



The South Dakota Engineer

May 2017

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SDES

2017-2018

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President's Message

Hello South Dakota Engineering Society Members! Thanks for taking the time to read my first column as the new president of this great society. I would like to thank Brian Jenner for his leadership and service as President the past year as well as all the other officers and chairpersons who give their time and talents to serve. I look forward to continue working alongside all of them as I transition into this new role. We are fortunate to have active members who continue to volunteer their time and talents which are the foundation of our successful society. If you have not had the opportunity to get involved with any chapter or state activities, I encourage you to seek out an opportunity to participate. We have many young members and those new to the society who I would like to extend an invitation. I encourage current members to invite along new and young members to chapter meetings, activities, and outings. I'm sure you will find your efforts rewarding and your time well spent. A personal invite from a current member is our #1 marketing tool!

The Black Hills Chapter planned and hosted the 57th Annual Conference in Spearfish which was held April 26th – 28th at the Holiday Inn. The speakers were exceptional and the topics presented were diverse and interesting. I would like to thank the conference planning committee for all their time and hard work spent hammering out the details of the conference. Also, a big "thank you" to all the speakers, vendors, and others who participated in the conference. Including NSPE President-Elect Tom Roberts, PE who was the keynote speaker at the Awards Luncheon, where he also swore in the new officers. The Eastern Chapter is hosting the annual conference in 2018. Keep that in mind if you have an idea on future topics for the conference.

The largest item happening with our society right now... NSPE has proposed a new membership model intended to be more collaborative with the state societies while providing NSPE with a business model that enables them to better accomplish their goal of championing the PE license. The new model will be voted on by all state societies at the House of Delegates meeting following the NSPE Annual Conference on July 22, 2017. Please see the next page of the newsletter with details to access two documents that will provide more specifics on the new model. I encourage all members to carefully review the information as the new

Have you remembered to pay your membership dues? If you need an invoice, please go to www.sdes.org, where you can pay your dues online or contact Gail Boddicker at 394-6674 or gail.boddicker@sdsmt.edu for a copy of your invoice.

It is a good idea to periodically check your records to be sure your contact information is correct. You can update your information online or contact Gail with the information.



model will affect every member. It includes a new dues structure and changes to State-Only memberships. If you have questions or comments regarding the new model, please reach out to Executive Director Gail Boddicker or members of the board. If the new model is adopted, changes will happen and it's too late to comment!

Have a safe and enjoyable summer everyone!

Phil Gundvaldson, PE
2017-2018 SDES President

Proposed Membership Business Model

A state-specific analysis prepared for the South Dakota Engineering Society

In September of 2015, NSPE's Board of Directors contracted with McKinley Advisors, a nationally-recognized consulting firm for associations, to focus on a membership marketing approach. At the 2016 Professional Engineers Conference in Dallas, McKinley provided their final recommendations to the constituents. Soon after the recommendations were provided, a Working Group was formed to develop the recommendations made by McKinley. The Working Group has been meeting regularly since then to develop the plan for the new membership model.

At the July 2017 NSPE Professionals Engineers Conference, the House of Delegates will be required to vote whether or not to adopt their proposed model. Members can review the proposed model and details in the reports provided on the SDES website. Click on "Resources", click on "[Professional Links](#)" and the reports (*NSPE Value Proposition and Analysis of South Dakota of NSPE Proposed Membership Business Model*) are directly under the National Society of Professional Engineers heading on the Professional Links page.

You are encouraged to peruse these documents to understand the effect this model will have on your membership, should the House of Delegates vote to approve the initiative.

You are also encouraged to contact [Gail Boddicker](#) or the SDES executive committee with your concerns and questions.

Phil Gundvaldson, President
Ryan Johnson, President Elect
Andrew Bruels, Vice President
Steve Myer, Sec-Treasurer
Brian Jenner, Past President

**SOUTH DAKOTA ENGINEERING SOCIETY
57th ANNUAL CONFERENCE
APRIL 26-28, 2017
HOLIDAY INN SPEARFISH – CONVENTION CENTER**

SDES 2016 State Awards

YOUNG ENGINEER OF THE YEAR

This award is established to recognize young SDES members who have made outstanding contributions to the engineering profession and their communities during the early years of their careers.

**Stacia Slowey, EIT
HDR, Inc., Rapid City**



Brad Ludens, PE, SDES Awards Chair, and 2016 SDES Young Engineer Year of the Year awardee, Stacia Slowey, EIT. Stacia is a 2013 graduate of the University of Wyoming with a double major in civil engineering and natural resources. While in college, she was involved in a number of organizations, including ITE, ASCE, SWE, and Tau Beta Pi, while maintaining an impressive 3.8 GPA. Since graduation, she has worked in HDR's Rapid City office working on a wide variety of transportation projects all over the United States, ranging from neighborhood reconstruction projects all the way up to a \$470 million interstate widening project.

