

GRACE K. SABA

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PROFESSIONAL PREPARATION

University of California, Santa Barbara	Aquatic Biology	B.S., 2002
College of William and Mary	Marine Science	Ph.D., 2010
Rutgers University (Post-Doc)	Marine Science	2010 - 2012

APPOINTMENTS

Sept 2015 – present	Assistant Professor, DMCS, Rutgers University
Nov 2012 – Aug 2015	Assistant Research Professor, DMCS, Rutgers University

TEACHING AT RUTGERS

- Oceanography Seminar (16:712:605) (2017 – present)
- The Biology of Living in the Ocean: Water Column Ecosystems & Processes/Biological Oceanography” (11:628:461/16:712:520) (2016 – present)
- Ocean Methods and Data Analysis: Biology/Chemistry (11:628:363) (2016 – present)
- Ocean Ecology/Biological Oceanography (11:628:462/16:712:522) (2014 – 2015)
- Ocean Methods and Data Analysis (11:628:364) (2014 – 2015)

PUBLICATIONS (NOTE: HENDERSON IS MAIDEN NAME)

- Schofield, O., **Saba, G.K.**, Coleman, K., Carvalho, A.F., Couto, N., Ducklow, H., Finkel, Z., Irwin, A., Kahl, A., Miles, T., Montes-Hugo, M., Stammerjohn, S., Waite, N. 2017. Decadal variability in coastal phytoplankton community composition in a changing West Antarctic Peninsula. *Deep-Sea Research I* 124: 42-54.
- Fountain, A.G., **Saba, G.K.**, Adams, B., Doran, P., Fraser, W., Gooseff, M., Obryk, M., Priscu, J.C., Stammerjohn, S., Virginia, R.. 2016. The impact of a large-scale climate event on Antarctic ecosystem processes. *Bioscience* 66(10): 848-863.
- Gutt, J., Constable, A., Cummings, V., Hosie, G., McIntyre, T., Mintenbeck, K., Murray, A., Peck, L.S., Roper-Coudert, Y., **Saba, G.**, Schofield, O., Schloss, I., Stefels, J., Takahashi, K. 2016. Vulnerability of Southern Ocean biota to climate change. *Antarctic Environment Portal*, <http://nora.nerc.ac.uk/513335/>.
- Schofield, O., Jones, C., Kohut, J., Kremer, U., Miles, T.N., **Saba, G.K.**, Webb, D., Glenn. 2015, S. Developing Coordinated Communities of Autonomous Gliders for Sampling Coastal Ecosystems. *Marine Technology Society Journal* 49(3): 9-16.
- Saba, G.K.**, Fraser, W.R., Saba, V.S., Iannuzzi, R.A., Coleman, K.E., Doney, S.C., Ducklow, H.W., Martinson, D.G., Miles, T.N., Patterson-Fraser, D.L., Stammerjohn, S.E., Steinberg, D.K., Schofield, O. 2014. Winter and Spring Controls on the Summer Food Web of the coastal West Antarctic Peninsula. *Nature Communications*, 5: 4318, doi: 10.1038/ncomms5318.
- Schofield, O., Kohut, J., **Saba, G.**, Yi, X., Wilkin, J., Glenn, S. Ocean observing and prediction. 2014. In: Y.Q. Wang, Ed., *Encyclopedia of Natural Resources*. Taylor Francis, New York, NY. doi:10.1018/E-ENRW-120048087.
- Schofield, O., Ducklow, H., Bernard, K., Doney, S., Patterson-Fraser, D., Gorman, K., Martinson, D., Meredith, M., **Saba, G.**, Stammerjohn, S., Steinberg, D., Fraser, W. 2013. Penguin biogeography along the West Antarctic Peninsula. *Oceanography* 26: 78-80.
- Saba, G.K.**, Steinberg, D.K. 2012. Abundance, composition, and sinking rates of fish fecal pellets in the Santa Barbara Channel. *Scientific Reports* 2: doi:10.1038/srep00716.
- Saba, G.K.**, Schofield, O., Torres, J.J., Ombres, E.H., Steinberg, D.K. 2012. Increased feeding and nutrient excretion of adult Antarctic krill, *Euphausia superba*, exposed to enhanced carbon dioxide (CO₂). *PLoS ONE*: doi:10.1371/journal.pone.0052224.

