



SOUTH DAKOTA
ENGINEERING SOCIETY

Professional Development Hours (PDH) Fall 2018 Conference
Hilton Garden Inn, Rapid City, SD
Friday, October 12, 2018

Presenter Biographies and Presentation Information

8:10 – 9:00 a.m.

Hwy 100: Rice St. to I-90 and I-90 Exit 402 Interchange

James Unruh, P.E.,

Sr. Transportation Project Manager HDR Engineering, Inc.



James Unruh is a graduate of SD School of Mines and Technology and spent the first 12 years of his civil engineering career with a consulting firm in Minneapolis, working on complex transportation projects in Minnesota. Since 2001, Mr. Unruh has been part of the Sioux Falls HDR office and has been a member of planning and design teams for many of the arterial street and interchange projects in the Sioux Falls area and across South Dakota. He was the project manager for the preliminary and final design phases of several of the Hwy100 projects.

9:00 – 9:50 a.m. The Engineering Behind the Underground Science Project

*Al Stratman, P.E., Director of Engineering, SD Science and Technology Authority,
Sanford Underground Research Facility*

Al Stratman, SURF Director of Engineering, leads the Engineering Department in the planning, design, construction, and engineering support to operations and research activities required to develop, operate and maintain Sanford Lab's surface and underground facility site infrastructure and the science it supports.

Before joining the SURF team in 2016, he worked as the Executive Director for Facilities and Services at the University of Illinois, Urbana/Champaign, overseeing all physical plant operations, planning, construction, and essential services for the university. Prior to working at the university, he served 28 years in the United States Navy Civil Engineer Corps, achieving the rank of captain. In this capacity, he supported Navy and Marine Corps infrastructure requirements and operations, completing tours, deployments and assignments worldwide.

Al is a registered Professional Engineer and holds a bachelor's degree in Civil Engineering from South Dakota State University and a master's degree in Geotechnical Engineering from the University of Texas at Austin. He also participated in the Executive Management Program in the Ross School of Business at the University of Michigan.



10:10 – 11:00 a.m. SD DENR New Stormwater
General Permit Impacts

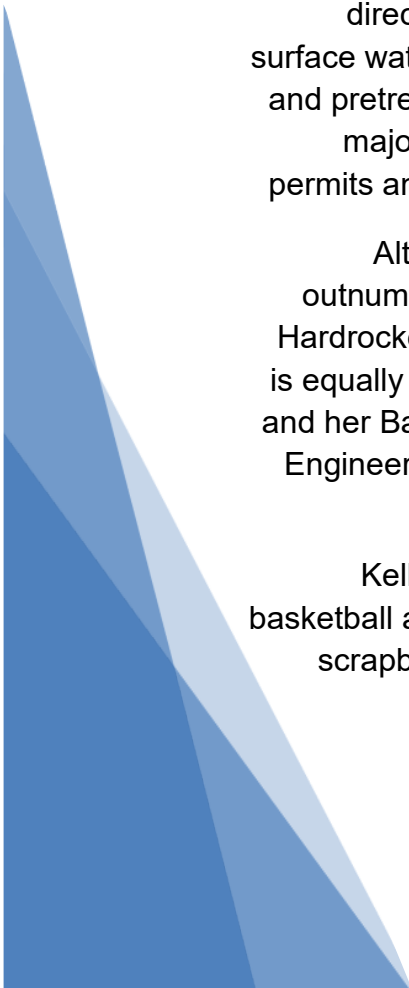
Kelli D. Buscher, P.E., Administrator

*South Dakota Department of Environment and Natural
Resources (DENR) Surface Water Quality Program*

Kelli Buscher brings five years as the Surface Water Quality Program Administrator with the DENR where she has supervised the Surface Water Discharge Permitting, Stormwater Permitting and Surface Water Quality Standards. Prior to her time as Administrator, Kelli spent 26 years with the program, directing and coordinating the surface water discharge, stormwater and pretreatment programs, writing major municipal and industrial permits and enforcing the program.

Although she may be a little outnumbered by Jackrabbits and Hardrockers in South Dakota, Kelli is equally as proud of the Cowboys and her Bachelor of Science in Civil Engineering from the University of Wyoming.

Kelli's other interests include basketball and baseball (Go Twins!), scrapbooking, photography and crafts.



