Scott DeNeale

Water Resources Engineer (EIT) | (865) 207-7353 | stdeneale@gmail.com

Education

Master of Science in Environmental Engineering, University of Tennessee
Knoxville, TN | May 2012

- Thesis: "Anticipated Changes in Precipitation Events over the 21st Century Using Community Climate System Model, version 4"
- Advisor: Dr. Joshua S. Fu

Bachelor of Science in Civil Engineering, University of Tennessee
Knoxville, TN | May 2011

- Chancellor's Honors Program Graduate, Summa Cum Laude
- Minor in Business Administration

Employment History

Oak Ridge National Laboratory	**Oak Ridge, TN**
R&D Associate	Jan 2021 – present
Technical Staff Member – Water Resources Engineer	Sep 2014 – Dec 2020
ORAU Postmaster's Research Associate Participant	Mar 2013 – Sep 2014
University of Tennessee	**Knoxville, TN**
Environmental Engineering Graduate Research Assistant	Jun 2011 – May 2012
Civil Engineering Undergraduate Student Assistant	Sep 2009 – May 2010
Federal Highway Administration	**Sevierville, TN**
Materials Engineering Technician *(summer position)*	May 2010 – Aug 2010

Certificates and Awards

- **ORNL Environmental Sciences Division Research Support Award** | 2020
- **Engineer-In-Training Certification 29340, State of Tennessee** | Issued: May 2011
- **HydroVision International Technical Paper of the Year** | 2017: 1st place | 2015: 2nd place
- **Scholarships, University of Tennessee** | 2007-2011

  John L. Callaway | Ina B. Howard | William and Pat Grecco | UT Volunteer
  CVS Corporate | Regal Cinemas | Tennessee Educational Lottery

Professional Organization Memberships

- American Society of Civil Engineers (ASCE)
- American Geophysical Union (AGU)

Publications

Peer-reviewed Publications

1. **DeNeale**, S., and C. Hansen (2022), Powering America's non-powered dams, one byte at a time, *Hydro Review*, December 2022.
2. Hansen, C., M. Musa, C. Sasthav, and S. **DeNeale** (2021), Hydropower development at non-powered dams: Data needs and research gaps, *Renewable and Sustainable Energy Reviews*.
3. Kao, S.-C., S. T. **DeNeale**, E. Yegorova, J. Kanney, and M. Carr (2020), Variability of Precipitation Areal Reduction Factors in the Conterminous United States, *Journal of Hydrology X*.
4. Hadjerioua, B., T. Eldredge, H. Medina, and S. **DeNeale** (2019), Hydrodynamic and structural response modeling of a prototype floating membrane reservoir system for pumped storage hydropower. *J Hydraul. Eng.*, 145 (9).
5. Hadjerioua, B., S. **DeNeale**, M. Mobley, M. Kuca, and L. Pierce (2019), Hydropower opportunities for the state of Alaska and native villages, *Hydro Review*, February 2019.
6. Kao, S.-C., S. T. **DeNeale**, and D. B. Watson (2019), Hurricane Harvey highlights: Need to assess the adequacy of probable maximum precipitation estimation methods, *J. Hydrol. Eng.*, 24 (4).
7. Hadjerioua, B., M. Politano, S. **DeNeale**, M.D. Bender, and A. Castro (2015), Tool to Predict TDG for the Columbia River Basin, *Hydro Review*, April 2015.
8. Zhang, Q. F., P. O'Connor, S. **DeNeale**, and R. Martinez (2014), Methodology Development for New Small Hydro Technology Assessment and Selection, *Hydro Review*, November 2014.

Data

9. Hansen, C. H., C. R. DeRolph, F. D. Carter, and S. T. **DeNeale** (2022), *U.S. Non-Powered Dam Characteristics Inventory*. HydroSource, Oak Ridge National Laboratory, Oak Ridge, TN.