- Schofield, O., Roarty, H., **Saba, G.**, Xu, Y., Kohut, J., Glenn, S., Manderson, J., Oliver, M. 2012. Phytoplankton dynamics and bottom water oxygen during a large bloom in the summer of 2011. *Oceans*, 2012, doi: 10.1109/OCEANS.2012.6405078.
- Saba, G.K.**, Steinberg, D.K., Bronk, D.A. 2011. The relative importance of sloppy feeding, excretion, and fecal pellet leaching in the release of dissolved carbon and nitrogen by *Acartia tonsa* copepods. *Journal of Experimental Marine Biology and Ecology* 404: 47-56.
- Saba, G.K.**, Steinberg, D.K., Bronk, D.A., Place, A.R. 2011. The effects of harmful algal species and food concentration on zooplankton grazer production of dissolved organic matter and inorganic nutrients. *Harmful Algae* 10: 291-303.
- Saba, G.K.**, Steinberg, D.K., Bronk, D.A. 2009. Effects of diet on release of dissolved organic and inorganic nutrients by the copepod *Acartia tonsa*. *Marine Ecology Progress Series* 386: 147-161.
- Steinberg, D.K. **Saba, G.K.** 2008. Nitrogen consumption and metabolism in marine zooplankton. In: Capone, D.G., Bronk, D.A., Mulholland, M.R., and E.J. Carpenter, eds., *Nitrogen in the Marine Environment*, 2nd Edition. Academic Press, Boston. p 1135-1196.
- Goldthwait, S.A., Carlson, C.A., **Henderson, G.K.**, Alldredge, A.L. 2005. Effects of physical fragmentation on remineralization of marine snow. *Marine Ecology Progress Series* 305: 59-65.

FUNDING

- 2017 Using bio-acoustics on an autonomous surveying platform to examine phytoplankton-zooplankton and fish interactions in the western Ross Sea. NSF PLR-Antarctic Research (EAGER). Amount awarded (2017-2019): \$299,988. (Lead PI)
- 2017 Continuation of the Mid-Atlantic Coastal Acidification Network, MACAN. NOAA Ocean Acidification Program. Amount awarded (2017-2018): \$10,000 (co-PI but Rutgers lead PI; Lead PI of project = Gerhard Kuska, MARACOOS)
- 2016 Collaborative Research: Developing a profiling glider pH sensor for high resolution coastal ocean acidification monitoring. NSF OCE OTIC. Amount awarded (2016-2019): \$882,647. (Lead PI; co-PIs = Travis Miles, Rutgers and Wei-Jun Cai, University of Delaware)
- 2016 Development of the Mid-Atlantic Coastal Acidification Network, MACAN. NOAA Ocean Acidification Program. Amount awarded (2016-2017): \$5,000 (co-PI but Rutgers lead PI; Lead PI of project = Gerhard Kuska, MARACOOS)
- 2016 Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS): Preparing for a Changing Mid-Atlantic. NOAA IOOS. Amount awarded: \$15,000,000 (2016-2021). (co-PI; Lead PI of project = Scott Glenn, Rutgers)
- 2016 Mid-Atlantic Regional Resilience: Linking Coastal Ocean Information to Enhance Economic, Social and Ecological Resilience. NOAA NOS: Regional Coastal Resilience. Amount awarded (2016-2018): \$103,242. (co-PI but Rutgers lead PI; Lead PI of project = Mid-Atlantic Regional Ocean Council)
- 2015 Indicators of habitat change affecting three key commercial species of the U.S. Northeast Shelf: A design to facilitate proactive management in the face of climate change. NOAA OAR COCA. Amount awarded (2015-2018): \$747,743. (co-PI but Rutgers lead PI; Lead PI of project = Vincent Saba, NOAA NMFS)
- 2014 Physiological ecology and habitat suitability: combining experiments and surveys to inform stock assessments. NOAA Habitat. Amount awarded (2014-2016): \$88,011. (co-PI but Rutgers lead PI; Lead PI = Jon Hare, NOAA NMFS)
- 2013 Collaborative Research: Synergistic effects of elevated carbon dioxide (CO₂) and temperature on the metabolism, growth, and reproduction of Antarctic krill (*Euphausia superba*). NSF PLR-Antarctic Research. Amount awarded (2013-2016): \$732,435. (Lead PI; co-PI = Brad Seibel, URI)
- 2012 Functional genomic analysis of the Antarctic cryptophyte, *Geminigera cryophila*, under variable light regimes. NJAES Competitive Intramural Research Awards Program. Amount awarded (2012-2014): \$8000. (Lead PI; co-PI = Oscar Schofield, Rutgers)

