ALEX J. WEBSTER, PH.D.

Curriculum vitae

Personal Details

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Pronouns	She/her/hers

Education

2018	**Ph.D., Ecology** University of California, Davis
2008	**B.A. (with Highest Honors), Biological Sciences** Smith College

Professional Appointments

2020 – present	**Research Assistant Professor,** Univ. of New Mexico
2018 – 2020	**Postdoctoral Research Associate**, Univ. of Alaska, Fairbanks
2015 – 2018	**Graduate Student Researcher**, Graduate Group in Ecology, UC Davis
2012 – 2015	**National Science Foundation Graduate Research Fellow**, UC Davis
2010 – 2012	**Laboratory Manager and Senior Research Assistant**, UC Davis
2008 – 2010	**Laboratory Manager and Senior Research Assistant**, Boston Univ.

Publications

2020	**Webster, A.J.,** M.L. Cadenasso. Cross-scale controls on the in-stream dynamics of nitrate and turbidity in semiarid agricultural waterway networks. *Journal of Environmental Management*, 262. doi.org/10.1016/j.jenvman.2020.110307
2020	Harrison, J., A. Reinmann, A. Socci Maloney, N. Phillips, S. Juice, **A.J. Webster**, P.H. Templer. Transpiration of Dominant Tree Species Varies in Response to Projected Changes in Climate: Implications for Composition and Water Balance of Temperate Forest Ecosystems. *Ecosystems.* doi.org/10.1007/s10021-020-00490-y
2020	Abernathy, E.F., I. Arismendi, A. Boegehold, C. Colon-Gaud, M. Cover, E. Larson, E. Moody, B. Penaluna, A.J. Shogren, **A.J. Webster**, M. Woller-Skar. Diverse, equitable, and inclusive scientific societies: Progress and opportunities in the Society for Freshwater Science. *Freshwater Science* doi.org/10.1086/709129.

2018	**Webster, A.J.**, P.M. Goffman, M.L. Cadenasso. Controls on denitrification potential in nitrate-rich waterways and riparian zones in an irrigated agricultural setting. *Ecological Applications,* 24*.* doi.wiley.com/10.1002/eap.1709

Works in Progress

n.d.	**Webster, A.J.**, T.A. Douglas, P. Regier, M.D. Scheuerell, T.K. Harms. Temporal patterns in stream biogeochemistry indicate linked permafrost and ecological dynamics of boreal catchments. *Ecosystems [in revision].*
n.d.	Zemenick, A.T., **A.J. Webster**, S.C. Jones, M.G. Weber, E. Raymond, K. Sandelin, T. Kowalczyk, N. Hessami, C.L. Dahlberg. Diversifying and humanizing biologist role models through constructing slide deck on researchers' research and life experiences. *CourseSource [in review].*
n.d.	**Webster, A.J.**, J.P. Solins, M.L. Cadenasso. Metacommunity structures in human-dominated landscapes: insights from riparian vegetation in lowland stream networks. *Landscape Ecology [in prep].*
n.d.	**Webster, A.J.**, F.S. Chapin, J.F. Johnston, T.A. Douglas, T.K. Harms. Monitoring resilience and early warning signals of catchment-scale regime shifts in stream chemistry. *Frontiers in Ecology and the Environment [in prep].*
n.d.	Harms, T.K., A. Contreras, **A.J. Webster**. Stream chemistry indicates catchment response to fire and regional warming in the boreal forest. *Environmental Research Letters [in prep].*

Grants and Awards

2021 – 2025	"Transforming Rural-Urban Systems: Trajectories for Sustainability in the Intermountain West Research Network" (National Science Foundation - Sustainable Regional Systems Research Network Program). Co-lead on Guided Transformations working group and lead on Disaster Recovery and Resilience Building task. Univ. of New Mexico, Albuquerque, NM **[$15,000,000]**
2021-2022	"Perspectives on Innovative Approaches in Agriculture to Managing Water Scarcity" (Women in STEM Faculty Development Award). Univ. of New Mexico, Albuquerque, NM **[$15,000]**
2020	Excellence in Diversity Award (co-awarded with the Project Biodiversify team), Michigan State Univ., East Lansing, MI **[$2,500]**
2015 – 2018	Plant Sciences Graduate Fellowship, Plant Sciences Dept., Univ. of California, Davis, Davis, CA **[$125,000]**
2017	Best Oral Presentation for Student Research, Society for Freshwater Sciences Annual Meeting, Raleigh, NC **[$500]**
2014	Annie's Sustainable Agricultural Scholarship, Univ. of California, Davis, Davis, CA **[$10,000]**
2012 – 2015	National Science Foundation Graduate Research Fellowship, Univ. of California, Davis, Davis, CA **[$132,000]**
2012 – 2014	Univ. of California College of Agriculture and Environmental Science Jastro-Shields Research Fellowship, Davis, CA **[$7,500]**