11:00 – 12:00 p.m. An Introduction to PavementDesigner.org

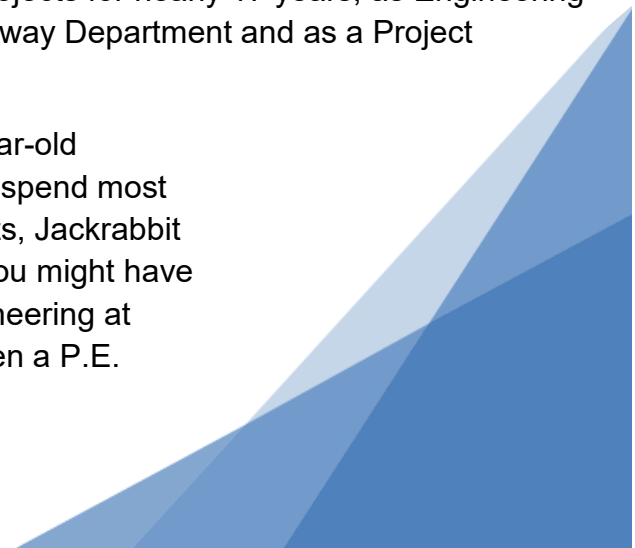
*Jason Reaves, P.E., Executive Vice President, South Dakota Chapter
American Concrete Pavement Association*



The South Dakota Chapter of the American Concrete Pavement Association represents the contractors, suppliers, and members of the concrete pavement industry throughout all of South Dakota. The SDACPA is one of several state chapters under the national organization of ACPA located in Rosemont, IL. Jason travels the state to promote the use of concrete pavement to mainly the SDDOT, cities and counties. The Association also provides member services, troubleshooting, hosts a yearly concrete workshop along with many other duties to support the concrete pavement industry.

Since accepting the position nearly 2 years ago, Jason has attended many national conferences and spoken with some of the most expert minds in the concrete industry to bring the expertise and knowledge back to the state of South Dakota to advance and enhance the concrete pavement in the state. Prior to the SDACPA, Jason was involved with design, construction administration, and project management on municipal and highway projects for nearly 17 years, as Engineering Supervisor for the Minnehaha County Highway Department and as a Project Engineer for Stockwell Engineers, Inc.

Jason resides in Sioux Falls with his 11-year-old daughter and 15-year-old yellow lab. They spend most of their time traveling to soccer tournaments, Jackrabbit athletic events, and summer lake life. As you might have guessed, Jason earned his B.S. Civil Engineering at South Dakota State University and has been a P.E. since 2004.



1:10 – 2:00 p.m. Our Changing Climate, A Brief Status Report

Alan Anderson, Retired, National Oceanic & Atmospheric Administration and U.S. Forest Service

Alan graduated from SDSM&T in 1971 with a Bachelor of Science degree in Mechanical Engineering and from the Naval Postgraduate School in 1978 with a Masters in Business.

He has enjoyed two careers over 43 years. First, as an officer in the National Oceanic & Atmospheric Administration's Commissioned Corps, retiring as an O6 in 1999. Second, as an engineering manager and District Ranger for the Forest Service. During that time, he held numerous engineering management positions at the local, regional and national level. He spent nine years at sea, five of those as Commanding Officer of hydrographic survey ships working on the east, west, Gulf of Mexico, and Alaska coasts.

His work assignments at National Forests and Grasslands throughout the country and at sea, in virtually all of the coastal waters of the U.S., allowed him to observe the natural processes occurring there and how pollution and changes in climate were affecting them, especially in Alaska. While working as District Ranger on the Buffalo Gap National Grassland, he began to translate a lifelong interest in natural sciences, two careers related to physical sciences and natural resources and a mounting body of climate change related data into several presentations on climate change.

After retiring in 2014, he continues to speak and share information on different aspects of climate change and is volunteering for local groups. Those groups include the Whispering Pines VFD Rural Fire Protection District, Black Hills Electric Coop advisory committee and five other local non-profit environmental groups. He spends increasing amounts of effort as a volunteer advocate and sometime lobbyist for climate change mitigation issues at the local, state and federal level.

Alan's presentation is a brief status report on the issue of our changing climate. It touches on the basic science of climate change, the status of observed changes in different aspects of the environment, results of efforts to mitigate change, projections of future changes, statistics on people's attitudes toward climate change, political changes, and additional possible mitigation efforts.



2:00 – 2:30 p.m. Video Monitoring of Pile Driving and Static Pile Tests at I-90 Exit 44

Amy DiRienzo, P.E. Project Engineer, RESPEC

Amy DiRienzo, P.E. has her BS and MS in mechanical engineering from the University of Wyoming and is a project engineer for RESPEC in Rapid City, SD.

Amy specializes in video monitoring and numerical modeling. As RESPEC's video monitoring expert, Amy captures and analyzes video recordings to extract displacement and strain measurements caused during dynamic events.



Amy was the first to use video monitoring technology to measure movements of structures and equipment at an underground salt mine, vibrations caused by blasting in mines, deflections of a concrete pavement from heavy truck traffic, and ground surface and pile movements during pile driving and static pile tests.

