

Svetlana Stuefer (Berezovskaya)

Associate Professor of Civil and Environmental Engineering
University of Alaska Fairbanks

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Appointments

2019 to present – Associate Professor at the Department of Civil, Geological, and Environmental Engineering and the Water and Environmental Research Center, College of Engineering and Mines, University of Alaska Fairbanks, Alaska, USA
2012 to 2019 – Assistant Professor at the Department of Civil and Environmental Engineering and the Water and Environmental Research Center, College of Engineering and Mines, University of Alaska Fairbanks, Alaska, USA
2005 to 2011 – Research Assistant Professor at the Water and Environmental Research Center, Institute of Northern Engineering, University of Alaska Fairbanks, Alaska, USA
2003 to 2005 – Post Doctoral Research Fellow at the Water and Environmental Research Center, University of Alaska Fairbanks, Alaska, USA
1998 – Research Associate at the Arctic and Antarctic Research Institute, Department of oceanography, St. Petersburg, Russia

Education

Ph.D. Land Hydrology and Water Resources, Russian State Hydrometeorological University, St. Petersburg, Russia, 2003
Ph.D. student within the frame of the Russian Federation Presidential Award, GEOMAR Research Center for Marine Geosciences, Kiel, Germany, 2001
M.S. Hydrologic Engineering, diploma with honors, Russian State Hydrometeorological University, St. Petersburg, Russia, 1999

Research expertise

Arctic region hydrology and hydraulics, seasonal snow and ice, streamflow, precipitation, field measurements and modeling

Academic Teaching

Arctic Hydrology and Hydraulic Engineering, CE F683 (UAF)
Advanced Water Resources Engineering, CE F661 (UAF)
Water Resources Engineering, CE F344 (UAF)
Fluid Mechanics, ES F341 (UAF)
Hydrologic Analysis and Design, CE F445 (UAF)

Other Teaching Activity

1st European Snow Science Winter School, lecturer, co-taught with M. Schneebeli, J. Lemmetyinen, C. Derksen, A. Langlois, M. Proksch, A. Kontu, I. Gouttevin, February 2015, Sodankylä and Saariselkä, Finland
Cold Regions Engineering Course, instructor, co-taught with J. Zarling, B. Tsigonis, A. Cooke and L. Axelarrris, University of Washington, spring and fall 2022

Professional Development

SnowEx Hackweek, Workshop on data science tools for NASA SnowEx datasets, July 10-15, 2022
ASCE Excellence in Civil Engineering Education Teaching Workshop, June 22-27, 2014
FHWA Urban Drainage Design Training, October 7-9, 2014
iTeach hands-on workshop offered by the Instructional Design Team at UAF eLearning, May 19-23, 2014
USGS training on ice-affected discharge measurements, March 17-18, 2014
NSF Science: Becoming the Messenger, Communication Skill-building Workshop, July 17-18, 2013
HEC USACE Risk Analysis for Flood Risk Management Training, May 7-11, 2012

Professional Societies

American Society of Civil Engineers (ASCE)
American Geophysical Union (AGU)
American Water Resources Association (AWRA) Alaska section

Thesis Committee

* denotes students that graduated

Chair: Lauren Thomas (prospective student, MS Earth System Sciences, Hydrology), Lora May* (MS Interdisciplinary Study, Hydrology), Kelsey Spellmann* (Stockert) (MS Water and Environmental Science), Elizabeth Richards* (MS Civil Engineering), Kelsey Dean* (MS Water and Environmental Science), Alexa Hinzman* (MS Civil Engineering)
Co-Chair: Mary Szatkowski* (MS Water and Environmental Science), Ori Miller* (MS Civil Engineering), Michael Winfree* (MS Interdisciplinary Study, Hydrology)
Committee member: Christopher Kalev (MS Geological Engineering), Kyoko Okano (PhD Biological Sciences), Gabriel Fulton* (MS Civil Engineering), Jenah Laurio* (MS Civil Engineering), Brett Wells* (MS Civil Engineering), Tim Tschetter (MS Civil Engineering), Levi Overbeck* (MS Civil Engineering), Erica Lamb* (MS Interdisciplinary Study, Hydrology), Erica Lamb (PhD Interdisciplinary Study, hydrology), Tim Dietrich* (MS Civil Engineering), Anna Liljedahl* (PhD Interdisciplinary Study, Hydrology), Jayashree Narayanan* (MS Computer Science)

