

Leora Nanus, Ph.D.

Associate Professor

CONTACT INFORMATION

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College of Science and Engineering, San Francisco State University
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EDUCATION

Doctor of Philosophy (Ph.D.), Geography, 2008

Department of Geography, University of Colorado Boulder, Boulder, Colorado.

Master of Science (M.S.), Geology, 2000

Department of Geology, Western Washington University, Bellingham, Washington.

Bachelor of Science (B.S.), Earth Sciences, 1995

Department of Earth Sciences, University of California Santa Cruz, Santa Cruz, California.
1991-1993: Colgate University, New York.

ACADEMIC APPOINTMENTS and PROFESSIONAL EXPERIENCE

2020 to present **Associate Professor**, Geography & Environment, San Francisco State University

2014 to 2020 **Assistant Professor**, Geography & Environment, San Francisco State University

2017 **Academic Visiting Researcher**, Eawag, Swiss Federal Institute of Aquatic Science and Technology, ETH Domain, SIAM, Dübendorf, Switzerland (01/2017 – 06/2017).

2010 to 2020 **Associated Faculty**, Environmental Studies, San Francisco State University

2009 to 2014 **Adjunct Assistant Professor & Research Scientist**, Earth & Climate Sciences, San Francisco State University

2013 to 2014 **Assistant Researcher**, Principal Investigator, Institute of Marine Sciences, University of California Santa Cruz

2011 to 2012 **Assistant Project Scientist**, Institute of Marine Sciences, University of California Santa Cruz, and NOAA Fisheries Service, Southwest Fisheries Science Center

2010 **Lecturer**, Earth & Climate Sciences, San Francisco State University

1999 to 2009 **Hydrologist**, U.S. Geological Survey, Colorado Water Science Center

2005 **Instructor**, Department of Geography, University of Colorado Boulder

2004 to 2006 **Graduate Research Assistant**, Institute of Arctic and Alpine Research, University of Colorado Boulder, Ph.D. advisor: Dr. Mark Williams

1997 to 1998 **Graduate Research Assistant**, Geology, Western Washington University, Washington, M.S. advisor: Dr. Scott Babcock

PEER-REVIEWED PUBLICATIONS

*SFSU student author supervised by Nanus

Journal Articles

1. *Statman-Weil, Z., **Nanus, L.**, Wilkinson, N., 2020. Disparities in Community Water System Compliance with the Safe Drinking Water Act, *Applied Geography* 121, 102264, doi.org/10.1016/j.apgeog.2020.102264.
2. **Nanus, L.**, Campbell, D.H., Lehmann, C.M.B., Mast, M.A., 2018. Spatial and Temporal Variation in Sources of Atmospheric Nitrogen Deposition in the Rocky Mountains using Nitrogen Isotopes, *Atmospheric Environment* 176, 110-119, doi: 10.1016/j.atmosenv.2017.12.023.
3. **Nanus, L.**, McMurray, J.A., Clow, D.W., Saros, J.E., Blett, T., Gurdak, J.J., 2017. Spatial Variation of Atmospheric Deposition and Nitrogen Critical Loads for Aquatic Ecosystems in the Greater Yellowstone Area, *Environmental Pollution* 223, 646-656, doi:10.1016/j.envpol.2017.01.077.
4. Gurdak, J.J., Geyer, G.E., **Nanus, L.**, Taniguchi, M., Corona, C.R., 2017. Scale Dependence of Controls on Groundwater Vulnerability in the Water-Energy-Food Nexus, California Coastal Basin Aquifer System, *Journal of Hydrology: Regional Studies* 11, 126-138, doi:10.1016/j.ejrh.2016.01.002.
5. Clow, D.W., Roop, H.A., **Nanus, L.**, Fenn, M.E., Sexstone, G.A., 2015. Spatial Patterns of Atmospheric Deposition of Nitrogen and Sulfur using Ion-exchange Resin Collectors in Rocky Mountain National Park, USA, *Atmospheric Environment* 101, 149-157.
6. Newcomer, M.E., Gurdak, J.J., Sklar, L.S., **Nanus, L.**, 2014. Urban Recharge beneath Low Impact Development and Effects of Climate Variability and Change, *Water Resources Research*, doi: 10.1002/2013WR014282.
7. **Nanus, L.**, Clow, D.W., Saros, J., Stephens, V.C., 2012. Mapping Critical Loads of Atmospheric Nitrogen in the Rocky Mountains, USA, *Environmental Pollution* 166, 125-135.
8. Clow, D.W., **Nanus, L.**, Verdin, K.L., Schmidt, J., 2012. Evaluation of SNODAS Snow Depth and Snow Water Equivalent Estimates for the Colorado Rocky Mountains, *Hydrological Processes* 26, 17, 2583-2591.
9. Clow, D.W., **Nanus, L.**, Huggett, B., 2010. Use of Regression-Based Models to Map Sensitivity of Aquatic Resources to Atmospheric Deposition in Yosemite National Park, *Water Resources Research* 46, doi:10.1029/2009WR008316.
10. **Nanus, L.**, Williams, M.W., Campbell, D.H., Tonnessen, K.A., Blett, T., Clow, D.W., 2009. Assessment of Lake Sensitivity to Acidic Deposition in National Parks of the Rocky Mountains, *Ecological Applications* 19, 4, 961-973.
11. **Nanus, L.**, Williams, M.W., Campbell, D.H., Elliott, E.M., Kendall, C., 2008. Evaluating Regional Patterns in Nitrate Sources to Watersheds in National Parks of the Rocky Mountains using Nitrate Isotopes, *Environmental Science and Technology* 42: 6487-6493.

