Alice Fay Besterman

Postdoctoral Researcher with Buzzards Bay Coalition & Woodwell Climate Research Center

114 Front St. New Bedford, MA
(508) 999-6363 x 231 (Mon, Tue)
(508) 444-1537 (Wed, Thur, Fri)

abesterman@woodwellclimate.org
besterman@savebuzzardsbay.org
https://alicebesterman.weebly.com

EDUCATION

2019	Ph.D. Environmental Sciences, Concentration Ecology University of Virginia
2013	B.S. Environmental Studies Virginia Commonwealth University *Magna Cum Laude*

PROFESSIONAL APPOINTMENTS & EXPERIENCE

2020-present	Postdoctoral Researcher, Buzzards Bay Coalition, MA
2020-present	Postdoctoral Researcher, Woodwell Climate Research Center, MA
2019	Contracted Researcher, Climate Focus, Washington D.C.
2015-2018	NSF Graduate Research Fellow, University of Virginia
2012	Hydrologic Technician Intern, U.S. Geological Survey, Wetland and Biogeochemistry Lab, Reston, VA

AWARDS AND OTHER HONORS

2019	**Maury Environmental Sciences Prize**, Dept. of Env. Sci., UVA. Awarded to the top student in the department.
2019	**Dissertation Year Research Prize**, Jefferson Scholars Foundation.
2017	**Raven Honor Society,** Univ. of Virginia.
2016	**Outstanding Graduate Student in Ecology Award**, Dept. of Env. Sci, UVA.
2015	**National Science Foundation Graduate Research Fellowship**

GRANTS AND FELLOWSHIPS

EXTERNAL **[total: $792,582]**

2020-2023 **Northeast Climate Adaptation Science Center Grant ($371,849)**
"Mapping Salt Marsh Response to Sea level Rise to Aid Wildlife Habitat Management in New England". PI: Linda Deegan. (*Named postdoc, contributed significantly to proposal concepts and writing*)

2020-2021 **Rose Family Foundation ($35,000)**
"Promoting Salt Marsh Resilience through Research, Innovative Management, and Public Engagement. Awarded to Buzzards Bay Coalition, Co-writers: Rachel Jakuba, **Alice Besterman**

2019-2021 **Southeast New England Program, Watershed Grants ($223,533)**
"Evaluating management actions to promote salt marsh resilience". PI: Rachel Jakuba (*Named postdoc, contributed significantly to proposal concepts and writing*)

2018 **Virginia Soc. of Ornithology, J.J. Murray Student Research Award ($1,000)**
"Do macroalgal mats affect shorebird distributions and foraging behavior during spring stopover in the Virginia Coast Reserve?". **Alice Besterman**

2015-2018 **4-VA, Collaborative Research Grant ($23,200)**
"Pathogenic bacteria in a pristine environment". PIs: Michael Pace, Karen McGlathery, Joanna Mott, Pradeep Vasudevan. **Co-PIs: Alice Besterman** and Stanley Peyton

2015-2018 **NSF Graduate Research Fellowship ($138,000). Alice Besterman**

INVITED PRE-PROPOSALS

2020-2021 **NERRS Science Collaborative, Catalyst Grant ($199,923)**
"Using High Frequency NERRS Monitoring Data to Measure Recovery of Coastal Environments". Co-Project Leads: Michael Pace, Jonathan Walter. **Team Members: Alice Besterman**, Cal Buelo, Spencer Tassone. -- ***Full Proposal Denied.***

2019 **Woods Hole Sea Grant Program ($116,845)**
"Evaluating Salt Marsh Resilience Across Gradients of Nutrient Enrichment & Land Management". PIs: Rachel Jakuba, Linda Deegan, Joe Costa, **Alice Besterman.** -- ***Full proposal denied but deemed meritorious of support***.

COMPETITIVE INTERNAL **[total: $25,000]**

2018 **Environmental Resilience Institute,** Univ. of Virginia **($14,000)**
Rapid Response Grant: "Using high frequency monitoring data to measure resilience of coastal environments to hurricanes".
PI: Michael Pace, Co-PIs: **Alice Besterman** and Cal Buelo
https://eri.virginia.edu/project/monitoring-hurricanes/

2018 **Dept. of Environmental Sciences,** Univ. of Virginia **($3,500)**
Moore Graduate Research Award: "Do macroalgal mats affect shorebird distributions and foraging behavior during spring stopover in the Virginia Coast Reserve?"

