



ST. LOUIS ENGINEER

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MSD Project Clear – Maline Creek

Abstract: Project Clear is a \$4 billion dollar Metropolitan St. Louis Sewer District (MSD) initiative to improve water quality throughout St. Louis City and County. The Maline Creek Tunnel is the third Project Clear storage project to be constructed, and will be the first large diameter chamber to store combined sewer water. The underground cavern is 175 feet below the ground surface, constructed through a 50’ diameter circular shaft excavation supported by secant piles. Drill and blast techniques were used to excavate the cavern in an urban setting under a USACE floodwall. A mobile form carrier and 41’ long segmental form is used to cast the 28’ diameter cavern concrete liner. The three drop shafts have been drilled and excavated, along with the five vent shafts. A world record was set by Kiewit Foundations Group for the 11’ diameter rock drill used to excavate the larger drop shafts. The excavations have adapted to 100 year flooding, water main breakages and flooding, overhead and underground utilities, and varied groundwater conditions. The presentation will summarize the construction progress, methods, and challenges to date.

John Deeken is a geotechnical engineer for Black & Veatch residing near St. Louis, MO. John has over 14 years of professional experience in the US and 6 foreign countries, involved in construction and design of numerous power generation and transmission projects. As a geotechnical specialist he is a member of several ASCE, DFI, and AISC groups. He is currently the Resident Engineer for the Maline Creek CSO project.

Kevin Nelson is a civil engineer and construction manager for Black & Veatch in St. Louis, MO. During his 29 year career, he has been involved in the design and construction of numerous water and wastewater system projects throughout the United States. He is currently the Construction Manager of a program consisting of construction of five tunnels and three large relief sewer projects for the Metropolitan St. Louis Sewer District.

Time, Date, Location: 11:30am to 1:00pm, June 20th , 2019, at the Engineering Center, 4359 Lindell, St. Louis 63018. Registration starts at 11:30am and lunch is served at Noon. The program will begin promptly at 12:15pm. One (1.0) PDH is available.

Cost: \$20/person, students and members in transition \$5

Registration: Please register and pay online using the link below for reservations by Friday before the event @ 5:00 PM. Please cancel by Friday before the meeting or we may have to charge you for the meal: <https://mspe.org/event-3344359>

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June Joint Luncheon

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P R E S I D E N T ' S M E S S A G E

MSPE St. Louis Chapter – February 2018 President's Report



I wanted to take this opportunity to share a wonderful book I just finished titled *Getting Sued and Other Tales of the Engineering Life*, by a Mr. Richard L. Meehan (the MIT Press, 1981). In a series of essays, really stories, Mr. Meehan chronicles his life as a geotechnical Engineer from his fraternity days at MIT to his late career spent writing environmental impact statements, or in his own prose, the “trick of trafficking in words.” Along the way Mr. Meehan takes a ROTC commission and serves as an Army lieutenant, completes projects in Haiti and Thailand and with his partners forms a consulting firm.

In discussing the controversy over suspected earthquake faults near the nation's first corporately owned nuclear test reactor at Vallecitos, California, he explores the attempt to face one of the most perplexing moral predicaments, the evaluation of risk. He not only probes the nature of “the politics of expertise” but discusses trying to communicate to the public. Perhaps most interestingly he relates how his school learning may be applied to the case at hand, not only the physics but the humanities courses he took.

Recent events, especially as related to autonomous vehicles, from airliners to automobiles, highlight the importance of the definition and consideration of risk and the role of Engineers in evaluating this risk. NSPE has been working on multiple fronts to promote and protect the public health, safety, and welfare in the development and deployment of autonomous vehicle technologies. Embracing its Grand Challenge to foster ethical innovation, the Society is taking action to give professional engineers a leading voice in ensuring that the same attention to safety and reliability that went into the built transportation infrastructure is incorporated into autonomous vehicles and smart transportation systems. You may find more on this effort on-line at:

<https://www.nspe.org/resources/issues-and-advocacy/action-issues/autonomous-vehicles>

Our own upcoming April luncheon, outlined in this newsletter, highlights the increasing role technology may play in ensuring quality. The program will feature the use of unmanned aerial vehicles in inspecting infrastructure, specifically the power grid. This proves to be an interesting event and highlights one of the things NSPE/MSPE does well, that is share information across disciplines and make us think about our role as Engineers in considering the impact and role of technology. I encourage you to join us for our April event and if you have readings you wish to suggest or wish to become more active in MSPE please call or email me, Michael T. Buechter at 314-768-2772 or mtbuec@stlmsd.com.