12. Ingersoll, G.P., Mast, M.A., Campbell, D.H., Clow, D.W., **Nanus, L.**, Turk, J.T., 2008. Trends in Snowpack Chemistry and Comparison to National Atmospheric Deposition Program Results for the Rocky Mountains US, 1993- 2004, *Atmospheric Environment* 42, 6098-6113.
13. **Nanus, L.**, Campbell, D.H., Ingersoll, G.P., Clow, D.W., Mast, A.M., 2003. Atmospheric Deposition Maps for the Rocky Mountains, *Atmospheric Environment* 37, 4881-4892.
14. Mitchell, R.J., Babcock, S., Gelinas, S., **Nanus, L.**, Stasney, D., 2003. Nitrate Distributions and Source Identification in the Abbotsford-Sumas Aquifer, Northwestern Washington, *Journal of Environmental Quality* 32, 3, 789-800.
15. Clow, D.W., Striegl, R.G., **Nanus, L.**, Mast, M.A., Campbell, D.H., Krabbenhoft, D.P., 2002. Chemistry of Selected High-Elevation Lakes in Seven National Parks in the Western United States, *Water, Air, and Soil Pollution, Focus 2*: 139-164.

Peer-Reviewed Reports

1. **Nanus, L.**, McMurray, J., 2015. Mapping Atmospheric Deposition of Nitrogen and Sulfur in the Greater Yellowstone Area, *USDA Forest Service Technical Report*.
2. Bytnerowicz, A. Fenn, M., Gertler, A., Preisler, H., Zielinska, B., Ahuja, S., Cisneros, R., Shaw, G., Schweizer, D., Procter, T., Burley, J., Schilling, S., **Nanus, L.**, McDaniel, M., Theiss, S., Sickman, J., Bell, M., Rorig, M. 2013. Distribution of Ozone, Ozone Precursors and Gaseous Components of Atmospheric Nitrogen Deposition in the Lake Tahoe Basin. *Final Technical Report for SNPLMA Project P063*. Albany, CA, U.S.D.A, Forest Service, Pacific Southwest Research Station.
3. Simonich, S., **Nanus, L.**, 2012. Sierra Nevada-Southern Cascades Region Air Contaminants Research and Monitoring Strategy, *National Park Service Technical Report*.
4. Ingersoll, G.P., Mast, M.A., Campbell, D.H., Clow, D.W., **Nanus, L.**, and Turk, J.T., 2009. Rocky Mountain snowpack physical and chemical data for selected sites, 1993–2008. *U.S. Geological Survey Data Series 369*.
5. Ingersoll, G.P., Mast, M.A., Campbell, Nanus, L., Handran, H.M., Manthorne, D.J., and Hulstrand, D.M., 2007. Rocky Mountain Snowpack Chemistry at Selected Sites, 2004. *U.S. Geological Survey, Open-File Report 2007-1045*.
6. **Nanus, L.**, Campbell, D.H., Williams, M.W., 2005. Sensitivity of Alpine and Subalpine Lakes to Acidification from Atmospheric Deposition in Grand Teton National Park and Yellowstone National Park, Wyoming. *U.S. Geological Survey, Scientific Investigations Report 2005-5023*.
7. Ingersoll, G.P., Mast, M.A., **Nanus, L.**, Manthorne, D.J., Handran, H.M., Hulstrand, D.M., Winterringer, J.A., 2005. Rocky Mountain Snowpack Chemistry at Selected Sites, 2003. *U.S. Geological Survey, Open-File Report 2005-1332*.
8. Ingersoll, G.P., Mast, M.A., **Nanus, L.**, Manthorne, D.J., Clow, D.W., Handran, H.M., Winterringer, J.A., Campbell, D.H., 2004. Rocky Mountain Snowpack Chemistry Synoptic at Selected Sites 2002. *U.S. Geological Survey, Open-File Report 2004-1027*.

- Ingersoll, G.P., Mast, M.A., Clow, D.W., **Nanus, L.**, Campbell, C., Handran, H.M., 2003. Rocky Mountain Snowpack Chemistry Synoptic at Selected Sites for 2001. *U.S. Geological Survey, Open-File Report, 2003-48.*

Other Publications

Ingersoll, G.P., Campbell, D.H., Mast, M.A., Clow, D.W., **Nanus, L.**, Frakes, B., 2009. Snowpack Chemistry Monitoring Protocol for the Rocky Mountain Network; Narrative and Standard Operating Procedures. *U.S. Geological Survey, Administrative Report.*

Nanus, L., 2008. Regional Assessment of the Sources and Effects of Acidic Deposition on Lake Chemistry in Alpine and Subalpine Watersheds of National Parks in the Rocky Mountains, United States. *Ph.D. Dissertation., University of Colorado, Boulder, CO.*

Nanus, L., and Clow, D.W., 2004. Sensitivity of Lakes in Wilderness Areas in Oregon and Washington to Atmospheric Deposition, *U.S. Department of Agriculture Forest Service, Region 6, Administrative Report.*