2017 **Institute of the Humanities and Global Cultures,** Univ. of Virginia **($5,000)**
Graduate Collaborative Network. "Ecological Methods Lab (Eco-Lab)". Co-Leads: Jeremy Sorgen, Luke Krieder, **Alice Besterman**

2015 **Dept. of Environmental Sciences,** Univ. of Virginia **($1,500)**
Exploratory Graduate Research Award: "Spatial dynamics of trophic interactions and pathogen reservoirs relative to an invasive macroalga's (*Gracilaria vermiculophylla)* distribution

2011 **Dept. of Environmental Studies,** Virginia Comm. University **($1,000)**
Rice Rivers Center Summer Research Experience Grant: "The relationship between food availability and reproduction in a Neotropical migratory songbird, the Prothonotary Warbler"

PEER-REVIEWED PUBLICATIONS

5. **Besterman, A.F.**, K.J. McGlathery, M.A. Reidenbach, P.L. Wiberg, M.L. Pace. *In press.* Predicting benthic macroalgal abundance in shallow coastal bays from geomorphology and hydrologic flow patterns. *Limnology and Oceanography.* DOI: 10.1002/lno.11592
4. **Besterman, A.F.**, S. Karpanty, M.L. Pace. 2020. Impact of exotic macroalga on shorebirds varies with foraging specialization and spatial scale. *PLoS ONE.* 15(4): e0231337. https://doi.org/10.1371/journal.pone.0231337
3. Contributing author: NYDF Assessment Partners. 2019. Protecting and Restoring Forests: A Story of Large Commitments yet Limited Progress. New York Declaration on Forests Five-Year Assessment Report. Climate Focus (coordinator and editor). Accessible at forestdeclaration.org.
2. Wilkinson, G.W., **A.F. Besterman**, C. Buelo, J. Gephart, M.L. Pace. 2018. A synthesis of modern organic carbon burial rates in coastal and inland ecosystems. *Scientific Reports.* Vol 8, Article Number: 15736. https://doi.org/10.1038/s41598-018-34126-y
1. **Besterman, A.F**. & Pace, M.L. 2018. Do macroalgal canopies impact microphytobenthos on mudflats? Evidence from a meta-analysis, comparative survey, and large-scale manipulation. *Estuaries and Coasts* 41:2304-2316. https://doi.org/10.1007/s12237-018-0418-3

UNDER REVIEW AND IN PREPARATION PUBLICATIONS

Besterman, A.F., M.L. Pace. *In preparation.* Geomorphology has a larger effect on biomass and body size of mudflat consumers than exotic macroalga. *Ecosystems.* -- (Full manuscript draft prepared)

TEACHING AND MENTORSHIP

TEACHING EXPERIENCE

2019	**Guest lecturer**, Univ. of Virginia, 'Writing and Critical Inquiry: A Scientific Approach to Artful Communication', Lectured and led discussion for first year students on how to generate and narrow research questions. 2 sessions
2014-15 & 2019	**Teaching Assistant**, Univ. of Virginia, 'Practical Concepts in the Environmental Sciences', Non-majors course in earth science. Activities included preparing lectures, designing quizzes, grading quizzes and homework, and instructing students through hands-on activities.
2012	**Teaching Assistant**, Virginia Commonwealth University, 'Panama Avian Field Ecology Course', Split study-abroad and on-campus course. Assisted with field work and research projects of enrolled students
2012-2013	**Supplemental Instruction Leader**, Virginia Commonwealth University, Introductory Biology, Designed and led 1-hr group learning review sessions to help students learn course material. Held three sessions per week, extra sessions before tests, and weekly office hour

TEACHING-RELATED PUBLICATIONS

Teacher-reviewed, classroom tested lesson plan- downloaded 335 times: **Besterman, Alice**. How Green Is It? Learning Light and Electromagnetic Spectrum Properties by Measuring Algae. *Virginia Scientists & Educators Alliance (VA SEA), a collaboration of the Chesapeake Bay National Estuarine Research Reserve in Virginia and the Marine Advisory Program, Virginia Institute of Marine Science, College of William & Mary.* Virginia Institute of Marine Science. https://doi.org/10.21220/V5GB2X

Peer-reviewed book chapter: Emery, K.A., J.A. Gephart, G.M. Wilkinson, **A.F. Besterman**, M.L. Pace. 2016. Exploring trophic cascades in lake food webs with a spreadsheet model. Ed. Loren B. Byrne. *Learner-Centered Teaching Activities for Environmental and Sustainability Studies*. Springer International Publishing. 111-115.