2012 Graduate Group in Ecology Graduate Fellowship, Univ. of California, Davis, Davis, CA **[$12,000]**

Teaching and Mentorship

Courses Organized

2021 "Stakeholder-driven Data Analysis for Sustainable Water Resource Management". Dept. of Biology, Univ. of New Mexico.
Designed and led this inquiry-based transdisciplinary course featuring teams of graduate students and stakeholders working together to address water management challenges in New Mexico with advanced methods in data analysis and data visualization.

2014 "Ecological Intensification in California: Science to Practice". Dept. of Entomology, Univ. of California, Davis.
Co-designed and co-led an interdisciplinary undergraduate and graduate seminar that facilitated discussions with stakeholders about sustainability approaches in California agriculture.

2013, 14, 15 Writing workshop for NSF GRFP. Dept. of Environmental Sciences and Policy, Univ. of California, Davis.
Organized, read, and reviewed proposals of undergraduate and graduate students applying to the National Science Foundation Graduate Research Fellowship Program (NSF GRFP).

Teaching Assistantships

2018 **Lead Teaching Assistant**, Ecosystem and Landscape Ecology. Dept. of Plant Sciences, Univ. of California, Davis.
Upper division undergraduate course: co-organized course structure, designed and led discussion sections for in-depth analysis of key topics, co-designed and graded assignments.

2017 **Teaching Assistant**, Trees and Forests. Dept. of Plant Sciences, Univ. of California, Davis.
Introductory undergraduate course: Prepared discussion section lectures and guided laboratory activities.

2016 **Lead Teaching Assistant**, Introduction to Sustainable Agriculture. Dept. of Plant Sciences, Univ. of California, Davis.
Intermediate undergraduate course: Prepared and led field-based laboratory activities.

2016 **Lead Teaching Assistant**, Critical History of Sustainable Design. Dept. of Design, Univ. of California, Davis.
Intermediate undergraduate course: Prepared discussion section lectures and mentored students in course-long research projects on the life cycle analysis of consumer products.

2015 **Teaching Assistant**, Critical History of Sustainable Design. Dept. of Design, Univ. of California, Davis.
Intermediate undergraduate course: Prepared discussion section lectures and mentored students in course-long research projects on the life cycle analysis of consumer products.

Guest Lectures

2020 "Impacts of Global Change on Boreal and Arctic Ecosystems". Global Change Biology, Dept. of Biology, Univ. of New Mexico, 28 Oct., Albuquerque, NM. (virtual)

2020 "Impacts of Global Change on Freshwater Ecosystems". Global Change Biology, Dept. of Biology, Univ. of New Mexico, 9 Nov., Albuquerque, NM. (virtual)

2019 "Multivariate analysis using ordination techniques". Data Analysis in Biology, Dept. of Biology & Wildlife, Univ. of Alaska, Fairbanks, 5 Oct., Fairbanks, AK.

2017	"Farm-scape diversification: The case study of hedgerows". Introduction to Sustainable Agriculture, Dept. of Plant Sciences, Univ. of California, Davis, 27 May, Davis, CA.

Advising

2021 – present	Dissertation Committee: Eliza Gilbert
2021	New Mexico Alliance for Minority Participation Summer Community College Opportunity for Research Experience Internship: Manuel Espinoza Romo
2019	Research Experience for Undergraduates (REU) Ecology Internship: Adela Contreras (co-supervised)
2016	Laboratory Science: Indya Messier, Kristina Louis
2015	Laboratory Science: Stephanie Lee, Alannah Johansen
2014	Field Ecology: Kelley Liang, Stephanie Lee, Alannah Johansen
2010 – 2011	Laboratory Science: Monika Mather, Susan Wheatley
2009	Research Experience for Undergraduates (REU) Ecology Internship: Cayce Salvino (co-supervised)

