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CURRENT POSITION

Assistant Professor, Department of Civil and Environmental Engineering, South Dakota School of Mines and Technology, August 2010 to present

Program Director, Sustainable Engineering Minor Program, South Dakota School of Mines and Technology, May 2012 - present

PAST POSITIONS

Postdoctoral Research Associate, Virginia Tech, 2009-2010

Postdoctoral Research Associate, University of Alaska Fairbanks, 2008-2009

Project Manager, Environmental Engineering, Inc., Blacksburg, Virginia, 1997-2001

EDUCATION

Ph.D. Environmental Engineering, 2008, University of Alaska Fairbanks

M.S. Environmental Engineering, 1997, Virginia Tech

B.S., Civil and Environmental Engineering, *Summa Cum Laude*, 1995, Rutgers University

GRANTS

NSF CBET, "Collaborative Research: Particle-mediated enhanced transport of semi-volatile organic compounds, \$161,312 (SDSMT), Missouri University of Science and Technology, SDSM&T, Virginia Tech, Sept 2013-Aug 2016, PIs: Glenn Morrison (MST), Jennifer Benning (SDSMT), John Little (VT).

NSF CBET REU Supplemental, "Collaborative Research: Particle-mediated enhanced transport of semi-volatile organic compounds," \$6,000, Benning.

HUD Sustainable Construction in Indian Country Small Grant Program, "Designing for People and Place: Sustainable & Affordable Housing for the Pine Ridge Indian Reservation," Consortium Agreement with R. Pyatt, University of Colorado Boulder, 2012-2013, \$4,000, for research on indoor air quality.

EPA Environmental Education, "Education for the protection of water resources on the Pine Ridge Indian Reservation, South Dakota," Benning, S. Kenner, J. Sawyer, 2011-2013, \$68,991.

USGS 104B, "Investigation of the contribution of coliform contamination in runoff from scoured bed sediments," Benning (PI), S. Kenner, A. Davis, 2011-2012, \$14,913.

South Dakota School of Mines and Technology Nelson Research Grant, "Life cycle assessment for South Dakota School of Mines and Technology," 2011-2012, \$5,000.

Western Dakota Water Development District, "The tracking and identification of bacterial sources in stormwater runoff," Benning, S. Kenner, 2011-2012, \$23,455.

NSF, “Oglala Lakota College/South Dakota State University/South Dakota School of Mines and Technology Pre-Engineering Education Collaborative,” SDSMT: D. Hrnrcir (PI), F. Sawyer, M. Hansen, D. Fick, Benning, 2010-2015, \$825,000.

PEER-REVIEWED PUBLICATIONS

Pyatt, Rob, Jennifer Benning, Nick Tilsen, Charles Jason Tinant, 2015, Pedagogy into Practice: Teaching Environmental Design, Chapter in *Putting the Local in Global*, Stylus Publishers, in preparation.

Liu, Cong, Yinping Zhang, Jennifer L. Benning, John C. Little, 2014, The effect of ventilation on indoor exposure to semivolatile organic compounds, *Indoor Air*, doi: 10.1111/ina.12139.

Lupo, C., K. Olson, D. Clay, J. Benning, J. Stone, 2013, Life cycle assessment of the beef cattle production system for the Northern Great Plain, US, *Journal of Environmental Quality*, 42(5), 1386-1394.

Benning, Jennifer L, Zhe Liu, Andrea J. Tiwari, John C. Little, Linsey C. Marr, 2013, Characterizing gas-particle interactions of phthalate plasticizer emitted from vinyl flooring, *Environmental Science and Technology*, 47(6), 2696-2703.

Xu, Ying, Zhe Liu, Jinsoo Park, Per A. Clausen, Jennifer L. Benning, John C. Little, 2012, Measuring and predicting the emission rate of phthalate plasticizer from vinyl flooring in a specially designed chamber, *Environmental Science and Technology*, 46(22), 12534-12541.

Benning, J., C. Davidson, C. Lupo, 2012, Toasters and sustainability, *Center for Sustainable Engineering Modules*, <http://www.engineeringpathway.com/engpath/ep/Home>

Stone, J.J., C.R. Dollarhide, J.L. Benning, C.G. Carlson, D.E. Clay, 2012, The life cycle impacts of feed for modern Northern Great Plain U.S. swine production, *Agricultural Systems*, 106, 1-10.