Peer-Reviewed Journal Articles

* denotes graduate student

Spellman K. *, E. Euskirchen, and **Stuefer S.L.**, 2023. Arctic and subarctic sublimation calculations in Alaska, The Cryosphere Discussion, DOI: [10.5194/tc-2023-153](https://doi.org/10.5194/tc-2023-153).
Richards E. *, **Stuefer S.L.**, Correa Rangel R., Maio C., Belz N., 2023. An evaluation of GPR monitoring methods on varying river ice conditions: a case study in Alaska. Cold Region Science and Technology (210), j.coldregions.2023.103819

- Stuefer, S. L.**, Kane, D. L., & K. M. Dean*, 2020. Snow water equivalent measurements in remote Arctic Alaska watersheds. *Water Resources Research* 56(4), e2019WR025621.
- Arp, C. D., Whitman, M. S., Kemnitz, R., and **S. L. Stuefer**, 2020. Evidence of hydrological intensification and regime change from northern Alaskan watershed runoff, *Geophysical Research Letters*.
- Rawlins, M. A., Cai, L., **Stuefer, S. L.**, and D. Nicolsky, D. 2019. Changing characteristics of runoff and freshwater export from watersheds draining Northern Alaska. *The Cryosphere* 13 (12).
- Winfree M.*, Hood E., **Stuefer S.**, Schindler D., Kline T., Arp C., and S. Pyare, 2018. Landcover and geomorphology influence streamwater temperature sensitivity in salmon bearing watersheds in Southeast Alaska, *Environmental Research Letters*, v.13, 6, 10.1088/1748-9326/aac4c0.
- Stuefer S.L.**, Arp C., Kane D.L., and A. Liljedahl, 2017. Recent extreme runoff observations from coastal Arctic watersheds in Alaska. *Water Resources Research*, 53 (11), p. 9145–9163.
- Douglas T., Sturm M., Blum J., Polashenski C., **Stuefer S.**, Hiemstra C., Steffen A., Filhol S*, and R. Prevost, 2017. A pulse of mercury and major ions in snowmelt runoff from a small Arctic Alaska watershed. *Environ. Sci. Technol.*, 51 (19), p. 11145–11155.
- Janowicz J. R., **Stuefer S.L.**, Sand K., and L. Leppanen*, 2017. Measuring winter precipitation and snow on the ground in northern polar regions, *Hydrology Research*, 48 (4), p. 884–900.
- Schoen E. R., Wipfli M. S., Trammell E. J., Rinella D. J., Floyd A., Grunblatt, J., McCarthy M.*, Meyer B., Morton J., Powell J., Prakash A., Reimer M. N., **Stuefer S.L.**, Toniolo H., Wells B.*, and Witmer F., 2017. Future of Pacific Salmon in the Face of Climate and Landscape Change: Insights from Kenai River, Alaska, *Fisheries*, 42 (10), p. 538–553.
- Stuefer S.L.** and D.L. Kane, 2016. Snow retention for increased water supply of shallow arctic lakes, *Cold Regions Science and Technology*, vol. 123, p. 32–43.
- Bring A., Fedorova I., Dibike Y., Hinzman L., Karlsson J., Merlind S., Prowse T., Semenova O., **Stuefer S.**, and M.I. Woo, 2016. Arctic terrestrial hydrology: A synthesis of processes, regional effects and research challenges, *Journal of Geophysical Research: Biogeosciences*, 121 (3), p. 621–649.
- Ding Y., Zhang S., Liu F., Yang D., He C., and **S. Stuefer**, 2016. Hydrometeorological observation and study in high altitude area, *Advances in Meteorology*, vol. 2016, p. 2, 2016.
- Kane D.L. and **S.L. Stuefer**, 2015. Reflecting on the status of precipitation data collection in Alaska. *Hydrology Research*, Vol. 46, No. 4, p. 478-493.
- Stuefer, S.L.**, D.L. Kane, and G.Liston, 2013. In situ snow water equivalent observations in the U.S. Arctic. *Hydrology Research*, Vol. 44, No. 1, p. 21-34.
- Sturm, M. and **S.L. Stuefer**, 2013. Windblown flux rates derived from drifts at Arctic snow fences. *Journal of Glaciology*, vol. 59, no. 213, p. 21-34.
- Stuefer, S.L.**, D.Yang and A.Shiklomanov, 2011. Effect of streamflow regulation on mean annual discharge variability of the Yenisei River. In *Cold Regions Hydrology in a Changing Climate*, editors D. Yang, P. Marsh, and A. Gelfan, IAHS publication 346, p.27–32.
- Liston, G.E, R.B. Haehnel, M. Sturm, C.A. Hiemstra, **S. Berezovskaya** and R. Tabler, 2007. Simulating Complex Snow Distributions in Windy Environments using SnowTran-3D, *Journal of Glaciology*, Vol. 53, No. 181, p.241–256.
- Sergueev, D.O., G.S. Tipenko, V.E. Romanovsky, N.N. Romanovsky and **S.L. Berezovskaya**, 2005. The influence of mountain topography and of vertical geocryological zonation on the permafrost thickness evolution in Southern Yakutia. *Earth Cryosphere*, Vol. IX, № 2, p. 33-42.
- Berezovskaya S.L.**, D. Yang and L. Hinzman, 2005. Long-term annual water balance analysis of the Lena River. *Global and Planetary Change*, 48, 1-3, p. 84-95.

