

## JACOB E. ALLGEIER

Associate Professor  
Department of Ecology, Evolution, and Biology  
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### EDUCATION

2006 - 2013 Ph.D. Ecology (Advisor: Dr. Amy Rosemond) University of Georgia, Athens, GA  
1997 - 2001 B.S. Biology Centre College, Danville, KY

### PROFESSIONAL APPOINTMENTS

2023 – present Associate Professor, University of Michigan, Ecology and Evolutionary Biology  
2017 – 2023 Assistant Professor, University of Michigan, Ecology and Evolutionary Biology  
2016 – 2017 Postdoctoral Research Associate, University of California, Santa Barbara  
(Advisor: Dr. Deron Burkepile)  
2014 – 2016 National Science Foundation Postdoctoral Fellow in Biology, University of Washington  
(Advisor: Dr. Daniel Schindler)  
2013 – 2014 Postdoctoral Research Associate, North Carolina State University  
(Advisor: Dr. Craig Layman)

### SELECT AWARDS

Ecological Society of America - Early Career Scientist 2020. Elected for efforts: (1) toward integrating ecosystem and community ecology to help advance understanding of nutrient dynamics in marine ecosystems, and (2) to apply this information toward the conservation of coastal marine ecosystems.

### FUNDING

David and Lucile Packard Foundation, “The Precollege Ocean Discovery and Science (PODS) Program: helping tomorrow’s conservation leaders in The Bahamas apply, attend, and graduate from higher-level STEM education” PI (\$45,000 to Allgeier) 2023-2024  
University of Michigan Global Change Biology Working Group, “Forecasting climate-driven changes in human-wildlife interactions” Co-PI with N. Carter, B. Weeks, B. Abrahms (~\$250,000; amount to Allgeier pending) 2022-2024  
David and Lucile Packard Foundation, “The Precollege Ocean Discovery and Science (PODS) Program: helping tomorrow’s conservation leaders in The Bahamas apply, attend, and graduate from higher-level STEM education” PI (\$50,000 to Allgeier) 2021-2023  
National Science Foundation, “Using novel ecosystem-scale experiments to quantify drivers of reef productivity in a heavily impacted coastal ecosystem in Haiti” PI (\$675,164 to Allgeier) 2020-2024  
David and Lucile Packard Fellowship for Science & Engineering, “Farming the oceans: using ecology and innovation to develop sustainable coastal fisheries” (\$875,000 to Allgeier) 2019-2024  
National Science Foundation, Postdoctoral Fellowship: Integrating Mathematics and Biology. 2014-2016 (\$138,000 to Allgeier)  
The Ecosystem Center, Woods Hole Postdoctoral Fellowship 2014 – 3 year offer (declined for NSF Fellowship)  
National Science Foundation, “Fish aggregations and biogeochemical hot spots across regional environmental gradients” Non-PI (due to eligibility) co-author and sole collaborator with Dr. Craig Layman. 2013-2017 (\$657,000)  
National Science Foundation, Doctoral Dissertation Improvement Grant (DDIG) 2010 (\$14,580 to Allgeier)  
Environmental Protection Agency, Science To Achieve Results (STAR) Fellowship 2010–2013 (\$111,000 to Allgeier)

### *Under Consideration*

National Science Foundation, “Individuals to meta-ecosystems: incorporating individual-level spatial dynamics into models of coastal ecosystem function” PI. Resubmission Pending (\$818,274; 709K to Allgeier)

### ***Additional Funding***

Financial Assistance Grant: International Coral Reefs Symposium - 2012 (\$750)  
Odum Endowment Graduate Student Research Grant - 2011 (\$1,400)  
Odum School of Ecology Graduate Student Symposium Presentation Award: 2<sup>nd</sup> place - 2011  
Odum School of Ecology Graduate Student Symposium Presentation Award: 3<sup>rd</sup> place - 2010  
University of Georgia – Dissertation Completion Award - 2010 (Award declined for EPA STAR - \$39,000)  
Odum Endowment Research Grant – 2008-2009 (\$800/\$1,200)  
Sigma Xi Research in Aide Grant - 2008 (\$400)  
Society of Wetland Scientist Research Award - 2008 (\$1000)  
Tinker Award – Research Travel Grant - 2008 (\$600)  
Robert A. Sheldon Research Travel Award - 2007 (\$400)  
Latin-American and Caribbean Studies Institute Travel Award - 2007 (\$500)  
University Recruitment Fellowship – University of Georgia Graduate School - 2006-2008 (\$34,000)  
Undergraduate Research Fellowship, University of Arizona, Nyanza Tanzania Project - 2001  
Faculty Scholarship, Centre College, - 1997-2001 (\$68,000)