Howard-Reed, C., Z. Liu, J. Benning, S. Cox, J. Little, D. Samarov, D. Leber, A. Hodgson, S. Mason, D. Won, 2010, Developing a diffusive reference material for VOC emissions: multiple laboratory study, *Building and Environment*, 46, 1504-1511, doi:10.1016/j.buildenv.2011.01.024.

Benning, J.L., D.L. Barnes, J. Burger, J.J. Kelley, 2009, Amchitka Island, Alaska: Moving towards long-term stewardship, *Polar Record*, 45(2), 133-146.

Benning, J.L., D.L. Barnes, 2009, Comparison of methods for the determination of diffusion coefficients and effective porosities in through-diffusion tests, *Water Resources Research*, 45, W09419, doi: 10.1029/2008WR007236.

Benning, J.L., D.L. Barnes, 2009, The effects of scale and spatial heterogeneities on diffusion in volcanic breccias and basalts, Amchitka Island, Alaska, *Journal of Contaminant Hydrology*, 106, 150-165.

Benning, J.L., 2008, The effects of scale and spatial heterogeneities on diffusion in volcanic breccias and basalts: Amchitka Island, Alaska, Ph.D. Dissertation, Environmental Engineering, University of Alaska Fairbanks.

Benning, Jennifer and Daqing Yang, 2005, Adjustment of daily precipitation data at Barrow and Nome Alaska for 1995-2001, *Arctic, Antarctic, and Alpine Research*, Vol. 37, No.3, pp. 276-283. <http://instaar.colorado.edu/AAAR/volume37/index.html>

Benning, J.L., 1997, The development of alternative crab claw separation methods to minimize environmental impact, Master's Thesis, Environmental Engineering, Virginia Tech. <http://scholar.lib.vt.edu/theses/public/etd-1123161739741061/etd-title.html>

CONFERENCE PRESENTATIONS

Benning, Jennifer, Andrea Surovek, Daniel Dolan, Lyle Wilson, Andrew Thompson, Rob Pyatt, 2014, Cultural considerations in service learning for American Indian reservations, *Frontiers in Education*, Madrid, October 24, 2014.

Sawyer, J. Foster, Joanita Kant, Jennifer Benning, Damon Fick, Suzette Burckhard, 2014, Forging partnerships, experiential learning, and community impact: Capacity building matters, *ASEE Midwest Regional Conference*, Iowa City, October 17, 2014.

Gayton, Logan, (student presenter), Jennifer Benning, Lisa Bailey (student), Effect of building practices on particulate (PM10) concentrations in sustainable housing projects, **poster presentation**, *South Dakota Undergraduate Research Symposium*, Pierre, SD, August 2014.

Betone, Paul (student presenter, Oglala Lakota College), Jennifer Benning, Weather tower design for the Native American Sustainable Housing Initiative, **poster presentation**, *South Dakota Undergraduate Research Symposium*, Pierre, SD, August 2014 .

Bailey, Lisa (student presenter), Jennifer Benning, Logan Gayton (student), Effect of building practices on radon concentrations in sustainable housing projects, **poster presentation**, *South Dakota Undergraduate Research Symposium*, Pierre, SD, August 2014.

O'Conner, Kristen (student presenter), Jennifer Benning, Semi-Volatile Organic Compound Emissions, **poster presentation**, **Undergraduate 1st place winner**, *SDSM&T Research Symposium*, Rapid City, April 2014.

Bailey, Lisa (student presenter), Jennifer Benning, Indoor air quality monitoring for evaluation of sustainable housing practices, **poster presentation**, *SDSM&T Research Symposium*, Rapid City, April 2014.

Bhardwaj, Rushang, (student presenter), Jennifer Benning, Particle-enhancement of semi-volatile organic compound transfer, **poster presentation**, *SDSM&T Research Symposium*, Rapid City, April 2014.