TEACHER TRAINING

2015 **Science into Lesson Plans Graduate Student Workshop**, Virginia Scientists and Educators Alliance (VA SEA) Project, November 5. Training in lesson plan development and best practices in instruction

2012-2013 **Training as Supplemental Instruction Leader,** Virginia Commonwealth University. Training in how to facilitate group learning in accordance with International Center for Supplemental Instruction at UMKC guidelines.

RESEARCH MENTOR AND SUPERVISOR

2016-18 Rebekah Flick, UVA, NSF REU Fellow, Independent Research
2015-16 Nick Braun, UVA, NSF REU Fellow, Distinguished Major
2015-present Research supervisor for 2 Buzzards Bay Coalition interns. While at UVA I supervised 3 non-university-affiliated technicians, and 6 UVA undergraduate students.

MEETINGS AND SEMINARS

ORGANIZED

2020 **Evaluating Runnels for Salt Marsh Adaptation Workshop**, Woods Hole Research Center, MA.
Lead-Organizer for a 70+ person workshop including in-person and remote attendees discussing the application and theory related to the 'runnel' salt marsh adaptation technique. https://tinyurl.com/saryhkn

2017 **Dept. of Environmental Sciences Annual Student Research Symposium (EnviroDay)**, Univ. of Virginia, VA
Co-Organized graduate student research symposium, including selecting and chairing oral, poster, and panel sessions, and inviting keynote speaker Dr. Richard Ostfeld. https://enviroday.evsc.virginia.edu/?page_id=358

INVITED SPEAKER

2020 **Besterman, A.F.** R.W. Jakuba, L.A. Deegan, W. Ferguson, D. Brennan. "Developing Best Practices in Runnel Project Design and Planning". Session*: Shallow drainage through use of runnels: An adaptation technique to enhance marsh resiliency*. Restore America's Estuaries 2020 National Coastal and Estuarine Virtual Summit. Oct 2020.

2019 **Besterman, A.F.,** S. Karpanty, M.L. Pace. "Impact of exotic macroalga on shorebirds varies with foraging specialization and spatial scale." Virginia Society of Ornithology Annual Meeting, Pembroke, VA.

2018 **Besterman, A.F.,** Panelist. "Science into Educational Curricula". Virginia Sea Grant Graduate Student Symposium. Richmond, VA.

2015 **Besterman, A.F.,** *Gracilaria vermiculophylla* and mudflat food webs. Virginia Coastal Avian Partnership Annual Meeting, Northampton, VA

CONFERENCES

2019 **Besterman, A.F.,** M.L. Pace. "Predicting benthic macroalgal abundance in shallow coastal bays from hydrodynamics and geomorphology. Oral Presentation. Coastal and Estuarine Research Federation 25th Biennial Conference (Mobile, AL)

2019 **Besterman, A.F.,** M.L. Pace. "Geomorphology exerts bottom-up control on intertidal flat biomass." Oral Presentation. Assoc. Sciences of Limnology & Oceanography (San Juan, PR

2018 **Besterman, A.F.,** M.L. Pace. "Do macroalgal mats limit microphytobenthos on mudflats?" Oral Presentation. Ecological Society of America Annual Meeting (New Orleans, LA)

2018 **Besterman, A.F.,** M.L. Pace. "Do macroalgal mats limit microphytobenthos on mudflats?" Oral Presentation. Atlantic Estuarine Research Society Meeting, (Rehobeth Beach, DE.)

2017 **Besterman, A.F.,** Wilkinson, G., Buelo, C., Gephart, J., Pace, M. "Comparing modern carbon burial in aquatic ecosystems." Poster. Assoc Sciences of Limnology and Oceanography (Honolulu, HI.)

