Julie B. Schram
Curriculum Vitae, 15 November 2020
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EDUCATION

Ph.D Biology	University of Alabama at Birmingham, 2015
M.S. Biology	University of Alabama at Birmingham, 2010
B.S. Biology	Western Washington University, 2004

PROFESSIONAL APPOINTMENTS

Assistant Professor of Animal Physiology – University of Alaska Southeast, 2020- present
Postdoctoral Researcher - University of Oregon, Oregon Institute of Marine Biology, 2016 - 2020
Postdoctoral Researcher – University of Washington, Department of Civil & Environmental Engineering, 2018
Adjunct Professor – University of Oregon, Oregon Institute of Marine Biology
Summer 2017, 2019 Instructor of record Ocean Acidification
Lecturer – University of Alabama at Birmingham, Birmingham, Alabama
Spring 2015 Instructor of record Advanced Invertebrate Zoology
Graduate Teaching Assistant – University of Alabama at Birmingham, Birmingham, Alabama

Fall 2012, 2013, 2014, 2015	Invertebrate Zoology laboratory, Instructor of record
Spring 2011	General Biology laboratory
Fall 2010; Fall 2011	Microbiology laboratory
Fall 2009; Spring, Summer 2010	Microbiology laboratory
Fall 2008; Spring, Summer 2009	Human Physiology laboratory

PEER REVIEWED PUBLICATIONS

Schram JB, Sorensen HL, Brodeur RD, Galloway AWE, Sutherland KR (2020) Abundance, distribution, and feeding ecology of *Pyrosoma atlanticum* in the Northern California Current. Mar Ecol Prog Ser 651:97-110. DOI: https://doi.org/10.3354/meps13465

Galloway AWE, von Dassow G, **Schram JB**, Klinger T, Hill TM, Lowe AT, Chan F, Yoshioka RM♦, Kroeker KJ (2020) Ghost factors of laboratory carbonate chemistry are haunting our experiments. Biol Bull 239 (3) DOI: https://doi.org/10.1086/711242

Thomas M♦, **Schram JB**, Clark-Henry Z, Shanks A, Galloway, AWE (2020) Juvenile Dungeness crabs (*Metacarcinus magister*) selectively integrate and modify the fatty acids of their experimental diets. Phil Trans B. DOI: http://dx.doi.org/10.1098/rstb.2020.0038

Schram, JB, Amsler, CD, McClintock, JB (2019) Contrasting chemotactic escape responses of the common Antarctic gastropod *Margarella antarctica* to four species of sympatric sea stars. Polar Science. DOI: https://doi.org/10.1016/j.polar.2019.100486

Schram, JB, Amsler, MO, Galloway, AWE, Amsler, CD, McClintock, JB (2019) Fatty acid trophic transfer of Antarctic algae to a sympatric amphipod consumer. Antarctic Science, 1-2. DOI: https://doi.org/10.1017/S0954102019000397

Yoshioka, RM♦, **Schram, JB**, Galloway, AWE (2019) Eelgrass pathogen *Labyrinthula zosterae* synthesizes essential fatty acids. Diseases of Aquatic Organisms 135, 89-95. DOI: https://doi.org/10.3354/dao03382

Dethier, MN, Hoins, G♦, Kobelt, J♦, Lowe, AT, Galloway, AWE, **Schram, JB**, Raymore, M, Duggins DO (2019) Feces as food: The nutritional value of urchin feces and implications for benthic food webs. J Exp Mar Biol Ecol 514, 95-102. DOI: doi.org/10.1016/j.jembe.2019.03.016

Hakim, JA♦, **Schram JB**, Galloway AWE, Morrow CD, Crowley MR, Watts SA, Bej AK (2019) The Purple Sea Urchin *Strongylocentrotus purpuratus* Demonstrates a Compartmentalization of Gut Bacterial Microbiota, Predictive Functional Attributes, and Taxonomic Co-Occurrence. Microorganisms 7, 35. DOI: 10.3390/microorganisms7020035

Schram JB, Kobelt, JN♦, Dethier, MN, Galloway AWE (2018) Trophic Transfer of Macroalgal Fatty Acids in Two Urchin Species: Digestion, Egestion, and Tissue Building. Front Ecol Evol. 6:83. DOI: 10.3389/fevo.2018.00083