Benning, Jennifer, 2014, Quantifying interactions of SVOCs with airborne particles in small chambers, Workshop on SVOCs – characterizing emissions, transport, and exposure, a practical guide, *Indoor Air*, Hong Kong, July 11, 2014.

Benning, Jennifer, J. Foster Sawyer, 2014, The importance of place, culture, and trust in sustainable engineering education, *2014 Hawaii Education STEM Conference*, Honolulu, June 17, 2014.

O'Conner, Kristen (student presenter), Alizadeh, R., Benning, 2013, Semi-volatile organic compound emissions, **poster presentation**, SDSM&T CEE Professional Advisory Board Meeting, Rapid City, SD, Sept 19, 2013.

Gayton, Logan (student presenter), Alizadeh, R., Benning, J., 2013, Primary PM10 measurements regarding to indoor air quality at Thunder Valley Sustainable Housing Project, **poster presentation**, at SDSM&T Undergraduate REU Poster Session, Rapid City, SD, Aug 9, 2013 and at SDSM&T CEE Professional Advisory Board Meeting, Rapid City, SD, Sept 19, 2013.

White, Kyle (student presenter), Alizadeh, R., Benning J., 2013, Indoor air quality – Policy Regulation & Test Procedures, Protimeter moisture measure system relative readings, **poster presentation**, at SDSM&T Undergraduate REU Poster Session, Rapid City, SD, Aug 9, 2013 and at SDSM&T CEE Professional Advisory Board Meeting, Rapid City, SD, Sept 19, 2013.

Cong Liu, Yinping Zhang, Jennifer Benning, John Little, 2013, Can ventilation reduce airborne SVOC concentrations in dwellings, **poster presentation**, *Environment and Health – Bridging South, North, East, and West*, Basel, Switzerland, Aug 19-23, 2013.

Benning, J.L., Z. Liu, A. Tiwari, J. Little, L. Marr, 2013, Characterizing gas-particle interactions of phthalate plasticizer emitted from vinyl flooring, *2nd Annual International Workshop on SVOCs in the Indoor Environment*, Wuhan, China, June 8, 2013.

Prann, Robert (graduate student presenter), Galen Hoogestrat, Jennifer Benning, Scott Kenner, 2012, Monitoring Stormwater Quality in Two Drainage Basins in Rapid City, South Dakota, 2012, *Eastern Dakota Hydrology Conference*, Brookings, South Dakota, Oct 30, 2012.

Marnach, Nicholas (graduate student presenter), Jennifer Benning, Scott Kenner, J. Foster Sawyer, Delinda Simmons, 2012, Education for the Protection of Water Resources on the Pine Ridge Reservation, *Eastern Dakota Hydrology Conference*, Brookings, South Dakota, Oct 30, 2012.

Marnach, N. (graduate student presenter), J. Benning, S. Kenner, J. Sawyer, 2012, Education for the protection of water resources on Pine Ridge Indian Reservation, *West Dakota Hydrology Conference*, Rapid City, SD, April 2012.

Benning, Jennifer, Zhe Liu, Andrea Tiwari, John Little, Linsey Marr, Interactions between DEHP Emitted from Vinyl Flooring and Airborne Particulate Matter, 2011, Oral presentation, *Indoor Air*, Austin, Texas, June 2011.

Liu, Z., Y. Xu, J.L. Benning, J.C. Little, 2011, Characterizing emissions of di-2-ethylhexyl phthalate from vinyl flooring in a specially-designed chamber, Oral presentation, *Indoor Air*, Austin, Texas, June 2011.

Benning, Jennifer, Zhe Liu, Andrea Tiwari, John Little, Linsey Marr, 2010, Enhancement of Phthalate Emissions from Vinyl Flooring due to Partitioning to Particles, Oral presentation given by Linsey Marr, *American Association for Aerosol Research*, Portland, Oregon, October 2010.

Benning, J.L., D.L. Barnes, R.W. Wies, M. Razavi, 2005, Spatial and Scalar Effects on Diffusion of Radionuclides for Amchitka Island, Presented at the *Environmental and Subsurface Science Symposium*, September 21, 2005, Big Sky, Montana.

