

## Susanne M. Brander, Ph.D.

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### Education

- 2013 Post-Doctoral Scholar, School of Veterinary Medicine, Department of Anatomy, Physiology and Cell Biology, University of California, Davis / Department Biology and Marine Biology, University of North Carolina Wilmington
- 2011 Ph.D. Toxicology. University of California, Davis
- 2005 M.S. Environmental Science and Policy. Johns Hopkins University, MD
- 1999 B.S. Business Administration, Minor: Biology. Elizabethtown College, PA

### Employment

- 2017 – present Assistant Professor, Department of Environmental and Molecular Toxicology, Oregon State University, Corvallis, OR
- 2017 - present Adjunct Professor, Department of Biology and Marine Biology, University of North Carolina, Wilmington
- 2013 – 2017 Assistant Professor, Department of Biology and Marine Biology, University of North Carolina, Wilmington
- 2012 – 2013 Research Assistant Professor, Department of Biology and Marine Biology, University of North Carolina, Wilmington.
- 2011 – 2012 Lecturer / Adjunct Professor, Department of Biology and Marine Biology, University of North Carolina, Wilmington.
- 2007 – 2011 Delta Science Pre-Doctoral Fellow, Department of Environmental Toxicology and Bodega Marine Laboratory, University of California, Davis.
- 2009 – 2010 National Science Foundation, CAMEOS, GK-12 Pre-Doctoral Fellow, Bodega Marine Laboratory, University of California, Davis.
- 2007 Graduate Student Researcher, Water Quality Objectives Methodology, Department of Environmental Toxicology, University of California, Davis.
- 2005 – 2006 Project Scientist, Weston Solutions, Inc., Tiburon, CA.
- 2004 – 2005 Environmental Analyst, Weston Solutions, Inc., Tiburon, CA.

### Publications

- in prep Brander, S.M. Endocrine disruption in the aquatic environment. *Toxicology for Professionals*. Current Opinion in Toxicology. Ed.: DeWitt, J. Invited chapter (W, IC, \$).
- in prep Major, K., Brander, S. Pyrethroid pesticide toxicity in aquatic invertebrates. *Pyrethroid Pesticides: Handbook of Environmental Chemistry*. Ed: Costa, S. Invited chapter (W, IC, \$).
- in prep Bachelor, B. †, Horn, D. †, Stienbarger, C. †, Joseph, J., Granek, E., Taylor, A., Brander, S. Microplastic occurrence and effects in North American commercial fishery species. Invited to *Limnology and Oceanography Letters*. (W, IC, \$).

in review	Athey, S.A.†, S.D. Albotrat, C.A. Gordont, B. Monteleone, P. Seaton, A.R. Taylor, S.M. Brander. Trophic transfer of microplastics in an estuarine model and the effects of a sorbed legacy pollutant. Invited to <i>Limnology and Oceanography Letters</i> . (IC, EA, A, F)
in revision	Connon, R.E., Hasenbein S., Brander S.M., Cherr G.N., Whitehead A., Todgham A., Young T., Breur R.S., Orland J.L., Collier T.K., Scholz N.L., Colburne J.K., Hajibabbe M., Hamdoun A., Incardona J., Perkins E.J., Garcia-Reyero N., Denslow N.D., Gallagher E.P., Schlenk D., Brown J.B., Deng X., Erickson G., Poynton H., Holland E. Considerations for evaluating contaminant effects in the San Francisco Bay-Delta. Submitted to <i>San Francisco Estuary and Watershed Sciences</i> . (W, IC, \$)
in press	DeCourten, B.D. †*, Romney A., Brander S.M. The heat is on: Aquatic endocrine disruption in the context of climate change. <i>Evaluating water quality to prevent future disasters</i> . Elsevier. Ed: Ahuja, S. *Invited contribution. (W, IC, \$)
2019	DeCourten, B.D.†*, Connon R.E., Brander S.M. Direct and indirect exposure to endocrine disruptors and elevated temperature influences gene expression across generations in a euryhaline fish model. <i>Peer J</i> . (IC, EA, A, F)
2019	Frank, D.F. †, Brander, S.M., Hasenbein, S., Harvey, D.J., Geist, J., Connon, R.E. Exposure to environmentally relevant bifenthrin concentrations results in behavioral and transcriptomic alterations during early development of <i>Menidia beryllina</i> . <i>Aquatic Toxicology</i> . (F, A, EA, IC)
2018	McConville, M. †, Roberts J. †, Boulais, M., Woodall, B. †, Guyomarch, J., LeFloch, S., Redman, A., Arnold, R., Parkerton, T., Bytingsvik, J., Camus, L., Volety, A., Brander, S. The sensitivity of the deep sea fish species <i>Anoplopoma fimbriae</i> to single oil-associated aromatic compounds, dispersant, and chemical enhanced Alaskan North Slope oil. <i>Environmental Toxicology and Chemistry</i> . (W, F, EA)
2018	Frank, D.F. †, G.W. Miller, R.E. Connon, D.J. Harvey, S.M. Brander, J. Geist, P.J. Lein. Developmental bifenthrin exposure causes delayed hyperactivity and transcriptomic alterations in mTOR and ryanodine receptor-dependent signaling in zebrafish ( <i>Danio rerio</i> ). <i>Aquatic Toxicology</i> 200, 50-61. (EA)
2017	Brander, S.M., Biales, A., Connon R.E. The role of epigenomics in aquatic toxicology. Invited Focus paper. <i>Environmental Toxicology and Chemistry</i> 36 (10), 2565-2573. (W, IC)
2017	DeCourten B.M.**, S.M. Brander. Combined effects of warming and pollutants on sex determination, survival, and development across generations. <i>Scientific Reports</i> 7, 9310. (W, IC, EA, A, F)

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*The above papers have been published, prepared, or submitted since Brander moved to Oregon State University. The below codes are used to indicate Brander's involvement in each paper:*

*Brander has a total of 25 publications (+ 2 in review, 1 in prep), h-index = 11, i10-index = 12*

\$ resulting from or dependent on grants awarded to Brander as PI or Co-PI since coming to OSU

IC original scholarly contribution in the form of key ideas and concepts by Brander

EA original scholarly contribution in the form of application of experimental approach, analytical method, or conceptual framework developed by Brander

A major contribution by Brander in the form of administering the research program, including planning field and laboratory methods, hiring personnel, organizing schedules, and coordinating efforts of the research team

F major contribution by Brander to lab work, field work, data collection, and/or data analysis

W substantial contribution by Brander to the writing of the manuscript (note: for all manuscripts for which I am a co-author, I provide careful review and editing of various drafts – a “W” designation denotes a more substantial contribution)

\*author was an OSU graduate student; †author was a student at another institution; \*\*author was an undergraduate

- 2017 Goff A.D.\*\* , P. Saranjampour\*\* , M. Hladik, K. Armbrust, S.M. Brander. The effects of fipronil and its photodegradation product fipronil desulfinyl on growth and gene expression in juvenile blue crabs, *Callinectes sapidus*, at different salinities. *Aquatic Toxicology* 186: 96-104.
- 2017 J.W. White, B.C. Cole, G.N. Cherr, R.E. Connon, S.M. Brander. Scaling up the individual-level effects from individuals to populations: Outcomes depend on how many males a population needs. *Environmental Science and Technology* 51: 1802-1810.
- 2016 Brander S.M., M.K. Gabler\*\* , N.L. Fowler\*\* , R.E. Connon, D. Schlenk. Pyrethroid pesticides as endocrine disruptors: Molecular mechanisms in vertebrates with a focus on fishes. *Environmental Science and Technology* 50: 8977-8992.
- 2016 Cole B.J., S.M. Brander, K.M. Jeffries, G. Hu, S. Hasenbein, N.A. Fanguie, M.S. Denison, R.E. Connon. Differential changes in gene expression in *Menidia beryllina* and hormone receptor activation caused by exposure to estuarine waters near wastewater outfalls with different treatment processes. *Archives of Environmental Contamination & Toxicology* 71: 210-223.
- 2016 Brander S.M., B.J. Cole, K.M. Jeffries, B.M. DeCourten\*\* , N.A. Fanguie, R.E. Connon. Transcriptomic changes underlie altered egg protein production and reduced fecundity in an estuarine model fish exposed to bifenthrin. *Aquatic Toxicology* 174: 247-260. (Invited)
- 2015 Jeffries K.M., S.M. Brander, M.T. Britton, N.A. Fanguie, R.E. Connon. Chronic exposures to low and high concentrations of ibuprofen elicit different gene response patterns in a euryhaline fish. *Environmental Science and Pollution Research* 22: 17397-17413. (Invited)
- 2015 Heintz M.M.\*\* , S.M. Brander, J.W. White. Endocrine disrupting compounds alter risk-taking behavior in fish. *Ethology* 121: 480-491.
- 2015 Brander S.M., S. Hecht, J. Incardona, K. Kidd, K. Kuivila, S. Kullman, N. Scholz. “Bridging the gap” with fish: Advances in assessing exposure and effects across biological scales. *Environmental Toxicology and Chemistry* 34: 459-466. \*Invited contribution.
- 2014 DeGroot B.D.\* , S.M. Brander. The role of metabolism in the estrogenicity of bifenthrin in fish. *Aquatic Toxicology* 156: 17-20.
- 2013 Brander S.M., R.E. Connon, G. He , J.A. Hobbs, K.L. Smalling, S.J. Teh, J.W. White, I. Werner, M.S. Denison, G.N. Cherr. From ‘omics to otoliths: Correlated responses of an estuarine fish to endocrine disrupting compounds across biological scales. *PLoS One* 8(9): e74251. doi:10.1371/journal.pone.0074251
- 2013 Brander S.M. Thinking outside the box: Assessing endocrine disruption in aquatic life. In: Ajuha, S., editor. *Monitoring water quality: Pollution assessment, analysis, and remediation*. Elsevier. Ed: Ahuja, S. pp. 395. \*Invited contribution.
- 2012 Brander S.M., G. He, K.L. Smalling, M.S. Denison, G.N. Cherr. The *in vivo* estrogenic and *in vitro* anti-estrogenic activity of permethrin and bifenthrin. *Environmental Toxicology and Chemistry* 31: 2848-2855.
- 2012 Brander S.M., C.M. Mosser, J.P. Geist, M.L. Hladik, I. Werner. Esfenvalerate toxicity to the cladoceran *Ceriodaphnia dubia* in the presence of the green algae, *Pseudokirchneriella subcapitata*. *Ecotoxicology* 21: 2409-2418.