Technical Reports

10. **DeNeale**, S., C. Hansen, J. Feyyisa, and G. Oladosu (2022), *An Assessment of Non-Powered Dam Hydropower Development Opportunities in the United States*. ORNL/TM-2022/2459, Oak Ridge National Laboratory, Oak Ridge, TN.
11. Kao, S.-C., L. George, C. Hansen, S. **DeNeale**, K. Johnson, A. Sampson, M. Moutenot, K. Altamirano, and K. Garcia (2022), *An Assessment of Hydropower Potential at National Conduits*. ORNL/TM-2022/2431, Oak Ridge National Laboratory, Oak Ridge, TN.
12. Musa, M., B. Smith, C. Sasthav, K. DeSomber, S. **DeNeale**, K. Stewart, M. Marshall, T. Smith, and P. Irminger (2022). *Needs and Opportunities for Testing of Hydropower Technology Innovations*. ORNL/TM-2022/2462, Oak Ridge National Laboratory, Oak Ridge, TN.

13. Nguyen, D. T., T. Eldredge, H. Medina, and S. **DeNeale** (2022), *Design and Modeling of a Hybrid, Modular, Closed-Loop, Scalable Pumped Storage Hydropower System*. ORNL/TM-2022/2472, Oak Ridge National Laboratory, Oak Ridge, TN.
14. **DeNeale**, S., C. Hansen, G. Oladosu, and J. Feyyisa (2022), *NPD Development Opportunities Assessment, NPD-FY22-01: Intermediate Project Progress Memo*. ORNL/LTR-2022/400, Oak Ridge National Laboratory, Oak Ridge, TN.
15. **DeNeale**, S., C. Sasthav, M. Musa, C. Hansen, K. Stewart, and P. Matson (2022), *Non-Powered Dam Retrofit Exemplary Design for Hydropower Applications*. ORNL/TM-2021/2232, Oak Ridge National Laboratory, Oak Ridge, TN.
16. Sasthav, C., G. Oladosu, S. **DeNeale**, and K. Stewart (2022), *The waterSHED Model: User Guide*. ORNL/TM-2022/2440, Oak Ridge National Laboratory, Oak Ridge, TN.
17. Carter, F., C. DeRolph, S. **DeNeale**, and C. Hansen (2022), *NPD Classification Tools – User Guide NPD Explorer and NPDamCAT Apps*. ORNL/TM-2022/2389, Oak Ridge National Laboratory, Oak Ridge, TN.
18. Hansen, C., C. Sasthav, M. Musa, and S. **DeNeale** (2022), *Non-Powered Dam Custom Analysis and Taxonomy (NPDamCAT) Framework*. ORNL/TM-2021/2155, Oak Ridge National Laboratory, Oak Ridge, TN.
19. Mohammadi, S., M. Bensi, S.-C. Kao S-C, and S. T. **DeNeale** (2021), *Multi-Mechanism Flood Hazard Assessment: Example Use Case Studies*. ORNL/TM-2021/2231, Oak Ridge National Laboratory, Oak Ridge, TN.
20. **DeNeale**, S.T., S.-C. Kao, D.B. Watson, and K.R. Quinlan (2021), *Considerations for Estimating Site-Specific Probable Maximum Precipitation at Nuclear Power Plants in the United States of America: Final Report*. NUREG/KM-0015, US Nuclear Regulatory Commission, Rockville, MD.
21. Kao, S.-C., S. **DeNeale**, and E. Yegorova (2021), *Application of Point Precipitation Frequency Estimates to Watersheds*. NUREG/CR-7271, US Nuclear Regulatory Commission, Rockville, MD.
22. Han, F., S. **DeNeale**, M. Miller, M. Musa, G. Oladosu, B. Richardson, C. Atkins, and B. Smith (2020), *FOA-2080 Advanced Manufacturing Design Review and Brainstorming Workshop for University of Minnesota: Summary Report*. ORNL/LTR-2020/1660, Oak Ridge National Laboratory, Oak Ridge, TN.
23. Han, F., S. **DeNeale**, M. Miller, B. Richardson, A. Hassen, G. Oladosu, and B. Smith (2020), *FOA-2080 Advanced Manufacturing Design Review and Brainstorming Workshop for Percheron Power, LLC: Summary Report*. ORNL/LTR-2020/1647, Oak Ridge National Laboratory, Oak Ridge, TN.
24. Han, F., S. **DeNeale**, B. Richardson, A. Hassen, G. Oladosu, and B. Smith (2020), *FOA-2080 Advanced Manufacturing Design Review and Brainstorming Workshop for Natel Energy, Inc.: Summary Report*. ORNL/LTR-2020/1646, Oak Ridge National Laboratory, Oak Ridge, TN.
25. Bensi M., S. Mohammadi, S.-C. Kao S-C, and S. T. **DeNeale** (2020), *Multi-Mechanism Flood Hazard Assessment: Critical Review of Current Practice and Approaches*. ORNL/TM-2020/1447, Oak Ridge National Laboratory, Oak Ridge, TN.
26. **DeNeale**, S., N. Bishop, L. Buetikofer, R. Sisson, C. Sasthav, M. Musa, T. Wilcox, K. Stewart, W. Tingen, and C. DeRolph (2020), *Hydropower Geotechnical Foundations:*