Benning, J.L., D.L. Barnes, S. R. Raghupatruni, 2004, Measurement Techniques for Matrix Diffusion in Fractured Bedrock for Amchitka Island, Alaska, *Poster presentation at the Environmental and Subsurface Science Symposium*, September 2004, Spokane, Washington.

Benning, J.L., S. R. Raghupatruni, D.L. Barnes, S. Schiewer, P.I. Trivedi, 2003, The Influence of Scale on Aqueous Phase Diffusion in Fractured Rock Aquifers, *Poster presentation at the 54th Arctic Science Conference of the American Association for the Advancement of Science Arctic Division*, Fairbanks, Alaska, September 2003

Benning, J.L., S. R. Raghupatruni, D.L. Barnes, S. Schiewer, P.I. Trivedi, 2003, Aqueous Phase Diffusion in Fractured Rock Aquifers, *Poster presentation at the Subsurface Science Symposium*, October 2003, Salt Lake City, Utah.

Benning, J.L. and D. Yang. 2002. Adjustment of Daily Precipitation Data at Barrow Alaska for 1995-2000. Presented at the *Alaska Section, American Water Resources Association, Annual Meeting 2002*, Soldotna, Alaska, April 2002. <http://www.awra.org/state/alaska/proceedings/2002abstracts/2002proceedings.html>

Benning, J.L. and D. Yang. 2002. Adjustment of Daily Precipitation Data for Two Alaskan Stations for 1995-2001, *Poster presentation at the American Geophysical Union 2002 Fall Meeting*, San Francisco, California, December 2002.

Benning, J.L. and D. Yang. 2002. Adjustment of Daily Precipitation Data at Barrow Alaska for 1995-2000, *Poster presentation at the Arctic Systems Science All-Hands Workshop, Arctic Research Consortium of the United States*, Seattle, Washington, February 2002.

INVITED TALKS

Black Hills Sigma Xi, Spearfish, SD, Integrating sustainable design into engineering education and research, May 15, 2014

Virginia Tech, Water and Environmental Seminar, Blacksburg, VA, Interactions between DEHP Emitted from Vinyl Flooring and Airborne Particulate Matter, April 2012.

Missouri University of Science and Technology, Environmental Seminar, Rolla, MO, Life Cycle Assessment Research at SDSM&T, October 2011.

Black Hills State University, A to Z Science Seminar, Spearfish, SD, Sustainable Engineering and Initiatives at SDSMT, March 2011.

Oglala Lakota College, Freshman Engineering Class, Kyle, SD, Introduction to Sustainable Engineering, June 2011.

Sustainability/Green Energy Conference, Research Panelist, South Dakota School of Mines and Technology, April 2011.

SDSMT, University Advisory Board, Sustainable Engineering and Initiatives at SDSMT, April 2011.

SDSMT, CEE Professional Advisory Board, Sustainable Engineering and Initiatives at SDSMT, April 2011.

SDSMT, CEE 316 Engineering and Construction Materials, Guest Lecture on sustainability and sustainable materials, December 2010.

SDSMT, GE 130 Introduction of Engineering, Guest Lecture on sustainability, 3 sessions, September 2010.

STUDENT SUPERVISION

Alexis Long, BS CBE 2015, "The Role of Relative Humidity on Emissions of Volatile Organic Compounds," Co-advised with Dr. Cross

Rushang Bhardwaj, MS CBE 2015, "Particle-mediated enhanced transport of semi-volatile organic compounds," Co-advised with Dr. J. Puszynski (CBE).

Kristen O'Conner, BS CE 2016, "Interlaboratory study on semi-volatile organic compound emissions."

Logan Gayton, BS CE 2017, Kyle White, BS CE 2017, "Indoor air quality monitoring of net zero energy research homes on Pine Ridge Indian Reservation: Collaboration with Native American Sustainable Housing Initiative and Thunder Valley Community Development Corp."

Jessie Allard, MS CE, 2014, "Pyrosequencing for the tracking and identification of bacterial sources in stormwater run-off."

Stephanie Jones, MS CE 2015, "Use of bacterial source tracking to model and predict the performance of watershed protection measures," co-advised with Bora Cetin.

Ramazan Alizadah, MS CE, 2013, "Demonstration of Enhanced Mass Transfer of SVOCs in the Presence of Airborne Particulate Matter."