### **PUBLICATIONS**

*Last author indicates work originated from the lab*

(<sup>#</sup> = students, <sup>^</sup> = postdocs, underline = undergraduates in the lab)

#### ***Manuscripts in revision or review***

Hasselbarth, M.H. <sup>^\*</sup>, and **Allgeier, J. E.**<sup>\*</sup> High fish biomass and low nutrient enrichment synergistically enhance resilience in an artificial reef-seagrass meta-ecosystem. *In review* - Proceedings of the National Academy of Science (\* = equal contribution)  
Ma, D., Abrams, B., **Allgeier J.E.**, Newbold, T., Weeks, B., and Carter, N. Global Expansion of Human-Wildlife Overlap in the 21st Century. *In review* - Science  
Munsterman, K.S.,<sup>#</sup> Hasselbarth, M.H.<sup>^</sup>, **Allgeier, J. E.** Fish community size structure and foraging behavior drive ecosystem-level primary production through differing mechanisms in a seagrass ecosystem. *In review* - Ecology  
Paxton, A.V., Runde, B.J., Smith C.S., Bugnot A.B., Lester S.E., Vozzo M.L., Saunders, M.L., Steward D.A., Lemoine, H.R., Valdez, S.L., Gittman, R.K., Narayan, S., **Allgeier, J.E.**, Morris, R.L., Nowacek, D.P., Seaman, W., Halpin, P.N., Angelini, C, Silliman, B.R. Leveraging built marine structures to benefit natural habitats. *In review* - Proceedings of the National Academy of Science  
Kemp, D.W., **Allgeier, J.E.**, Hoadley, K.D., Lewis A., Smith, R., Wham F., Golbuu Y., Warner, M.E., LaJeunesse T.C., Corals respond to environmental extremes with trophic plasticity. *In revision* - Nature Ecology and Evolution

#### ***Manuscripts published***

Shayka, B. <sup>#</sup>, Hasselbarth, M.H. <sup>^</sup>, Schill, S. and **Allgeier, J. E.** 2023. The natural capital of seagrass beds in the Caribbean: evaluating their ecosystem services and blue carbon trade potential. *Biology Letters*  
Andskog, M. A. <sup>#\*</sup>, C. A. Layman, and **Allgeier, J. E.** \* 2023. Seagrass production around artificial reefs is resistant to human stressors. (\* = equal contribution) *Proceedings of the Royal Society B*  
Shakya, A. <sup>#</sup> and **Allgeier, J. E.**, 2023. Water column contributions to coral reef productivity: an ecosystem ecology perspective to help overcome challenges of context dependence. *Biological Reviews*  
Cline, T. W.<sup>^\*</sup>, and **Allgeier, J.E.**<sup>\*</sup>. 2022. Weak evidence for fish community control of coral reef resilience. *Nature Ecology and Evolution* (\* = equal contribution)  
Esquivel, K. <sup>#</sup>, Hasselbarth, M.H. <sup>^</sup>, and **Allgeier, J. E.** 2022. Mechanistic support for increased primary production around artificial reefs. *Ecological Applications*  
Layman, C.A., Patterson-Maura, O., Giery, S.T., **Allgeier, J.E.**, Rypel, A.L. 2022. Direct Economic Inputs from Internationally Funded Science Projects to the Abaco Islands, The Bahamas. *Caribbean Journal of Science*.