- Lui*, B., Yang, D., Ye, B., **Berezovskaya, S.**, 2005. Long-term open-water season stream temperature variations and changes over Lena River basin in Siberia. *Global and Planetary Change*, 48, 1-3.
- Berezovskaya, S.L.**, D. Yang and D. Kane, 2004. Compatibility of precipitation and runoff trends over the large Siberian watersheds, *Geophys. Res. Lett.*, 31, L21502, doi:10.1029/2004GL021277.
- Berezovskaya S.L.**, Dmitrenko I.A., Kirillov S.A., Griбанov V.A., Kassens H, 2002. River water propagation on the Laptev Sea shelf under the different atmospheric circulation. *Doklady Earth Science*, MAIK Nauka, 386 (1).

Peer-reviewed Atlas

* denotes graduate student

- Perica, S., Kane, D., Dietz, S., Maitaria, K., Martin, D., Pavlovic, S., Roy, I., **Stuefer, S.**, Tidwell, A., Trypaluk, C., Unruh, D., Yekta, M., Betts*, E., Bonnin, G., Heim, S., Hiner, L., Lilly, E., Narayanan*, J., Yan, F., Zhao, T., 2012. Precipitation-Frequency Atlas of the United States, NOAA Atlas 14, volume 7, Version 2.0: Alaska

Book chapters

- Ye, H., Yang, D., Behrangi, A., **Stuefer, S. L.**, Pan X., Mekis, E., Dibike, Y., and Walsh J.E. (2021). Precipitation characteristics and changes. In Arctic hydrology, permafrost, and ecosystem: linkages and interactions, Eds. Yang, D. and Kane, D.L., p. 25–59

Experiment plan

- Vuyovich C., **Stuefer S.**, Durand M., Marshall H.P., Osmanoglu B., Elder K., Vas D., Gelvin A., Larsen C., Pedersen S., Deeb E., Mason M., Youcha E. NASA SnowEx 2023 Experiment Plan. 2022 Aug.