- 2012 Brander S.M., B.J. Cole, G.N. Cherr. An approach to detecting estrogenic endocrine disruption via choriogenin expression in an estuarine model fish species. *Ecotoxicology* 21: 1272-1280.
- 2011 Brander S., R. Fontana, T. Mata, S. Gravem, A. Hettinger, J. Bean, A. Szoboszlai, M. Marrero, C. Keiper. The Ecotoxicology of Marine Debris. *Journal of the American Biology Teacher* 73: 474-478.
- 2009 Brander S.M., I. Werner, J.W. White, L.A. Deavonic. Toxicity of a pyrethroid mixture to *Hyalella azteca* at environmentally relevant concentrations. *Environmental Toxicology and Chemistry* 28: 1493-1499.
- 2008 S. Bodensteiner, Zinkl M., McCloskey J., Brander S., Grabow L., Sellier P. Effects of desalination brine waste blended with treated wastewater in the aquatic environment of San Francisco. *Water Practice* 2: 1-9.
- 2007 Brander S.M., J.A. Royle, M. Eames. Evaluation of the status of anuran populations on a refuge in suburban Maryland. *Journal of Herpetology* 41: 51-59.

### Non- Peer Reviewed / Technical Reports

- 2015 Brander, S.M. The case against pesticides. Cape Fear's Going Green, Fall-Winter 2015 issue. [www.goinggreenpublications.com](http://www.goinggreenpublications.com)
- 2014 Goff, A.D., Brander, S.M. Evaluating water quality in the lower Cape Fear: Effects on the health and survival of migratory fishes. Report to the Cape Fear River Partnership.
- 2011 The Pulse of the Delta: Monitoring and Managing Water Quality in the Sacramento–San Joaquin Delta. Re-thinking Water Quality Monitoring. Contribution 630. Aquatic Science Center, Oakland, CA.
- 2010 Palumbo, A.J., Fojut, T.L., Brander, S.M., and Tjeerdema, R.S. Methodology for derivation of pesticide water quality criteria for the protection of aquatic life. Phase III: Bifenthrin criteria derivation. Prepared for the Central Valley Regional Water Quality Control Board. Department of Environmental Toxicology, University of California, Davis, CA.
- 2007 Werner, Inge, Linda Deavonic, Joy Kamphanh, Juergen Geist, Dan Markiewicz, Kevin Reece, Marie Stillway, and Susanne Brander. Pelagic organism decline: acute and chronic invertebrate and fish toxicity testing. Progress Report II. Aquatic Toxicology Laboratory, School of Veterinary Medicine, University of California, Davis, California.

### Media / Press Coverage

- 2018 This Week in Science, TWIS. Interview, podcast. Portland, OR. October 2018. <https://www.twis.org/2018/10/06/2405/>
- 2018 *Stop washing your gross used contact lenses down the drain.* Interview, quoted. Earther. <https://earther.gizmodo.com/stop-washing-your-gross-used-contact-lenses-down-the-dr-1828472006>. August 2018. Also mentioned in *OSU Today*.
- 2018 Clean Water week. Scientific Expert Panel. Cape Fear Community College, Wilmington, NC. <https://www.coastalreview.org/2018/06/whats-in-our-water-panel-discussion-set/> Held in June 2018.
- 2018 NOAA Marine Debris Project interview. WECT. <http://m.wect.com/story/37671929/uncw-researchers-find-plastic-in-certain-fish-caught-off-our-coast> Aired March 2018.
- 2017 *Special Report: GenX, A Toxic Year.* Interview. WHQR. Aired December 2017.
- 2017 *Combination of warmer water, chemical exposure intensifies harmful effects in a coastal fish.* Phys.org. <https://phys.org/news/2017-12-combination-warmer-chemical-exposure-effects.html>. December 2017.

- 2017 *Combination of warmer water, chemical exposure intensifies harmful effects in a coastal fish.* Oregon State Extension. Interview and press release. December 2017.
- 2017 *The role of epigenomics in aquatic toxicology.* Article featured for one month on *Environmental Toxicology and Chemistry* home page carousel.
- 2017 *GenX: The tale of two studies.* WHQR. Interview. <http://whqr.org/post/genx-tale-two-studies> Aired July 2017.
- 2017 Brunswick County residents get answers during GenX forum. Scientific Expert Panel. <https://www.wwaytv3.com/2017/07/19/residents-get-answers-during-genx-forum/>. July 2017.
- 2017 *GenX: New Water Testing Begins Monday.* WHQR. Interview. <http://whqr.org/post/genx-new-water-testing-begins-monday>. Aired June 2017.
- 2017 *GenX: A Question of Chemistry.* WHQR. Interview. <http://whqr.org/post/genx-question-chemistry>. Aired June 2017.
- 2017 *To use or not to use? A local expert on the drinking water.* WECT TV6. <http://www.wect.com/story/35739905/to-use-or-not-to-use-a-local-expert-on-the-drinking-water>. Aired June 2017.
- 2017 *GenX.* Spectrum News. Interview. Aired June 2017.
- 2017 *Questions about GenX.* Coastline. WHQR. Interview. Aired June 2017.
- 2017 Toxic Tap Water FAQs. Star News. <http://www.starnewsonline.com/news/20170611/toxic-tap-water-faqs-june-20-update>. Quoted.
- 2017 Panel: More than GenX in water. Star News. Quoted. <http://www.starnewsonline.com/news/20170621/panel-more-than-genx-in-water>
- 2017 PHOTOS: GenX and water quality forum. Star News. June 2017. <http://www.starnewsonline.com/photogallery/NC/20170621/NEWS/621009991/PH/1>
- 2017 Cape Fear River Watch holding community forum. WECT TV6. Quoted. <http://www.wect.com/story/35698341/cape-fear-river-watch-holding-community-forum..>
- 2017 *Meet Dr. Susanne Brander. The Female Scientist.* <https://thefemalescientist.com/portrait/susanne-brander/>. June 2017.
- 2017 *Researchers work to rid oceans of plastic.* Coastal Review Online. Interview. <http://www.coastalreview.org/2017/05/researchers-work-rid-oceans-plastic/>
- 2017 *The oceans are drowning in plastic – And no one’s paying attention.* Huffington Post. Interview. [http://www.huffingtonpost.com/entry/plastic-waste-oceans\\_us\\_58fed37be4b0c46f0781d426](http://www.huffingtonpost.com/entry/plastic-waste-oceans_us_58fed37be4b0c46f0781d426)
- 2016 *UNCW Researchers’ Work Used in New Documentary.* WWAY TV News (interviewed on “A Plastic Ocean” documentary) <http://www.wwaytv3.com/2016/02/23/uncw-researchers-work-used-in-new-documentary/>
- 2016 *UNCW researchers among international scientists featured in “A Plastic Ocean” documentary.* UNCW website. <http://www.uncw.edu/news/2016/02/uncw-researchers-among-international-scientists-featured-in-a-plastic-ocean-documentary.html>
- 2015 *A Plastic Ocean.* (film) Plastic Oceans Foundation, Producer Jo Ruxton. [www.plasticoceans.org](http://www.plasticoceans.org) Features footage from collaborative research on microplastics by Brander, Taylor, and Monteleone of UNCW. Airing January 2016.

- 2015 *Fish Tales*. WILMA Wilmington's Successful Women. Monthly Magazine Online Profile Feature. <http://www.wilmaontheweb.com/December-2015/Fish-Tales/>
- 2015 *UNCW awarded \$400K grant from EPA*. Lumina News, Star News, WWAY TV News, Newstral, Epnewswire, Wopular. (Press release regarding EPA STAR early career award)
- 2015 UNCW receives substantial grant from EPA. UNCW website. <http://uncw.edu/news/2015/08/uncw-receives-substantial-grant-from-epa.html>
- 2015 *This Week on Wingspan: Episode 2*. UNCW Wingspan. <http://www.uncwingspan.com> (interview)
- 2015 *Current water issues in North Carolina*. UNCTV – OVEE. Aired September 2015. (interactive online interview) <http://www.unctv.org/content/ovee>
- 2015 *Veterans Organization takes VA Concerns to Washington*. WWAY TV News (interviewed on potential health effects of metal contamination in drinking water at local hospital) <http://www.wwaytv3.com/2015/05/06/veterans-organization-take-va-concerns-to-washington/>
- 2014 *We all live downstream*. UNCTV (University of North Carolina Public Television). NC Science NOW. <http://science.unctv.org/content/we-all-live-downstream> Aired January 2015. (coverage of blue crab research)
- 2013 *Urban fish masculinized by hormone-mimicking chemicals*. Davis Enterprise, Contra Costa Times, Underwater Times, Daily Democrat, eScienceNews, FishBio, Phys.org, Technology.org. (Press release: *PLoS One* 8(9): e74251. doi:10.1371/journal.pone.0074251).