- Burkepile D.E., Adam T.C., **Allgeier, J.E.**, Shantz A.A. Functional diversity in herbivorous fishes on Caribbean reefs: The role of macroalgal traits in driving interspecific differences in feeding behavior 2022. *Food Webs* 33
- Schiettekatte, N.M.D. plus 22 other authors including **Allgeier, J.E.** and K. S. Munsterman<sup>#</sup> 2022. Biological trade-offs underpin coral reef ecosystem functioning. *Nature Ecology and Evolution* <https://doi.org/10.1038/s41559-022-01710-5>
- Brines, E.**<sup>#</sup>, A. Andskog<sup>#</sup>, K. S. Munsterman<sup>#</sup>, C.A. Layman, and **Allgeier, J. E.** 2022. Anthropogenic nutrients mitigate importance of fish-mediated nutrient supply for seagrass beds in Haiti. *Marine Biology* 169:38
- Allgeier, J.E.**, Weeks, B.C., Wenger, S.J., Wale, N., Schiettekatte, N.M.D., Villéger, S, Burkepile, D.E., Munsterman, K.S.<sup>#</sup>, Parravicini, V. 2021 Phylogenetic conservatism determines nutrient dynamics of coral reef fishes. *Nature Communications* 12:1-9
- Allgeier, J.E.** 2021 Nutrient Stoichiometry of fishes and invertebrates in Caribbean coastal ecosystems. *Ecology*. 102 (12)
- Munsterman, K.S.<sup>#</sup>, **Allgeier, J.E.**, Peters, J.R., Burkepile, D.E. 2021 A view from both ends: shifts in herbivore assemblages impact top-down and bottom-up processes on coral reefs. *Ecosystems*. 24, 1702–1715
- Layman, C.A., **Allgeier, J.E.**, Geary, S.T., 2020. Moving beyond semantics: Advancing restoration with food web approaches. *Food Webs*. 25, 1-2
- Layman, C.A.\* and **Allgeier, J.E.\***. 2020. Artificial reefs viewed from the bottom-up: an ecosystem ecology perspective. *Journal of Applied Ecology* 57:11(\* = equal contribution)
- Allgeier, J.E.**, Wenger, S.J., Layman, C.A. 2020. Taxonomic identity explain variation in body nutrient content in a diverse food web. *Scientific Reports* 10, 13718
- Allgeier, J.E.**, Andskog, M., Hensel, E., Appaldo, R., Layman, C.A., Kemp, D. 2020 Rewiring coral: anthropogenic nutrient shift coral-algal nutrient and energy pathways toward algal dominance. *Global Change Biology*. 00: 1–14
- Allgeier, J.E.**, R. A. Wathen, ^Cline, T.W., Walsworth, T. N., Layman, C. A., and Schindler, D. S. 2020 Individual behavior drives ecosystem function. *Science Advances* 6:9
- Schiettekatte, NMD, Barneche, DR, Villéger, S, **Allgeier, J.E.**, Burkepile, D.E., Brandl, S.E., Casey, J.E., Mercière, A., Munsterman, K.S.<sup>#</sup>, Morat, F., Parravicini, V. 2020 Nutrient limitation, bioenergetics and stoichiometry: A new model to predict elemental fluxes mediated by fishes. *Funct Ecol*. 00: 1– 13.
- Allgeier, J.E.**, ^Cline. T.W., 2019 *Technical Comment*: Demographic dynamics of the smallest marine vertebrates fuel coral reef ecosystem functioning. *Science* 366: 6472
- Hensel, E., **Allgeier, J.E.**, Layman, C.A., 2019. Effects of predator presence and habitat complexity on reef fish communities in The Bahamas. *Marine Biology* 166:136
- Wathen, G\*, **Allgeier, J.E.\***, Bouwes, N., Pollock, M.M., Schindler, D.E., and Jordan, C.E. 2019. Beaver activity increases habitat complexity and spatial partitioning of steelhead trout. *Canadian Journal of Fisheries and Aquatic Sciences*. 76(7): 1086-1095. (\* = equal contribution)
- Lyon, R.P, Eggleston, D.L., Bohnenstiehl, D.R., Layman, C.A., Ricci, S.W., **Allgeier, J.E.** 2019. Fish community structure, habitat complexity, and soundscape characteristics of patch reefs in a tropical, back-reef system. *Marine Ecology Progress Series* 609:33-48
- Vandermeer, J., Agaii, A., **Allgeier, J.E.**, Badgley, C., Baucom, R., Blesh, J., Fink Shapiro, L, Jones, A., Hoey, L., Jain, M., Perfecto, I., Wilson, M. 2018. Feeding Prometheus: An interdisciplinary approach for solving the global food crisis. *Frontiers in Sustainable Food Systems* 2:39
- Allgeier, J.E.**, Speare, K.E., Burkepile, D.E. 2018. Estimates of fish and coral larvae as nutrient subsidies to coral reef ecosystems. *Ecosphere* 10:1002
- Allgeier, J.E.**, Layman, C.A., Montana, C.G., Buhler, S.B., Appaldo, R., Rosemond, A.D. 2018. Anthropogenic versus fish-derived nutrient effects on seagrass community structure and function. *Ecology* 99:1792-1801