Nanus, L., 2000. Spatial and Temporal Variability of Nitrate Contamination in the Abbotsford-Sumas Aquifer. Whatcom County, Washington. *M.S. Thesis, Western Washington University, Washington.*

Mitchell, R.J., Babcock, R.S., Stasney, D., **Nanus, L.**, Boesser, S., Matthews, R., and Vandersypen, J., 2000. *Abbotsford-Sumas Aquifer Monitoring Project, Final Report.*

FUNDED RESEARCH GRANTS and CONTRACTS

- Comparing Measured and Modeled Acid Deposition to Inform Critical Load Exceedances in Western US National Parks*, **Nanus, L.** (PI), Bell, M., National Park Service, 2020-2022, **\$41,223.**
- REU Site: Sustainable Groundwater Resources*, **Nanus, L.**, (PI), Faculty Research Mentors (14 CSU Faculty), National Science Foundation (NSF), EAR, Research Experience for Undergraduates (REU), 2020-2023, **\$428,362.**
- Spatial Patterns in Sources of Atmospheric Nitrogen Deposition across the Greater Yellowstone Area using Nitrogen Isotopes in Multiple Ecosystem Indicators*, **Nanus, L.** (PI), McMurray, J.A. (co-PI), Greater Yellowstone Coordinating Committee, U.S. Forest Service, 2020-2023, **\$12,000.**
- GHG Benefits and Co-benefits of Mountain Meadow Restoration in the Context of Global Change*, Oliphant, A. (PI), Baguskas, S. (co-PI), Davis, J. (co-PI), Simonin, K. (co-PI), **Nanus, L.** (co-PI), Blesius, L. (co-PI), Studwell, A. (co-PI), Wetlands Restoration for Greenhouse Gas Reduction Program, State of California, Lead Agency: The Sierra Fund; SFSU sub award, 2019-2024, **\$382,000.**
- Assessment of High-Elevation Lakes Exceeding Critical Loads of Nitrogen Deposition Across the Greater Yellowstone Area*, **Nanus, L.** (PI), USDA Water Resources Internship, USDA NIFA Award No. 2015-38422-24058, Award Title: Water Resources Experiential Learning for USDA Careers, Lead Agency: CSU San Bernardino, funded by CSU Water Resources & Policy Initiatives (WRPI), 2019-2020, **\$9,000.**
- Fog and Fish: Stream Temperature Reduction Due to Coastal Fog in Central California's Anadromous Salmonid Habitat*, Baguskas, S. (PI), Torregrosa, A. (co-PI), **Nanus, L.** (co-PI), submitted 04/09/2018, California Sea Grant College Program, 2019-2021, **\$69,806.**

7. *Current Air Quality Issues in the Greater Yellowstone Area (GYA)*, **Nanus, L.** (PI), McMurray, J.A.(co-PI), Blett, T.A. (Collaborator), FY18-WO-Air Priority Allocation Funding Proposals, Bridger-Teton National Forest, U.S. Forest Service, 2018-2021, **\$10,000**.
8. *Paleolimnological Assessment of High-Elevation Lakes Exceeding Critical Loads of Nitrogen Deposition Across the Greater Yellowstone Area*, **Nanus, L.** (PI), Saros, J. (co-PI), McMurray, J.A. (Collaborator). Greater Yellowstone Coordinating Committee, U.S. Forest Service, 2018-2021, **\$24,723**.
9. *Water-Energy-Food Nexus in Coastal California –Evaluating Freshwater Vulnerability to Anthropogenic Stressors under Climate Change*, **Nanus, L.** (PI). California State University, Water Resources and Policy Initiatives, Faculty Research Incentive Award, 2014-2015, **\$5,067**.
10. *Demarcation of Environmental Management for Human Environmental Security in Asia-Pacific region – Nexus of Thermal Energy, Water, and Coastal Fishery*, Japanese Ministry of Education, Gurdak, J. (PI), **Nanus, L.** (co-PI), Research Institute for Humanity and Nature, Kyoto, Japan, 2013 – 2018, **\$150,000** (2013-2018).
11. *Atmospheric Deposition in the Greater Yellowstone Ecosystem*, **Nanus, L.** (PI), 2013-2015, U.S. Forest Service, Bridger-Teton National Forest, **\$15,000**.
12. *Non-Point Contaminants in Alaskan National Park Ecosystems*, **Nanus, L.** (PI), Simonich, S. (co-PI), 2011-2014, National Park Service, **\$23,000**.
13. *Distribution of Ozone, Ozone Precursors and Gaseous Components of Atmospheric Nitrogen Deposition in the Lake Tahoe Basin*, Bytnerowicz, A. (PI), Fenn, M. (PI), Gertler, A. (PI), Preisler, H., (PI), Zielinska, B. (PI), Ahuja, S. (Collaborator), Shaw, G. (Collaborator), Schweizer, D. (Collaborator), Proctor, T. (Collaborator), Burley, J. (Collaborator), **Nanus, L.** (Collaborator), 2010-2012, U.S. Forest Service, **\$296,540**.
14. *Toxic Air Contaminants Research and Monitoring Strategy for Sierra Nevada Southern Cascades*, Simonich, S. (PI) and **Nanus, L.** (co-PI), 2010-2011, National Park Service, **\$30,000**.
15. *Preparing the San Francisco State University Community to Understand Climate Change Effects on Groundwater Resources in San Francisco*, Gurdak, J. (PI) and **Nanus, L.** (co-PI), 2010-2011, SFSU Office of Research and Sponsored Programs, FOA 2010-01 Facilitating Research at SFSU, **\$11,000**.
16. *Critical Loads of Atmospheric Nitrogen in the Rocky Mountains, USA*, **Nanus, L.** (PI), 2012, U.S. Geological Survey, **\$20,000**.
17. *Mapping Critical Loads of Atmospheric Nitrogen Deposition in the Rocky Mountains, USA*, Clow, D. (PI), Campbell, D.(PI), Saros, J.(co-PI), **Nanus, L.** (co-PI), Sickman, J. (co-PI), Fenn, M. (co-PI), Baron, J. (co-PI), Williams, M.(co-PI), 2007-2010, Multiple Agency: U.S. Environmental Protection Agency, National Park Service, U.S.D.A. Forest Service, U.S. Geological Survey, **\$240,000**.
18. *Determination of Source Areas and Source Types of Nitrogen Deposition in Colorado, Wyoming, Montana, and Utah using Nitrogen Isotopes*, **Nanus, L.** (PI), Campbell, D. (co-PI), Ingersoll, G., Harlin, K., 2007-2009, U.S. Environmental Protection Agency Funding Program: EPA-R8-2007-01 Regional Geographic Initiatives, Air Quality, **\$68,695**.