## Invited Presentations

### *Invited Platform*

- 2019 Federal actions to address marine plastic pollution: Reducing or preventing marine plastic pollution through source controls and life-cycle management. Scientific expert. United States Senate Environment and Public Works Committee Briefing. Brander S. January 14, 2019. Hosted by Surfrider and the UCLA School of Law.
- 2018 Transgenerational effects of early life stage exposure to endocrine disruptors across biological scales, in a euryhaline model fish. Brander S, DeCourten B, Forbes J, Roark H, Burns N, Mehinto A, Major K, White W, Britton M, Li J, Settles M, Connon R. Society for Environmental and Molecular Toxicology North America, Sacramento, CA. November 2018.
- 2018 An assessment of directly ingested and trophically transferred microplastics in larval and juvenile black sea bass (*Centropristis striata*). Stienbarger C, Joseph J, Carroll P, Monteleone B, Andrady A, Watanabe W, Seaton P, Taylor A, Brander S. Society for Environmental and Molecular Toxicology North America, Sacramento, CA. November 2018.
- 2018 Combined exposure to EDCs and elevated temperature influences development, reproduction and gene expression across generations in an estuarine fish. DeCourten B, Connon R, Brander S. Society for Environmental and Molecular Toxicology North America, Sacramento, CA. November 2018.
- 2018 Environmental stressors in coastal ecosystems with a focus on bifenthrin. Brander, S. Interagency Ecological Program, Contaminants Work Team, Sacramento, CA. *webinar* November 2018.
- 2018 Environmental stressors in coastal ecosystems: measuring responses in model estuarine organisms. Brander, S. Pacific Northwest National Labs, Sequim, WA. October 2018.

- 2018 An assessment of microplastic impacts on the health of the *Centropristis striata* fishery. Brander S, Stienbarger C, Jincy J, Athey S, Andrady A, Seataon P, Watanabe W, Monteleone B, Taylor A. American Fisheries Society Annual Meeting, Atlantic City, NJ. August 2018.
- 2018 Relevance of wildlife (fish) PFAS bioaccumulation data to human health protection. Brander, S. Toxicology Forum Annual Meeting, Annapolis, MD. July 2018.
- 2018 Effects of early life exposure on adult and offspring health: Considerations for risk assessment in aquatic ecosystems. Brander, S. Environmental Health Sciences Center, Oregon State University, Corvallis, OR. June 2018.
- 2018 Transgenerational effects of early life stage exposure to endocrine disruptors across biological scales in a euryhaline model fish. Brander S, DeCourten B, Forbes J, Roark H, Burns N, Mehinto A, White W, Settles M, Connon R. Society for Environmental and Molecular Toxicology Europe, Rome, Italy. May 2018.
- 2018 Using model estuarine and marine organisms to assess environmental stress. Brander S. Environmental Health Sciences Center. Oregon State University, Corvallis, OR. March 2018.
- 2018 The transgenerational effects of endocrine disrupting compounds. Brander S. Plenary talk. Pacific Northwest Society of Environmental Toxicology and Chemistry Annual Meeting. CH2M Hill, Corvallis, OR. March 2018.
- 2018 Using model estuarine and marine organisms to assess environmental stress. Brander S. College of Earth, Oceanic, and Atmospheric Sciences Seminar Series. Oregon State University, Corvallis, OR. February 2018.
- 2018 From the benchtop to the beach: Assessing responses to environmental stressors in marine and estuarine organisms. Brander S. Hatfield Marine Science Center Seminar Series. Oregon State University, Newport, OR. February 2018.
- 2018 Combined effects of warming and pollutants on temperature-dependent sex determination, survival, and development across generations. DeCourten B, Connon R, Brander S. Ocean Sciences Meeting, Portland, OR. February 2018.
- 2017 Using model estuarine organisms to assess environmental stress across biological scales. Environmental and Molecular Toxicology Seminar Series. Oregon State University, Corvallis, OR. November 2017.
- 2017 At what cost? Ecosystem services of shellfish cultivation in an estuarine reserve. Darrow E, Alphin T, Brander S, Puckett B, Lytle M, Billet K, Posey M. Coastal and Estuarine Research Foundation (CERF) Annual Meeting, Providence, RI. November 2017.
- 2017 Combined effects of warming and pollutants on temperature-dependent sex determination, survival, and development across generations. DeCourten B, Brander S. Coastal and Estuarine Research Foundation (CERF) Annual Meeting, Providence, RI. November 2017.
- 2017 The potential for transgenerational effects of early life stage exposure to endocrine disruptors across biological scales, in a euryhaline model fish species. Brander S. Environmental Protection Agency Science to Achieve Results Symposium. Minneapolis, MN. November 2017.
- 2017 Transgenerational effects of early life stage exposure to endocrine disruptors on reproduction and development in an estuarine fish. DeCourten B, Forbes J, Burns N, Mehinto A, Settles M, White W, Connon R, Brander S. Society of Environmental Toxicology and Chemistry North America, Minneapolis, MN. November 2017.

- 2017 Multiple stressors in coastal ecosystems: Measuring responses in model estuarine organisms. Brander, S. American Chemical Society Annual Meeting, San Francisco, CA. April 2017.
- 2017 Multiple stressors in coastal ecosystems: Measuring responses in model estuarine organisms. Brander, S. University of North Carolina at Greensboro, Greensboro, NC. March 2017.
- 2016 Multiple stressors over multiple generations: Assessing the combined effects of climate change and endocrine disruptors. DeCourten B, Connon R, Brander S. Bay-Delta Science, Sacramento, CA. October 2016.
- 2016 Multiple stressors over multiple generations: Assessing the combined effects of climate change and endocrine disruptors. DeCourten B, Connon R, Brander S. SETAC North America, Orlando, FL. November 2016.
- 2016 Microplastic debris ingestion and evaluation of trophic transfer in the estuarine fish, *Menidia beryllina*. S Brander. North Carolina Marine Debris Symposium, Wrightsville, NC. September 2016.
- 2016 From the benchtop to the beach: Model organisms for the study of endocrine disruption in marine and estuarine ecosystems. S Brander. Stony Brook University, New York, NY. April 2016.
- 2016 Multiple stressors over multiple generations: Assessing the combined risk of climate change and endocrine disruptors. DeCourten, B., Brander, S. Interagency Ecological Program Meeting, Sacramento, CA. April 2016.
- 2015 Linking biological scales across generations: An estuarine and marine model for measuring the ecological impact of EDCs. S Brander, A Mehinto, J White, R Connon\*, B DeCourten, K Maruya. EPA STAR Awards Kick Off Session. SETAC North America, Salt Lake City, Utah, USA. \*presenter, November 2015.
- 2015 Linking molecular level responses to apical endpoints: The development of relevant model systems for evaluating effects across the biological hierarchy. S Brander. Swiss Federal Institute of Aquatic Science and Technology (Eawag), Dübendorf, Switzerland. May 2015.
- 2014 Bifenthrin as endocrine disruptor in fishes: effects at the molecular, reproductive, and population levels. S Brander, K Jeffries, B Cole, B DeCourten\*\*, J White, N Fangue, R Connon. Society for Environmental Toxicology and Chemistry North America, Vancouver, Canada. November 2014.
- 2014 Predicted population decline in fish due to bifenthrin exposure: Implications for aquatic ecosystems in the Bay-Delta. S Brander, K Jeffries, B Cole, B DeCourten\*\*, B DeGroot\*, J White, N Fangue, R Connon. San Francisco Bay-Delta Conference. October 2014.
- 2014 Use of an estuarine model teleost to evaluate pollutant impacts at multiple biological scales. S Brander, K Jeffries, B Cole, B DeCourten\*\*, B DeGroot\*, J White, N Fangue, R Connon. Society for Environmental Toxicology and Chemistry Europe, Basel, Switzerland. May 2014.
- 2014 Validating inland silversides as a bioindicator species for the San Francisco Estuary. R. Connon, K Jeffries, B Cole, B DeCourten\*\*, B DeGroot\*, J White, N Fangue, S Brander. Interagency Ecological Program Annual Workshop, Folsom, CA. April 2014.
- 2013 Effects of bifenthrin and bifenthrin metabolite exposure on the endocrine system of *Menidia beryllina*. S Brander, K Jeffries, B Cole, B DeCourten\*\*, B DeGroot, J White, N Fangue, R Connon. Society for Environmental Toxicology and Chemistry North America, Nashville, TN. November 2013.