Schram JB, Schoenrock KM, McClintock JB, Amsler, CD, Angus RA (2017) Ocean warming and acidification alter Antarctic macroalgal biochemical composition but not amphipod grazer feeding preferences. Mar Ecol Prog Ser. 581, 45-56. DOI: https://doi.org/10.3354/meps12308

Schram JB, Schoenrock KM, McClintock JB, Amsler CD, Angus RA (2016) Seawater acidification more than warming presents a challenge for two Antarctic macroalgal-associated amphipods. Mar Ecol Prog Ser. 554, 81-97. DOI:10.3354/meps11814

Schram JB, Amsler, MO, Amsler CD, Schoenrock KM, McClintock JB, Angus RA (2016) Antarctic benthic grazer assemblages exhibit resistance following exposure to decreased pH. Mar Biol 163:106. DOI: 10.1007/s00227-016-2894-y

Schram JB, Schoenrock KM, McClintock JB, Amsler CD, Angus RA (2016) Testing Antarctic resilience: The effects of elevated seawater temperature and decreased pH on two gastropod species. ICES Journal of Marine Science. 73 (3), 739-752. doi: 10.1093/icesjms/fsv233

Schoenrock KM, **Schram JB**, Amsler CD, McClintock JB, Angus RA, Vohra YK (2016) Climate change confers a potential advantage to fleshy Antarctic crustose macroalgae over calcified species. J Exp Mar Biol Ecol 474, 58-66, doi:10.1016/j.jembe.2015.09.009

Schram JB♦, Schoenrock KM♦, McClintock JB, Amsler CD, Angus RA (2015) Multi-frequency observations of seawater carbonate chemistry on the central coast of the western Antarctic Peninsula. Polar Research. 34, 25582. DOI: http://dx.doi.org/10.3402/polar.v34.25582

Schram JB♦, McClintock JB, Amsler, CD, Baker BJ (2015) Impacts of acute elevated seawater temperature on the feeding preferences of an Antarctic amphipod toward chemically deterrent macroalgae. Mar Biol 162, 542-433. DOI: 10.1007/s00227-014-2590-8

Schoenrock KM♦, **Schram JB♦**, Amsler, CD, McClintock JB, Angus RA (2015) Climate change impacts on over-story *Desmarestia* spp. from the western Antarctic Peninsula. Mar Biol 162, 377-389. DOI: 10.1007/s00227-014-2582-8

Harvey BP, Al-Janabi B, Broszeit S, Cioffi R, Kumar A, Aranguren-Gassis M, Bailey A, Green L, Gsottbauer CM, Hall EF, Lechler M, Mancuso FP, Pereira CO, Ricevuto E, **Schram JB**, Stapp LS, Stenberg S, Santa Rosa LT (2014) Evolution of Marine Organisms under Climate Change at Different Levels of Biological Organisation. Water 6, 3545 – 3574. DOI:10.3390/w6113545 (♦all coauthors)

Schram JB♦, Schoenrock KM♦, McClintock JB, Amsler, CD, Angus RA (2014) Multiple stressor effects of near-future elevated seawater temperature and decreased pH on righting and escape behaviors of two common Antarctic gastropods. J Exp Mar Biol Ecol. 457, 90-96. DOI:10.1016/j.jembe.2014.04.005

Lebrato, M, McClintock JB, Amsler, MO, Ries, JB, Egilsdottir, H♦, Amsler, CD, Challener, C♦, **Schram, JB♦**, Mah, CL, Cuce, J♦, Baker, BJ (2013) From the Arctic to the Antarctic: the major, minor, and trace elemental composition of echinoderm skeletons: Ecological Archives E094-127, Ecology. 94(6), 1434-1434. DOI: 10.1890/12-1950.1

Schram JB♦, McClintock JB, Angus RA, Lawrence JM (2011) Regenerative capacity and biochemical composition of the sea star *Luidia clathrata* (Say) (Echinodermata: Asteroidea) under conditions of near-future ocean acidification. J Exp Mar Biol Ecol. 407, 266-274. DOI:10.1016/j.jembe.2011.06.024