Invited Talks and Workshops

External

2021	**Seminar Speaker**, Univ. of Minnesota Department of Biology Seminar Series. "Project Biodiversify: How to enhance inclusivity in your biology classrooms" (with A.T. Zemenick and S.C. Jones). 5 May (virtual).
2020	**Seminar Speaker**, Duke University Department of Biology Seminar Series. "Project Biodiversify: How to enhance inclusivity in your biology classrooms" (with A.T. Zemenick and S.C. Jones). 16 Nov. (virtual).
2020	**Workshop organizer**, MacMillian Learning. "Inclusive and accurate approaches for teaching sex and gender in biology" (with A.T. Zemenick). 29–30 Oct. (virtual).
2020	**Workshop organizer**, Univ. of California, Davis Center for Population Biology. "Inclusive and accurate approaches for teaching sex and gender in biology" (with A.T. Zemenick and S.C. Jones). 16 Sept., Davis, CA (virtual).
2020	**Seminar Speaker,** Los Alamos National Laboratory. "Detecting ecosystem tipping points and catchment-scale permafrost degradation from high-frequency stream chemistry". 7 Jan., Los Alamos, NM
2019	**Seminar speaker and workshop organizer**, Western Washington Univ.. "Project Biodiversify: How to enhance inclusivity in your biology classrooms" (with A.T. Zemenick and S.C. Jones). 29 Oct., Bellingham, WA.
2019	**Seminar speaker and workshop organizer**, Univ. of Washington, Tacoma. "Project Biodiversify: How to enhance inclusivity in your biology classrooms" (with A.T. Zemenick and S.C. Jones). 25 Oct., Tacoma, WA.

2019 **Speaker,** Sacramento Valley Water Quality Coalition Management Advisory Committee Meeting. “Pipes or Traps? Ecological functions and water quality benefits of agricultural drainage networks”. 11 March, Elk Grove, CA. (virtual)

2019 **Seminar speaker and workshop organizer**, Northern Kentucky Univ.. “Project Biodiversify: How to enhance inclusivity in your biology classrooms” (with A.T. Zemenick and S.C. Jones). 8-9 April, Highland Heights, KY.

2018 **Speaker**, California Dept. of Water Resources Interagency Ecological Program Annual Workshop. “Ecological function of small streams and riparian zones in the human-dominated landscapes of California’s Sacramento Valley” (with J.P. Solins). 6 March, Folsom, CA.

2017 **Opening plenary speaker**, Society for Freshwater Science Annual Meeting. “Diversity and Inclusivity in Freshwater Sciences”. 4 June, Raleigh, NC.

2016 **Speaker**, Stakeholder meeting, sponsored by Yolo and Solano County Resource Conservation Districts and Water Management Agencies. “Water quality in agricultural waterways of Yolo and Solano Counties”. 14 July, Dixon, CA.

2014 **Speaker**, Farmer workshop, sponsored by Univ. of California Cooperative Extension and Yolo and Solano County Resource Conservation Districts. “Riparian hedgerows for nitrate removal in agricultural ditches”. 8 Oct., Arbuckle, CA.

2013 **Speaker**, Audubon National. “Water quality benefits of hedgerows on agricultural ditches”. 6 Dec. (virtual)

Internal

2020 **Speaker**, Univ. of New Mexico Earth and Planetary Science Departmental Seminar. “Deconvoluting Stream Chemistry Time Series”. 6 Nov. (virtual)

2020 **Speaker**, Sevilleta Long Term Ecological Research Seminar Series. “Self-organization, resilience, and detecting critical transitions: from computational physics to ecology” (with Mousumi Roy). 21 Sept. (virtual)

Conference Activity

First-Authored Papers Presented (Oral)

2021 **Webster, A.J.**, B. Warner, J. Wang, M. Stone, A. Oglesby, M. Morgan, M. Litvak, K. Kambic, K. Howe, S.M. Han, L. Crossey. “Towards sustainable and resilient water resources through interdisciplinary research”. Univ. of New Mexico Team Research Symposium. 21 April. (virtual)

2019 **Webster, A.J.**, P. Regier, A. Krehlik, T.K. Harms. “Time scales of variation in stream biogeochemistry across contrasts of permafrost extent”. Association for the Sciences of Limnology and Oceanography Aquatic Sciences Meeting, 26 February, San Juan, Puerto Rico.

2017 **Webster, A.J**., J.P. Solins, M.L. Cadenasso. “Small streams and riparian zones in California's Sacramento Valley: Ecological function and management opportunities”. California Chapter of the Society for Freshwater Science, 24 Oct., Davis, CA.

2017 **Webster, A.J**., J.P. Solins, M.L. Cadenasso. "Ecological function of small streams and riparian zones in human-dominated landscapes". The Riparian Summit: Confluence to Influence, 17 Oct., Davis, CA.

2017 **Webster, A.J**., J.P. Solins, M.L. Cadenasso. "Riparian plant communities in human-dominated landscapes: Evidence of resilience, invasion, and management drivers across urban and agricultural land uses in California's Central Valley". Ecological Society of America Annual Meeting, 8 Aug., Portland, OR.

2017 **Webster, A.J.,** P.M. Goffman, M.L. Cadenasso. "Controls on denitrification potential in nitrate-rich waterways and riparian zones of an irrigated agricultural landscape". Society for Freshwater Science Meeting, 6 June, Raleigh, NC.