- Allgeier, J.E.**, Adam, T.C., Burkepile, D.E. 2017 The importance of individual and species-level traits for trophic niches among herbivorous coral reef fishes. *Proceedings of the Royal Society B* 284: 1856
- Allgeier, J.E.**, Layman, C.A. Burkepile, D.E. 2017. Animal pee in the sea: consumer-mediated nutrient dynamics in the world's changing oceans. *Global Change Biology* 23:2166–2178
- Allgeier, J.E.**, Valdivia, A., Cox, C.S., Layman, C.A. 2016. Fishing down nutrients on coral reefs. *Nature Communications* 7:1246 - covered by over 40 news outlets including *National Geographic*.
- Layman, C.A., **Allgeier, J.E.**, Montana, C. 2016. The attraction-production debate viewed from the bottom-up: mechanistic evidence of enhanced production. *Ecological Engineering* 95: 574-579
- Streicker, D.G. and **Allgeier, J.E.** Variability in individual dietary specialization across a resource gradient in common vampire bats. 2016. *Journal of Applied Ecology* 53:1280-1288.
- Allgeier, J.E.**, Wenger, S.J., Schindler, D.E., Layman, C.A., Rosemond, A.D. 2015. Metabolic theory and taxonomic identity predict nutrient cycling in a diverse food web. *Proceedings of the National Academy of Sciences of the USA* 112 (20): 2640-26437 - received [PNAS Commentary](#)
- Allgeier, J.E.**, Layman, C.A., Mumby, P.J., Rosemond, A.D. 2015. Biogeochemical implications of regional biodiversity loss across coastal marine ecosystems. *Ecological Monographs* 85: 117:132
- Archer, S.K., **Allgeier J.E.**, Semmens, B.X., Heppell, S.A., Pattengill-Semmens, C.V., Rosemond, A.D., Bush, P., McCoy, C.M., Johnson, C.B., and Layman, C.A., 2015. Hot moments in spawning aggregations: implications for ecosystem-scale nutrient cycling. *Coral Reefs* 34: 19-23
- Allgeier, J.E.**, Layman, C.A., Mumby, P.J., Rosemond, A.D. 2014. Consistent nutrient storage and supply mediated by diverse fish communities in coral reef ecosystems. *Global Change Biology* 20: 2459-2472
- Hammerschlag-Peyer, C.M., **Allgeier, J.E.**, Layman, C.A. 2013. Predator effects on faunal community composition in shallow seagrass beds of The Bahamas. *Journal of Experimental Biology and Marine Ecology* 446: 282-290
- Burkepile, D.E., **Allgeier, J.E.**, Shantz, A., Pritchard, C., Lemoine, N., Bhatti, L., Layman, C.A. 2013. Nutrient supply from fishes facilitates macroalgae and suppresses corals in a Caribbean coral reef ecosystem. *Scientific Reports* 3: 1493
- Allgeier, J.E.**, Yeager, L.A., Layman, C.A. 2013 Consumers alter nutrient limitation regimes and enhance primary production. *Ecology* 94: 521-529.
- Layman, C.A., **Allgeier, J.E.**, Yeager, L.A., Stoner, E.B. 2013 Thresholds of ecosystem response to nutrient enrichment from fish aggregations. *Ecology* 94: 530-536
- Layman, C.A. and **Allgeier, J.E.** 2012. Characterizing trophic ecology of generalist consumers: a case study on the invasive lionfish *Pterois volitans* in The Bahamas. *Marine Ecology Progress Series* 448:131-14
- Allgeier, J.E.**, Rosemond, A.D., Layman, C.A. 2011. Small-scale variation in nutrient limitation and seagrass nutrient content in Bahamian mangrove wetlands. *Journal of Experimental Marine Biology and Ecology* 407: 330-336
- Yeager, L.A., **Allgeier, J.E.**, Layman, C.A. 2011. Experimental test of how patch- and landscape-scale variables affect fish community assembly. *Oecologia* 167: 157-168  
*Awarded top graduate student paper 2011, Florida International University*
- Allgeier, J.E.**, Rosemond, A.D., Layman, C.A. 2011. The frequency and magnitude of non-additive responses to multiple nutrient enrichment. *Journal of Applied Ecology* 48: 96-101  
*Recommended F1000 and Awarded top graduate student paper 2011, Odum School of Ecology, UGA*
- Layman, C.A.\*, **Allgeier, J.E.\***, Rosemond, A.R., Dahlgren, C.P., Yeager, L. 2011. Marine fishery declines viewed from the bottom-up. *Ecological Applications* 21(2): 343-349 (\* = equal contribution);  
*Recommended F1000*
- Allgeier, J.E.**, Mehring, A.S., Rosemond, A.D., Layman, C.A. 2010. Significant nutrient co-limitation across a gradient of fragmentation in sub-tropical mangrove-dominated estuaries. *Limnology and Oceanography* 55(66): 2660-2668
- Layman, C.A., Montaña, C.G., **Allgeier, J.E.** 2010. Linking community assembly and rates of water level change in river littoral habitats. *Aquatic Ecology* 44: 269-273