19. *Evaluation of Spatial and Temporal Variability in Source Types of Nitrogen Deposition in the Rocky Mountains using Nitrogen Isotopes*, **Nanus, L.** (PI), Campbell, D. (co-PI), Ingersoll, G., 2007-2009, U.S. Geological Survey, National Atmospheric Deposition and Hydrologic Benchmark Programs, **\$50,000**.
20. *Evaluation of Sampling Strategies for Capturing the Spatial Variability in Atmospheric Deposition in the Rocky Mountains*, **Nanus, L.** (PI), Ingersoll, G.(co-PI), Clow, D., Campbell, D., 2006-2007, National Park Service, Rocky Mountain Inventory and Monitoring Network **\$40,000**.
21. *Snow-Sampling Protocol and Network Evaluation: Monitoring Atmospheric Deposition to Annual Snowpacks in the Rocky Mountain Region, USA*, Ingersoll, G. (PI), **Nanus, L.** (co-PI), Clow, D., Campbell, D., 2005-2007 National Park Service, Rocky Mountain Inventory and Monitoring Network, **\$60,000**.
22. *Determination of Sources of Atmospherically Deposited Nitrogen in Rocky Mountain National Park Using Multiple Techniques*, Clow, D. (PI), **Nanus, L.** (co-PI), 2006, National Park Service, Rocky Mountain National Park, **\$30,000**.
23. *Evaluating Nitrogen Sources in Alpine Lakes of the Rocky Mountains using Nitrate Isotopes*, **Nanus, L.** (PI), Campbell, D.H. (co-PI), Kendall, C., Williams, M., 2005-2006, U.S. Geological Survey, National Atmospheric Deposition Program and Hydrologic Benchmark Program, **\$65,000**.
24. *Developing Screening Procedures and Sampling Protocols for Assessment of Deposition-Sensitive Surface Waters in the Rocky Mountains*, **Nanus, L.** (PI), Williams, M.(co-PI), Campbell, D., Clow, D., 2003-2008, National Park Service, Air Resources Division, **\$100,000**.
25. *Lake Sensitivity to Atmospheric Deposition in Grand Teton and Yellowstone National Parks*, **Nanus, L.** (PI), Campbell, D. (co-PI), Williams, M., 2003-2004, National Park Service, Greater Yellowstone Inventory and Monitoring, **\$25,000**.
26. *Atmospheric Deposition of Pollutants in Yellowstone and Grand Teton National Parks and Bighorn Canyon National Recreation Area*, **Nanus, L.**, (PI) and Campbell, D. (co-PI), 2003-2004, National Park Service, Greater Yellowstone Inventory and Monitoring, **\$25,000**.
27. *Sensitivity of Lakes in Oregon and Washington Wilderness Areas to Deposition*, **Nanus, L.** (PI) and Clow, D. (co-PI), 2001-2003, U.S.D.A. Forest Service, **\$35,000**.
28. *Atmospheric Deposition Maps for the Rocky Mountains*, **Nanus, L.** (PI), Campbell, D. (co-PI), Ingersoll, G., Clow, D., Mast, M., 1999-2002, U.S. Geological Survey, National Atmospheric Deposition Program, **\$50,000**.

OTHER GRANTS and CONTRACTS

(Collaborator) US Forest Service (2010-2012)

Distribution of Ozone, Ozone Precursors and Gaseous Components of Atmospheric Nitrogen Deposition in the Lake Tahoe Basin, Bytnerowicz, A. (PI), Fenn, M. (PI), Gertler, A. (PI), Preisler, H., (PI), Zielinska, B. (PI), Ahuja, S. (Collaborator), Shaw, G. (Collaborator), Schweizer, D. (Collaborator), Proctor, T. (Collaborator), Burley, J. (Collaborator), **Nanus, L.** (Collaborator).

