the taller climbs.

And lastly, there was a "What kind of Engineer am I?" matching game that a few New Tech High students enjoyed leading. Several engineering disciplines were laid on the table, and the kids shuffled through opportunities that they matched to each engineering discipline to see where their interests and backgrounds could lead them to in an engineering career someday.

<u>FREE FIRST FRIDAY VOLUNTEERS</u>: Deidra Beck, Kari Drake, Aaron Fagerness, Lee Kaffar, Krista May, Abby Nelson, Jedidiah Reimnitz, Erin Steever, Nick VanWye, Lance Weatherly

# COMMUNITY ENGAGEMENT/OUTREACH IN CELEBRATION OF E-WEEK ERIN STEEVER, PE

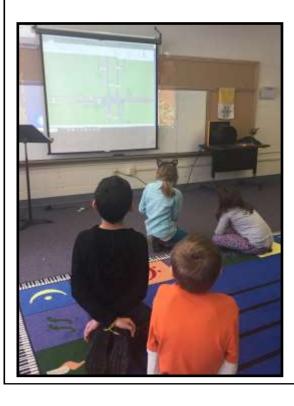
Also, new this year, three of our engineers stepped into two underserved after school programs to talk about traffic modeling and drainage through the Action Arts and Science Program at the Washington Pavilion.

AASP AFTERSCHOOL CARE SITE VISIT VOLUN-TEERS: Phil Gundvalson at Harmony SD at St Joseph's Cathedral; Lee Kaffar and Nick VanWye at Laura B. Anderson

We appreciate each and every one of our volunteers and those that came out to enjoy the Free First Friday event, helping SDES to engage with the attendees and bring awareness to the field of engineering.

If you missed the February events, we've extended our programing into March with the Action Arts and Science Program for an evening at the Kirby Science Discovery Center on Friday, March 8<sup>th</sup>, and two afterschool care site visits available on March 19 and 21<sup>st</sup>. Contact Erin for more information at <a href="mailto:erins@bannerassociates.com">erins@bannerassociates.com</a> or by phone at 855-323-6342.







### THE BANQUET VOLUNTEERING EVENT KURT PEPPEL, PE

On Wednesday, February 20 SDES members and friends purchased, cooked, and served breakfast at The Banquet for approximately 200 adults and children. A group of seven bright eyed volunteers trudged through nine inches of snow to start cooking at 5:30am; the menu included waffles, eggs, and fruit. At 6:30am the remaining volunteers arrived to help welcome the guests and serve the meal. Guests started arriving at 7:00am and varied from young children to older adults. The budget for the meal was \$400 and we were able to donate a total of \$460 via the generosity of our members and friends. The extra funds will be used by The Banquet to help pay for meals in which there is no sponsoring group. Our ability to not only cook and serve the meal but also pay for the food fills a significant need in our community; I really hope we can do this again sometime soon. Thank you to everyone who donated time and/or money and made this such a successful endeavor!







### MATHCOUNTS RECAP KRISTA MAY, PE



On behalf of the South Dakota Engineering Society, I want to thank all those that volunteered and contributed financially to this year's program. Your contribution helped ensure another successful program on the local level. This year's competition was held on February 21, 2019 at Southeast Technical Institute in Sioux Falls.

The first-place team was Edison Middle School from Sioux Falls and the second-place team was Sacred Heart Middle School from Yankton. The top 2 teams and top 4 individuals (1 from Edison MS, 2 from Patrick Henry MS, and 1 from Yankton MS) from the chapter competition advance to the state competition in Pierre on March 9<sup>th</sup>. There they will compete against the top students from 2 other chapters in the state. The top four individuals from the State Competition will represent South Dakota at the 2019 Raytheon MATHCOUNTS National Competition in Orlando, FL, May 11<sup>th</sup> - 14<sup>th</sup>.

#### Thanks to the following businesses for their financial contribution to this year's competition:

Banner Associates HDR Engineering

Bartlett & West HR Green

BX Civil & Construction Infrastructure Design Group

Carl V. Carlson Company Journey Group

Core & Main JSA Consulting Engineers

DGR Engineering KLJ

Geotek Engineering & Testing KMS Engineering

Stockwell Engineers

#### Thank you to the following volunteers for helping with this year's competition:

Brad Ludens Karin Lang

Jon Wiegand Aaron Fagerness

Chris Jibben Kari Drake

Ben Scholtz Abby Nelson

Lance Weatherly Beth Kassing & 3 students

Michele Nielson

Thank you again for supporting the MATHCOUNTS program in South Dakota. Your help is greatly appreciated!