Data sets in open data repositories

- Richards*, E., **Stuefer, S.**, 2021, Ice Thickness measurements using manual and GPR methods on the Tanana and Yukon Rivers in interior Alaska, <https://doi.org/10.7910/DVN/ZIOZAY>, Harvard Dataverse, V1
- Stuefer, S.L.**, D.L. Kane, R. Gieck, and Dean, K., 2019. Snow water equivalent data from the Innavaik Creek watershed, Arctic Alaska, 1985–2017. Arctic Data Center. doi:10.18739/A29G5GD77
- Stuefer, S. L.**, Kane, D., and Dean, K., 2019. Snow water equivalent data from the Upper Kuparuk River watershed, Arctic Alaska, 1997–2017. Arctic Data Center. doi:10.18739/A2CF9J675

Articles in conference proceedings

* denotes graduate student, ** denotes undergraduate student

- Stuefer S.L.**, 2013. Preface: 19th International Northern Research Basins Symposium and Workshop, South-central Alaska, August 11-17, 2013.
- Kane, D.L., and **Stuefer, S.L.**, 2013. Challenges of Precipitation Data Collection in Alaska, 19th International Northern Research Basins Symposium and Workshop, South-central Alaska, August 11-17, 2013.
- Bauret**, S., and **Stuefer, S.L.**, 2013. Kenai Peninsula Precipitation and Air Temperature Trend Analysis, 19th International Northern Research Basins Symposium and Workshop, South-central Alaska, August 11-17, 2013

- Stuefer S.**, and M. Sturm, 2012. Quantifying snow transport using snow fences and sonic sensors, International Snow Science Workshop, Anchorage, Alaska, USA, September 16-21, 2012.
- Stuefer S.L.**, 2011. Using snow fences to augment fresh water supplies in the Arctic Lakes, Arctic Technology Conference, Houston, Texas, February 5-7, 2011.
- Berezovskaya S.L.**, 2009. Uncertainty in snow depth measurements. 17th International Northern Research Basins Symposium and Workshop Iqaluit-Pangnirtung-Kuuujuaq, Canada, August 12 to 18, 2009.
- Berezovskaya S.L.**, G.E. Liston and D.L. Kane, 2009. Upper Kuparuk River Snow Distributions for hydrological analysis in Arctic Alaska. AWRA 2009 spring specialty conference, Anchorage, Alaska, 4-6 May 2009.
- Liljedahl* A., Hinzman L., Marchenko S., and **S. Berezovskaya**, 2008. The Effect of Spatially Distributed Snow Cover on Soil Temperatures: A Field and Modeling Study. Ninth International Conference on Permafrost, Fairbanks, Alaska, June 29 – July 3, 2008.
- Berezovskaya S.** and D.L. Kane, 2007. Measuring snow water equivalent for hydrological applications: part 1, accuracy of observations. 16th International Northern Research Basins Symposium and Workshop Petrozavodsk, Russia, 27 Aug. – 2 Sept. 2007.
- Kane D.L. and **S. Berezovskaya**, 2007. Strategies for measuring snow water equivalent for hydrological application: part 2, spatial distribution at the watershed scale. 16th International Northern Research Basins Symposium and Workshop, 27 Aug. – 2 Sept. 2007, Petrozavodsk, Russia.
- Berezovskaya S.** and D.L.Kane, 2007. Representativeness of snow water equivalent measurements for hydrological applications on Alaska's Arctic Slope. Proceedings of 7th International Conference on Global Change: Connections to the Arctic, 19-20 February 2007, Fairbanks, Alaska, USA.

Extended abstracts in conference proceedings

- Stuefer S.L., and D.L. Kane, 2016. Snowmelt water balance for a permafrost watershed: case study from Alaska Arctic, XI. International Conference on Permafrost.