(Collaborator) Research Institute for Humanity and Nature, Kyoto, Japan (2013-2018)

Demarcation of Environmental Governance for Human Environmental Security in Asia-Pacific Region- Nexus of Thermal Energy, Water, and Coastal Fisheries

(Collaborator) U.S. Geological Survey, Water Resources Discipline (1999-2009)

Water, Energy, Biogeochemical Budgets in Alpine/Subalpine Watersheds

(Collaborator) U.S. Geological Survey, National Park Service, U.S. Forest Service (1999-2009)

Rocky Mountain Snowpack Chemistry Synoptic: High-Elevation Sites

(Collaborator) U.S. Forest Service (1999-2009)

Long Term Lakes Monitoring in U.S. Forest Service Wilderness Areas, Colorado

HONORS and AWARDS

• SFSU Presidential Award for Professional Development (Spr. 2017)	2015
• Cal State Univ., Water Resources and Policy Initiatives, Faculty Research Incentive Award	2014
• National Park Service, Greater Yellowstone Area Honorarium	2011
• U.S. Geological Survey Superior Performance Award	2007
• National Park Service, Air Resources Division, Research Assistantship Grant	2004, 2005
• U.S. Geological Survey STAR Award	1999, 2002, 2003
• Washington State Department of Ecology, Research Assistantship Grant	1997, 1998
• Western Washington University, Geology Department, Graduate Research Funds Award	1998
• Western Washington University, Graduate School, Graduate Research Grant	1998
• Sigma-XI Grants-in-Aid of Research	1998
• Western Washington University, Elias Austin Bond Graduate Fellowship in Geology	1997

CONFERENCE ABSTRACTS and PROCEEDING PAPERS (since 2014)

*SFSU student supervised by Nanus

Nanus, L., Clow, D.W., Saros, J.E., McMurray, J.A., Sickman, J.O., 2020. Critical loads of atmospheric nitrogen deposition for high-elevation ecosystems in the western United States. *Goldschmidt 2020 virtual*, 13d, doi.org/10.46427/gold2020.1891.

Nanus, L., Mast, M.A., Elliott, E.M., Clow, D.W., 2019. Determining Sources and Fate of Atmospheric Nitrate in an Alpine Watershed Using Triple Nitrate Isotopes, Fall meeting. *Eos Trans. AGU, Fall Meet. Suppl.* B13N-2519, San Francisco, CA.

*LoGuidici, J., **Nanus, L.**, Saros, J., McMurray, J.A., Davis, J.D., Burpee, B.T., 2019. Assessment of Alpine Lakes Exceeding Critical Loads of Atmospheric Nitrogen Deposition in the Greater Yellowstone Area. AGU Fall meeting. *Eos Trans. AGU, Fall Meet. Suppl.* B13N-, San Francisco, CA.

Baguskas, S., **Nanus, L.**, Torregrosa, A., Obedzinski, M., Esch, C., Olsen, T., 2019. Coastal Fog Events Buffer Stream Temperature Change in Salmonid Habitat in California, *Eos Trans. AGU, Fall Meet. Suppl.* A33N-2905, San Francisco, CA.

Burpee, B.T., Saros, J.E., **Nanus, L.**, Alpine Lake Sensitivity Working Group, 2019. Scale-dependent Lake Characteristics Determine Ecological Sensitivity to Atmospheric Nutrient Deposition in Alpine Regions, *Eos Trans. AGU, Fall Meet. Suppl.* B110, San Francisco, CA.

Simonin, K.A., Baguskas, S.A., Oliphant, A.J., Davis, J.D., **Nanus, L.**, Blesius, L., Physioc, K., LeBeau, R., Mousavi, S., Studwell, A., Clark, Q., 2019. Montane Meadow Restoration: Quantifying the Impact of Biogeomorphic Change on Ecosystem Function, *Eos Trans. AGU, Fall Meet. Suppl.* EP028, San Francisco, CA.

Dailey, H., Gurdak, J.J., Ibarra, Y., **Nanus, L.**, 2019. Quantifying Impacts of Climate Variability and Irrigated Agriculture on Groundwater Recharge, Tulelake, California USA, *Eos Trans. AGU, Fall Meet. Suppl.* H084, San Francisco, CA.

Nanus, L., Clow, D.W., Sickman, J.O., 2019. Critical Loads of Atmospheric Nitrogen Deposition for Aquatic Ecosystems in the Sierra Nevada, California. *Proceedings of the National Atmospheric Deposition Program Technical Meeting*, Boulder, CO, November 6.