Current Practice and Innovation Opportunities for Low-Head Application. ORNL/TM-2020/1553, Oak Ridge National Laboratory, Oak Ridge, TN.

27. **DeNeale**, S., N. Bishop, L. Buetikofer, R. Sisson, C. Sasthav, M. Musa, T. Wilcox, K. Stewart, W. Tingen, and C. DeRolph (2020), *Hydropower Geotechnical Foundations: Executive Summary on Current Practice and Innovation Opportunities for Low-Head Application*. ORNL/SPR-2020/1607, Oak Ridge National Laboratory, Oak Ridge, TN.
28. Hadjerioua B., K. Stewart, S. **DeNeale**, W. Tingen, S. Curd, B. Smith, T. Greco, G. Stark, E. DeGeorge, V. Koritarov, T. Veselka, A. Botterud, T. Levin, M. Christian, J. Saulsbury, and A. Colotelo (2020), *Pumped Storage Hydropower FAST Commissioning Technical Analysis*. ORNL/SPR-2019/1299, Oak Ridge National Laboratory, Oak Ridge, TN.
29. Kao, S.-C. and S. **DeNeale** (2020), *Technical Evaluation Report: Robinson Nuclear Plant Precipitation Frequency Estimates for the Black Creek Watershed*. ORNL/LTR-2019/1311, Oak Ridge National Laboratory, Oak Ridge, TN.
30. **DeNeale**, S. T., G. B. Baecher, K. M. Stewart, E. D. Smith, and D. B. Watson (2019), *Current State-of-Practice in Dam Safety Risk Assessment*. ORNL/TM-2019/1069, Oak Ridge National Laboratory, Oak Ridge, TN.
31. Hadjerioua, B., S. **DeNeale**, and A. Fetizanan (2019), *Lower Mekong Initiative (LMI) - Foundations for Strategic Lower Mekong Hydropower and Water Resources Management: Phase II Workshop Summary Report*. ORNL/TM-2019/1221, Oak Ridge National Laboratory, Oak Ridge, TN.
32. Hadjerioua, B., K. Stewart, S. **DeNeale**, B. Smith, W. Tingen, S. Curd, T. Greco, V. Koritarov, J. Saulsbury, J. Garson, C. Vezina (2019), *Pumped Storage Hydropower FAST Commissioning Preliminary Analysis*. DOE/EE-1926, Water Power Technologies Office, U.S. Department of Energy, Washington, DC.
33. **DeNeale**, S. and S.-C. Kao (2018), *Technical Evaluation Report: Review of the Site-Specific Probable Maximum Precipitation Study for the Tennessee Valley Authority Nuclear Power Plants*. ORNL/TM-2018/994, Oak Ridge National Laboratory, Oak Ridge, TN.
34. Witt, A., S. **DeNeale**, T. Papanicolaou, B. Abban, and N. Bishop (2018), *Standard Modular Hydropower: Case Study on Modular Facility Design*. ORNL/TM-2018/915, Oak Ridge National Laboratory, Oak Ridge, TN.
35. Hadjerioua, B., M. Mobley, S. **DeNeale**, and D. Ott (2018), *Hydropower Development Opportunities for Alaska Native Villages*. ORNL/TM-2018/772, Oak Ridge National Laboratory, Oak Ridge, TN.
36. **DeNeale**, S., S.-C. Kao, and D. Watson (2018), *A Review of Data, Tools, Methods, and Professional Judgements Used in Site-Specific Probable Maximum Precipitation Studies: Observations and Lessons Learned*. ORNL/TM-2016/701, Oak Ridge National Laboratory, Oak Ridge, TN.
37. **DeNeale**, S. and S.-C. Kao (2018), *Technical Evaluation Report: Catawba Nuclear Station Mitigating Strategies Assessment Estimation of River-basin Site-specific Probable Maximum Precipitation*. ORNL/TM-2018/528, Oak Ridge National Laboratory, Oak Ridge, TN.