McClintock JB, Amsler MO, Angus RA, Challener RC♦, **Schram JB♦,** Amsler CD, Mah CL, Cuce J♦, Baker BJ (2011) The Mg-Calcite composition of Antarctic echinoderms: Important implications for predicting the impacts of ocean acidification. J Geology. 119, 457-466. DOI: 10.1086/660890

Schram JB♦, McClintock JB (2009) Rapid regeneration of the body wall of the aboral central disc in the sea star *Luidia clathrata.* Gulf of Mexico Science. 27(2), 123-124. DOI: https://doi.org/10.18785/goms.2702.05

♦indicates student coauthor at time of publication

PUBLICATIONS SUBMITTED

Salant CD, Shanks, A, **Schram JB,** Galloway AWE (*under review*) Trophic biomarkers indicate coastal surfzone hydrodynamics affect resource assimilation of mussels and barnacles. L & O

NON-PEER REVIEWED PUBLICATIONS

Schram JB (2015) Responses of marine benthic invertebrates of the western Antarctic Peninsula to ocean acidification and elevated temperature. Ph.D Dissertation. Biology, University of Alabama at Birmingham.

Schram JB, McClintock JB, Angus RA, Lawrence JM (2010) Arm loss and regenerative capacity of the common soft-bottom sea star *Luidia clathrata* exposed to near-future conditions of ocean acidification. M.S. Thesis.

SELECTED RECENT AWARDS AND HONORS

2020 Antarctic Science International Bursary – Support for Early Career Scientists working in Antarctic Science (£6000)

2018 Partners in Science grant – Partner with local high school teacher for hands on science experience to study Dungeness crab responses to ocean acidification, funded by M.J. Murdock Charitable Trust ($15,000)

2017 Funded 2018-20 Oregon Sea Grant Biennial Research Competition, Co-PI with Aaron Galloway. Project title: Effects of ocean acidification on behavior, development, and nutritional value of newly recruited coastal Dungeness crab ($200,000)

2015 Samuel B. Barker Award for Excellence in Graduate studies – UAB Graduate School - Highest prestige UAB annual award given to 1 Ph.D. and 1 Master's student nominated by each department's graduate program director and selected by the Dean of the Graduate School

2014 Travel Grant - Office of Polar Programs, funded by NSF and allocated by Scientific Committee on Antarctic Research (SCAR) for attendance of 2012 SCAR conference ($2,250)

2014 UAB Ireland Research Travel Award – Funding granted for travel to the Friday Harbor Laboratory Facility to perform gastropod shell material strength analysis ($1,000)

2014 1st Place – UAB Graduate Student Research Days – oral presentation competition

2013 Sigma Xi Grants-In-Aid of Research – Funding for mollusk shell x-ray diffraction (XRD) and scanning electron microscopy (SEM) elemental analysis ($640)

2012 Travel Grant - Office of Polar Programs, funded by NSF and allocated by SCAR ($1,000)

RECENT NATIONAL/INTERNATIONAL CONFERENCE PRESENTATIONS

2020 Ecological Society of America 2020 Virtual Meeting (August 3-6, 2020) MF Meyer*, T Ozersky, KH Woo, K Shchapov, D Snow, EJ Rosi, AWE Galloway, **JB Schram**, MA Timofeyev, E A Silow, DY Karnaukhov, MR Brousil, SE Hampton. Oral presentation: Effects of lakeside development on nearshore benthic communities of Lake Baikal (Siberia)

2020 Scientific Committee on Antarctic Research 2020 Virtual Meeting (August 3 – 7) **JB Schram*,** MO Amsler2 CD Amsler, AWE Galloway, JB McClintock. Oral presentation: Fatty acid trophic transfer from Antarctic algae to the benthic amphipod *Gondogeneia antarctica*

2020 Scientific Committee on Antarctic Research 2020 Virtual Meeting (August 3 – 7) CD Amsler*, MO Amsler, AG Klein, S Heiser, AWE Galloway, K Iken, JB McClintock, AT Lowe, **JB Schram**, R Whippo♦. Poster presentation: Macroalgal Cover South of Anvers Island.