2012 **Besterman, A.F.**, J. Moore, C. Viverette, S. Huber, L. Bulluck. Female age and caterpillar frass abundance correlate with annual fecundity in the Prothonotary Warbler (*Protonotaria citrea*). Poster. Ecological Society of America Mid-Atlantic Conference (Blacksburg, VA)

DEPARTMENTAL PRESENTATIONS

2019 **Besterman, A.F.** "Exotic *Gracilaria vermiculophylla* in tidal flat ecosystems: distribution and effects." Dept. Env. Sci. Seminar Series, Univ. of Virginia. March 28

2019 **Besterman, A.F.,** M.L. Pace. "Geomorphology exerts bottom-up control on intertidal flat biomass." Oral Presentation. EnviroDay, Univ. of Virginia

2018 **Besterman, A.F.,** M.L. Pace. "Do macroalgal mats limit microphytobenthos on mudflats?" Oral Presentation. EnviroDay, Univ. of Virginia

2017 **Besterman, A.F.,** Wilkinson, G., Buelo, C., Gephart, J., Pace, M. "Comparing modern carbon burial in aquatic ecosystems." Poster. EnviroDay, Univ. of Virginia

2012 **Besterman, A.F.**, J. Moore, C. Viverette, S. Huber, L. Bulluck. Female age and caterpillar frass abundance correlate with annual fecundity in the Prothonotary Warbler (*Protonotaria citrea*). Poster. Rice Rivers Center Symposium, Virginia Commonwealth University

PROFESSIONAL DEVELOPMENT AND OTHER TRAINING

2018 **Visiting Student**, Gulf Coast Seafood Lab, Food and Drug Administration, Dauphin Island, AL. October 15-November 2
Training in molecular and microbiological techniques, plus mentorship and supervision for sample processing

2015 **Fundamentals of Ecosystem Ecology Short Course**, Cary Institute of Ecosystem Studies, Millbrook, New York, January 4 - 15

2014 **Communicating Science to Decision-Makers and the Media: A Workshop for Ecosystem Scientists**. Association for Ecosystem Research Centers, Washington D.C., October 8.

SERVICE, OUTREACH, AND BROADER IMPACTS

PROFESSIONAL SERVICE

Reviewer: Limnology and Oceanography, Marine Ecology Progress Series, Marine and Freshwater Research,

Membership: Association for the Sciences of Limnology and Oceanography, Coastal and Estuarine Research Federation, Atlantic Estuarine Research Society, New England Estuarine Research Society, Ecological Society of America

2018-19 **Site Representative,** Long-Term Ecological Research Network Graduate Student Committee, Rep. for Virginia Coast Reserve LTER Site

2014 **University of Virginia Delegation**, Association of Ecosystem Research Centers Congressional Briefing Day, October 8.

DEPARTMENTAL AND UNIVERSITY SERVICE

2015-18 **Volunteer proposal reviewer and panelist NSF GRFP Workshops**
Office of Graduate and Postdoctoral Affairs, Univ. of Virginia.

2016-18 **Environmental Sciences Policy Lunch Discussion Group**
Organized and lead weekly graduate student discussion group

2015-16 **Environmental Sciences Graduate Student Association Co-Chair**
Organized social events for department, facilitate communication between faculty and graduate students. Dept. of Env. Sci, Univ. of Virginia.

BROADER IMPACTS AND MEDIA

2020 **Skype-A-Scientist**
Connected with families and students at home during the COVID-19 outbreak.

2018 **Virginia Barrier Island Seabird Sonification**
Collaborated with composer Eli Stine to ecologically validate a sonification of shorebird and waterbird abundance data. https://tinyurl.com/rwyy8w9

2017 **VA SEA Lesson Plan Expo and Teacher Open House**
Demonstrated lesson plan "How Green Is It? Learning Light and Electromagnetic Spectrum Properties by Measuring Algae. More than 100 K-12 teachers in attendance. April 21

PUBLISHED DATA SETS

Besterman A. 2018. Algal cover and biomass on the mudflats of the Virginia Coast, 2015, 2016 and 2018. EDI. https://doi.org/10.6073/pasta/db73ca73d974b39709e9ea48f859fa5f..

Besterman A. 2018. Bird observations on the tidal flats of the Virginia Coast Reserve, 2016-2018. EDI. https://doi.org/10.6073/pasta/a2dc5bda5321d3231238e39680b976ba

Besterman A. 2016. Invertebrates on the tidal flats of the Virginia Coast, May 2016. EDI. https://doi.org/10.6073/pasta/f86c1d4ad24e3f60d0a4577c0099629a

Besterman A. 2017. Benthic Chlorophyll and Macroalgae on an Experimentally-manipulated Tidal Flat on the Virginia Coast, 2016-2017. EDI. https://doi.org/10.6073/pasta/2498aa2a5a744a55f19ca14e4ee851f9

Besterman A. 2018. Geomorphic characteristics and algal cover for 36 tidal mudflats on the Virginia Coast. EDI. https://doi.org/10.6073/pasta/9ce05eadfa3817a816fb1e2bc9ad496e