Technical Reports

- Stuefer S.L. and Richards E. (2024). Evaluating ground penetrating radar measurements for river ice travel applications. Center for Safety Equity in Transportation (CSET), USDOT University Transportation Center. Final Contract Report, 21 pp.
- Daly, S., Connor, B., Garron, J., Stuefer, S., Belz, N., & Bjella, K. (2023). Design and operation of ice roads. Final report, University of Alaska Fairbanks, Arctic Infrastructure Development Center, Report INE/AIDC 23.01, Fairbanks, Alaska, 89 pp.
- Stuefer S.L., Richards E. (2021). River ice measurements for transportation safety in rural communities. Pacific Northwest Transportation Consortium (PacTrans) USDOT University Transportation Center for Federal Region 10. Final Contract Report.
- Youcha, E., Arp, C. D., Stuefer, S. L., & Bondurant, A. (2018). Annual Report for TEON-Kuparuk. US Fish and Wildlife, Arctic Landscape Conservation Cooperative.
- Kane, D.L., Youcha, E.K., Stuefer, S.L., Myerchin-Tape, G., Lamb*, E., Homan*, J.W., Gieck, R.E., Schnabel, W.E., and H. Toniolo. 2014. Hydrology and Meteorology of the Central Alaskan Arctic: Data Collection and Analysis, Final Report. University of Alaska Fairbanks, Water and Environmental Research Center, Report INE/WERC 14.05, Fairbanks, Alaska, 168 pp.
- Stuefer, S.L., Homan* J.W., Kane, D.L., Gieck, R.E. and Youcha, E.K., 2014. Snow Survey Results for the Central Alaskan Arctic, Arctic Circle to Arctic Ocean: Spring 2013. University of Alaska Fairbanks, Water and Environmental Research Center, Report INE/WERC 14.01, Fairbanks, Alaska, 96 pp.

- Stuefer S.L., Kane D.L., 2013. Using snow fences to augment fresh water supplies in shallow arctic lakes. University of Alaska Fairbanks, Water and Environmental Research Center, Report INE/WERC 13.06, September 2013, Fairbanks, Alaska, USA, 32 pp.
- Stuefer, S.L., Homan* J.W., Youcha, E.K, Kane, D.L. and Gieck, R.E. 2012. Snow Survey Data for the Central North Slope Watersheds: Spring 2012. University of Alaska Fairbanks, Water and Environmental Research Center, Report INE/WERC 12.22, Fairbanks, Alaska, 38 pp.
- Kane, D.L., Youcha, E.K, Stuefer, S.L., Toniolo, H., Schnabel, W.E., Gieck, R.E., Myerchin-Tape, G., Homan*, J., Lamb*, E., and K. Tape. 2012. Meteorological and Hydrological Data and Analysis Report for the Foothills/Umiat Corridor and Bullen Projects: 2006-2011. University of Alaska Fairbanks, Water and Environmental Research Center, Report INE/WERC 12.01, Fairbanks, Alaska, 260 pp.
- Stuefer, S.L., Youcha, E.K, Homan* J.W., Kane, D.L. and Gieck, R.E. 2011. Snow Survey Data for the Central North Slope Watersheds: Spring 2011. University of Alaska Fairbanks, Water and Environmental Research Center, Report INE/WERC 11.02, Fairbanks, Alaska, 47 pp.