In her spare time, she participates in a number of community activities, including the Rapid City Young Professionals Group, Rapid City's Youth in Science Group, Big Brothers/Big Sisters, Black Hills Works, United Way, and Black Hills Walk for Warmth. She recently started working on her master's degree at the School of Mines, and also serves as the President-Elect for the Black Hills Chapter. (2017-2018 BH Chapter President)

ENGINEER OF THE YEAR

This award is established to recognize SDES members who have made outstanding contributions to the engineering profession, the public welfare, and/or humankind.

Mark Mayer, PE SD DENR, Pierre



Mark Mayer, PE, is the Engineering Manager III of the Drinking Water Program in the South Dakota Department of Environment and Natural Resources (DENR). Mark graduated in 1988 with his Bachelor's degree in civil engineering from SDSU, and graduated in 1994 with his Master's degree in civil engineering from the University of Kansas. He started his professional career with Black & Veatch in 1989 as a staff engineer working on water and wastewater projects for both public and private clients. He also worked for Clark Engineering, was a founder of CETEC Engineering Services, and worked briefly for the South Dakota DOT before starting work as an Engineering Manager at the South Dakota DENR in 2003. Under his leadership, the South Dakota DENR operates one of the most efficient and effective Drinking Water Programs in the country, achieving a 99% compliance rate with a staff of only 11 people, which is one of the smallest programs in the country. In addition to SDES, he participates in the American Water Works Association, SD Water and Wastewater Association, SD Association of Rural Water Systems, and the Association of Safe Drinking Water Administrators.

In his spare time, Mark serves on the Deacon Board of his church, sponsors a child through One Child Matters, and volunteers for Feed My Starving Children and various Central Chapter activities.

OUTSTANDING ENGINEERING ACHIEVEMENT AWARD

This award is established to acknowledge the accomplishments of the engineering profession. Each year SDES recognizes engineering achievements that have captured the innovative and dynamic spirit of a profession dedicated to public service.

12 TH STREET BRIDGE REPLACEMENT PROJECT



Last year, ACEC-South Dakota approached the State Board of Directors about combining the awards programs for the two organizations. After discussing the merits of the proposal, the SDES Board of Directors and ACEC-South Dakota ultimately voted to combine their awards programs for this year. The biggest change for SDES is that the state winner for Outstanding Engineering Achievement is now eligible to represent South Dakota for the national ACEC Project of the Year Award.

This year's SDES/ACEC Outstanding Engineering Achievement Award goes to the 12th Street Bridge Replacement Project. The owner of this project is the City of Sioux Falls. The lead design firm for this project was HDR's Sioux Falls office, with the City of Sioux Falls and American Engineering Testing providing engineering support services.

The 12th Street bridge in Sioux Falls is located just west of downtown, and carries over 26,000 vehicles per day over the Ellis & Eastern railroad tracks. The existing bridge was constructed in 1965, and had severe deterioration of both the structure and adjacent retaining walls. Due to the high traffic count, lack of viable alternative routes, and because 12th Street is one of only four east-west principal arterial streets in Sioux Falls, full closure of 12th Street for construction was not an option. Therefore, the project team analyzed and developed several creative and innovative ways to not only keep 12th Street open to traffic during construction, but also minimize the construction time and impact to the public.

There were several challenging aspects to this project, including an almost unheard of 60 degree skew over a railroad, failing retaining walls adjacent to the existing bridge, and dense urban development very close to the structure. The project team used several Accelerated Bridge Construction methods to accelerate the bridge construction, including

cast-in-pile sleeves, geofoam embankment fill, and precast panel walls to contain the geofoam. According to HDR, these Accelerated Bridge Construction Methods are a first for South Dakota. Additionally, the project team implemented a traffic control plan that maintained three lanes of traffic at all times by constructing the bridge in halves. Traffic control was switched twice daily to always maintain two lanes of traffic in the “peak” direction. The City also offered a financial incentive for early completion of the project.

The special nature of this project attracted national attention. During Navy Week, the Navy’s Chief Engineer, Rear Admiral Bret Muilenburg, requested assignment to Sioux Falls’ Navy Week festivities to tour this (and other) projects in the area. Additionally, South Dakota DOT and FHWA officials toured the project to observe the Accelerated Bridge Construction methods used on this project.

Congratulations to all!



SDES Members!

There is an unusual opportunity to participate in the International Computer Programming Contest (ICPC) that will be held in Rapid City, South Dakota during the period of May 20-25, 2017. The ICPC is perhaps best described as the Olympics of computing and is the first time that the contest that is scheduled to be in the US in eleven years. The participants in this year’s world finals began in the fall with regional contests in 103 countries that involve 46,381 participants competing to be designated the best computer programmers in the world. The result of these competitions 133 three-person teams from 70 countries to compete in the 2017 World Finals in Rapid City.