Nicholas Marnach, MS CE, 2013, "Education for the protection of water resources on the Pine Ridge Indian Reservation, South Dakota."

Shane Herrod, BS CE, 2012-2013, "Education for the Protection of Water Resources on Pine Ridge Indian Reservation, NSF OSSPEEC/EPA.

Amanda Backstrom, MS CE, 2013, "The tracking and identification of bacterial sources in stormwater runoff," Co-advised with S. Kenner.

Robert Prann, BS EnvE, 2012, "Life cycle assessment for South Dakota School of Mines and Technology," MS CE, 2013, "Modeling the effect of urbanization on two watersheds in Rapid City, SD using SWMM."

Thesis Committees: Stephanie Jones, MS CEE, 2015; Erik Walega, MS GEOE, 2015; Thomas King, MS IAS, 2015; Douglas Tiedt, PhD Physics, 2016; Erik Smith, MS GEOE, 2014; Tyler Hengen, MS CE 204; Jonathon McKaskey, MS GEOE 2013; Christopher Lupo, MS CE, 2012; Keri Schiferl, MS CE 2011

External Master's Thesis Reviewer: University of Pretoria, 2014

TEACHING

EnvE/CEE 325, Introduction to Sustainable Design

CEE 327/327L, Environmental Engineering II

CEE/EnvE 425/525, Sustainable Engineering, traditional classroom and online delivery

CEE 792 Contaminant Fate and Transport

CE 130, Introduction to Civil Engineering (co-taught with M.R. Hansen)

CEE 464, Capstone Design (co-taught with J. Stone and M. Gribb)

ES 101, Civil Engineering Section, University of Alaska Fairbanks

Interdisciplinary senior design advisor, Sustainable Food Production on Pine Ridge Reservation, 2013-current

Course Highlights: All courses taught at SDSMT have involved development of new courses and/or substantial and innovative restructuring of existing courses to add interdisciplinary design and sustainability content to cornerstone and capstone design courses. Project-based service learning is incorporated into all courses. Students in 325 and 425 have partnered with Rapid City community members on sustainable design projects and presented their work in public meetings and in formal reports to city officials.

TEACHING SUPPORT

Magna, Online Courses Step-by-Step, Completion of course on online teaching, August 2013

AEESP, "Graduate Ethics Education," *Bridging the gap between engineers and society: Learning to Listen*," Workshop, July 2013

AEESP, "Bringing Sustainability into the Curriculum" Workshop, July 2013

ASEE "National Effective Teaching Workshop I" (NETI 1), Tampa, January 2013

SDSM&T, Cultural Competency Training: Developing Understanding of Lakota, Dakota, and Nakota Peoples, February 2012

Center for Sustainable Engineering, *Adding Sustainability to Engineering Education*, workshop at Syracuse University, May 2011.

Association for Environmental Engineering and Science Professors, *Integrating Intensive Service Learning Into Sustainability Courses*, workshop at University of South Florida, July 2011

Association for Environmental Engineering and Science Professors, *NSF CAREER*, workshop at University of South Florida, July 2011

OUTREACH SERVICE

Rapid City Mayor's Standing Committee on Sustainability, 3 year term, 2012-2015.

Coordinated student presentations to City Council, Legal and Finance Committee, Public Works, Rapid City Sustainability Committee, Landfill Staff, CAMP, ASCE, on "The Benefits of Recycling," analyzing data for Rapid City, through City Councilman, Jerry Wright; 3 TV news and 1 newspaper interview.

SD GEARUP, with Scott Kenner, Foster Sawyer, Nicholas Marnach, Anil Shrestha, Shane Herrod, 2012, 4 days of field sampling with pre-and post-field classroom sessions (2 days; 1st was led by Scott Kenner, 2nd by Benning) for over 250 Native American high school students, June 2012.

Faculty Adviser for Engineers and Scientists Abroad student alternative spring break trip to Guatemala, the group built 2 houses and volunteered at a malnutrition clinic, homeless shelter, clothing distribution, etc., March 2012

Co-chair SDSMT Sustainability Committee, Co-coordinated the Campus Sustainability Day, October 2010, 2011, 2012

Interview for South Dakota Public Radio, Earth Day, 2012.