- 2013 Mechanistic effects of exposure to ibuprofen on inland silversides (*Menidia beryllina*). K Jeffries, S Brander, B De Courten\*\*, N Fangué, R Connon, Society for Environmental Toxicology and Chemistry, Nashville, TN. November 2013.
- 2013 Linking the benchtop to the bay: *Menidia* species as indicators of endocrine disruption. S Brander, K Jeffries, B Cole, B DeCourten\*\*, B DeGroot\*, J White, G Cherr, N Fangué, R Connon. Biomarkers Workshop. University of California, Davis. September 2013.
- 2013 From molecules to metapopulations: Using native model organisms to assess endocrine disruption. Cape Fear River Watch, Wilmington, NC. S Brander. September 2013.
- 2013 From 'omics to otoliths: Using *Menidia* species to assess endocrine disruption at multiple biological scales. North Carolina State University, Raleigh, NC. S Brander. May 2013.
- 2013 From molecules to metapopulations: Assessing endocrine disruption in aquatic life. Davidson College, Davidson, NC. S Brander. February 2013.
- 2012 From 'omics to otoliths: Using *Menidia* species to assess endocrine disruption. Society for Environmental Toxicology and Chemistry, Long Beach, CA. S Brander, G Cherr. November 2012.
- 2012 From 'omics to otoliths: Using responses to endocrine disrupting compounds at multiple biological scales to predict population dynamics. Ecological Society of America, Portland, OR. S Brander, G Cherr. August 2012.
- 2011 From 'omics to otoliths: Linking responses to estrogenic and androgenic endocrine disrupting compounds at multiple biological scales. Office of Environmental Health Hazard Assessment, Sacramento, CA. S Brander, G Cherr. May 2011.
- 2010 Pyrethroids as endocrine disruptors: bifenthrin and permethrin act as estrogens and anti-estrogens. Society of Environmental Toxicology and Chemistry, Portland, OR. November 2010.
- 2010 Pyrethroids as endocrine disruptors: bifenthrin and permethrin acting as estrogens and anti-estrogens. California Department of Pesticide Regulation, Sacramento, CA. August 2010.
- 2010 Linking environmentally relevant responses to EDCs at multiple scales. Northern CA Society for Environmental Toxicology and Chemistry, Berkeley, CA. S Brander, G Cherr. May 2010.
- 2010 Endocrine disruption in a California estuary: Individual and population level effects in a resident fish species. San Francisco Estuary Interagency Ecological Program, Sacramento, CA. S Brander, G Cherr. March 2010.

*Invited Poster*

- 2018 An assessment of potential microplastic impacts on the health of the *Centropristis striata* fishery. Brander S, Athey S, Stienbarger C, Andrady T, Seaton P, Watanabe W, Monteleone B, Taylor A. International Marine Debris Conference, San Diego, CA. March 2018.
- 2017 Impacts of marine plastics on a mid-trophic level estuarine fish (*Menidia* species). Athey S, Nickel K, Hall K, Ruiz G, Green Z, Mongo M, Monteleone B, Seaton P, Taylor A, Brander S. Ocean Plastics, Expo 216, Wilmington, NC. March 2017.
- 2017 The development and evaluation of protocols for fluorescently labeling microplastics for use in feeding experiments with larval fish. Gordon C, Monteleone B, Avery G, Taylor A, Brander S. Ocean Plastics, Expo 216, Wilmington, NC. March 2017.
- 2017 Microplastics: the potential for trophic transfer in a model marine system. Albotra S, Echevarria M, Monteleone B, Seaton P, Taylor A, Brander S. Ocean Plastics, Expo 216, Wilmington, NC. March 2017.

- 2016 Impacts of marine plastics on a mid-trophic level estuarine fish (*Menidia* species). Athey, S.\*\*, Nickel, K.\*\*, Hall, K. \*\*, Ruiz, G. \*\*, Green, Z. \*\*, Mongo, M. \*\*, Monteleone, B., Seaton, P., Taylor, A., Brander, S. North Carolina Marine Debris Symposium, Wrightsville Beach, NC. September 2016.
- 2015 Investigating the potential for endocrine disruption in wild populations of blue crabs (*Callinectes sapidus*). Goff, A.\*\*, Ryan, L.\*\*, Covi, J., Brander, S. Society for Environmental Toxicology and Chemistry North America, Vancouver, Canada. November 2015.
- 2015 Multiple stressors over multiple generations: assessing the combined effects of climate change and endocrine disruptors. DeCourten, B.\*\*, Connon, R., Brander, S. Society for Environmental Toxicology and Chemistry North America, Vancouver, Canada. November 2015.
- 2015 Microplastics: the potential for bioaccumulation and trophic transfer in a model marine system. S Albotra\*, M Echevarria\*\*, B Monteleone, P Seaton, A Taylor, S Brander. Society for Environmental Toxicology and Chemistry North America, Vancouver, Canada. November 2015.
- 2015 The effects of early-life bifenthrin exposure on gene expression in *Menidia beryllina*, at different salinities. R Diaz\*, R Connon, S Brander. Society for Environmental Toxicology and Chemistry North America, Vancouver, Canada. November 2015.
- 2014 Ibuprofen exposure reduced reproductive output in adult inland silversides. K Jeffries, S Brander, N Fangué, R Connon. San Francisco Bay-Delta Conference, 8<sup>th</sup> Biennial, Sacramento, California. October 2014.

## Other Presentations

### Oral

- 2018 Trophic transfer of microplastics and an associated legacy pollutant from microzooplankton to their predators. Athey S, Albotra S, Gordon C, Monteleone B, Andrady A, Taylor A, Brander S. Society for Environmental Toxicology and Chemistry, Sacramento, CA. November 2018.
- 2018 Combined exposure to EDCs and elevated temperature influences development, reproduction and gene expression across generations in an estuarine fish. DeCourten B, Connon R, Brander S. Bay-Delta Science Conference, Sacramento, CA. October 2018.
- 2018 Towards development of environmental criteria for siting of bivalve mariculture siting in reserves. Darrow E, Alphin T, Billet K, Brander S, Bricker S, Ferreira J, Lytle M, Posey M, Volety A, Weirich C, Wilbur A. Atlantic Estuarine Research Society, Rehobeth Beach, DE. March 2018.
- 2017 Impacts of oyster structures (reefs and culture operations) on adjacent infaunal community assemblages. Lytle M, Posey M, Darrow E, Brander S, Alphin T. Coastal and Estuarine Research Foundation (CERF) Annual Meeting, Providence, RI. November 2017.
- 2017 Combined effects of warming and pollutants on temperature-dependent sex determination, survival, and development across generations. Decourten B, Connon R, Brander S. Carolinas Society of Environmental Toxicology and Chemistry, Charleston, SC. May 2017.
- 2017 The effect of a microplastic-associated legacy pollutant on the feeding preferences of microzooplankton and their predators. Athey S, Echevarria M, Andrady A, Taylor A, Brander S. Carolinas Society of Environmental Toxicology and Chemistry, Charleston, SC. May 2017.

- 2016 How many males does a population need? White JW, Easter E, Cole B, Cherr G, Connon R, Brander S. Western Society of Naturalists, Monterey, CA. November 2016.
- 2016 Multiple stressors over multiple generations: Assessing the combined effects of climate change and endocrine disruptors. DeCourten B, Brander S. 2016 Bay-Delta Science Conference, Sacramento, CA. October 2016.
- 2016 Multiple stressors over multiple generations: assessing the combined effects of climate change and endocrine disruptors. DeCourten, B.\*\*, Brander, S. Carolinas SETAC, Wilmington, NC. May 2016.
- 2016 Behavioral responses and sublethal impacts of dispersed oil and PAHs on juvenile sablefish, *Anoplopoma fimbria*. McConville, M.\*\*, Roberts, J.\*\*, Brander, S., Volety, A. Graduate Symposium, College of William and Mary, Williamsburg, VA. March 2016.
- 2016 Assessing the impacts of endocrine disruption in wild populations and laboratory reared blue crabs, *Callinectes sapidus*, by evaluating gene expression, morphology, and population-level endpoints. Goff, A.\*\*, Brander, S. Benthic Ecology Meeting, Portland, ME. March 2016.
- 2015 Multiple stressors over multiple generations: assessing the combined effects of climate change and endocrine disruptors. DeCourten, B.\*\*, Brander, S. SETAC North America, Salt Lake City, Utah, USA. November 2015.
- 2015 Effects of bifenthrin across multiple biological scales in a euryhaline model fish species. Brander, S., Cole, B., Jeffries, K., DeCourten, B.\*\*, White, J., Fangué, N., Connon, R. Pollutant Responses in Marine Organisms: PRIMO 18<sup>th</sup> biannual meeting. May 2015.
- 2014 Physiological effects of exposure to ibuprofen in *Menidia beryllina*. Jeffries, K., Brander, S., Cole, B., Fangué, N., Connon, R. SETAC Europe 2014, Society of Environmental Toxicology and Chemistry Europe, Basel, Switzerland. May 2014.
- 2014 Use of an estuarine model teleost to evaluate pollutant impacts at multiple biological scales. Brander, S., Jeffries, K., Cole, B., DeCourten, B.\*\*, DeGroot, B.\*, White, J., Fangué, N., Connon, R. SETAC Europe 2014, Society of Environmental Toxicology and Chemistry Europe, Basel, Switzerland. May 2014.
- 2014 Generalized mixed models for ecotoxicology: avoiding pseudoreplication and unnecessary data transformations. White, J., Brander, S. SETAC Europe 2014, Society of Environmental Toxicology and Chemistry. May 2014.
- 2013 Guppy gladiators: endocrine disrupting compounds alter risk-taking behaviors when facing a predator in the arena. Heintz, M. M.\*\*, Brander, S., White, J. 42nd Benthic Ecology Meeting, Savannah, GA. March 2013.
- Poster*
- 2018 Chemical analysis of ingested plastics and associated organic pollutants in wild-caught black sea bass, *Centropristis striata*. Joseph J, Stienbarger C, Seaton P, Andrady A, Watanabe W, Monteleone B, Taylor A, Brander S. Society of Environmental Toxicology and Chemistry North America, Sacramento, CA. November 2018.
- 2018 Quantifying marine microplastic ingestion in Black rockfish (*Sebastes melanops*) along the Oregon Coast. Laundry J, Agrawal A, \*Lasdin K, Brander S. Western Society of Naturalists, Vancouver, WA. November 2018.
- 2018 Quantifying marine microplastic ingestion in Black rockfish (*Sebastes melanops*) along the Oregon Coast. Laundry J, Agrawal A, Lasdin K, Brander S. Beginning and Continuing CAS Undergraduate Research Symposium. Oregon State University, Corvallis, OR. October 2018.