## MATHCOUNTS RECAP CONTINUED KRISTA MAY, PE







### SCHOLARSHIP WINNERS LANCE MAYER, PE

As part of the 2018-2019 scholarship program, the SDES-Eastern Chapter awarded three \$2000 Engineering Scholarships out of 45 applicants to the following high school seniors:



**Logan Wolf**, from Sioux Falls, SD, participates in many extracurricular activities including choir, football, track, powerlifting, band, Boy Scouts, and volunteering. Logan's most satisfying achievement has been becoming an Eagle Scout where he was able to provide his service to the community through multiple scouting projects including building shelving units that solved a major storage issue for a local homeless shelter. Logan's interest in engineering started at a young age with a love for building things. His ultimate goal as an engineer is to improve upon existing technologies in exoskeleton and prosthetic science to help and protect people in hazardous career fields such as the military. Logan plans on attending South Dakota State University to study Mechanical and Biomedical Engineering.

Cassidy Sjovall, from Burbank, SD, has excelled academically as a senior at Beresford

High School where she ranks 3<sup>rd</sup> in her class and participates in a number of activities. Some of these activities include quiz bowl, National Honor Society, volunteering, and cheerleading for football and basketball. Cassidy's toughest struggle in high school has been adjusting to life without her mother who passed away in January 2017. Though it was difficult to focus on activities and school, she knew her mom would want her to keep moving forward. Cassidy has persevered to stay optimistic and continues to work hard in school where she maintains a perfect GPA and scored high on her ACT. Cassidy's interest in engineering comes from her father and grandfather who are engineers along with her desire to create new, innovative products. Cassidy plans on



attending South Dakota School of Mines and Technology to study either Chemical or Biomedical Engineering.

### SCHOLARSHIP WINNERS, CONTINUED LANCE MAYER, PE

**Mercedes Mesman**, from Emery, SD, attends Bridgewater-Emery High School where she ranks 4th in her class. She participates in many activities including National Honor Society, FFA, journalism, yearbook, oral interpretation, cheerleading, color guard, and choir. The achievement that has given Mercedes the most satisfaction was being announced state champions at the State FFA convention and then going on to compete in the 91st National FFA Convention and Expo to compete in the Milk Quality and Products Career Development Event (CDE). This was the first time their chapter had ever qualified for a national CDE. Ever since Mercedes was young, she has always tried to create different concoctions and figure out how new technologies and machinery works. With an interest in science and medicine, Mercedes will be pursuing a Biomedical Engineering degree at the South Dakota School of Mines and Technology.



In 2018, the Eastern Chapter sponsored two \$1000 Engineering Scholarships at South Dakota State University. To qualify, students must be entering their junior or senior year and major under the College of Engineering. The two recipients selected by SDSU faculty were **Cody Gravenhof** and **Justin Nixon** both majoring in Mechanical Engineering.

Also, in 2018, the Eastern Chapter sponsored a \$450 Engineering Scholarship which was made available through a permanent endowed fund held within the South Dakota Community Foundation. **Ryan Fick** was the recipient selected by the Scholarship Committee and he presently attends South Dakota State University planning to major in Electrical Engineering.

Congratulations to all of this year's SDES - Eastern Chapter Scholarship Recipients!

## EASTERN CHAPTER SOUTH DAKOTA ENGINEERING SOCIETY



#### For Immediate Release

Date: February 25, 2019

**Contact:** Wes Philips

SDES Awards Chairperson

605-367-8657

## Eastern Chapter of SD Engineering Society Announces Award Winners

**Sioux Falls, South Dakota:** The Eastern Chapter of the South Dakota Engineering Society presents awards annually to acknowledge the accomplishments of the engineering profession and recognize engineering achievements that capture the innovative and dynamic spirit of a profession dedicated to public service. The following awards were presented at the Annual Awards Banquet on February 23, 2019:

Young Engineer of the Year Award - Krista May, PE

Krista May is a Project Engineer at Infrastructure Design Group, Inc. of Sioux Falls. Krista has a Bachelor of Science degree in Civil Engineering from South Dakota State University. Krista has played the lead engineering role for multiple large-scale complex projects in her 8 year career. Her lead role includes roadway design, traffic control, lighting and signals, traffic impact studies, drainage, erosion control, water main, pavement marking, signage, and sanitary sewer. Krista has been involved in nearly \$130 million worth of civil engineering projects. Krista is involved in numerous professional and community organizations including: Alpha Omega Epsilon (A $\Omega$ E) (President), MATHCOUNTS Competition (SE South Dakota Chairperson), SD Engineering Society (Eastern Branch President-Elect), American Society of Civil Engineers (ASCE), Young Professionals Network (YPN), and Sioux Empire United Way (Emerging Leaders Advisory Committee). Krista likes to read, attend theater productions, and attend her cousins' sporting events.