38. Hadjerioua, B. and S. **DeNeale** (2018), *Preliminary Design Specification and Cost Estimates for a Prototype Floating Membrane Reservoir System*. ORNL/TM-2018/806, Oak Ridge National Laboratory, Oak Ridge, TN.
39. Hadjerioua, B., T. Eldredge, H. Medina, and S. **DeNeale** (2018), *Prototype Modeling, Analysis, and Recommendations for a Floating Membrane Reservoir System*. ORNL/TM-2018/805, Oak Ridge National Laboratory, Oak Ridge, TN.
40. Hadjerioua, B., S. **DeNeale**, and K. Stewart (2017), *Performance, Design and Site Criteria for Testing a Floating Membrane Reservoir System*. ORNL/TM-2017/719, Oak Ridge National Laboratory, Oak Ridge, TN.
41. Stewart, K.M., B.T. Smith, A. Witt, S. **DeNeale**, M. Bevelhimer, J.L. Pries, T.A. Burress, S.-C. Kao, M. Mobley, K. Lee, S. Curd, A. Tsakiris, C. Mooneyham, T. Papanicolaou, K. Ekici, M. Whisenant, T. Welch, and D. Rabon (2017), *Simulation and Modeling Capability for Standard Modular Hydropower Technology*. ORNL/TM-2017/175, Oak Ridge National Laboratory, Oak Ridge, TN.
42. Witt, A., M. Mobley, S. **DeNeale**, A. Fernandez, and B.T. Smith (2017), *Standard Modular Hydropower Technology Acceleration Workshop: Summary Report*. ORNL/TM-2017/328, Oak Ridge National Laboratory, Oak Ridge, TN.
43. Witt, A., B.T. Smith, A. Tsakiris, T. Papanicolaou, K. Lee, K. Stewart, S. **DeNeale**, M. Bevelhimer, J. Pries, T. Burress, B. Pracheil, R. McManamay, S. Curd, K. Ekici, B. Kuntz, N. Bishop, A. Fernandez, T. Welch, and D. Rabon (2017), *Exemplary Design Envelope Specification for Standard Modular Hydropower Technology, Revision 1*. ORNL/TM-2016/298, Oak Ridge National Laboratory, Oak Ridge, TN.
44. Smith, B. T., A. Witt, K.M. Stewart, K. Lee, S. **DeNeale**, M. Bevelhimer, T.A. Burress, B. Pracheil, J.L. Pries, P. O'Connor, R. Uria-Martinez, R. McManamay, S. Curd, G. Zimmerman, K. Ekici, T. Papanicolaou, A. Tsakiris, B. Kutz, N. Bishop, A. R. Fernandez, T. Welch, and D. Rabon (2017), *A Multi-Year Plan for Research, Development, and Prototype Testing of Standard Modular Hydropower Technology/R1* ORNL/TM-2016/102, Oak Ridge National Laboratory, Oak Ridge, TN.
45. O'Connor, P.W., S.T. **DeNeale**, D.R. Chalise, E. Centurion, and A. Maloof (2015), *Hydropower Baseline Cost Modeling, Version 2*, ORNL/TM 2015/471, Oak Ridge National Laboratory, Oak Ridge, TN.
46. O'Connor, P.W., Q.F. Zhang, S.T. **DeNeale**, D.R. Chalise, and E.E. Centurion (2015), *Hydropower Baseline Cost Modeling*, ORNL/TM-2015/14, Oak Ridge National Laboratory, Oak Ridge, TN.
47. Hadjerioua, B., N. Bishop, R. Martinez, S. **DeNeale**, P. O'Connor, and E. Hopping (2014), *Evaluation of the Feasibility and Viability of Modular Pumped Storage Hydro (m-PSH) in the United States*, ORNL/TM-2014/202, Oak Ridge National Laboratory, Oak Ridge, TN.
48. Hadjerioua, B., Q. F. Zhang, S. **DeNeale**, and E. Hopping (2014), *Evaluation of Canadian Hydro Component Small Hydropower Technology to be Deployed at the 45-Mile Project, Oregon, United States*, Oak Ridge National Laboratory, 2014 Project Report. ORNL/TM-2014/203, Oak Ridge National Laboratory, Oak Ridge, TN.
49. Kao, S.-C., R. A. McManamay, K. M. Stewart, N. M. Samu, B. Hadjerioua, S. T. **DeNeale**, D. Yeasmin, M. F. K. Pasha, A. A. Oubeidillah, and B. T. Smith (2014), *New Stream-reach Development: A Comprehensive Assessment of Hydropower Energy*