Yours respectfully,
Michael T. Buechter, PE, D.WRE, F.EWRI

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Missouri Society of Professional Engineers - St. Louis Chapter

2019 Calendar

Mar-19						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
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31						

May-19						
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Apr-19						
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28	29	30				

Jun-18						
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9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30						

- Kickoff Meeting Chapter/Foundation Board Meeting
- Chapter/Foundation Board Meeting
- Newsletter Deadline for Article Submittals, President's Message, Program Information, Etc.
- Newsletter Posting Date to MSPE Website
- Tentative Program Dates
- 2019 Eweek
- Missouri Engineer Publication Dates

Potential Programs, potential 3rd Thursday of the month:

- February: Awards Dinner (Rademacher)
- March: Evening Happy Hour (Hollman)
- April: Tour - Ameren Drones (Black)
- May: Tour - Enterprise Center (Hollman)
- June: Lunch - MSD Tunnels (Ratzki)/ New Officer Installation



ST. LOUIS CHAPTER
MISSOURI SOCIETY OF
PROFESSIONAL ENGINEERS

STL Chapter at the Rotary Lunch for Engineers Week

The St. Louis Chapter was represented in full force at the Rotary Lunch in St. Louis for Engineers Week. The lunch was held at the Clayton Plaza Hotel and featured a presentation by Jack Uldrich titled “How to Embrace Today’s Trends to Create Tomorrow’s Opportunities”.



If you missed out and want information for next year’s E-Week Lunch, please contact Bailey Manula at bcmanula@burnsmcd.com



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Are you looking to advertise your business in the St. Louis area to a focused group of Engineers?

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**YOUR
AD
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Order Of The Engineer

Sponsored by SLU Parks College of Engineering and Aviation
and SLU ASCE



One-time Ceremony
for your oath and ring

No Dues or Extra
Meetings

Reception with Light
Food and Drink
Afterward

\$15 Charge for ring and
ceremony

Who: Graduating Seniors and Engineers in Industry	Date: 4/30/2019	Time: 4:30 to 5:30 PM	Where: Sinquefield Room, Rm 409 Inside DuBourg Hall
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The Order of the Engineer was initiated in the United States to foster a spirit of pride and responsibility in the engineering profession, to bridge the gap between training and experience, and to present to the public a visible symbol identifying the engineer.

Mail payment to:
Vickey Pettiford
3450 Lindell Boulevard
McDonnell Douglas Hall, Room 1033
St. Louis, MO 63103

RSVP by emailing asce@slu.edu by April 15th



SAINT LOUIS UNIVERSITY

PARKS COLLEGE OF ENGINEERING,
AVIATION AND TECHNOLOGY



ST. LOUIS CHAPTER
MISSOURI SOCIETY OF
PROFESSIONAL ENGINEERS

MSPE Membership Approves Bylaw Changes

MSPE Membership Approves Bylaw Changes March 14, 2019

JEFFERSON CITY -- MSPE members gathered earlier this month at the association office to cast the final vote needed to approve proposed by-law amendments.

The action finalized the procedure to revise the existing society bylaws to comply with changes brought forth with NSPE's new membership model. The MSPE Bylaws Committee, under the direction of John Huss, P.E., worked on this effort for over a year. On October 12, 2018, the MSPE Board of Directors approved the "administrative" changes. On March 2 of this year, the MSPE membership approved the "governance" changes.

The revised bylaws are now in effect. Please see the link for the new addition.

<https://mspe.org/resources/Documents/MSPE%20Bylaws-%20March%202,%202019.pdf>





2019 National Engineers Week Celebration at the Saint Louis Science Center

The SciFest Engineering Expo at the Saint Louis Science Center in celebration of National Engineers Week (EWeek) was hosted by the **Missouri Society of Professional Engineers (MSPE)** and began Saturday, February 23, 2019 at 9:30 a.m. A variety of engineering fields were represented by organizations, government agencies, companies, and colleges.

Several engineering societies were present during the EWeek event in addition to MSPE. The **American Society of Civil Engineers (ASCE)** exhibit included a zipline for flight testing. The **Engineering Center of St. Louis** used cards to make houses that were then earthquake tested. The **Society of American Military Engineers (SAME) Saint Louis & Scott Field Post** launched wiffle balls at a target using a catapult. The **Society of Hispanic Professional Engineers (SHPE)** had an additive manufacturing hands-on demonstration.