- 2018 Quantifying marine microplastic ingestion in Black rockfish (*Sebastes melanops*) along the Oregon Coast. Laundry J, Agrawal A, \*Lasdin K, Brander S. State of the Coast, Coos Bay, OR. October 2018.
- 2018 Multigenerational effects of Hormone Disrupting Chemicals in Fish. Laundry J, DeCourten B, Brander S. Beginning and Continuing CAS symposium, Oregon State University, Corvallis, OR. October 2018.
- 2018 Combined effects of warming and pollutants on temperature-dependent sex determination, survival, and development across generations in an estuarine fish. DeCourten B, Connon R, Brander S. Tribal Environmental Health Summit, Corvallis, OR, USA. June 2018.
- 2018 Exposure to EDCs influences development, reproduction and gene expression across generations in an estuarine fish, with notes on co-exposure with elevated temperature. DeCourten B, Connon R, Brander S. Oregon State University Center for Genome Research and Bioinformatics workshop, Corvallis, OR, USA. June 2018.
- 2018 Trophic transfer of microplastics and an associated legacy pollutant from microzooplankton to their predators. Athey S, Echevarria M, Taylor A, Andrady A, Brander S. International Association for Great Lakes Research Annual Meeting, Toronto, Ontario, Canada. May 2019.
- 2018 The effects of a microplastic-associated legacy pollutant on the feeding preferences of microzooplankton and their predators. Athey S, Echevarria M, Andrady A, Taylor A, Brander S. International Marine Debris Conference, San Diego, CA. March 2018.
- 2018 Roles of physiological rates on farm-scale nutrient removal. Kinsella J, Darrow E, Ferreira JG, Bricker S, Volety A, Alphin T, Posey M, Brander S, Puckett B. Atlantic Estuarine Research Society, Rehobeth Beach, DE. March 2018.
- 2017 Effects of new oyster cultivation on sediment characteristics within Masonboro Island, NC. Carlton J, Darrow E, Alphin T, Brander S, Puckett B, Posey M. Coastal and Estuarine Research Foundation (CERF) Annual Meeting, Providence, RI. November 2017.
- 2017 Scaling up endocrine disruption effects from individuals to populations: Outcomes depend on how many males a population needs. White JW, Cole BJ, Cherr GN, Connon RE, Brander SM. Society of Environmental Toxicology and Chemistry North America, Minnesota, MN. November 2017.
- 2017 The effects of a microplastic-associated legacy pollutant on the feeding preferences of microzooplankton and their predators. Athey S, Echevarria M, Andrady A, Taylor A, Brander S. Society of Environmental Toxicology and Chemistry North America, Minnesota, MN. November 2017.
- 2017 The immune response of *Menidia beryllina* exposed to endocrine disrupting compounds in early life. Roark H, DeCourten B, Forbes J, Brander S. Society of Environmental Toxicology and Chemistry North America, Minnesota, MN. November 2017.
- 2017 Histological assessment of endocrine disrupting compounds on the inland silverside, *Menidia beryllina*. Forbes J, DeCourten B, Burns N, Brander S. Carolinas Society of Environmental Toxicology and Chemistry, Charleston, SC. May 2017.
- 2017 The immune response of *Menidia beryllina* exposed to endocrine disrupting compounds in early life. Roark H, DeCourten B, Forbes J, Brander S. Carolinas Society of Environmental Toxicology and Chemistry, Charleston, SC. May 2017.
- 2017 Hierchy development in juvenile *A. ocellaris*. Hudson K, Brander S. Undergraduate Research Symposium, UNCW, Wilmington, NC. May 2017.

- 2016 Evaluation of ecosystem services associated with shellfish culture operations in coastal regions served by the National Estuarine Research Reserve. Darrow ES, Alphin TD, Brander SM, Puckett B, Posey MH. National Estuarine Research Reserve Annual Meeting, Williamsburg, VA. December 2016.
- 2016 Impacts of marine plastics on a mid-trophic level estuarine fish (*Menidia* species). Athey, S.\*\*, Nickel, K.\*\*, Hall, K. \*\*, Ruiz, G. \*\*, Green, Z. \*\*, Mongo, M. \*\*, Monteleone, B., Seaton, P., Taylor, A., Brander, S. State of North Carolina Undergraduate Research Symposium, Durham, NC. May 2016.
- 2016 Effects of three crude oil aromatic constituents on a model fish species *Anoplopoma fimbria*. J Roberts, M Boulais, B Woodall, M McConville, J Guyomarch, S LeFloch, L Camus, S Brander, A Volety. SETAC North America, Orlando, FL, USA. November 2016.
- 2016 Visualizing skeletal defects in inland silverside (*Menidia beryllina*) exposed to levonorgestrel. M McConville, B DeCourten, B Woodall, A Taylor, S Brander. SETAC North America, Orlando, FL, USA. November 2016.
- 2016 Behavioral response and sublethal impacts of dispersed oil and PAHs on juvenile sablefish, *Anoplopoma fimbria*. McConville, M.\*\*, Roberts, J.\*\*, Brander, S., Volety, A. Carolinas SETAC, Wilmington, NC. May 2016.
- 2016 The effects of fluoxetine on social hierarchy formation in *A. ocellaris* juveniles. Chrisos, A.\*, Hudson, K.\*, Johnson, M., Leso, A.\*, Brander, S. Carolinas SETAC, Wilmington, NC. May 2016.
- 2016 Assessing the effects of estrogenic and androgenic endocrine disruptors over multiple generations in an estuarine model species. Burns, N., DeCourten, B.\*\*, Brander, S.. Carolinas SETAC, Wilmington, NC. May 2016.
- 2015 Microplastics: the potential for bioaccumulation and trophic transfer in a model marine system. S Albotra\*, M Echevarria\*\*, B Monteleone, P Seaton, A Taylor, S Brander. North Carolina Marine Debris Symposium, Nags Head, NC. September 2015.
- 2015 Fluorescently labeled microplastics for use in marine ecotoxicology studies. C Gordon\*, B Monteleone, B Avery, P Seaton, A Taylor, S Brander. North Carolina Marine Debris Symposium, Nags Head, NC. September 2015.
- 2015 Microplastics: the potential for bioaccumulation and trophic transfer in a model marine system. S Albotra\*, M Echevarria\*\*, B Monteleone, P Seaton, A Taylor, S Brander. Society for Environmental Toxicology and Chemistry North America, Vancouver, Canada. November 2015.
- 2015 Investigating the potential for endocrine disruption in wild populations of blue crabs (*Callinectes sapidus*). Goff, A.\*\*, Ryan, L.\*\*, Covi, J., Brander, S. Carolinas SETAC Annual Meeting, Raleigh, NC. April 2015.
- 2015 Multiple stressors over multiple generations: assessing the combined effects of climate change and endocrine disruptors. DeCourten, B.\*\*, Connon, R., Brander, S. Carolinas SETAC Annual Meeting, Raleigh, NC. April 2015.
- 2015 Multiple stressors over multiple generations: assessing the combined effects of climate change and endocrine disruptors. DeCourten, B.\*\*, Connon, R., Brander, S. Southeastern Estuarine Research Society Annual Meeting, Carolina Beach, NC. March 2015.
- 2015 The effects of trophically transferred Deepwater Horizon oil on *Menidia beryllina*. Gross, J.\*, Condon, R., Brander, S. Carolinas SETAC Annual Meeting, Raleigh, NC.

- 2014 The potential for endocrine disruption in the blue crab, *Callinectes sapidus* . Goff, A.\*\*,  
Ryan, L.\*\*, Covi, J., Brander, S. North Carolina Sea Grant Review, NC Sea Grant, Raleigh,  
NC. March 2015.
- 2014 Examining the impact of endocrine disrupting compounds on sex determination and  
development in the blue crab, *Callinectes sapidus* . Goff, A.\*\*, Ryan, L.\*\*, Covi, J., Brander,  
S. North Carolina Sea Grant Symposium, NC Sea Grant, Raleigh, NC. February 2015.
- 2014 Multiple stressors over multiple generations: assessing the combined effects of climate  
change and endocrine disruptors. DeCourten, B.\*\*, Brander, S. Carolinas SETAC Annual  
Meeting, Carolinas Society of Environmental Toxicology and Chemistry, Clemson, SC.  
March 2014.
- 2014 The effects of toxicants on the production of ecdysteroids by the Y-organ in *Callinectes  
sapidus*. Ryan, L.\*\*, Brander, S., Chang, E., Chang, S., Covi, J. SICB Annual Meeting,  
Society of Integrative and Comparative Biology, Austin, TX. January 2014.
- 2013 The effects of bifenthrin exposure on initial phase *Thalassoma bifasciatum* (bluehead  
wrasse) brain aromatase (CYP19A2) expression and aggression. Burnsed, K.\*, Brander, S.  
SETAC North America, 24th Annual Meeting, Society of Environmental Toxicology and  
Chemistry, Nashville, TN. November 2013.
- 2013 The effects of bifenthrin exposure on initial phase *Thalassoma bifasciatum* (bluehead  
wrasse) brain aromatase (CYP19A2) expression and aggression. Burnsed, K.\*, Brander, S.  
SNCURCS 2013, State of North Carolina Undergraduate Research and Creativity  
Symposium, Charlotte, NC. May 2013.
- 2013 Development of molecular tools to assess fish health in the San Francisco Estuary Jeffries, K.  
M., Brander, S., Fangue, N. A., Connon, R. E. The 11th Biennial State of the San Francisco  
Estuary Conference, Delta Science Council, Oakland, CA, October 2013.
- 2013 Impacts of endocrine disrupting chemicals on *Menidia beryllina*, a resident fish in the SSJ  
Delta. Cole, B. J., Brander, S., Jeffries, K. M., Connon, R. E., Cherr, G. N. The 11th Biennial  
State of the San Francisco Estuary Conference, Delta Science Council, Oakland, CA.  
October 2013.
- 2013 The effects of sub-lethal chronic exposure to the pesticide bifenthrin on inland silversides  
(*Menida beryllina*). Jeffries, K.M., Brander, S., DeCourten, B. M.\*, Stillway, M. V.,  
Deanovic, L. A., Fangue, N. A., Connon, R.E. American Fisheries Society Cal-Nev, AFS  
California and Nevada, Davis, CA. September 2013.
- 2013 Endocrine disrupting compounds alter risk-taking and anti-predator behavior in fish  
(*Poecilia reticulata*). Heintz, M.\*\*, Brander, S., White, J. Carolinas Society of  
Environmental Toxicology and Chemistry Annual Meeting, Raleigh, NC. March 2013.
- 2013 The role of metabolism in the estrogenicity of bifenthrin in *Menidia beryllina*.  
DeGroot, B.C.\*, Brander, S. Carolinas Society of Environmental Technology and Chemistry  
Annual Meeting, Raleigh, NC. March 2013.
- 2012 Transfected vs. native: The potential for conflicting measurements of endocrine activity  
from different cell lines. Brander, S., Davies, B. H., He, G., Connon, R. E., Denison, M. S.,  
Society of Environmental Toxicology and Chemistry, SETAC, Long Beach, CA. November  
2012.
- 2012 Transfected vs. native: The potential for conflicting measurements of endocrine activity  
from different cell lines. Brander, S., Davies, B. H., He, G., Connon, R. E., Denison, M. S.,  
Bay Delta Science Conference, Delta Science, Sacramento, CA. October 2012.