Layman, C.A., Quattrochi, J.P., Peyer, C.M., **Allgeier, J.E.** 2007. Niche width collapse in a resilient predator following ecosystem fragmentation. *Ecology Letters* 10:937-944

#### ***Manuscripts submitted or in prep for submission***

Richards, S. #, Hasselbarth, M.H.^, **Allgeier, J. E.** Functional diversity increases seagrass primary productivity more than species diversity. *In prep*

Seth, S. #, Watson, N. #, Shayka, B. #, Munsterman, K.S. #, **Allgeier, J.E.**, Artificial reefs in seagrass beds increase local invertebrate production. *In prep*

**Allgeier, J.E.**, The ecosystem ecology of coral reefs revisited. *Invited: Annual Reviews of Ecology, Evolution and Systematics*

**Allgeier, J.E.**, Wenger, S.J., Burkepile, D.E. Individual variation in consumer stoichiometry is better predicted by phylogeny than ecological traits. *In prep - draft available upon request.*

#### ***Technical Reports***

**Allgeier, J.E.**, Layman, C.A., The Conservation of Eagle Bay. 2014. Report to Bahamas National Trust and The Nature Conservancy

Layman, C.A., and **Allgeier, J.E.** Scientific regional evaluation of habitat for proposed marine protected area in southern Haiti. 2012. Report for The Nature Conservancy

**Allgeier, J.E.** Temporal variation and vertical migration of zooplankton in the upper 90 meters of the pelagic zone in Lake Tanganyika. 2001. Proc. Nyanza Project Lake Tanganyika

#### **PRESENTATIONS**

##### ***Society Meetings***

Ecological Society of America 2023; Ecological Society of America 2019; International Coral Reef Symposium 2016; Abaco Science Conference 2016; Ecological Society of America 2015; International Coral Reef Symposium 2012; Graduate Student Symposium, UGA 2011; Ecological Society of America 2010; Student Symposium, UGA 2009; North American Benthological Society 2009; Student Symposium, UGA 2008; Student Symposium, UGA 2007.

##### ***Invited Presentations***

Institute for Global Change Biology; University of Michigan October 2023  
Graduate Student Invited Keynote Speaker: University of Georgia Odum School of Ecology January 2023  
Ecological Society of America Early Career Award Presentation 2021  
Gordon Research Conference Invited Speaker 2022 Summer  
Florida International University Department Seminar 2022 Spring  
Rutgers University – Graduate Student Invited Seminar 2022 Fall  
Ecological Society of America - Early Career Fellow Presentation 2021  
Department Seminar, University of The Bahamas 2020  
Conservation Lightening Talk, School of the Environment and Sustainability, UM 2019  
Department Seminar, Leibniz-Institute of Freshwater Ecology and Inland Fisheries 2018  
Department Seminar, Scripps Institute of Oceanography 2017  
Department Seminar, Ecology and Evolutionary Biology, University of Michigan 2016  
Department Seminar, School of Marine and Atmospheric Sciences, Stony Brook University 2016  
Department Seminar, Marine Sciences, University of California Santa Barbara 2016  
Department Seminar, Biology, Georgia Tech University 2016  
Department Seminar, Biology, University of Louisville 2015  
Quantitative Seminar, School of Aquatic and Fisheries Science, University of Washington 2015  
Presentation of Research for Bahamas Department of Marine Resources, The Bahamas 2011  
Guest Seminar, Am. Fisheries Society, University of Georgia Chapter 2010  
Keynote Speaker: Lionfish Awareness Event, The Bahamas 2010

## **TEACHING AND MENTORING**

### ***Courses Taught***

Ecology (co-taught with Nate Sanders) Winter 2023 - University of Michigan

Ecosystem Ecology (co-taught with Don Zak) Winter 2018, 2019, 2020, 2021, 2022, 2023 – University of Michigan

Coastal Ecology and Sustainability Fall 2017, 2019, 2021, 2022, 2023 – University of Michigan

