JACOB E. ALLGEIER
Assistant Professor +1 734-764-6797
Department of Ecology, Evolution, and Biology jeallg@umich.com
University of Michigan http://jacoballgeier.com/

EDUCATION

2006 - 2013 Ph.D. Ecology University of Georgia, Athens, GA
1997 - 2001 B.S. Biology Centre College, Danville, KY

PROFESSIONAL APPOINTMENTS

2017 – present 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)

GRANTS AND OTHER FUNDING

National Science Foundation, "Using novel ecosystem-scale experiments to quantify drivers of reef productivity in a heavily impacted coastal ecosystem in Haiti" PI. 2020-2024 ($675,164)
David and Lucile Packard Fellowship for Science & Engineering 2019-2024 ($875,000)
National Science Foundation, Postdoctoral Fellowship: Integrating Mathematics and Biology. 2014-2016 ($138,000)
National Science Foundation, "Fish aggregations and biogeochemical hot spots across regional environmental gradients" Non-PI co-author and sole collaborator with Dr. Craig Layman. 2013-2017 ($657,000)
National Science Foundation, Doctoral Dissertation Improvement Grant (DDIG) 2010 ($14,580)
Environmental Protection Agency, Science To Achieve Results (STAR) Fellowship 2010–2013 ($111,000)

PUBLICATIONS

Publications from the lab use the first and last author positions as positions of emphasis
(# = students, ^ = postdocs, underline = undergraduates in the lab)

Allgeier, J.E., ^Cline. T.W., *Technical Comment*: Demographic dynamics of the smallest marine vertebrates fuel coral reef ecosystem functioning. Science
Allgeier, J.E., R. A. Wathen, ^Cline, T.W., Walsworth, T. N., Layman, C. A., and Schindler, D. S. Individual behavior drives ecosystem function. *In Press Science Advances*
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. *In press.* (* = joint first author)
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 write-up in PNAS*

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 (* = joint first author);
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 in advanced stages

Allgeier, J.E., Wenger, S.J., Layman, C.A. Taxonomic identity explain variation in body nutrient content in a diverse food web. *In Review.*

Allgeier, J.E., Andskog, M., Hensel, E., Layman, C.A., Kemp, D. Rewiring coral: anthropogenic nutrient shunt coral-algal nutrient and energy pathways through algal symbiont. *In Review.*

Layman, C.A. and **Allgeier, J.E.** Artificial reefs viewed from the bottom-up: an ecosystem ecology perspective. *In Review.*

Andskog, M. A. #, E. Brines#, K. S. Munsterman#, K. Esquivel#, C. A. Layman, and **J. E. Allgeier**. *in prep*. Primary production regimes across a gradient of fishing pressure and nutrient enrichment on artificial reefs in the Caribbean

Brines, E., #, A. Andskog#, K. S. Munsterman#, and J. E. Allgeier. *in prep*. Fish fertilization of seagrass across a gradient of eutrophication in Haiti.

Esquivel, K. #, T. J. Cline^, and **J. E. Allgeier**. *in prep*. The potential for fish production via bottom-up pathways on tropical artificial reefs.

Cline, T. W.^, and **J. E. Allgeier**. *in prep*. Weak evidence for fish community control of coral reef resilience.

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

SELECTED ADDITIONAL AWARDS AND GRANTS

NSF Sponsored *Coastlines and People* Workshop Invitee – September 2018
The Ecosystem Center, Woods Hole Postdoctoral Fellowship 2014 – 3 year offer (declined for NSF Fellowship)
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: 2nd place - 2011
Odum School of Ecology Graduate Student Symposium Presentation Award: 3rd place - 2010
University of Georgia – Dissertation Completion Award - 2010 (Award declined for EPA STAR - $39,000)
Odum Endowment Research Grant - 2009 ($1,200)
Odum Endowment Research Grant - 2008 ($800)
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)

TEACHING AND MENTORING

Courses Taught

Ecosystem Ecology (co-taught with Don Zak) Winter 2018, 2019 – University of Michigan
Coastal Ecology and Sustainability Fall 2017, 2019 – University of Michigan