- Fujiwara, L., Gurdak, J., **Nanus, L.**, Mazzini, P., 2019. Evaluating the Role of Low Impact Development Recharge for Sustainable Groundwater Resources, *2019 ARCS (Achievement Rewards for College Scientists) Foundation Symposium: Meet the Minds of the Future*, Menlo Park, CA.
- Culpepper, J., Baron, J., Sadro, S., Olesky, I., Vinebrooke, R., Hampton, S., Smits, A., Moser, K., Brahney, J., Strecker, A., Chandra, S., Williams, J., Fradkin, S., **Nanus, L.**, Rosen, M., Noble, P., 2018. A Conceptual Model for Understanding the Role of Mountain Gradients on Lakes, Special Session: Understanding mountain lakes in a changing world, *Proceedings of the Association for the Sciences of Limnology and Oceanography Summer Meeting*, Victoria, B.C., Canada.
- *Weeks, D., **Nanus, L.**, Gurdak, J.J., Davis, J., 2018. Mercury in the Cache Creek Watershed – Spatial Analysis, Ecosystem Services Impacts and SES Framework Implementation, *SFSU College of Science & Engineering 20th Annual Student Project Showcase*, San Francisco, CA.
- *Weeks, D., **Nanus, L.**, Gurdak, J.J., 2018. Mercury in the Cache Creek Watershed – Trends, Hot Spots and Ecosystem Services Analysis, California, *Proceedings of the American Association of Geographers Annual Meeting*, New Orleans, LA.
- Nanus, L.**, Lehmann, C.M.B., Mast, M.A., 2017. Evaluating Variation in Sources of Atmospheric Nitrogen Deposition in the Rocky Mountains using $\delta^{15}\text{N-NO}_3^-$ and $\delta^{15}\text{N-NH}_4^+$. *Proceedings of the National Atmospheric Deposition Program Technical Meeting*, San Diego, CA.
- Nanus, L.**, Clow, D.W., Saros, J., McMurray, J.A., Blett, T.A., Sickman, J.O., 2017. Multiscale Framework for Assessing Critical Loads of Atmospheric Nitrogen Deposition for Aquatic Ecosystems in Wilderness Areas of the Western United States. *European Geosciences Union General Assembly, EGU2017-10537*, Vienna, Austria.
- Nanus, L.**, Clow, D.W., Sickman, J.O., 2016. Critical Loads of Atmospheric Nitrogen Deposition for Aquatic Ecosystems in Yosemite and Sequoia & Kings Canyon National Parks. *Eos Trans. AGU, Fall Meet. Suppl.* B13F-0711, San Francisco, CA.
- *Stein, S., **Nanus, L.**, Wilkinson, N., 2016. Water Quality in Estuarine Wetland Restoration: An Examination of Dissolved Oxygen and Nutrients in the South Bay Salt Pond Restoration Project, *Eos Trans. AGU, Fall Meet. Suppl.* H43I-1587, San Francisco, CA.
- Gurdak, J.J., ^Geyer, G.E., **Nanus, L.**, Taniguchi, M., ^Corona, C.R., 2016. Scale Dependence of Controls on Groundwater Vulnerability to Nonpoint-source Nitrate Contamination, California Coastal Basin Aquifer System, *Toward Sustainable Groundwater in Agriculture*, San Francisco, CA.
- *Stein, S., **Nanus, L.**, Wilkinson, N., 2016. An examination of Water Quality in the South Bay Salt Pond Restoration Project, *Proceedings American Association of Geographers Meeting*, San Francisco, CA.
- *Doudna, E., **Nanus, L.**, Gurdak, J., Wilkinson, N., 2016. Using the Water-Energy-Food Nexus of fracking and irrigation wells to better inform sustainable groundwater management decisions in California, *Proceedings American Association of Geographers Meeting*, San Francisco, CA.
- Nanus, L.**, McMurray, J., Clow, D., Saros, J., Blett, T., 2015. Spatial Variation of Atmospheric Nitrogen Deposition and Estimated Critical Loads for Aquatic Ecosystems in the Greater Yellowstone Area. *Eos Trans. AGU, Fall Meet. Suppl.*, B13G-0719, San Francisco, CA.
- Nanus, L.**, McMurray, J., Clow, D., Saros, J., Blett, T., 2015. Mapping Critical Loads of Atmospheric Nitrogen Deposition for Aquatic Ecosystems in the Greater Yellowstone Area, USA. *9th International Acid Rain Conference*, Rochester, NY.
- Nanus, L.**, Clow, D.W., Saros, J., Blett, T., McMurray, J., 2015. Mapping Critical Loads of Nitrogen Deposition for Aquatic Ecosystems in National Parks of the Western United States, *Science for Parks, Parks for Science: The Next Century*, University of California Berkeley, National Geographic, and the National Park Service, Berkeley, CA.
- Nanus, L.**, ^Geyer, G., Gurdak, J.J., Orenco, P.M., Endo, A., Taniguchi, M., 2014. Freshwater Vulnerability to Nitrate Contamination as an Indicator of Sustainability and Resilience within the Water-Energy-

Food Nexus of the California Coastal Basins, *Eos Trans. AGU, Fall Meet. Suppl., H23I-0995*, San Francisco, CA.

Clow, D.W., Roop, H.A., **Nanus, L.**, Fenn, M.E, Sexstone, G.A., 2014. Mapping Atmospheric Deposition of Nitrogen and Sulfur in Rocky Mountain National Park, USA using Ion-exchange Resin Collectors, *Proceedings of the National Atmospheric Deposition Program Technical Meeting*, Indianapolis, IN.