2:30 – 3:00 p.m. Box Culverts – Not Just Cast-In-Place Anymore

Riley Dvorak, Engineer, Forterra

Riley is a graduate of Minnesota State University Mankato with a BS in civil engineering. He hopes to be a registered P.E. this fall. He has been in the precast concrete industry with Forterra (formerly Cretex) for over six years, holding various roles in drafting, estimating, sales and engineering. He currently serves as the technical resource engineer for Forterra's Midwest region, providing tools and technical information to the engineering and design community.

Riley was married in 2017 and he and his wife recently purchased a home in Prior Lake, MN, just south of Minneapolis. The two of them enjoy volunteering for their church, working on their yard, playing cribbage and camping/hiking national parks.

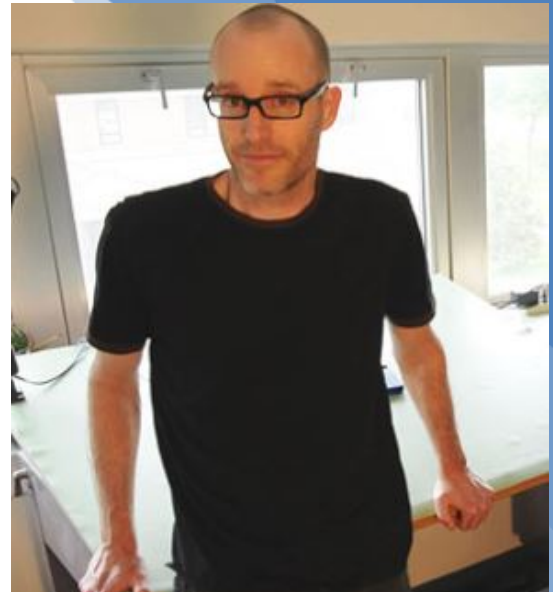


3:10 – 4:00 p.m. The GasCube: Turning Remote Base Waste into Energy

Dr. James Stone, PhD, P.E., Professor of Environmental Engineering, South Dakota School of Mines & Technology

Jim Stone is a Professor of Environmental Engineering at the South Dakota School of Mines & Technology. He completed his undergraduate and masters degrees in Environmental Engineering at Virginia Tech and his PhD in Environmental Engineering at Penn State. He also worked in environmental consulting in Virginia and Colorado. Jim is a registered PE in the State of Colorado.

During the past 15 years at the South Dakota School of Mines, he has focused on a variety of collaborative and inter-disciplinary research projects related to sustainability and the environment.



4:00 – 4:50 p.m. Characterization of River Ecosystems: Mongolia & the US

*Scott Kenner, Ph.D., P.E., Department Head
Department of Civil & Environmental Engineering
South Dakota School of Mines & Technology*



Scott Kenner grew up in Rapid City and received his BS and MS in civil engineering from SDSMT in 77 and 79, respectively. He spent the next 10 years working in private consulting, with experience covering a range of water resources projects, including wastewater collection and treatment, stormwater runoff analysis and design, floodplain analysis and delineation, sediment and erosion analysis and modeling of gravel/cobble and sand bed river systems. In the Fall of 1988, Scott returned to school to pursue his Ph.D. at the University of Florida in the environmental engineering and sciences department, completing his degree in summer 1992, along with a graduate certificate in wetlands science.

After holding a tenure track faculty position at the University of Florida for one year, Scott took a faculty position at SD Mines in the civil engineering department and has been there for 25 years serving as Department Head the last three years. During this time, Scott has:

- developed an extensive research program with emphasis in watershed monitoring modeling and assessment;
- studied small urban watersheds to large complex river systems, like the Cheyenne River Watershed;
- conducted 2-D hydraulic modeling of river systems for characterization of fisheries habitat for the SD Game, Fish and Parks and the US ACOE
- worked with multiple agencies including SD DENR, SDGFP, NRCS, BHNF, US ACOE, USGS and EPA; serving as PI for over 6 million in research projects
- served on the governing board and as chair of the EWRI Urban Water Resources Research Council for 9 years.

Scott's research on stormwater runoff and receiving water quality formed the foundation for development of stormwater ordinances for the Cities of Rapid City and Sioux Falls. His work on temperature modeling of impaired streams in the Black Hills has formed the basis for the development of an ecoregional temperature criterion for cold water streams in the Black Hills.

From Sept 2012 to June 2013 he was a Fulbright Scholar to Mongolia for teaching and research. He became integrally involved with a research project to establish environmental flows on the Orkhon River and is currently involved with hydrologic assessment for the Shuren Hydropower dam on the Selenge River. He is currently a Co-PI on a \$4.2 million NSF grant studying rivers in the US and Mongolia.