South Dakota USGBC Chapter, Education Committee, coordinator for continuing education webinars in Rapid City, 2011

Coordinated a student presentation/demonstration table for SDSMT for the National RecycleMania Event, students of CEE/EnvE 425/525 and CEE 325 presented, April 2011, 2012, 2013.

Participation in the Rapid City mayor's Ad Hoc Task Force on Green Cities, Sustainability Education Workshop, as a co-representative of SDSMT, 2010

Coordinated a student-presented Lunch and Learn on Sustainability Topics for the community, students of CEE/EnvE presented, November 2010

PROFESSIONAL ACTIVITIES

Technical Committee Memberships:

International Science Committee on SVOCs in the Indoor Environment. Committee member, 2013-current

International Society of Indoor Air Quality and Climate (ISIAQ), Science and Technical Committee on Sources, Monitoring, and Evaluation, Committee member, 2011 – current

Association for Environmental Engineering and Science Professors, Student Services Committee, 2013- current

Participant:

2014 Sustainable Engineering Education Community Workshop, sponsored by ASEE, NSF, and Syracuse University, NSF Headquarters, Arlington, VA, August 5-6, 2014.

Living on Earth, Virgin Islands EPSCoR, Social-Ecological Systems Research Workshop, Oct 23-26, 2012.

Reviewer:

Grant reviewer: EPA 2013, NSF 2013, 2014

Journal Reviewer: *Atmospheric Environment, Journal of Contaminant Hydrology, Environmental Science and Technology, Indoor Air, Nuclear and Engineering Design, Building and Environment, EOS, Center for Sustainable Engineering Modules*

Conference Abstract and Paper Reviewer: *American Society for Engineering Education*, 2012

AEESP Academic Job Search Workshop Reviewer: *AEESP 2011*, Tampa, July 2011, *AEESP 2013*, Golden, July 2013, August 2014

Student Poster Judge: *Indoor Air 2011*, Austin, June 2011; *AEESP 2011*, Tampa, July 2011

Professional Memberships:

- International Society of Indoor Air Quality and Climate (ISIAQ)
- Association of Environmental Engineering and Science Professors (AEESP)
- Association for Advancement of Sustainability in Higher Education (AASHE)
- American Society for Engineering Education (ASEE)
- American Society of Civil Engineers (ASCE)
- US Green Building Council (USGBC), South Dakota Chapter
- Engineers for a Sustainable World (ESW)

UNIVERSITY SERVICE ACTIVITIES

University:

- Co-chair SDSMT Sustainability Committee
- Environmental Engineering Program Management Committee
- Faculty Student Affairs Committee
- Library Committee
- Student Development Committee

Civil and Environmental Engineering Department:

- Undergraduate Curriculum Committee
- Laboratory/Space Committee
- Environmental Engineering Professional Advisory Board

Engineers for a Sustainable World, University of Alaska Fairbanks Student Chapter, founding member and President, 2004-2005

AWARDS RECEIVED

ASCA/AIA Housing Design Education Award for the Native American Sustainable Housing Initiative educational collaboration between University of Colorado Boulder, SDSMT, and Oglala Lakota College, 2014

Virginia Simpson Award for SDSM&T faculty/staff involvement with Rapid City Community, 2014
American Water Resources Association, Alaska Section 2002 Graduate Student Scholarship Award

Edward Fuller Brooks Memorial Award for highest cumulative GPA in engineering subjects, Department of Civil and Environmental Engineering, Rutgers University, 1995
Garretson Hageman 1968 Memorial Award for outstanding academic achievement, Department of Civil and Environmental Engineering, Rutgers University, 1994
Rutgers University, Member Tau Beta Pi and Chi Epsilon Honor Societies

LICENSES AND CERTIFICATIONS

Engineer in Training, 1995, Eligible to sit for P.E. exam (completed Arctic Engineering requirement for the State of Alaska's P.E. eligibility)
OSHA Hazwoper and Site Supervisor Certification, *not current*, 1998-2001
Confined Space Entry Certification, *not current*, 1999-2001