Potential in the United States, GPO DOE/EE-1063, Wind and Water Power Program, Department of Energy, Washington, DC.

Conference Papers

50. Bensi, M., S. Mohammadi, S.-C. Kao, S. T. **DeNeale**, M. Carr, and J. Kanney (2019), A review of available methods for the probabilistic treatment of coincident and correlated flood mechanisms, 25th International Conference on Structural Mechanics in Reactor Technology, Charlotte, NC, August 2019.
51. Hadjerioua, B., K. Stewart, S. **DeNeale**, W. Tingen, M. Mobley, S. Curd, B. Smith, T. Greco, J. Saulsbury, and V. Koritarov (2019) Toward Faster Commissioning of Pumped Storage Hydropower in the United States, HydroVision International 2019, Portland, OR, July 2019
52. Hadjerioua, B., T. Eldredge, H. Medina, and S. **DeNeale** (2019) Design and Modeling of a Prototype Floating Membrane Reservoir System Application for Pumped Storage Hydropower, 2019 World Environmental & Water Resources Congress, Pittsburgh, PA, May 2019.
53. Hadjerioua, B., M. Mobley, S. **DeNeale**, and D. Ott (2018), Hydropower Development Opportunities for Alaska Native Villages, HydroVision International 2018, Charlotte, NC, June 2018.
54. Witt, A., Fernandez-McKeown, A., Mobley, M., **DeNeale**, S., Bevelhimer, M., and B. Smith (2017), How Standard Modular Hydropower Can Enhance the Environmental, Economic, and Social Benefits of New Small Hydropower Development, HydroVision International 2017, Denver, CO, June 2017.
55. Chalise, D.R., P. O'Connor, S. **DeNeale**, and C. Waldoch (2016), Hydropower Integrated Design and Economic Assessment Tool for Use in Preliminary Feasibility Assessments – Modeling Framework, HydroVision International 2016, Minneapolis, MN, July 2016.
56. **DeNeale**, S., P. O'Connor, D.R. Chalise, E. Centurion, A. Maloof, and N. Samu (2015), Parametric Cost Modeling for National-scale Hydropower Feasibility, HydroVision International 2015, Portland, OR, July 2015.
57. Chalise, D.R., P. O'Connor, S. **DeNeale**, R. Uría Martínez, and S.-C. Kao (2015), LCOE Uncertainty Analysis for Hydropower using Monte Carlo Simulations, HydroVision International 2015, Portland, OR, July 2015.
58. Stewart, K., A. Witt, B. Hadjerioua, S. **DeNeale**, A. Maloof, M. Politano, T. Magee, and M. Bender (2015), Total Dissolved Gas (TDG) Prediction and Implementation within Optimization Scheduling Model for the Mid-Columbia River System, HydroVision International 2015, Portland, OR, July 2015.
59. **DeNeale**, S., Q. F. Zhang, P. O'Connor, and S.-C. Kao (2014), Statistical Characteristics of US Hydropower Plant Capacity Factors, HydroVision International 2014, Nashville, TN, July 2014.
60. Hadjerioua, B., P. O'Connor, N. Bishop, M. McCall, R. Martinez, and S. **DeNeale** (2014), Can Modular Pumped Storage Hydro (PSH) be Economically Feasible in the United States?, HydroVision International 2014, Nashville, TN, July 2014.
61. Hadjerioua, B., D. Ott, S. **DeNeale**, A. Alstom, and C. Johnson (2014), Can the State of Alaska Match its Energy Demand through Installed Hydropower Capacity?, HydroVision International 2014, Nashville, TN, July 2014.