\* *undergraduate student*

\*\**graduate student*

## Public Presentations / Service

- 2018 Marine plastics, how big is the problem and how can we begin to stem the tide? Tap Talk, Block 15 Brewing Southtown. December 2018.
- 2018 Environmental stressors in coastal ecosystems, with a focus on pesticides. Department of Environmental Quality quarterly meeting. November 2018.
- 2017 Multiple stressors in estuarine ecosystems. St. James Plantation, Southport, NC. June 2017.
- 2016 Water quality and effects on aquatic organisms. NC Sorosis Society, Guest Speaker. November 2017.
- 2016 An introduction to toxicology. UNCW College Day, Lecturer. Continuing education opportunity for UNCW community. October 2016.
- 2016 Blue crab basics & beyond. UNCW Center for Marine Science Lecture Series, Guest Speaker. Sponsored by the Masonboro National Estuarine Research Reserve. April 2016.
- 2015 Blue crab basics & beyond. UNCW Center for Marine Science Lecture Series, Guest Speaker. Sponsored by the Masonboro National Estuarine Research Reserve. April 2016.
- 2014 Blue crab basics & beyond. UNCW Center for Marine Science Lecture Series, Guest Speaker. Sponsored by the Masonboro National Estuarine Research Reserve. April 2016.
- 2015 From molecules to metapopulations: using native model organisms to gauge the impact of pollutants. UNCW Osher Institute for Lifelong Learning, Guest Speaker. October 2015.
- 2014 An introduction to toxicology. UNCW College Day, Lecturer. Continuing education opportunity for UNCW community. October 2014.

## Grants and Awards

- Pending Keck Foundation. Marine microplastic research laboratory. Lead PIs Goni and Brander. **1.2 million (all at OSU)**
- Pending NOAA Marine Debris Program. Linking fiber occurrence in wild-caught herring along the Pacific coast with laboratory exposures assessing biologically relevant responses. Lead PI Brander, Co PIs (all at San Francisco Estuary Institute, SFEI) Field, Sedlak, Sutton, Lin. **\$322,500 (223.5K to Brander at OSU, 99K to SFEI)**
- Pending NOAA Marine Debris Program. Plastic marine debris accumulation and risk assessment in three Pacific Northwest commercially-harvested marine species: Raising awareness through field and laboratory linked research and science-based outreach. Lead PI Granek, Co-PIs Brander, Conkle, Eckert, **\$348,000 (111.5K subaward to Brander at OSU)**
- Pending Agricultural Research Foundation, OSU. Kick-starting COZI – the coastal Oregon zooplankton investigation – to understand microplastic and energetic loads at the base of our food web. Lead PI Torres, Co PIs Brander, Henkel, Bernard). **\$12,500, 2K to Brander**
- Pending Delta Science Council Proposition 1 Funding Request. An evaluation of sublethal and latent pyrethroid toxicity across a salinity gradient in two Delta fish species. Lead PI Brander, Co-PIs Connon and Hladik. **\$459,803 (228K to Brander at OSU, 107K to UC Davis, 125K to USGS)**
- Recommended Environmental Protection Agency, Science to Achieve Results (STAR). Reducing the reliance on early-life stage testing with relevance to euryhaline fishes: Development and implementation of in-vitro assays predictive of early life stage toxicity and population-level effects. Lead PI Brander, Co-PIs Chappell, Armbrust, White. **\$849,988; 269K to LSU, 581K to OSU, Brander (428K to Brander, 133K to Chappell, 20K to White)**

- Recommended Southern California Municipal Water District. Wildfire-related contaminants: Potential for detrimental effects of ash leachates on early life stages of important Bay-Delta fishes. Lead PI Brander, Co-PIs Connon and Young. **\$175,000 (100K to Brander at OSU, 75K to UC Davis)**
- 2018-2019 Agricultural Research Foundation, OSU. The potential for marine plastic ingestion in a coastal commercial and recreational fishery. Lead PI S. Brander – **12,500 to Brander OSU**  
 - *Brander and students are investigating whether wild nearshore rockfish are ingesting plastics off the Oregon coast. Brander wrote the grant and is responsible for managing all grant-related activities such as mentoring students (K. Lasdin, OSU Masters Student, undergraduates) on research, data analysis, reporting, and budgeting. Estimated FTE = 0.1 (no summer salary on this grant)*
- 2017-2020 NOAA Marine Debris Research. Microplastic ingestion by the black sea bass, *Centropristis striata*: An assessment of potential impacts on the health of an Atlantic commercial fish species. Lead PI S. Brander, with Co-PIs A. Andrady, W. Watanabe, P. Seaton, B. Monteleone, A. Taylor (\$289,000) – **0K to Brander at OSU**  
 - *Brander and colleagues are investigating whether wild black sea bass are ingesting plastics off the North Carolina coast, and designing and running laboratory experiments to evaluate the effects of plastic ingestion in cultured black sea bass. Brander wrote the grant and is responsible for managing many grant-related activities such as co-mentoring a UNCW post-doc and students on research, data analysis, reporting, and budgeting. Estimated FTE = 0.1 (no summer salary on this grant, was planned but used to make up a shortfall due to increased research expenses)*
- 2017-2020 California Department of Fish and Wildlife, Prop 1 Funding Request. Contaminant effects on two California fish species and the food web that supports them. Lead PI R. Connon, with Co-PIs N. Fangue, T. Hung, S. Brander, H. Poynton, M. Lydy. (\$1,700,000) – **54 K to Brander at OSU**  
 - *Brander and colleagues are investigating whether pesticide-resistant amphipods are transferring chemicals in high enough concentrations to cause sublethal effects in San Francisco Bay-Delta fish species that prey upon them. Brander wrote a portion of this multi-PI grant and is responsible for managing grant-related activities such as co-mentoring two UC Davis post-docs on research and data analysis. Estimated FTE = 0.1 (1 month summer salary)*
- 2016-2019 NERR Science Collaborative. Evaluation of Ecosystem Services Associated with Shellfish Culture Operations in Coastal Regions Served by the National Estuarine Research Reserve. Lead PI M. Posey, Co-PIs T. Alphin, B. Darrow Condon, S. Brander (\$673,500) – **11K to Brander at OSU**  
 - *Brander and colleagues are researching the potential impact of aquaculture on native oysters in national estuarine reserch reserves in North Carolina. Brander wrote a portion of this multi-PI grant and is responsible for managing grant-related activities such as mentoring UNCW graduate student Kelsey Billet on research and data analysis. Brander also contributes to team meetings, presentations, and manuscripts. Estimated FTE = 0.1 (1/2 mo. summer salary)*
- 2015-2019 U.S. Environmental Protection Agency, Science to Achieve Results (EPA-G2014-STAR-E1/E2). Linking biological scales across generations: An estuarine and marine model for measuring the ecological impact of endocrine disrupting compounds. Lead PI Brander (\$399,971), with Co-PI W.White, Associate Investigators A. Mehinto, R. Connon. – **141K to OSU, 69K to Brander, 24K to Mehinto (subaward), 48K to Connon (subaward)**  
 - *Brander is responsible for overall project management and research direction, she wrote the proposal and is lead PI. Brander oversees regular team meetings between co-PIs, mentors a post-doc and a Ph.D. student at OSU (Kaley Major, Bethany DeCourten) and*



has mentored another recently graduated Masters student at UNCW (Josh Forbes) as well as many undergraduate assistants. She advises on data analysis, gives presentations, submits reports, and is responsible for budgeting. Remainder of grant is in the process of being transferred to OSU. Estimated FTE = 0.1 (1/2 mo. summer salary)

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The above grants have either been submitted or awarded since Brander moved to OSU or were in progress at UNCW when Brander moved to OSU. The amount awarded to OSU for each grant is detailed, as well as the amount awarded to Brander if subawards are included on grant. Descriptions are included for awarded / ongoing grants.