- Berezovskaya, S.L., Hilton, K.M., Derry, J.E., Youcha, E., Kane, D.L., Gieck, R.E., Homan J. and Lilly, M.R. 2010. Snow Survey Data for the Central North Slope Watersheds: Spring 2010. University of Alaska Fairbanks, Water and Environmental Research Center, Report INE/WERC 10.01, Fairbanks, Alaska, 50 pp.
- Berezovskaya, S.L., Derry, J.E., Kane, D.L., Gieck, R.E., and Lilly, M.R. 2010. Snow Survey Data for the Central North Slope Watersheds: Spring 2009. University of Alaska Fairbanks, Water and Environmental Research Center, Report INE/WERC 09.01, Fairbanks, Alaska, 45 pp.
- Kane, D., White, D., Lilly, M., Toniolo, H., Berezovskaya, S., Youcha, E., Derry, J., Gieck, R., Paetzold, R., Trochim, E., Remillard, M., Schnabel, B., Busey, R., and Holland, K., 2009. Meteorological and Hydrological Data and Analysis Mid-Term Report for Bullen Point and Foothills Projects: 2006-2008. University of Alaska Fairbanks, Water and Environmental Research Center, Report INE/WERC 08.18, Fairbanks, Alaska, 181 pp.
- Berezovskaya, S.L., Derry, J.E., Kane, D.L., Gieck, R.E., Lilly, M.R., and White, D.M., 2008. Snow survey data for the Kuparuk Foothills Hydrology Study: Spring 2008. University of Alaska Fairbanks, Water and Environmental Research Center, Report INE/WERC 08.14, Fairbanks, Alaska, 40 pp.
- Berezovskaya, S.L., Derry, J.E., Kane, D.L., Lilly, M.R., and White, D.M., 2008. Snow survey data for the Sagavanirktok River / Bullen Point Hydrology Study: Spring 2008. June 2008, University of Alaska Fairbanks, Water and Environmental Research Center, Report INE/WERC 08.15, Fairbanks, Alaska, 30 pp.
- Berezovskaya, S.L., Derry, J.E., Kane, D.L., Gieck, R.E., Lilly, M.R., and White, D.M., 2007. Snow survey data for the Sagavanirktok River / Bullen Point Hydrology Study: Spring 2007. July 2007, University of Alaska Fairbanks, Water and Environmental Research Center, Report INE/WERC 07.18, Fairbanks, Alaska, 17 pp.
- Berezovskaya, S.L., Derry, J.E., Kane, D.L., Gieck, R.E., Lilly, M.R., and White, D.M., 2007. Snow survey data for the Kuparuk Foothills Hydrology Study: Spring 2007. July 2007, University of Alaska Fairbanks, Water and Environmental Research Center, Report INE/WERC 07.17, Fairbanks, Alaska, 21 pp.
- Kane, D.L., Berezovskaya, S., Irving, K., Busey, R., Chambers, M., Blackburn, A.J., and Lilly, M.R., 2006. Snow survey data for the Sagavanirktok River / Bullen Point Hydrology Study: Spring 2006. July 2006, University of Alaska Fairbanks, Water and Environmental Research Center, Report INE/WERC 06-03, Fairbanks, Alaska, 10 pp.
- Kane, D.L., Berezovskaya, S., Irving, K., Busey, R., Gieck, R., Chambers, M., Blackburn, A.J., and Lilly, M.R., 2006. Snow survey data for the Kuparuk Foothills Hydrology Study: Spring 2006. July 2006, University of Alaska Fairbanks, Water and Environmental Research Center, Report INE/WERC 06-06, Fairbanks, Alaska, 12 pp.