62. Hadjerioua, B., M. Politano, S. **DeNeale**, M. Bender, and A. Castro (2014), Predicting Total Dissolved Gas (TDG) for the Mid-Columbia River System, HydroVision International 2014, Nashville, TN, July 2014.

Abstracts

63. Kao, S.-C., L. George, K. Johnson, A. K. Sampson, M. Moutenout, K. Altamirano, K. Garcia, C. Hansen, S. T. **DeNeale**, M. Sciubba, and C. Vezina (2021), "Assessing Hydropower Potential in National Water Conduits: Challenges and Opportunities," abstract for American Geophysical Union 2021 Fall Meeting, virtual, December 2021.
64. Mohammadi, S., M. Bensi, S.-C. Kao, S. T. **DeNeale**, E. Yegorova, and J. Kanney (2021), "Probabilistic flood hazard assessment of multi-mechanism floods using a computationally tractable Bayesian-motivated approach," abstract for American Geophysical Union 2021 Fall Meeting, virtual, December 2021.
65. Mohammadi, S., M. Bensi, S.-C. Kao, S. T. **DeNeale**, J. Kanney, and E. Yegorova (2021), "Multi-mechanism flood hazard assessment in coastal areas," abstract for Society for Risk Analylsis 2021, virtual, December 2021.
66. Kao, S.-C., S. T. **DeNeale**, E. Yegorova, J. Kanney, and M. Carr (2021), "Factors Affecting the Variability of Precipitation Areal Reduction Factors in the Conterminous United States," abstract for World Environmental & Water Resources Congress 2021, virtual, May 2021.
67. Mohammadi, S., M. Bensi, S.-C. Kao, S. T. **DeNeale**, E. Yegorova, M. Carr, and J. Kanney (2020), "Coastal Probabilistic Flood Hazard Assessment Due to Coincident Occurrence of Tropical Cyclone-Induced Surge and Precipitation," abstract for American Geophysical Union 2020 Fall Meeting, virtual, December 2020.
68. Mohammadi, S., M. Bensi, S.-C. Kao, S. T. **DeNeale**, M. Carr, and J. Kanney (2020), "Assessment of hazards from concurrent and coincident flooding mechanisms," abstract for 30th European Safety and Reliability Conference and the 15th Probabilistic Safety Assessment and Management Conference, July 2020.
69. Bensi, M., S. Mohammadi, S.-C. Kao, and S. **DeNeale** (2020), "Probabilistic Assessment of Flood Hazards Due to Combinations of Flooding Mechanisms: Study Progress and Next Steps," abstract for Nuclear Regulatory Commission 5th Annual Probabilistic Flood Hazard Assessment Research Workshop, Rockville, MD, February 2020.
70. Kao, S.-C. and S. **DeNeale** (2020), "Application of Point Precipitation Frequency Estimates to Watersheds," abstract for Nuclear Regulatory Commission 5th Annual Probabilistic Flood Hazard Assessment Research Workshop, Rockville, MD, February 2020.
71. **DeNeale**, S., S.-C. Kao, E. Yegorova, J. Kanney, and M. Carr (2019) "A Watershed-based Assessment of Precipitation Areal Reduction Factors in the Ohio River Basin," abstract for American Geophysical Union 2019 Fall Meeting, San Francisco, CA, December 2019.
72. Mohammadi, S., M. Bensi, S.-C. Kao, S. T. **DeNeale**, M. Carr, and J. Kanney (2019), "A review of joint probability studies used for estimation of flood hazards due to combinations of flooding mechanisms," abstract for 2019 Society for Risk Analysis Annual Meeting, Arlington, VA, December 2019.