#### Engineer of the Year Award - Lance Weatherly, PE, MBA

Lance Weatherly is a Principal Engineer for the City of Sioux Falls providing engineering support for the Public Works Stormwater division. Lance is responsible for the planning and execution of the \$44 million Stormwater Capital Improvements Program to improve neighborhoods and promote comprehensive growth. Lance's professional career has spanned 15 years in the private and public sectors in Eastern South Dakota. Lance has Bachelor and Master of Science degrees in Civil Engineering from South Dakota State University and a Master of Business Administration from the University of South Dakota. Lance obtained his professional engineer licensure in 2008 and is licensed in South Dakota. Lance is active in the South Dakota Engineering Society, having served in different leadership roles and is the current president of the Eastern Chapter. Lance enjoys giving back to personally and professionally to the Sioux Falls community and

mentoring the upcoming generation of professional engineers. Lance enjoys spending time with his family and traveling to explore new cultures.

Outstanding Engineering Achievement Award
DGR Engineering - Dell Rapids Wastewater Treatment Facility Improvements Project

The City of Dell Rapids existing wastewater treatment facility lacked the capability to provide adequate treatment of the City's wastewater. The City of Dell Rapids is a growing community that wanted to position themselves to welcome newcomers and not be constrained by a treatment system with limited treatment capacity.

The City understood that discharge limits are only going to become more stringent in the future, and they needed a treatment system that was easily expandable and adaptable to meet these future limits. The City selected a sequencing batch reactor (SBR) because it met these requirements and set Dell Rapids up for future growth and success. The overall project construction cost was nearly \$5.8 million.





Outstanding Engineering Achievement Award
RESPEC - Big Sioux River Flood Information System Project

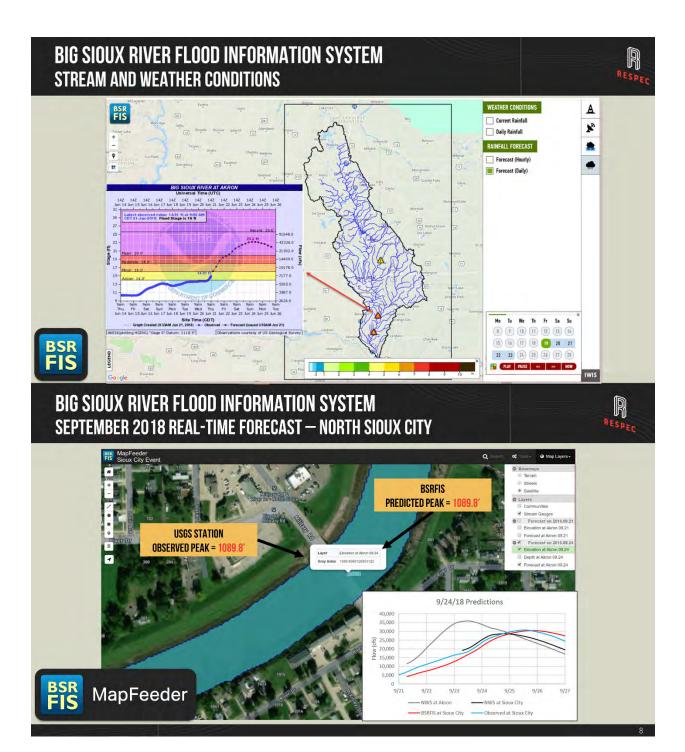
The Big Sioux River Basin in eastern South Dakota has experienced repeated flooding in recent years. In 2014, a major flood in the lower basin revealed shortcomings in understanding and predicting flood-event behavior. In 2016, the State of South Dakota commissioned the development of the Big Sioux River Flood Information System.

The Flood Information System is a two-part web platform including access for the public and flood-response teams. The first part is a public site <a href="http://www.bigsiouxfis.org/">http://www.bigsiouxfis.org/</a> with access to stream conditions at over 50 locations throughout the Big Sioux River Basin and a library of over 8,000 inundation maps, representing flood scenarios for five different communities. The second part is a site reserved for state and community officials and includes access to real-time flood inundation forecasts. When flood events are predicted, the hydro-logic output is run through models and predicted inundation maps are loaded to the web platform.

The Flood Information System provides the public with an understanding of potential flood risks and gives flood-response teams accurate information for decision making during flood events.