Thesis

- Berezovskaya, S.L.: Long-term variability of the Lena River runoff and river waters propagation in the Laptev Sea shelf. Ph.D. thesis, Department of Land Hydrology, RSHU, St.Petersburg, Russia, December 2002 (accepted by Ministry of Education in March 2003)
- Berezovskaya, S.L.: The influence of the Lena River hydrological regime on biogenous elements outflow into the Laptev Sea. M.Sc. thesis, Department of Land Hydrology, RSHU, St.Petersburg, Russia, June 1999

Research Awards

- Svetlana Stuefer (PI), Chris Larsen, Matthew Sturm, 2023–2024. Airborne and ground-based snow measurements in Alaska, (National Aeronautics and Space Administration funding \$249,649)
- Denise Thorsen (Alaska NASA EPSCoR Director), Svetlana Stuefer (Science PI), 2022–2025. Data assimilation and modeling to improve snow water equivalent assessment in Alaska, (National Aeronautics and Space Administration EPSCoR funding \$750,000)
- Svetlana Stuefer (PI), Chris Larsen, Matthew Sturm, 2021–2023. SnowEx field campaign in Alaska, (National Aeronautics and Space Administration funding \$1,011,704)
- Bret-Harte Syndonia (PI), Eugenie Euskirchen, Katey Walter-Anthony, Svetlana Stuefer, Alexander Kholodov, 2020–2025. Collaborative Research: Carbon, Water, and Energy Balance of the Arctic Landscape at Flagship Observatories in Alaska and Siberia; nearing a tipping point? (National Science Foundation funding, \$2,934,606)
- Svetlana Stuefer (PI), 2020–2023. Evaluating Ground Penetrating Radar measurements for river ice travel applications, AUTC, (CSET funding, \$100,000)
- Scott Rupp (PI), Erin Trochim, Kevin Bjella, Margaret Darrow, Svetlana Stuefer, Aaron Dotson, Peter Larsen, 2020–2023. Arctic Environmental and Engineering Data and Design Support System (Department of Defense funding, \$ 1,948,674)
- Svetlana Stuefer (PI), 2019–2020. River ice measurements for transportation safety in rural communities, AUTC, (PacTrans funding, \$65,807)
- Kelsey Dean (graduate student PI), Svetlana Stuefer (faculty PI), 2018–2019. Changes and trends in snowmelt hydrology in the Alaska Arctic, (USGS National Institutes for Water Resources funding, \$75,000)
- Chris Arp (PI), Svetlana Stuefer, 2015–2020. Hydroclimate Monitoring, terrestrial Environmental Observation Network (TEON), (US Fish and Wildlife, Arctic Landscape Conservation Cooperative funding \$1,014,798)
- Svetlana Stuefer (PI), 2012–2013. Long-term precipitation dataset development for the northern regions, (Environment Canada, \$24,000)
- Douglas Kane (PI), Willam Schnabel, Svetlana Stuefer, Horacio Toniolo, 2012–2015. Meteorological and Hydrological Monitoring and Analysis Program for Ambler Mining District Access, (State funding, \$2,008,040)
- Douglas Kane (PI), Willam Schnabel, Svetlana Stuefer, Horacio Toniolo, 2010–2014. Surface-water Flow Monitoring and Analysis Program for the ADOT&PF North Slope Umiat Corridor: Phase 2, and Phase 3 (State funding, \$2,490,104)
- Svetlana Berezovskaya (PI), Douglas Kane, 2008–2013. Using Artificial Barriers to Augment Fresh Water Supplies in Shallow Arctic Lakes (Department of Energy funding, \$ 644,621)
- Douglas Kane (PI), Amy Tidwell, Svetlana Berezovskaya, 2008–2012. Updated Precipitation Frequency Analysis for the State of Alaska, (State funding, \$439,434)
- Matthew Sturm (PI), Glen Liston, Chris Hiemstra, Svetlana Berezovskaya, Douglas Kane, Daqing Yang, 2008–2013. IPY Collaborative Research: A Prototype Network for Measuring Arctic

Winter Precipitation and Snow Cover (Snow-Net), (National Science Foundation funding, \$ 537,565)

Daqing Yang (PI), Svetlana Berezovskaya, Horacio Tonilio, Alexander Shiklomanov, Richard Lammers, 2006–2009. Collaborative Research: Study of Dam/Reservoir-induced Hydrologic Changes in Siberian Regions, (National Science Foundation funding, \$ 425,802)

Daniel White (PI), Douglas Kane, Sveta Berezovskaya, Horacio Toniolo, 2006–2009. Hydrologic Analysis and Support for the Alaska Department of Transportation and Public Facilities North Slope Foothills Project, (State funding, \$ 2,521,733)

Douglas Kane (PI), Daniel White, Sveta Berezovskaya, Horacio Toniolo, 2006–2009. Surface-Water Data Collection for the Alaska Department of Transportation and Public Facilities North Slope, (State funding, \$ 1,727,947)

Awards

- UAF sabbatical award for 2020–2021
- INE award in recognition of success in service contributions and research program, 2014
- Recognition award for the second-best talk at the Western Snow Conference, Anchorage, 2012
- Institute of Northern Engineering INE travel award for the Northern Research Basins Symposium in 2009, 2011
- National Oceanic and Atmospheric Administration NOAA travel award for the CLiC first science conference in Beijing, China, 2005
- International Association for the Physical Sciences of the Oceans IAPSO travel award for International Union of Geodesy and Geophysics (IUGG) conference in Sapporo, Japan, 2003
- Fellowship from the Russian-German Otto Schmidt Laboratory for Polar and Marine Research, funded by the German Ministry for Education and Research, 2002
- Russian Federation Presidential Fellowship to conduct one-year research abroad, 2000–2001
- Outstanding Student Award from the Governor of Saint-Petersburg, Russia, 1997