73. **DeNeale**, S., G. B. Baecher, and K. M. Stewart (2019), "Current State-of-Practice in Dam Risk Assessment," abstract for Nuclear Regulatory Commission 4th Annual Probabilistic Flood Hazard Assessment Research Workshop, Rockville, MD, April-May 2019.
74. Kao, S.-C. and S. **DeNeale** (2019), Factors Affecting the Development of Precipitation Areal Reduction Factors," abstract for Nuclear Regulatory Commission 4th Annual Probabilistic Flood Hazard Assessment Research Workshop, Rockville, MD, April-May 2019.
75. Kao, S.-C., S. **DeNeale**, and D. B. Watson (2019), "Hurricane Harvey Highlights the Challenge of Estimating Probable Maximum Precipitation," abstract for Nuclear Regulatory Commission 4th Annual Probabilistic Flood Hazard Assessment Research Workshop, Rockville, MD, April-May 2019.
76. Bensi, M., S. Mohammadi, S. T. **DeNeale**, and S.-C. Kao (2019), "Methods for Estimating Joint Probabilities of Coincident and Correlated Flooding Mechanisms for Nuclear Power Plant Flood Hazard Assessments," abstract for Nuclear Regulatory Commission 4th Annual Probabilistic Flood Hazard Assessment Research Workshop, Rockville, MD, April-May 2019.
77. **DeNeale**, S., S.-C. Kao, E. Yegorova, J. Kanney, and M. Carr (2018), "A Comparative Evaluation of Precipitation Areal Reduction Factor Variability across the Conterminous United States," abstract for American Geophysical Union 2018 Fall Meeting, Washington, DC, December 2018.
78. Watson, D., S. **DeNeale**, B. Smith, and S.-C. Kao (2017), "Critical Review of State of Practice in Dam Risk Assessment," abstract for Nuclear Regulatory Commission 3rd Annual Probabilistic Flood Hazard Assessment Research Workshop, Rockville, MD, December 2017.
79. Hayes, B.D., S.-C. Kao, J.F. Kanney, K.R. Quinlan, and S.T. **DeNeale** (2015), "Site Specific Probable Maximum Precipitation Estimates and Professional Judgement," abstract for American Geophysical Union 2015 Fall Meeting, San Francisco, CA, December 2015.

Master's Thesis

80. **DeNeale**, S. (2012), *Anticipated Changes in Precipitation Events over the 21st Century Using Community Climate System Model, version 4*, Masters Thesis, Department of Civil & Environmental Engineering, University of Tennessee, Knoxville.

Presentations

1. **DeNeale**, S. (2022), "Advances in Reservoir Linings for Pumped Storage Projects," October 2022, Clean Currents 2022, Sacramento, CA.
2. **DeNeale**, S. (2022), "An Assessment of Non-Powered Dam Hydropower Development Opportunities in the United States," October 2022, Clean Currents 2022, Sacramento, CA.
3. **DeNeale**, S. (2022), "Applying Pumped Storage Hydropower for Mine Land Applications: DOE Demonstration Program," September 2022, Clean Energy Demonstrations for Mine Lands Workshop, Knoxville, TN.