On behalf of the Excellence in Computer Programming (ECP), the host of the ACM-ICPC World Finals in Rapid City, representing SDSM&T, the City of Rapid City, and the State of South Dakota, Dr. Richard Gowen, President Emeritus of SDSM&T and DSU, who is the President of ECP invites the members to participate in the Rapid City Day Innovation Seminar on Sunday, May 21, 2017 at the Rushmore Plaza Civic Center. The seminar will be presented in the morning and repeated in the afternoon. The moderator is Dr. Steve Bourne and the presenters are Rob Mudge, RPM Innovations; Bryan Cantrill, Joyent; and Erik Meijer, Facebook. More information is available on the attached flyer and at <http://www.icpc2017.org/>

Sincerely,
Richard J. Gowen, President
Excellence in Computer Programming, Inc.

Senate confirms Heather Wilson as Trump's Air Force secretary

The U.S. Senate easily confirmed Heather Wilson, a former Republican member of the House of Representatives, on Monday to be President Donald Trump's secretary of the Air Force.

The vote was 76-22 in favor of Wilson becoming the top civilian overseeing the Air Force. The 22 "no" votes all came from Democrats.

At her confirmation hearing in March, Wilson praised the stealth capability of Lockheed Martin Corp's ([LMT.N](#)) F-35 fighter jet, in remarks suggesting the Pentagon's most expensive weapons system would have an important advocate.

A graduate of the U.S. Air Force Academy and former Rhodes scholar, Wilson, 56, has been president of the South Dakota School of Mines & Technology since 2013. She was a House member from New Mexico from 1998 to 2009 and had served on the National Security Council under President George H.W. Bush.

(Reporting by Patricia Zengerle; Editing by Lisa Shumaker)

Puszynski Named Interim President at School of Mines

PIERRE, S.D. – Dr. Jan A. Puszynski (YAWN push-IN'-skee), vice president for research at South Dakota School of Mines & Technology, has been named interim president at School of Mines. Puszynski begins his duties immediately and will serve in a temporary capacity until a national search for the next president of the engineering and science university is concluded and a new president is appointed.

Heather Wilson, president at the School of Mines since 2013, submitted her resignation effective today (Wednesday) after her Senate confirmation this week as the next United States Air Force Secretary.

Puszynski has been educating undergraduate and graduate students at SD Mines for nearly 26 years, joining the faculty in 1991 as a professor of chemical engineering. During his tenure in Rapid City, he has established a national and international reputation in materials research and received several multi-million-dollar research awards.

“We are very pleased to have Dr. Puszynski assume this important interim appointment,” said Regents President Bob Sutton. “His long tenure on the Mines’ campus and familiarity with the university’s mission, programs, and students gives the regents a great deal of confidence that the campus is in good hands while a presidential search proceeds.”

Since 1996, Puszynski has been the principal investigator on several research and development projects funded by the Naval Surface Warfare Center and other Department of Defense organizations. His expertise is in reaction engineering, energetic materials, materials science, and mathematical modeling of reactive systems.

A presidential search process at School of Mines is underway. Contingent on a successful search, a new president will be appointed this fall to begin duties on or around January 1, 2018.

Prior to his time at School of Mines, Puszynski worked as a research professor in the chemical engineering department at State University of New York at Buffalo. His undergraduate and master’s degrees in chemical engineering are from the Technical University in Wroclaw, Poland. His Ph.D. in chemical engineering was awarded by the Institute of Chemical Technology in Prague.

News Release

Contacts: Mike Rush, Executive Director and CEO
From the Board of Regents

Bullets from my Board of Directors' update for April 15-30. Included in this report are the following:

Championing the PE License

- NSPE urges California Department of Motor Vehicles to revise proposed autonomous vehicle regulations that do not adequately protect the public.
- NSPE calls for full funding of Chemical Safety Board.
- NSPE sends well-received e-mail to members, non-members and lapsed members communicating Society's efforts in championing and protecting the PE license.

Ethical Guide to the Profession

- May/June issue of PE magazine delves into sensitive issues in the engineering workplace.

Powering for Professional Advancement

- NSPE launches an internship model as part of the Society's Job Board.

Uniting the PE Community

- NSPE officers and board members continue busy travel schedule visiting state societies and partner organizations during April.
- 2017 Candidate Screening Committee releases its report.
- Progress continues on NSPE website mega menu project with completion anticipated in mid-May
- NSPE receives Abila's ***Excellence Award for Moving the Needle*** as an organization making significant improvement in implementation of its state-of-the-art membership database management system.

And a reminder - you always have access to NSPE leadership resources in the [Leadership Toolbox](#). (NSPE Members Only)

The full report (and past reports) can always be found [online](#). (NSPE Members Only)

Special thanks to the following firms for their support of the South Dakota Engineering Society:

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