ASCE:



Engineering Center:



SAME:



SHPE:

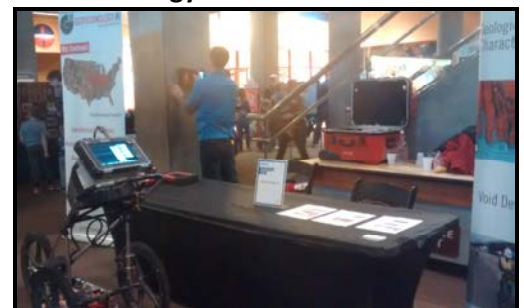


Boeing brought a miniature flight simulator and a virtual reality device. **Geotechnology** displayed their interactive ground penetrating radar. **National Geospatial-Intelligence Agency (NGA)** had a snap circuit board activity and civil engineering demonstrations. **St. Louis Children's Hospital** had 3D printing samples of hearts and other vital organs. The **United States Army Corps of Engineers** brought several hands-on models including their water sediment transport model and levee protection model in addition to making life preservers.

Boeing:



Geotechnology:



NGA:



STL Children's Hospital:



U.S. Army Corps of Engineers:



The **National Inventors Hall of Fame (HOF)** navigated an Optibot. **St. Louis Space Frontier** had hands-on activities using Legos to build models for living in space. **StraightUp Solar** put real solar cells to use while participating in multiple solar energy demonstrations. **Youth Exploring Science (YES)** gave center stage presentations.

National Inventors HOF:



Space Frontier:

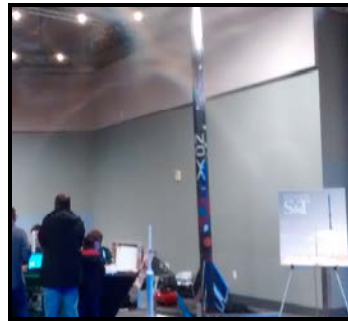


StraightUp Solar:



Several universities participated this year at the Science Center. **Missouri University of Science and Technology (Missouri S&T)** had their Student Design Center groups launching paper rockets using an air compressor with the Advanced Aero Vehicle Group (AAVG) (both airplane and rocket), Concrete Canoe, Human Powered Vehicle, iGEM, Mars Rover Design Team, Materials Advantage, Robot Design Team, Solar Car, Solar House and Steel Bridge. **Southern Illinois University Edwardsville (SIUE)** displayed their Cougar Baja Car in which kids could climb into and pretend they were racing with the best as well as their Solar Car, and their **SIUE ASCE** student chapter simulated earthquakes with their shake table. **Spectra** from **Washington University** demonstrated thermal imaging and **Lew Lab** painted with light using spectrophotometry. **Maryville Science and Robotics Program** displayed miniature robots created from their Science and Robotics Program.

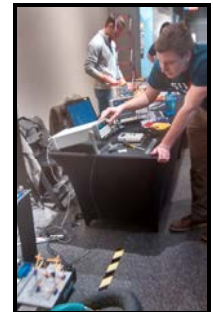
Missouri S&T:



SIUE:



SIUE-ASCE:



Spectra:



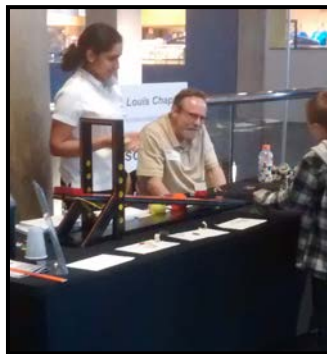
Lew Lab:



Maryville:



The **MSPE** exhibit was located near the entrance of the Science Center next to the registration table and intrigued many throughout the two day event. It was comprised of a ramp, a ball at the top of the ramp, office supplies, and a Buzz Light-year figurine. The objective was to have participants build a structure out of the given supplies to protect Buzz Light-year, located at the bottom of the ramp, from being knocked over by the ball (a.k.a. the asteroid) that rolled down the ramp. The activity was popular with all age groups, and a variety of solutions were discovered.



A special thanks to these volunteers who made the MSPE exhibit a success: **Michael Buechter, Marc Eshelman, Kathy French, Mike Hernke, Corey Meyer, Gary Meyer, Allison Morris, Jade Maria Pereira, & Eric Stauffer.**

EWeek is nationally recognized and concluded in St. Louis, MO with the close of the Saint Louis Science Center (SLSC) at 4:30 p.m. on Sunday, February 24, 2019. Attendance was recorded Saturday with 5,260 people, and Sunday with 3,849 people. Thanks to our Science Center contacts **Ruth Watt** and **Paul Freiling** for making the SciFest Engineering Expo at the SLSC in celebration of National EWeek a smooth and successful operation. We are looking forward to next year's National EWeek celebration at the SLSC scheduled for **February 22-23, 2020!**

- Erin Jearls, MSPE