Guest Lecturer Graduate/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
Current: Bridget Shayka (PhD Student: 2018-present), Katrina Munsterman (PhD Student: 2019-present), Samantha Iliff (PhD Student: 2019-present), Anji Shakya (MS Student: 2019-present),
Graduatedt: Kenzo Esquivel (MS Student: 2018-2019), Timothy Cline (Postdoctoral Fellow: 2018-2019),

PhD and MS Student Committees
Zachary Hajian-Forooshani (PhD; EEB), Alex Merciere (PhD; SEAS), Morgan Lindback (PhD; EEB), Joyah Watkins (MS; EEB), Alexa White (PhD; EEB), Ye Yuan (MS; EEB), Katrina Munsterman (2019 MS: UC Santa Barbara), Teal Harrison* (2018 MS; EEB)
* = *students with whom I worked substantially*

Undergraduate Students
Adrian Gonzalez Fall 2019-present, Gigi Broyles Fall 2019-present, Lily Matlof; Fall 2018 – present, Arin Yu Spring 2019- present, Brianna Westmoreland Fall 2017

Independent Research Course:
Kaylee Prichard Fall 2019 (in collaboration with NOAA), Patrick Lewis Fall 2018-Spring 2019, Emily Brines Fall 2018-Spring 2019, Brandon Nee, Spring 2017

SERVICE

Departmental Committees
Search Committee for UMBS Biological Station 2019
Early Career Scientist Symposium – departmental organizer
Undergraduate Affairs Committee 2016-present, Social Committee 206-2018

Journals and Funding Agencies Reviewed for (88 total):
*National Science Foundation (7), Aquatic Conservation (1)***,** *Biologica Tropical (1), Biological Conservation (3), Biology Letters (2), Continental Shelf Research (1), Diversity and Distributions (1), Ecology (6), Ecological Applications (6), Ecology Letters (5), Ecology and Evolution (1), Ecosphere (1), Ecosystems (2), Environmental Science and Technology (2), Freshwater Biology (4), Freshwater Science (3), Frontiers in Earth Science (1), Functional Ecology (3), Global Change Biology (4), Journal of Applied Ecology (1), Journal of Animal Ecology (1), Limnology and Oceanography (1), Marine Biology (2), Marine Ecology Progress Series (7), Marine Environmental Research (3), Marine Freshwater Behavior and Physiology (1), Nature Ecology and Evolution (4), Neotropical Ichthyology (1), Oecologia (6), Oikos (1), Proceedings of the Royal Society B (2), Science Advances (2), Transactions of the American Fisheries Society (1), Trends in Ecology and Evolution (3)*

Journal Editorial Board
Food Webs 2016-current

SYNERGISTIC ACTIVITIES

Sustainable Food Systems Initiative Faculty (University of Michigan) 2016-present
Institute for Global Change Biology (University of Michigan) 2019-present

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.

Working 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.

Development of an educational outreach program in Haiti involving hundreds of students and local community members. We provide presentations (>25 in the past three years) 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 is in coordination with much of our ongoing artificial reef research there.

Collaborator at the Mo'orea Coral Reef LTER and Centre de Recherches Insulaires et Observatoire de I'Environnement (CRIOBE, Mo'orea) with on-going research on consumer-mediated nutrient dynamics in coral reef ecosystems.

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.

Leader of Conservation Initiative "Ampil Poison" to implement small-scale no-take fisheries areas in Haiti

PRESENTATIONS

Society Meetings

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

Conservation Lightening Talk School of the Environment and Sustainability, UM Jan 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; 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

OUTREACH

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)

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; http://www.sciencedaily.com/releases/2015/04/150416132634.htm)
ScienceDaily.com: press release on articles on fish nutrient cycling (Ecology, 2013; http://www.sciencedaily.com/releases/2012/12/121211163545.htm)
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. http://www.livingoceansfoundation.org
UGA Research Magazine, press release article on overfishing manuscript (Ecological Applications 2011). Summer 2011
UGA Columns, press release article on overfishing manuscript (Eco. 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