2020 Scientific Committee on Antarctic Research 2020 Virtual Meeting (August 3 – 7) H Oswalt♦*, CD Amsler, **JB Schram**, MO Amsler, JB McClintock. Poster presentation: Impacts of ocean acidification on key members of shallow water Antarctic communities.

2019 25th Biennial Coastal and Estuarine Research Federation Conference (Nov. 2-7, 2019) Mobile, AL. **JB Schram***, SJ Taipale, AWE Galloway. Poster presentation: Controlled diet mixtures of macroalgae influence the fatty acid composition of juvenile and adult isopods

2019 25th Biennial Coastal and Estuarine Research Federation Conference (Nov. 2-7, 2019) Mobile, AL. HG Hayes♦*, SA Manos♦*, **JB Schram**, AWE Galloway. Poster presentation: Does a Reduced pH Affect Juvenile Dungeness Crab Behavior?

2019 25th Biennial Coastal and Estuarine Research Federation Conference (Nov. 2-7, 2019) Mobile, AL. WW Raymond♦*, **JB Schram**, AWE Galloway, GL Eckert. Oral presentation: Trophic mysteries of the shallows: Trophic relationships in Southeast Alaska eelgrass ecosystems

2019 Oregon Lakes Association Annual Conference (Oct. 25, 2019) Bend, OR. **JB Schram***, MT Brett, J Nielson, AWE Galloway. Oral presentation: Diet reconstruction of juvenile suckers of Upper Klamath Lake using fatty acids as biomarkers.

2019 Oregon Lakes Association Annual Conference (Oct. 25, 2019) Bend, OR. MT Brett*, **JB Schram**, J Nielson, AWE Galloway. Oral presentation: Using Fatty Acid Biomarkers to untangle trophic pathways in hypereutrophic Upper Klamath Lake.

2018 California Cooperative Oceanic Fisheries Investigations (CalCOFI) Conference (Dec. 2018) La Jolla, CA. HL Sorensen♦*, KR Sutherland, RD Brodeur, AWE Galloway, **JB Schram.** Poster presentation: Abundance, distribution, and feeding ecology of *Pyrosoma atlanticum* in the northern California Current during the 2017 bloom.

2018 Western Society of Naturalists Annual Meeting (November 2018), Tacoma, WA. RM Yoshioka♦*, **JB Schram**, AWE Galloway. Poster presentation: Eelgrass pathogen synthesizes essential fatty acids.

2018 Western Society of Naturalists Annual Meeting (November 2018), Pasadena, CA. MD Thomas♦*, **JB Schram**, AL Shanks, AWE Galloway. Poster presentation: Juvenile Dungeness crab (*Metacarcinus magister*) fed different meat and algal diets are distinguished by their fatty acid profiles.

2018 Oregon State of the Coast Annual Meeting (Oct. 2018). Coos Bay, OR. RM Yoshioka♦*, **JB Schram**, AWE Galloway. Poster presentation: An eelgrass pathogen produces essential fatty acids.

2018 Assoc. for the Sci. of Limnol. & Oceanogr. (ASLO) Annual Meeting (7/2018) Victoria, Canada. MT Brett*, **JB Schram**, AWE Galloway, A Střížek, J Kann, JM Nielsen Oral presentation: Do *Daphnia* and *Aphanizomenon* have a symbiotic relationship? Evidence for highly selective zooplankton resource utilization in a hypereutrophic lake.

2018 Gordon Research Conference, Ocean Global Change (15-20 July), Waterville Valley, NH, **JB Schram**, AWE Galloway. Poster presentation: Interaction of trophic stressors and the role of cannibalism on newly recruited coastal Dungeness crab exposed to reduced seawater pH

2018 American Society of Microbiology (7-11 June), Atlanta, GA. JA Hakim♦*, **JB Schram**, C Morrow, SA Watts, AWE Galloway, AK Bej. Oral presentation: The gut microbiome of sea urchin Strongylocentrotus purpuratus demonstrates a unique compartmentalization of microbiota and functional significance

2017 Western Society of Naturalists Annual Meeting (November 2017), Pasadena, CA. L Dixit♦*, **JB Schram**, AWE Galloway. Poster presentation: Importance of visual cues in the pigmentation and coloration of the marine isopod *Pentidotea wosnesenskii*.