Synergetic Activities and Service

Reviewer

- Journals: Geophysical Research Letters, Journal of Geophysical Research, Journal of Climate, Hydrological Processes, Atmosphere-Ocean, Hydrological Sciences, Journal of Hydrology, Cryosphere, Water Resources Research, The Journal of Cold Regions Engineering
- Proposals: National Science Foundation, Global Change Student Research Grant Competition, Canada Foundation for Innovation, NASA EPSCoR
- Conference abstracts and articles: American Water Resources Association Conference, Alaska section
- Books: The cold regions volume of UNESCO web encyclopedia; Handbook of Applied Hydrology, McGraw-Hill

Editor

- Guest editor for The Cryosphere, special issue, Northern hydrology in transition – impacts of a changing cryosphere on water resources, ecosystems, and humans, 2023–2024
- Guest editor for Advances in Meteorology, special issue, Hydrometeorological observation and study in high altitude area, Advances in Meteorology, 2016.
- Editor for the conference proceedings, 19th International Northern Research Basins Symposium and Workshop, South-central Alaska, August 11–17th, 2013

Professional Service

- UAF representative, The Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI), 2013–present
- Stuefer S.L., Darrow M.M., Parr C., Rupp T.S., 2021. Workshop on development of the Arctic Environmental and Engineering Data and Design Support System (Arctic-EDS). 2021 Regional Conference on Permafrost (RCOP) and 19th International Conference on Cold Regions Engineering (ICCRE). October 2021.
- U.S. representative, Arctic Freshwater Synthesis, International initiative by World Climate Research Programme's (WCRP) Climate and the Cryosphere Project (CliC), the International Arctic Science Committee (IASC), and the Arctic Council's Arctic Monitoring and Assessment Program (AMAP) (<http://www.climate-cryosphere.org/activities/targeted/afs>), 2013–2016
- Chair of the Organizing Committee for the 19th International Northern Research Basins Symposium and Workshop, South-central Alaska, August 11-17th, 2013 (www.19thnrb.com)
- U.S. Chief Delegate, International Northern Research Basins Working Group, 2011–present
- Northern Director, Alaska Section AWRA (<http://state.awra.org/alaska/>), 2009–2012

University Service

- Program Coordinator, Accreditation Board for Engineering and Technology, Inc. (ABET) Bachelor of Science (BS) Civil Engineering (CE), 2021–present
- Coordinator, Student Learning Outcomes Assessment (SLOA) BS CE, 2022–present
- CEM representative, Undergraduate Research & Scholarly Activity (URSA) Advisory Board, 2018–present
- Committee member of CEM Scholarship Committee, 2015–2020
- Committee member of CEM Curriculum Review Committee, 2012–2017
- Outside reviewer, UAF Graduate School, 2015–present
- Development of CE graduate and undergraduate curriculum, 2012–present
- Development of M.S. degree in Water and Environmental Science, 2012–2018

Field experience

- NASA Snow Experiment (SnowEx) field campaign in Alaska, 2022–2023, deputy project scientist.
- U.S. Arctic, Kuparuk River snow surveys, hydrologic and meteorologic measurements, 2004–present, roles varied with experience.
- Cold Land Processes Experiment II field campaign, 25-31 January, 2007, Colorado, USA and November 26 – December 4, 2007, Alaska, USA. Participant, ground based snow survey, including snow depth, snow water equivalent measurements and snow pits.
- U.S. Arctic, precipitation gauge intercomparison experiment and blowing/drifted snow observation study at the Barrow, Alaska, USA, March 2004, post-doctoral researcher.
- Russian Arctic, Russian-German joint expedition to the Laptev Sea aboard the Russian research vessel “Yakov Smirnitzkii”, August–September 2000. CTD and ADCP observations.
- Russian Arctic, Russian-German joint expedition to the Laptev Sea aboard the German research vessel “POLARSTERN”, ARK XIV/1b, July-August 1998. CTD and hydrochemistry measurements.
- Western Siberia, Monitoring the navigation conditions of the Western Siberian Rivers – expedition to the Pur River, June–October 1997. Hydrometric survey.