### ***Guest Lecturer Graduate and Undergraduate-level***

Biology of Fishes. University of Michigan, December 2018;

Limnology, University of Georgia. August 2012; Ecosystem Ecology: Introduction to Stable Isotopes;

University of Georgia. March 2012; Limnology, University of Georgia; October 2011; Limnology, University of Georgia. November 2009

### ***Graduate Students and Postdocs***

Nepsis Garcia (PhD Student: 2023-present)

Katrina Munsterman (PhD Student: 2019-present)

Bridget Shayka (PhD Student: 2018-present)

Anjali Shakya (MS Student 2018-2020; currently Scientist with Sacramento-San Joaquin Delta Conservancy)

Kenzo Esquivel (MS Student: 2017-2019; currently in PhD program at UC Berkeley)

Samantha Iliff (MS Student: 2019-2022)

Melaine Esch (Postdoctoral Fellow: 2023-present)

Maxwell Hesselbarth (Postdoctoral Fellow: 2020-2023)

Timothy Cline (Postdoctoral Fellow: 2018-2019)

### ***PhD and MS Student Committees*** \* = students with whom I have worked substantially

Britany Armalar (MS; SEAS UM)

Teresa Sauer (PhD; EEB UM)

Patricia Torres-Pineda (PhD; EEB UM)

William Weid\* (PhD; Marine Sciences Florida International University)

Libby Davenport (PhD; EEB UM)

Scott Jackson (PhD; SEAS UM)

Zachary Hajian-Forooshani (PhD; EEB UM)

Morgan Lindback (PhD; EEB UM)

Aisilinn Dunne (PhD; King Abdullah University of Science and Technology - graduated 2022)

Jennifer Flores (MS; EEB UM - graduated 2022)

Alex Killion (PhD; SEAS UM - graduated 2021)

Joyah Watkins (MS; EEB UM - graduated 2021)

Ye Yuan (MS; SEAS UM - graduated 2020)

Katrina Munsterman\* (MS; EEBM UC Santa Barbara - graduated 2019)

Teal Harrison\* (MS; EEB UM - graduated 2018)

### ***Secondary Academic Advisor***

Kathryn Schmidt (PhD; EEB UM)

Teresa Sauer (PhD; EEB UM)

Morgan Lindback (PhD; EEB UM)

### ***Mentored Undergraduate Students (>1,990 hours of undergraduate contributions to the lab since Fall 2020)***

*\* indicates I am primary mentor working with student on a publication*

Joanna Livingston Winter 2023-present\*

Eleanor Livingston Winter 2023-present  
Sean Richards Fall 2022-present\*  
Lily Rivere Winter 2022-present  
Shreyaan Seth Fall 2021-present\*  
Natalie Watson Fall 2021-present\*  
Micha Romana Spring 2019-Winter 2023  
Kati Valus Winter 2022  
Daniel Horne Winter 2023  
Jason Wagenmaker Fall 2020- Spring 2023  
Alexandra Mallouk Winter 2022-Summer 2022  
Charles Cotila 2021-Spring 2022  
Emily Brines 2018-2022\*  
Adrian Gonzalez Fall 2019-Spring 2020  
Gigi Broyles Fall 2019- Spring 2020  
Lily Matlof Fall 2018 - Spring 2020  
Arin Yu Spring 2019 - Spring 2020  
Meg Nicholson Spring 2019  
Lauren Martin Spring 2020  
Patrick Lewis Fall 2018-Spring 2019  
Brianna Westmoreland - Fall 2017

#### **Independent Research Course or Thesis Advisor:**

Joanna Livingston 2023-present; *Quantifying the importance of Syringodium filiforme for seagrass community production and nutrient retention* **\*Currently working on first author publication**  
Shreyaan Seth 2022-present; *Quantifying the impact of artificial reefs on invertebrate abundance and diversity* **\*Currently working on first author publication**  
Sean Wright 2022-present; *Quantifying the effect of species identity for ecosystem function using a seagrass individual-based simulation model* **\*Currently working on first author publication**  
Natalie Watson 2022-present; *Understanding the role of detritus for supporting invertebrate biomass in seagrass* **\*Currently working on first author publication**  
Micah Romaner 2022-2023; *Quantifying herbivory around artificial reefs across anthropogenic gradients in Haiti and The Bahamas*  
Alexandra Mallouk 2022; *Unraveling the role of herbivory in human dominated seagrass ecosystems.*  
Charles Cotila 2021 (co-advising Undergraduate Thesis with Dr. Julia Cole); *Quantifying the role of skeletal phosphorus in coral as a marker for climactic shifts.*  
Kaylee Prichard Fall 2019 (in collaboration with NOAA); *The ecological interactions of quagga mussels and benthic algae*  
Emily Brines Fall 2018-2019; *Quantifying the role of human impacts on biogeochemical hotspots in seagrass beds.* **\*Resulted in first author publication for student - Brines et al. 2022**  
Brandon Nee Spring 2017 (in collaboration with EPA); *Using fish otoliths to reconstruct population size and age structures over time.*