2017 Western Society of Naturalists Annual Meeting (November 2017), Pasadena, CA. AWE Galloway*, **JB Schram**, M Thomas♦, JL Watson. Oral presentation: Why so blue? Assessing possible drivers for bright blue-colored flesh in lingcod.

2017 Ecological Society of America (6-11 August), Portland, OR. **JB Schram*,** AWE Galloway Oral presentation: Influence of macroalgal diet on purple urchin trophic efficiency

2017 North American Echinoderm Conference (9-13 July), Worcester, MA. **JB Schram*,** AWE Galloway. Oral presentation: Purple urchin compensatory consumption of sympatric macroalgae maintains growth and influences nutritional subsidies

2016 Western Society of Naturalists (10-16 November), Monterey, CA. **JB Schram*;** AWE Galloway Oral presentation: Algal diet mixtures influence isopod growth, tissue turnover, and coloration

2016 Gordon Research Series, Ocean Global Change Biology (16 - 17 July), Waterville Valley, NH. **JB Schram*,** AWE Galloway. Invited talk: Trophic biomarkers reveal basal food web dynamics in changing environmental conditions

2016 Society for Integrative and Comparative Biology Annual Meeting (3-7 January), Portland, OR. **JB Schram*,** KM Schoenrock, JB McClintock, CD Amsler, RA Angus. Oral presentation: Seawater acidification rather than warming is a significant challenge for two common Antarctic macroalgal-associated amphipods

2015 Society for Integrative and Comparative Biology Annual Meeting (3-7 January), West Palm Beach, FL. **JB Schram*,** MO Amsler, CD Amsler, KM Schoenrock, JB McClintock, RA Angus. Oral presentation: Glimpses of assemblage resilience through an Antarctic ocean acidification mesocosm experiment

2014 XXXIII SCAR (Scientific Committee on Antarctic Research) Open Science Conference (25 – 28 August), Auckland, New Zealand. **JB Schram*,** KM Schoenrock, JB McClintock, CD Amsler, RA Angus. Oral presentation: Impacts of ocean acidification on an Antarctic marine macroalgal-mesograzer community: insights from a laboratory mesocosm experiment
Poster presentation: Multi-frequency observations of seawater pH, alkalinity, and carbonate chemistry of coastal western Antarctic Peninsula

2014 Gordon Research Conference, Ocean Global Change Biology (6 – 11 July), Waterville Valley, NH. **JB Schram***, CD Amsler, MO Amsler, KM Schoenrock, JB McClintock, RA Angus. Poster presentation: Impacts of ocean acidification on an Antarctic marine macroalgal-mesograzer community: insights from a laboratory mesocosm experiment

* indicates presenter

♦indicates student coauthor

INVITED TALKS

2019 Walla Walla University, Walla Walla, WA (8 Oct) Biology Colloquium seminar – Antarctic Organismal responses to climate change

2018 Southwestern Community College, Coos Bay, OR, USA (27 Oct) Oregon State of the Coast Symposium, invited discussion leader - Juvenile Dungeness crab responses to ocean acidification

2018 Gulf Coast Research Laboratory, Ocean Springs, MO, USA (5 Sept) Invited seminar speaker - Organismal responses to Antarctic ocean warming and acidification

2018 Hatfield Marine Science Center, Newport, OR, USA (27 June) Monterey Bay Aquarium Research Institute (MBARI) Education and Research: Testing Hypotheses (EARTH), Invited presenter - Juvenile Dungeness crab responses to ocean acidification

2018 Oregon Institute of Marine Biology, Charleston, OR (7 May) Marine Ecology course - Climate change: What does it mean for marine ecology?

2018 Oregon Institute of Marine Biology, Charleston, OR (5 May) The Ocean Planet Biology course (BI150) – Introduction to the Rocky Shores of the Coastal Intertidal Zone

2017 Regional 2017 Meeting of IMSLIC, Oregon Institute of Marine Biology, Charleston, OR (31 March) – You are what you eat: Feeding assays provide insights into benthic trophic ecology dynamics

2017 Charleston Marine Life Center, Charleston, OR (28 January) Public lecture– Ocean Acidification: What is it and what does it mean for marine life?