2016	University of North Carolina, Wilmington. Center for Marine Science Pilot Project. Near-shore impacts of microplastics: An investigation of coastal and estuarine occurrence, associated pollutants, and biological effects in a native euryhaline fish. Lead PI Brander, with Co-PIs A. Taylor, B. Monteleone, P. Seaton (\$21,150).
2015-2016	University of North Carolina, Wilmington. eTEAL Supported Pedagogy Initiative. The impact of microplastics and associated pollutants on the foundation of aquatic food webs. Lead PI Brander, with Co-PIs B. Monteleone, A. Taylor, and P. Seaton (\$3,800).
2015-2017	American Petroleum Institute. Toxicity of oil dispersants for deep sea species. Lead PI Volety, Co-PI Brander. (\$113,500)
2014-2016	University of North Carolina, Wilmington. Center for Marine Science Pilot Project. What flips the switch?: The role of aromatase in the sex determination of protandrous fishes. PI Brander (\$20,000)
2014	The Nature Conservancy, North Carolina. Nutrients and fish health. Lead PI Brander. (\$5,000)
2014	University of North Carolina, Wilmington. Cahill grant. The neuroendocrinological basis for sex change and social behavior in <i>Amphiprion ocellaris</i> . PI Brander (\$2,969)
2013 - 2014	University of North Carolina, Wilmington. eTEAL (experiential teaching and applied learning) Supported Pedagogy Initiative. Applied Environmental Endocrinology. PI Brander (\$3,000)
2012	North Carolina Sea Grant. Developing an approach to monitoring potential endocrine disruption in <i>Callinectes sapidus</i> . PI Brander (\$5,000)
2012	Friends of UNCW. Research on the impact of hormone-disrupting pollutants on fish in the Cape Fear River. PI Brander (\$1,000)
2012 - 2015	California Department of Fish and Game. A systems biology assessment of EDCs in the Delta. (with co-PI Richard Connon) (\$486,000)
2011	University of North Carolina, Wilmington, Center for Marine Science. Scaling up endocrine disruption effects in the Lower Cape Fear: from individual behavior to population dynamics. (with co-PI W. White) (\$35,000)
2010	Northern California Society for Environmental Toxicology and Chemistry. First Place Student Platform Presentation.
2009 – 2010	National Science Foundation CAMEOS GK-12 Graduate Fellowship.
2009	University of California, Davis. Research Scholarship. (\$1,000)
2009	Sacramento County Sanitation and Wastewater District. Research Grant. (\$5,000)
2007 - 2011	Delta Science. Pre-Doctoral Fellowship (3 years).

2007 University of California, Davis. Jastro-Shields Research Scholarship. (\$3,000)  
2007 - 2011 Phi Sigma, Graduate Honors Society.  
2006 University of California Davis. Pharmacology and Toxicology Graduate Group Block Grant.

### **Teaching / Course Development**

2018 Guest Lecturer, Environmental and Molecular Toxicology Graduate Seminar, Oregon State University, Fall quarter 2018.  
2018 Guest Lecturer, Tox 455-555, Aquatic Toxicology, Oregon State University, Winter quarter 2018.  
2017-2018 Course Development, Marine Studies Initiative Cat II proposal, Oregon State University, Summer 2018.  
2015-2017 Instructor, Toxicology, University of North Carolina, Wilmington  
2014 Guest Lecturer, Honors 120, Honors Principles of Biology: Cells, Behavioral Ecology, University of North Carolina, Wilmington  
2013 – 2017 Instructor, Applied Learning in Environmental Endocrinology, University of North Carolina, Wilmington  
2013 – 2017 Division of Student Affairs, annual recognition by multiple graduating seniors  
2014 Instructor, Teaching Assistantship in Cell Biology, University of North Carolina, Wilmington  
2013 – 2017 Instructor, Beyond DNA: Gene Expression and the Environment, University of North Carolina, Wilmington.  
2012 – 2014 Instructor, Principles of Biology: Cells, University of North Carolina, Wilmington.  
2011 – 2016 Instructor, Endocrinology, University of North Carolina, Wilmington.  
2009 – 2010 NSF GK-12 Mentor, Biology, El Molino High School, Sonoma County, CA.  
2008 Teaching Assistant, Physiology of Marine Organisms, University of California, Davis.  
2007 Teaching Assistant, Biological Effects of Toxicants, University of California, Davis.

### **Mentoring**

2018 – present Co-mentor, Post-doctoral scholar, Florian Manduit, *Contaminant effects on two California fish species and the food web that supports them*, University of California, Davis  
2018 – present Faculty Supervisor, Post-doctoral Scholar, Kaley Major, *Developing genomic tools for Menidia beryllina*, Environmental and Molecular Toxicology, Oregon State University  
2018 - present Faculty Supervisor (Graduate), Masters Thesis, *Microplastics in adult and juvenile nearshore black rockfish*, Katherine Lasdin, Fisheries and Wildlife, Oregon State University  
2018 Mentor (REU Undergraduate), Anika Agrawal, *The potential for marine plastic ingestion in a coastal commercial and recreational fishery*, Hatfield Marine Science Center, Oregon State University  
2018 Mentor (Graduate), Summer-Winter Lab Rotation, *Developing multi-generational testing for Daphnia magna*, Stephanie Krail, Oregon State University  
2018 Mentor (Graduate), Spring Lab Rotation, *Gene expression and DNA methylation in Menidia beryllina exposed to endocrine disruptors across multiple generations*, Claudia Santillan, Oregon State University

- 2018 Mentor (Undergraduate), Beginning CAS Researcher, *The potential for marine plastic ingestion in a coastal commercial and recreational fishery*, Jordan Laundry, Oregon State University
- 2018 – present Co-mentor, Post-doctoral scholar, Jincy Joseph, *Microplastic ingestion by the black sea bass, *Centropristis striata*: An assessment of potential impacts on the health of an Atlantic commercial fish species*, University of North Carolina, Wilmington
- 2018 – present Co-advisor, Masters Thesis, Cheyenne Stienbarger, *Microplastic ingestion by the black sea bass, *Centropristis striata*: An assessment of potential impacts on the health of an Atlantic commercial fish species*, University of North Carolina, Wilmington.
- 2017 – present Co-mentor, Post-doctoral scholar, Amie Romney, *Contaminant effects on two California fish species and the food web that supports them*, University of California, Davis
- 2017 – present Committee Member, Masters Thesis, Emily Vebrosky, *Influence of salinity, sunlight, and sediment on the toxicity of pesticides in three non-target organisms*, Louisiana State University.
- 2017 – present Faculty Supervisor, Masters Thesis, University of North Carolina, Wilmington. *Effects of oyster aquaculture on gene expression in wild oysters*. Kelsey Billet.
- 2016 – 2018 Faculty Supervisor, Masters Thesis, University of North Carolina, Wilmington. *Tropic transfer of microplastics and an associated legacy pollutant from microzooplankton to their predators*, Samantha Athey.
- 2016 – 2018 Faculty Supervisor, Masters Thesis, University of North Carolina, Wilmington. *Transgenerational effects on gonadal histology in a euryhaline fish model*, Joshua Forbes.
- 2016 – 2017 Faculty Supervisor, Undergraduate Honors Thesis. University of North Carolina, Wilmington. *Effects of endocrine disrupting chemicals on immune response in *Menidia beryllina* across generations*, Hunter Roark.
- 2015 – 2018 Committee Member, Masters Thesis. University of North Carolina, Wilmington. *Determination of the aquatic toxicity of irradiated suspensions of sediments impacted by petroleum*, Mekiyah Bailey.
- 2015 – 2017 Committee Member, Masters Thesis. University of North Carolina, Wilmington. *A species-sensitivity distribution for select PAHs*, John Roberts.
- 2015 – 2017 Faculty Supervisor, Masters Thesis. University of North Carolina, Wilmington. *Behavioral responses of sablefish to PAHs*, Megan McConville.
- 2015 – 2017 Committee Member, Doctoral Dissertation. University of California, Davis. *Early life stage exposure to bifenthrin in zebrafish and silversides*, Daniel Frank.
- 2013 – present Faculty Supervisor, Doctoral Dissertation. University of North Carolina, Wilmington. *Multiple stressor effects in *Menidia beryllina**, Bethany DeCourten.
- 2014 – 2016 Faculty Supervisor, Masters Thesis. University of North Carolina, Wilmington. *Endocrine disruption in *Callinectes sapidus**, Andrew Goff.
- 2014 – 2016 Faculty Supervisor, Undergraduate Honors Project. University of North Carolina, Wilmington. *Fluorescent labeling of marine microplastics for use in marine toxicology studies*, Cessely Gordon.
- 2014 – 2015 Faculty Supervisor, Undergraduate Honors Project. University of North Carolina, Wilmington. *Trophic transfer of Macondo oil from the Deepwater Horizon spill, effects on swimming behavior and gene expression in *Menidia beryllina**, Jacqueline Gross.