Already in 2018, the system has proven its value during two separate events near North Sioux City. As significant amounts of rain fell over parts of the basin upstream, there was a lot of uncertainty in the severity of flooding that may occur. The Flood Information System predicted less-severe impacts than previous forecasting methods. Flood response managers had the confidence to hold off any drastic measures well in advance. The Flood Information System predictions held true, accurate to within 0.1 feet of observed flood stage.

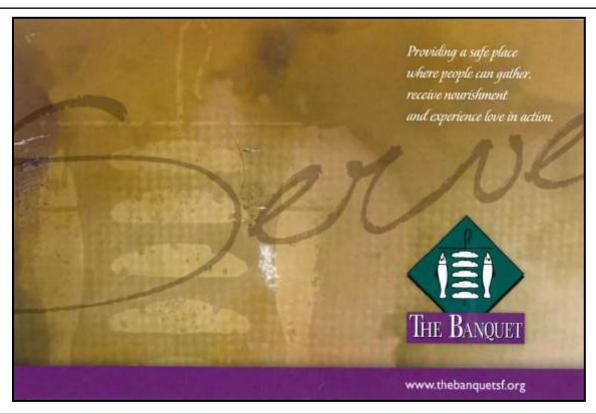
The total project cost was \$1.3 million.

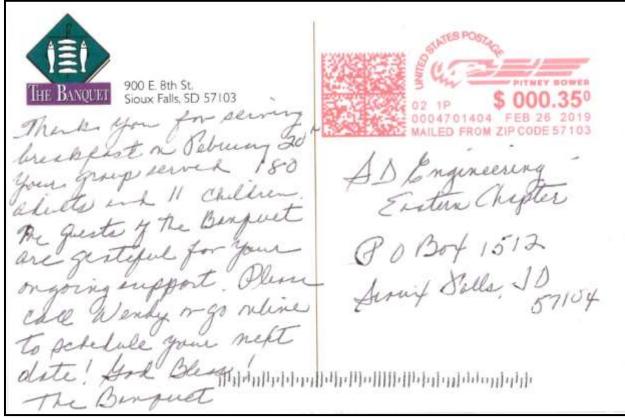


### **ENGINEERING AWARDS BANQUET PHOTOS**



#### **THANK YOU**





### 2018-2019 OFFICERS AND CHAIRPERSONS

#### **Officers**

President Lance Weatherly, PE

President Elect Krista May, PE

Vice President Ben Scholtz, PE

Secretary/Treasurer Josh Peterson, PE

Chapter Director(2nd term) Devin Clay, PE

Chapter Director(1st term) Riley Rinehart, PE

State Director Aaron Norman, PE

Past President Jon Wiegand, PE

#### **Committees**

Nominating Committee Lee Kaffar, BA
Mathcounts Krista May, PE

Scholarship Lance Mayer, PE

**Events Coordinators** 

E-Week Erin Steever, PE

Winter Social Gabe Laber, PE

Golf Outing Gabe Laber, PE

Awards Banquet Jedidiah Reimnitz, EIT

Awards Wes Philips, PE

Audio/Visual IT Chad Stensland, PE

Newsletter Abby Nelson, 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: <a href="https://sdes-eastern.webex.com">https://sdes-eastern.webex.com</a>
- 2. Select "Classic View" from the left column.
- 3. Select "Attend a Meeting"
- 4. Find the meeting in the "Search Meetings" Section.
- 5. Click the "Register" link by the Monthly Meeting.
- 6. Fill in your first name, last name, email address and hit the "Register Now" button at the bottom.
- 7. A registration email will be sent with all the information to log into the meeting.

#### **Eastern Chapter of SDES Goals**

To promote the licensed practice of engineering and to provide learning opportunities that enable licensed engineers to maintain practice competency;

To maintain high ethical standards for the practice of engineering and lead the profession in adhering to these principles:

To protect the public health, safety, and welfare; while being good stewards of the environment;

To incorporate engineering principles and perspectives in government decisions that protect the public; and

To consider community service a professional obligation.

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

Abby Nelson, PE HDR 6300 S. Old Village Place, Suite 100 Sioux Falls, SD 57108-2102 605-977-7753 Abby.Nelson@hdrinc.com

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

Nancy Hoines SDES Executive Director PO Box 1076 Pierre, SD 57501 605-951-1004 sdengineeringsociety@gmail.com



### MINNEHAHA COUNTY

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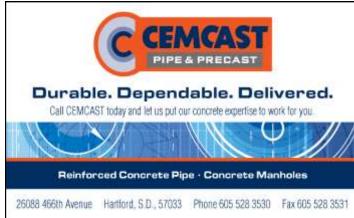




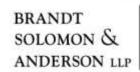












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