2016 Oregon Institute of Marine Biology, Charleston, OR (25 April) Department seminar - Testing Antarctic tolerance: Invertebrate responses to seawater warming and acidification

2016 Wasser Cluster, Lunz am See, Austria (20 April) Invited seminar speaker– Testing Antarctic tolerance: Invertebrate responses to seawater warming and acidification

PROFESSIONAL EXPERIENCE

- Fatty acid extraction and analysis using gas chromatography-mass spectrometry (GCMS)
- Data management and programming (R)
- Scientific diving, American Academy of Underwater Sciences (2012 – 2014, 2016 - present)
- Temperature and CO_2 enrichment experimental design and set-up
- Seawater carbonate chemistry analysis– Total alkalinity titration, Spectrophotometric pH, Dissolved Inorganic carbon
- Invertebrate zoology
- Phycology
- Aquarium maintenance
- Chlorophyll *a* analysis – fluorometry

- Remote field technician: experience working on scientific research cruise (Palmer LTER annual cruise on Lawrence M. Gould, Maria Vernet lab, 07 Jan – 03 Feb 2006 & 07 Jan – 06 Feb 2007)

RECENT PROFESSIONAL SERVICE

2020 Joined Association for Polar Early Career Scientists, APECS Council – individual member
2020 Coordinated organization of North American Echinoderm Conference – Cancelled due to COVID-19
2019 Participated in group review (Association for Polar Early Career Scientists, APECS) of the Working Group II Contribution to the IPCC Sixth Assessment Report, 1st Order draft
2019 Mentored OIMB summer Research Experience for Undergraduates program, "Exploration of Marine Biology on the Oregon Coast" students (2)
2018 Participated in group review (Association for Polar Early Career Scientists, APECS) of the IPCC Special Report on the Ocean and Cryosphere in a Changing Climate, 1st and 2nd order drafts
2018 Mentored OIMB summer Research Experience for Undergraduates program, "Exploration of Marine Biology on the Oregon Coast" student (1)
2017 Mentored OIMB summer Research Experience for Undergraduates program, "Exploration of Marine Biology on the Oregon Coast" students (2)
2018 Began (and continue to) serve on PhD committee for 1 PhD candidate (Nicole Nakata)
2016 Mentored undergraduate (2) & graduate (3) students in research (OIMB)
2016 XXIV Scientific Committee on Antarctic Research (SCAR) Open Sciences Conference (20-30 August) Kuala Lumpur – Ocean Acidification session convener
2015 Mentored undergraduate in laboratory research (Connor Stein) – UAB
2015 UAB Graduate Student Government (GSG) Mentoring and Advisory Council –program for graduate students mentoring new graduate students
2014 Chair of the Community Service Committee – Graduate Student Government (GSG)

RECENT EDUCATIONAL OUTREACH ACTIVITIES

2019 North Bend High School, North Bend, OR (20 Sept) Science National Honors Society - In Search of Seaweeds in Antarctica: A Diver's Journey to the Bottom of the World
2019 7 Devils Brewing Company, Coos Bay, OR (7 July) Pub Science Talk - In Search of Seaweeds in Antarctica: A Diver's Journey to the Bottom of the World
2018 Assisted with field projects for University of Oregon students (BI 283) – 19 May
2017 Charleston Marine Life Center, Charleston, OR (17 May, 26 June, 25 July) Teen Marine Science program –Presentation and hands-on activity, Introduction to climate change: What is it and what does it mean for marine life?
2017 Assisted with field projects for University of Oregon students (BI 283) – 5 May

PROFESSIONAL MEMBERSHIPS

American Society of Naturalists (2013 – Present)
Coastal & Estuarine Research Federation (2019 – Present)
Ecological Society of America (2013 – Present)
Society for Integrative & Comparative Biology (2011 - Present)
Sigma Xi (2012 - Present)

PEER REVIEW

Antarctic Science
Estuarine, Coastal and Shelf Science

Ethology
Frontiers in Marine Science
Journal of Experimental Marine Biology and Ecology
Marine Ecology Progress Series
Marine Environmental Research
PeerJ
Scientific Reports

National Science Foundation scientific research proposals
Chilean Antarctic Institute, INACH research proposals
Deutsche Forschungsgemeinschaft (DFG) research proposals