INVITED RESEARCH PRESENTATIONS

- 2017 Eawag, Swiss Federal Institute of Aquatic Science and Technology, SIAM (February 7)
- 2016 Sonoma State University, Department of Geology (November 10)
- 2015 National Park Service, Air Resources Division, Denver, Colorado (February 6)
- 2014 San Francisco State University, Department of Geography & Environment (February 13)
- 2013 Research Institute for Humanity and Nature, Kyoto, Japan (July 16)
- 2013 Portland State University, Department of Environmental Science and Management (February 18)
- 2012 University of San Francisco, Department of Environmental Science (April 19)
- 2012 University of California Santa Cruz, Institute of Marine Sciences (January 17)
- 2011 National Park Service, Jackson, Wyoming (April 5)
- 2009 San Francisco State University, Department of Earth & Climate Sciences (November 3)
- 2006 Sonoma State University, Department of Geography and Global Studies (February 8)
- 2003 Greater Yellowstone Clean Air Partnership, West Yellowstone, Montana (November 5)

TEACHING

SAN FRANCISCO STATE UNIVERSITY

- GEOG 751, Environmental Management Grad Seminar (2020, 2019, 2018, 2017, 2016, 2015, 2014)
- GEOG 644, Water Quality (2020, 2019, 2018, 2016, 2015)
- GEOG 342/ERTH 442, Surface Water Hydrology (2020, 2019, 2016, 2010)
- GEOG/ERTH 642, Watershed Assessment and Restoration (CSL) (2017, 2015)
- GEOG 101, Our Physical Environment, (2018, 2014)
- GEOG 688, Geographic Internship – National Park Service (CSL) (2020, 2019, 2018)

UNIVERSITY OF COLORADO, BOULDER

- GEOG 1011, Environmental Systems 2-Landscapes and Water (2005)

U.S. GEOLOGICAL SURVEY

- Statistical Modeling for Hydrologists, Co-taught, Water Resources Discipline

MENTORING

Primary advisor or committee member of 19 SFSU graduate students; ^students from underrepresented groups in STEM, including women supervised by Nanus

Master's Thesis Chair (Primary Advisor) (7)

- **Julian LoGiudici** – committee chair, M.A. Geography, Resource Management and Environmental Planning. *Atmospheric Nitrogen Deposition across Mountain Lake Ecosystems: Greater Yellowstone Area* [planned 2020].
- **Nick Fetherston** – committee chair, M.A. Geography, Resource Management and Environmental Planning. *Effects of Restoration on Water Quality in a Sierra Nevada Meadow* [planned 2021].

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- **^Kelly Krotcov** – committee chair, M.A. Geography, Resource Management and Environmental Planning, 05/2019, *Tradeoffs of Water Security and Adequate Ecological Protection during Drought, Coastal California*. Now Santa Margarita Groundwater Agency.

- **^Zoe Statman-Weil** – committee chair, M.S. Geographic Information Science, 12/2018. *Disparities in Community Water Systems' Compliance with the Safe Drinking Water Act*. Now Data Engineer, Premise, San Francisco.
- **^Deseret Weeks** – committee chair, M.A. Geography, Resource Management and Environmental Planning, 05/2018, *Mercury in the Cache Creek Watershed – Spatial Analysis, Ecosystem Services Impacts and SES Framework Implementation*. Now Ph.D. student, UC Merced, Management of Complex Systems.
- **Samuel Stein** – committee chair, M.A. Geography, Resource Management and Environmental Planning, 12/2016, *An Examination of Water Quality in the South Bay Salt Pond Restoration Project, California*. Now Ph.D. student, UC Berkeley, Department of Geography.
- **^Ellen Doudna** – committee chair, M.A. Geography, Resource Management and Environmental Planning, 12/2016, *Trends in the Water-Energy-Food Nexus of California's Central Valley: Drivers of Vulnerability within the Nexus of Oil Production, Agriculture and Water Use in Kern County*. Now ZEV Program Coordinator, Caltrans.

Master's Thesis Committee Member (12)

- **Thor Olsen** – second committee member, M.A. Geography. *Fog and Fish: Effects of Coastal Fog on Central California's Anadromous Salmonid Habitat* [planned 2022].
 - **^Jolene Bertetto** – second committee member, M.A. Geography. *Investigating the role of vegetation on midafternoon microclimates in a residential courtyard* [planned 2021].
 - **^Hannah Boelts** – committee member, M.S. Geosciences. *Investigating the effects of water chemistry on carbonates and biota in a northern California spring region* [planned 2021].
 - **Nicholas Moder** – committee member, M.S. Geosciences. *The influence of climate change on stream temperatures in the San Joaquin River* [planned 2021].
- COMPLETED-----

- **^Jasleen Pannu** – second committee member, M.A. Geography, 2020. *Critical Analysis of Environmental Activism in West Contra Costa County, California*.
- **^Cassandra Wolf** – committee member, M.S. Geosciences, 05/2020. *Evaluating factors that control recharge in a thick vadose zone under climate variability and change*.
- **^Hannah Dailey** – committee member, M.S. Geosciences, 05/2020. *Quantifying impacts of climate change and variability on groundwater recharge in Tulelake, California*.
- **Jeffrey Blumenthal** – second committee member, M.A. Geography, Resource Management and Environmental Planning, 12/2019. *Environmental Covariates and Atlantic Oyster Drill Distribution in Richardson Bay, California*.
- **^Lawrence Fujiwara** – committee member, M.S. Geosciences, 12/2019. *Low impact development effects on recharge and urban groundwater sustainability*.
- **^Charlotte Hummer** – second committee member, M.A. Geography, Resource Management and Environmental Planning, 05/2017. *An Examination of SF State University Students' Perceptions of Potable Reuse*. Now Environmental Planner, AECOM.
- **^Jessica Sloan** – second committee member, M.A. Geography, Resource Management and Environmental Planning, 12/2016. *Evaluating Visitation at Don Edwards NWR: Encouraging Environmental Education and Urban Conservation*. Now National Park Service.
- **^Gaby Geyer** – Committee Member, M.S. Earth & Climate Sciences, 08/2014, *Vulnerability of Recently Recharged Groundwater in the California Coastal Basins to Nitrate Contamination*.