#### **SYNERGISTIC ACTIVITIES**

Institute for Global Change Biology Working Group – co-wrote funded proposal for a working group with a diverse group of 3 other PIs on changing human-wildlife interactions in the face of climate change. To date have one paper in review and three in prep.

Founder of The Precollege Ocean Discovery and Science (PODS) Program. PODS is a pre-to-post-college mentorship program that promotes Bahamians in STEM fields and leadership positions by offering high school students from underrepresented groups research experience and personalized mentorship to help apply to, attend, and graduate from post-high school STEM programs. The program builds on a long-term (16 year) partnership between the PI Allgeier and an impactful local non-profit organization,

Friends of the Environment (FRIENDS) in Abaco, Bahamas. 2021-ongoing  
 Scientific advisor to and collaborator with Center for the Conservation and Eco-Development of Samaná Bay and its Surroundings (CEBSE). Working with local fisheries and coral restoration in collaboration with artificial reef research.  
 Scientific advisor for The United Nations Environmental Program in Haiti and The Nature Conservancy. Our recommendations informed the delineation of the first marine national park in Haiti.  
 Worked in partnership with fishers and local stakeholders in Ile A Vache, Haiti, to develop small-scale no-take management areas around clusters of artificial reefs. 2012-2019  
 Developed of an educational outreach program in Haiti involving hundreds of students and local community members. We provided presentations (>30) to schools, communities, and government officials about the basic ecology of their local ecosystems including the design and dissemination of educational posters written in English and Haitian Creole. This outreach was in coordination with much of our ongoing artificial reef research there. 2012-2019  
 Collaborator at the Mo'orea Coral Reef LTER and Centre de Recherches Insulaires et Observatoire de l'Environnement (CRIOBE, Mo'orea) with on-going research on consumer-mediated nutrient dynamics in coral reef ecosystems. 2015-ongoing  
 Ongoing collaboration with Loggerhead Productions Inc. on conservation films. To date we have produced three: two education videos about our [on-going research in Haiti](#), one in English and [one in Haitian Creole](#) that is being distributed throughout the island where we work. The third is a conservation documentary that recently showed that the Cucalorus Film Festival (Wilmington, NC) and has been submitted to the Full Frame Film Festival (Durham, NC). A fourth full-length documentary is close to [completion](#). 2012-ongoing  
 Founder of Conservation Initiative “Ampil Poison” to implement small-scale no-take fisheries areas in Haiti 2012-2019 (suspended due to political unrest) and the Dominican Republic 2022-ongoing  
 Sustainable Food Systems Initiative Faculty (University of Michigan) 2016-present  
 Institute for Global Change Biology (University of Michigan) 2019-present  
 NSF Sponsored *Coastlines and People* Workshop Invitee – September 2018

## OUTREACH

Editor of “Teachers Resource Guide to the Natural History of The Bahamas” – an educational document distributed to teachers throughout the entire country  
 Participant in elementary “Enrichment Clusters” – periodically host science lab fieldtrips 2007-2012  
 Student Mentor for Northwest Association of Biomedical Research BioExpo Program, Seattle, WA. 2014-2015  
 Guest Lecturer Elementary-High school for 30+ classes in Haiti, The Bahamas and USA 2006-present

### *Select Popular Press (see website for details)*

[Video](#) highlighting my research created and promoted by the College of Literature, Science, and the Arts 2022

[Interview](#) for *The Scientist* – 2021

*Detroit Free Press* [Article](#) about work on fish movement

[Interview](#) for *Scientific American* - 2019

Invited blog post for AAAS – “At the nexus of people and basic science – and argument for community engagement” <https://www.aaas.org/programs/center-public-engagement-science-and-technology/reflections/nexus-people-and-basic-science>

“This Side of the Zanskar” – authored article about globalization influence on remote cultures. *submitted Article* in *Oceana* about research on fish-mediated nutrient dynamics

[Interview](#) on Canadian Broadcasting Company’s “Quarks and Quirks” radio show for coral reef research