2016 **Webster, A.J.,** M.L. Cadenasso, 2016. "From microbes to water districts: Linking observations across scales to uncover the implications of riparian and channel management on water quality in an irrigated agricultural landscape". American Geophysical Union Fall Meeting, 11 Dec., San Francisco, CA.

2016 **Webster, A.J**., M.L. Cadenasso. "Vegetation and hydrogeomorphic complexity in agricultural waterways: implications for water quality". Society for Freshwater Science Annual Meeting, 22 May, Sacramento, CA.

2013 **Webster, A.J.,** M.L. Cadenasso, S.T.A. Pickett. "Spatial and temporal heterogeneity of inorganic soil nitrogen in a savanna: The role of riparian zone structure, hydrologic seasonality, and parent material". Ecological Society of America Annual Meeting, 9 Aug., Minneapolis, MN.

First-Authored Papers Presented (Poster)

2019 **Webster, A.J.**, T.A. Douglas, P. Regier, T.K. Harms. "Detecting catchment-scale permafrost degradation and biogeochemical regime change from high-frequency stream chemistry". American Geophysical Union Fall Meeting, 10 Dec., San Francisco, CA.

2015 **Webster, A.J.,** M.L. Cadenasso. "Interacting effects of vegetation and hydrogeomorphic complexity on nitrate in agricultural waterways". American Geophysical Union Fall Meeting, 14 Dec., San Francisco, CA.

2014 **Webster, A.J.,** M.L. Cadenasso. "Effects of riparian vegetation and morphology on nitrogen fluxes: Agricultural ditches in a semi-arid irrigated landscape". Ecological Society of America Annual Meeting, 12 Aug., Sacramento, CA.

Workshops Organized

2018 **Webster, A.J.**, A.T. Zemenick, S.C. Jones. "Inclusive and accurate approaches for teaching sex and gender in biology". Ecological Society of America Annual Meeting, 9 Aug., New Orleans, LA.

2018 Zemenick, A.T., **A.J. Webster**, S.C. Jones., M. Weber. "Contribute to Project Biodiversify: A repository of teaching materials to diversify and humanized biology courses". Ecological Society of America Annual Meeting, 8 Aug., New Orleans, LA.

2018 **Webster, A.J**., A.T. Zemenick, S.C. Jones. "Inclusive and accurate approaches for teaching sex and gender in biology". Society for Freshwater Science Annual Meeting, 22 May, Detroit, MI.

Professional Service and Outreach Activities

2018 – present	**Director**, Project Biodiversify: Tools to diversify and enhance inclusivity in biology education www.projectbiodiversify.org
2020 – present	**Chair,** Diversity, Equity, and Inclusivity Committee, Regional Conference on Permafrost, United States Permafrost Association
2020 – present	**Member,** Membership and Data Committee, Society for Freshwater Science
2018 – 2021	**Reviewer:** Water Resources Research, Geophysical Research Letters, Environmental Research Letters, Environmental Science and Technology, Environmental Science and Pollution Research
2021	**Organizer,** Speaker series: "Bridging disciplinary divides in sustainable water resources research", Univ. of New Mexico
2021	**Consultant**, Pearson Education
2020	**Consultant**, Macmillan Learning
2019 – 2020	**Consultant**, Museum of Natural History exhibit: "Sex and Gender in the Natural World", Univ. of Colorado, Boulder
2014 – 2020	**Reviewer**, Caring for Our Watersheds proposal writing contest, The Center for Land-Based Learning, Winters, CA
2019	**Volunteer**, Girls on Ice: A tuition-free wilderness science expedition for young women, Fairbanks, AK
2019	**Contributor**, "Scenic Science of the National Parks: An Explorer's Guide to Wildlife, Geology, and Botany", Ten Speed Press, Berkeley, CA
2018 – 2019	**Member**, Future Meetings Committee, Ecological Society of America
2017 – 2019	**Founding member**, Ad-Hoc Committee on Diversity and Inclusivity, Society for Freshwater Science
2012 – 2014	**Founding member**, Graduate Group in Ecology Diversity Committee, Univ. of California, Davis
2011 – 2014	**Mentor** for high school students, Student and Landowner Education and Watershed Stewardship Program (SLEWS), The Center for Land-Based Learning, Winters, CA

Professional Memberships

2016 – present	Society for Freshwater Science
2018 – 2019	Association for the Sciences of Limnology and Oceanography
2015 – 2019	American Geophysical Union
2013 – 2018	Ecological Society of America
2008 – present	Sigma Xi, the Scientific Research Society