- 2014 – 2015 Faculty Supervisor, Undergraduate Honors Project. University of North Carolina, Wilmington. *Effects of the trophic transfer of styrene on Menidia beryllina*, Samantha Albotra.
- 2013 – 2014 Faculty Supervisor, Undergraduate Honors Project. University of North Carolina, Wilmington. *The effect of the endocrine disrupting pesticide bifenthrin at varied salinities on larval Menidia beryllina*, Roxanne Diaz.
- 2013 – 2015 Committee Member, Masters Thesis. University of North Carolina, Wilmington. *The effects of toxicants on the production of ecdysteroids by the Y-organ in Callinectes sapidus*, Lauren Ryan.
- 2013 – 2014 Committee Member, Undergraduate Honors Project. University of North Carolina, Wilmington. *Assessment of susceptibility to lipophilic toxicants in local zooplankton embryos*, Jamie Gerlach.
- 2012 – 2013 Faculty Supervisor, Undergraduate Honors Project. University of North Carolina, Wilmington. *The effect of an estrogenic pesticide on gene expression and behavior in Thalassoma bifasciatum*, Kelsey Burnsed.
- 2012 – 2018 Faculty Supervisor, Directed Individual Study (Undergraduate Research Assistants). University of North Carolina, Wilmington. *The effect of endocrine disrupting compounds on vertebrates and invertebrates*, Brooke Conner, Brian Graham, Amanda Jones, Maria Bent, Alexandra Teague, Emily Welch, Courtney Coleman, Rachael Cannon, David Huffman, Rachel Pollara, Jaclyn Zerbato, James Andrews, Andrew Goff, Paige Millsap, Hannah Sipe, Amanda Cobb, Corinne Linder, Ameilia Sosnowski, Andrew Piper, Michael Simmonds, Amanda Cobb, Nicole Burkhead, Jordan Critcher, Samantha Albotra, Julie Hurst, Jacob Rennert, Samian Roy, Christopher Cantrell, William Squires, Jacqueline Gross, Kelsey McManus, Nikolas Newton, Nick Burns, Kelsey Mueller, Nicholas Jernack, Savannah Kennedy, Jonathan Cowart, James Lee, Cessely Gordon, Kory Enneking., Griffin Huck, Ryan Harding, Melinda Lambert, Katherine Martin, Ariel Fitzgerald, Adam Keyser, Alexa Chrisos, Kaitlyn Hudson, Todd Lysiak, Allison Leso, Shannon Bryant, Elizabeth Chason
- 2012 – 13 Committee Member, Co-advisor, Masters Thesis. University of North Carolina, Wilmington. *Endocrine disrupting compounds affect fish (P. reticulata) risk-taking behavior*, Melissa Heintz.
- 2012 – 13 Faculty Supervisor, Undergraduate Honors Project. University of North Carolina, Wilmington. *The role of metabolism in the endocrine activity of bifenthrin in fishes*, Breanna Degroot.
- 2011 – 12 Committee Member, Undergraduate Honors Project. University of North Carolina, Wilmington. *Methylmercury accumulation in Antarctic krill and silver fish*, Jennifer Lang.

## Professional Activities

### Leadership

- SETAC North America Board Member (2018 – present), liaison to NASAC and Student Advisory Council
- SETAC Microplastics Research Interest Group, Co-Leader (2018-present)
- Carolinas Society of Toxicology and Chemistry, Chapter Vice President (2013-14)
- Carolinas Society of Toxicology and Chemistry, Chapter President (2014-15)
- Carolinas Society of Toxicology and Chemistry, Annual Meeting Host (2016)

**Conferences**

1. Session Co-Chair (with K. Kuivila and S. Hecht, day-long session). Contaminants of Emerging Concern for Fish: Assessing Exposure and Effects Across Biological Scales. Society of Environmental Toxicology and Chemistry North America Annual Meeting, Nov 2013.
2. Session Co-Chair (with R. Connon and A. Biales, half-day session). Epigenetics and Environmental Exposures: Mechanisms and Effects from Invertebrates to Fishes. Society of Environmental Toxicology and Chemistry North America Annual Meeting, Nov 2016.
3. Session Co-Chair (with A. Todgham and N. Fanguie, half-day session). Impacts of Multiple Stressors in Coastal Ecosystems on Organism Health. Ocean Sciences Meeting, March 2018.
4. Session Co-Chair (with A. Biales, J. Head, R. Bhandari) Epigenetics and Environmental Exposures. Society of Environmental Toxicology and Chemistry North America Annual Meeting, November 2018.

**Academic Editor**

Special Issue Editor, Microplastic Pollution, Limnology and Oceanography 2018-2019  
Associate Editor, PeerJ 2017 – present

**Peer Review**

*Environmental Science and Technology; Aquatic Toxicology; Environmental Pollution; Journal of Freshwater Ecology; Asian Journal of Andrology, GAIA, Pesticide Biochemistry and Physiology; Science of the Total Environment; PLoS ONE; Toxicology Letters, Archives of Environmental Contamination and Toxicology, Environmental Toxicology and Chemistry, Environmental Toxicology and Pharmacology, Ecotoxicology and Environmental Safety, Journal of Epigenomics, Journal of Environmental Science, Conservation Physiology, Ecosystems, Chemosphere, Animal Reproduction, Archives of Environmental Contamination and Toxicology, Biological Reviews*

**Grant Review**

*Smith Fellowship (2016, 2018), USC Sea Grant (2016), NSF PIRE (2016), California Sea Grant College Program (2016), EPA STAR (2015), NOAA Gulf of Mexico (2015), California Sea Grant (2015), Department of Defense (2017)*

**Memberships/  
Affiliations**

Oregon Agricultural Experiment Station, W-3045 Mechanisms and Mitigation of Agrochemical Impacts on Human and Environmental Health (2018 – present)  
Marine Studies Initiative, Oregon State University (2017 – present)  
Environmental Health Sciences Center, Oregon State University (2017 – present)  
Center for Genome Research and Biocomputing, Oregon State University (2017 – present)  
Hatfield Marine Science Center (2017 – present)  
Pacific Northwest Society of Environmental Toxicology and Chemistry (2017 – present)  
National Society of Environmental Toxicology and Chemistry (2006 – present)  
SETAC Endocrine Disruptors Advisory Group (2014 – present)  
Carolinas Society of Environmental Toxicology and Chemistry (2012-2017)  
Northern California Society of Environmental Toxicology and Chemistry (2007-2010)  
Northern California Society of Toxicology (2007-2010)

American Chemical Society (2010 – present)

### **Workshops**

Transformative Curriculum, Marine Studies Initiative (OSU, participant fall 2017)  
RNA Seq Workshop, UC Davis Genome Center (participant fall 2017)  
eTEAL Summer Institute (participant ALTC / eTEAL, UNCW, 2016)  
eTEAL Summer Institute (participant ALTC / eTEAL, UNCW, 2015)  
Let's Publish This Summer (participant ALTC / eTEAL, UNCW, 2014)  
"Lean In" book circle (participant UNCW Center for Teaching Excellence, spring 2014)  
The Art and Science of Negotiation (participant Women in SETAC, Nov 2013)  
eTEAL-Supported Pedagogy Initiative Workshop (participant UNCW, summer 2013)

*\*ALTC = Applied Learning and Teaching Community, eTEAL = experiential teaching and learning*

### **Service**

2018 – present Diversity Committee, Environmental and Molecular Toxicology, Oregon State University  
2018 – present Ocean Friendly Establishments Corvallis, Lead  
2017 – present 500 Women Scientists Corvallis, Head Officer  
2017 – present Marine Science Initiative Committee, Environmental and Molecular Toxicology, Oregon State University  
2016 – 2017 Chairs Advisory Committee, University of North Carolina, Wilmington  
2016 – 2017 Laboratory Safety Committee, University of North Carolina, Wilmington  
2016 - 2017 Center for Marine Science Seawater Committee, University of North Carolina, Wilmington  
2015 - 2016 Equipment Committee Chair, University of North Carolina, Wilmington  
2015 – 2017 Management of Departmental DEA Permit  
2015 - 2016 Long Term Planning Committee, University of North Carolina, Wilmington  
2014 - 2015 Equipment Committee, University of North Carolina, Wilmington  
2014 - 2015 Biotechnology Curriculum Committee, University of North Carolina, Wilmington  
2013 Seminar Committee, University of North Carolina, Wilmington  
2013 Wrightsville Beach Elementary, Wrightsville Beach, NC: Science Fair Judge  
2012 Hoggard High School, Wilmington, NC: Faculty Mentor for Senior Project  
2011 Holly Shelter Middle School, Castle Hayne, NC: Science Fair Judge

### **Collaborators** (last 48 months)

B. Darrow (UNCW), M. Posey (UNCW), T. Alphin (UNCW), P. Seaton (UNCW), J. Covi (UNCW), A. Taylor (UNCW), B. Monteleone (UNCW), W. Watanabe (UNCW), R. Connon (UCD), M. Denison (UCD), T. Young (UCD), J. Hobbs (UCD), G. He (UCD), B. Cole (UCD), K. Armbrust (LSU), M. Hadlik (USGS), K. Jeffries (UCD), M. Hawkins (NCSU), A. Mehinto (SCWWRP), N. Denslow (UF), N. Fague (UCD), M. Brooks (USI), A. Andradý (NCSU), H. Poynton (UMASS), M. Lydy (USI), D. Weston (UCB), J. Caselle (UCSB), J. Field (OSU), B. Stubblefield

(OSU), L. Torres (OSU), S. Black (OSU), J.W. White (OSU), K. Grorud-Colvert (OSU), F. Chan (OSU), B. Kronmiller (OSU), G. Eckert (UAK), M. Sedlak (SFEI), D. Lin (SFEI), R. Sutton (SFEI), P. Hershberger (USGS), L. Aylesworth (ODFW), S. Rumrill (ODFW), C. Box (5 Gyres), E. Granek (PSU), J. Conkle (TAM), C. Stallings (USF), M. Donahue (UH)