[Article](#) on fish excretion on coral reefs featured in *National Geographic* and over 40 other news outlets

Educational film (in Haitian Creole) developed for Haitian students about local research and conservation: <https://vimeo.com/183383529> (also see personal website)

Film featuring artificial reef research in Haiti: <http://www.jacoballgeier.com/outreach>

Frequent blogger for *The Abaco Scientist*, <http://appliedecology.cals.ncsu.edu/absci/>



ScienceDaily.com: [press release](#) on articles on metabolic theory and consumer recycling (PNAS 2015)  
ScienceDaily.com: [press release](#) on articles on fish nutrient cycling (Ecology, 2013)  
UGA Research Magazine, press release on articles on fish nutrient cycling (Ecology 2013). Spring 2013  
“Haiti – a glimmer of hope in a sea of despair” - article in The Abaconian – local newspaper on Abaco, The Bahamas. October 2012  
"Abaco Creek Restoration: Where We Have Been and Where We are Going” article in The Abaconian – local newspaper on Abaco, The Bahamas. October 2011  
Global Reef Expedition - [article](#) about artificial reefs research.  
UGA Research Magazine, press release article on overfishing manuscript (Ecological Applications 2011). Summer 2011  
UGA Columns, press release article on overfishing manuscript (Ecological Applications 2011). Spring 2011  
“Sustainable Seafood” – article printed in The Flagpole, local newspaper, Athens GA. November 2008  
Frequent highlights in newspaper *Abaconian* for restoration, outreach work in Bahamas  
Abaco Life Magazine article about tidal creek restoration and outreach. December 2007

## **EXTERNAL SERVICE**

### ***Journals Reviewed for (>140 as of 2020):***

*Aquatic Conservation (1), Biogeosciences (1), Biologica Tropical (1), Biological Conservation (3), Biology Letters (2), Biological Reviews (1), Continental Shelf Research (1), Diversity and Distributions (1), Ecology (9), Ecological Applications (7), Ecology Letters (5), Ecology and Evolution (1), Ecological Engineering (1), Ecosphere (2), Ecosystems (3), eLife (1), Environmental Science and Technology (2), Estuaries and Coasts (1), Estuaries and Shelf Science (1), Freshwater Biology (4), Freshwater Science (3), Frontiers in Earth Science (1), Functional Ecology (8), Global Change Biology (5), Journal of Applied Ecology (2), Journal of Animal Ecology (4), Journal of Environmental Management (1), Limnology and Oceanography (1), Marine Biology (3), Marine Ecology Progress Series (7), Marine Environmental Research (4), Marine Freshwater Behavior and Physiology (1), Nature (3), Nature Ecology and Evolution (5), Nature Climate Change (1), Neotropical Ichthyology (1), Oecologia (6), Oikos (3), PLoS One (1), Proceedings of the Royal Society B (2), Science Advances (6), Transactions of the American Fisheries Society (1), Trends in Ecology and Evolution (3)*

### ***Journal Editorial Board***

Journal of Animal Ecology 2022-present  
Food Webs 2016-present

### ***Funding Agencies***

Review Panel – March 2022 Biological Oceanography National Science Foundation (BIO OCE)  
External Reviewer – National Science Foundation: 16 since 2014  
External Reviewer – North Carolina SeaGrant: 2023

### ***Invited Review***

*Book: Foundations of Human Made Reefs: Ecology and Application; Chpts 4 and 5 – Dr. William Seaman*

### ***External Tenure Promotion Review***

*University of California Santa Barbara 2022*

## **INTERNAL SERVICE**

### ***Departmental Committees***

Graduate Affairs Committee 2022-present  
Executive Committee 2020-2022  
Search Committee for Collegiate Fellow 2020  
Search Committee for UMBS Biological Station 2019

Early Career Scientist Symposium 2018; lead organizer with four others  
Undergraduate Affairs Committee 2016-present  
Social Committee 2016-2018

***David and Lucille Packard Foundation Fellowship University of Michigan Internal Review***

2020-2022 Reviewed ~15 applications each year

2021 Provided examples and assisted in virtual proposal workshop

***UM or Department-Related Outreach***

*NSF GRFP Workshop Organizer (with 4 other faculty) 2023-present*

*Alpha Tau Pi Panel– Professional Biology Fraternity professional development panel discussion 2022*

*Next Prof Mentor: 2021, 2022*

*Internal Reviewer for Departmental NSF GRFPs 2021*