4. **DeNeale**, S. (2022), “Pandemic-Era Research & Development: Tackling Future Energy Needs with Improved Data and Approaches,” August 2022, Tennessee Society of Professional Engineers (Knoxville Chapter), Knoxville, TN, invited talk.
5. **DeNeale**, S. (2021), “Innovation Opportunities for Hydropower Geotechnical Foundations,” December 2021, online workshop.
6. Carter, F., S. **DeNeale**, C. DeRolph, and C. Hansen (2021), “Non-Powered Dam Explorer Tool Meeting #2: Beta Review,” December 2021, online webinar.
7. Carter, F., S. **DeNeale**, C. DeRolph, and C. Hansen (2021), “Non-Powered Dam Explorer Tool: Beta Demo,” November 2021, online webinar.
8. Hansen, C., S. **DeNeale**, C. DeRolph, and F. Carter (2021), “NPD Explorer and NPDamCAT: web tools supporting analysis of non-powered dams,” July 2021, online webinar.
9. Hansen, C. and S. **DeNeale** (2020), “Challenges and Opportunities for Non-Powered Dams: Improving Classification and Data Access,” December 2020, online webinar.
10. Greco, T. and S. **DeNeale** (2020), “Groundbreaking Hydro Prize,” December 2020, webinar presented to the National Hydropower Association’s Water Innovation Council.
11. **DeNeale**, S., G. B. Baecher, and K. M. Stewart (2020), “Current State-of-Practice in Dam Risk Assessment,” Nuclear Regulatory Commission 5th Annual Probabilistic Flood Hazard Assessment Research Workshop, Rockville, MD, February 2020, poster presentation.
12. **DeNeale**, S., S.-C. Kao, E. Yegorova, J. Kanney, and M. Carr (2019) “A Watershed-based Assessment of Precipitation Areal Reduction Factors in the Ohio River Basin,” American Geophysical Union 2019 Fall Meeting, San Francisco, CA, December 2019, poster presentation.
13. **DeNeale**, S., (2019), “Standard Modular Hydropower: Environmentally compatible, low-cost technology acceleration,” Northwest Hydropower Association Small Hydro Buyer’s Workshop, Bend, OR, August 2019, invited talk.
14. **DeNeale**, S., S.-C. Kao, E. Yegorova, J. Kanney, and M. Carr (2018), “A Comparative Evaluation of Precipitation Areal Reduction Factor Variability across the Conterminous United States,” American Geophysical Union 2018 Fall Meeting, Washington, DC, December 2018, poster presentation.
15. **DeNeale**, S., and S.-C. Kao (2018), Comments on Development of a National Guidance Document to Review Site-Specific PMPs, Rockville, Maryland, August 2018, invited talk.
16. **DeNeale**, S., P. O’Connor, D.R. Chalise, E. Centurion, A. Maloof, and N. Samu (2015), Parametric Cost Modeling for National-scale Hydropower Feasibility, HydroVision International 2015, Portland, Oregon, July 2015, poster presentation.
17. **DeNeale**, S. and B. Hadjerioua (2014), Total Dissolved Gas (TDG) Prediction in the Mid-Columbia River System, 2nd Annual ORNL Postdoc Research Symposium, Oak Ridge, Tennessee, July 2014, poster presentation.
18. **DeNeale**, S., Q. F. Zhang, P. O’Connor, and S.-C. Kao (2014), Statistical Characteristics of US Hydropower Plant Capacity Factors, HydroVision International 2014, Nashville, Tennessee, July 2014, poster presentation.

Merit Review

1. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Funding Opportunity Announcement Number: DE-FOA-0002080, August 2019.
2. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Funding Opportunity Announcement Number: DE-FOA-0001286, July 2015.

Research Projects

Hydropower (U.S. Department of Energy)

- Puerto Rico Energy Public Policy Act (Act 17): Puerto Rico 100 Hydropower Resource Assessment
- Standard Modular Hydropower Technology Acceleration (including Laboratory Research & Industry Collaboration under Funding Opportunity Announcements)
- Non-Powered Dams Opportunity Assessment
- Bi-Partisan Infrastructure Law Support: EPAct Section 247 Technical Assistance
- Clean Energy Demonstrations on Mine Lands
- Reservoir Lining Study for PSH Plants
- Hydropower Test Facility Scoping Study
- Geotechnical Foundations for Hydropower
- National Conduit Hydropower Resource Assessment
- Pumped Storage Hydropower FAST Commissioning
- Modular Pumped Storage Hydropower Technology, Feasibility, and Economic Analysis
- Alaskan Hydropower Development Opportunities
- Cost Data Collection and Modeling for Hydropower
- DOE Hydropower Vision
- Hydropower New Stream-reach Development Assessment
- Water Quality Modeling Improvements (Columbia/Cumberland River Basins)
- International Collaboration (International Energy Agency Annex XI)
- International Engagement Technical Support (Lower Mekong Initiative: Foundations for Strategic Lower Mekong Hydropower and Water Resource Management)

Nuclear (U.S. Nuclear Regulatory Commission)

- Methods for Estimating Joint Probabilities of Coincident and Correlated Flooding Mechanisms for Nuclear Power Plant Flood Hazard Assessments
- Application of Point of Precipitation Frequency Estimates to Watersheds
- Critical Review of State of Practice in Dam Safety Risk Assessment
- Licensing Amendment Request Technical Reviews
- Site-specific Probable Maximum Precipitation Technical Reviews
- Mitigating Strategies Assessment Technical Reviews
- Flood Hazard Reevaluation Technical Reviews