Research and Scholarship Awards by Advisees at SFSU (\$61,140)

Zoe Statman-Weil (M.S., SFSU): 2019 Geography & Environment, Distinguished Graduate Achievement.
 Julian LoGiudici (M.A. pending): 2018-2019 Water Resources Exp. Learning Intern, CSU WRPI (\$4500).

David Espinoza (B.S., SFSU): 2018-2019 Water Resources Exp. Learning Intern, CSU WRPI (\$4500).
 Julian LoGiudici (M.A., SFSU): 2018 SFSU Geography & Environment, Pease Memorial Scholarship (\$1,000).
 Samuel Stein (M.A., SFSU): 2018-2019 CSU Chancellor's Doctoral Incentive Program Scholar, Faculty Mentor (Nanus) (\$30,000).
 Deseret Weeks (M.A., SFSU): 2017-2018 CSU California Pre-Doctoral Program, Sally Casanova Pre-Doctoral Scholar, Faculty Sponsor (Nanus) (\$11,200). Research Award.
 Deseret Weeks (M.A., SFSU): 2018 Geography & Environment, Distinguished Graduate Achievement.
 Kelly Krotcov (M.A., SFSU): 2017 Department of Geography, Pease Memorial Scholarship (\$1,000).
 Deseret Weeks (M.A., SFSU): 2017 California State University (CSU) Council on Ocean Affairs, Science and Technology (COAST) Graduate Student Research Award (\$3,000). Research Award.
 Deseret Weeks (M.A., SFSU): 2018 SFSU College of Science and Engineering, Travel Award (IRA) (\$500).
 Deseret Weeks (M.A., SFSU): 2018, SFSU Geography & Environment, Jean Vance Award (\$500).
 Deseret Weeks (M.A., SFSU): 2017 Association of Pacific Coast Geographers Women's Network (\$200).
 Samuel Stein (M.A., SFSU): 2017 Geography & Environment, Distinguished Graduate Achievement Award.
 Samuel Stein (M.A., SFSU): 2016 American Association of Geographers, Water Resources Specialty Group, Research Proposal Student Award (\$500). Research Award.
 Samuel Stein (M.A., SFSU) 2016, SFSU Geography & Environment, Water Research Grant (\$500).
 Samuel Stein (M.A., SFSU) 2016, SFSU Geography & Environment, Jean Vance Award (\$240).
 Samuel Stein (M.A., SFSU): 2015 SFSU College of Science and Engineering, Maxwell Scholarship (\$3000).
 Samuel Stein (M.A., SFSU) 2015, SFSU Geography & Environment, Pease Memorial Scholarship (\$500).

PROFESSIONAL and SERVICE ACTIVITIES

- Co-Coordinator, SFSU, Academic Internship Program (AIP) with National Park Service and the Golden Gate National Parks Conservancy serving underrepresented students. 2016-present
- Academic Advisor, B.S. Environmental Science; B.A. Geography, M.A. Resource Management and Environmental Planning, Geography & Environment 2015-present
- Faculty Mentor, Chancellor's Doctoral Incentive; Sally Casanova Pre-Doctoral, CSU 2018-present
- Curriculum Committee, Geography & Environment 2017-present
- Water Faculty, Water Resources and Policy Initiatives, CSU Member 2014-present
- Outstanding Student Presentation Award Judge, American Geophysical Union; National Atmospheric Deposition Program 2014-2016

Invited Peer Reviewer for Professional Journals

Environmental Science & Technology (2), Environmental Pollution (2), Atmospheric Environment (3), Biogeochemistry, Limnology and Oceanography, Science of the Total Environment, Water Resources Research, Journal of Hydrology, Journal of the American Water Resources Association

Invited Peer Reviewer for Federal Agencies

National Science Foundation, U.S. Geological Survey Scientific Investigations Reports, National Park Service Technical Reports, U.S. Forest Service Technical Reports

Professional Society Memberships

American Geophysical Union, Association of American Geographers, Association for the Sciences of Limnology and Oceanography, American Water Resources Association

International Community Contributions

- Mountain Lakes Research Network, mountain lake ecosystems and global change (UNR; 2/2018)

- Research Institute for Humanity and Nature, International Water-Energy-Food Nexus Workshop at SFSU, contributed to hosting the workshop, 40 scientists from 5 countries attended (12/2014)

PROFESSIONAL DEVELOPMENT and TRAINING

- Quality Learning and Teaching Online Teaching Lab, CEETL, SFSU, CA 2020
- Equitable Teaching Series and Inclusive Learning Strategies, CEETL, SFSU, CA 2018
- Environmental Systems Analysis, Eawag, Switzerland 2017
- UCAR Annual Members Meeting Participation, Early Career Invited Guest, Boulder, CO 2016
- Early Career Geoscience Faculty Workshop (SERC), College of William and Mary, VA 2015
- Wilderness First Aid Certification, CO 2000, 2006
- Water Safety Training and Certification, CO 2001
- Isotope Hydrology, CO 2000
- ArcInfo Geographic Information Systems, CO 1999, 2000
- Avalanche Safety Certification Level I and Level II, CO 1999