CONFERENCE PROCEEDINGS (NOTE: HENDERSON IS MAIDEN NAME; * = SABA STUDENT)

- Saba, G.K.**, Miles, T., Cai, W.-J., Barnard, A., Jones, C. 2017. Developing a profiling glider pH sensor for high resolution coastal ocean acidification monitoring. Poster presented at the first U.S. Underwater Glider Workshop, INFINITY Science Center, Pearlington, MS.
- *Slesinger, E., **Saba, G.K.**, Young, R., Andres, A., Saba, V., Phelan, B., Rosendale, J., Wieczorek, D., Seibel, B. 2016. Effects of temperature on Black Sea Bass (*Centropristis striata*) metabolic rate: Integrating physiological studies and climate change models to predict potential changes in distribution. Poster presented at Rutgers Climate Symposium, New Brunswick, NJ.
- Schofield, O.**, Ducklow, H., Steinberg, D., Saba, G., Miles, T., Carvalho, F., Cuoto, N., Waite, N., Kahl, A., Finkel, Z., Irwin, A., Saba, V. 2016. Decadal dynamics in phytoplankton communities in the West Antarctic Peninsula. Talk presented at XXXIV Scientific Committee on Antarctic Research (SCAR), Kuala Lumpur, Malaysia.
- Kohut, J., Schofield, O., Glenn, S., **Saba, G.**, Miles, T. McDonnell, J. 2016. Globalizing frontier technologies for ocean and atmosphere observing and forecasting: Promoting Spanish-U.S. partnerships for research, education and service to society. Puertos Del Estados, Madrid, Spain
- Kohut, J., Schofield, O., Glenn, S., **Saba, G.**, Miles, T. McDonnell, J. 2016. Globalizing frontier technologies for ocean and atmosphere observing and forecasting: Promoting E.U.-U.S. partnerships for research, education and service to society. Instituto Hidrografico, Lisbon, Portugal.
- Kohut, J., Manderson, J., Palamara, L., Saba, V., **Saba, G.K.**, Hare, J., Curchitser, E., Moore, P., Seibel, B., and G. DiDomenico. 2016. Toward dynamic ocean management: Fisheries assessment and climate projections informed by community developed habitat models based on dynamic coastal oceanography. Poster presented at Ocean Sciences, New Orleans, LA.
- Saba, G.K.**, Bockus, A., Fantasia, R., Shaw, C., Sugla, M., Seibel, B. 2016. Temperature and pH effects on feeding and growth of Antarctic krill. Poster presented at Ocean Sciences, New Orleans, LA.
- Schofield, O., **Saba, G.K.**, Miles, T. N., Carvalho, F., Couto, N. 2016. Decadal variability in phytoplankton community structure along the West Antarctic Peninsula. Talk presented at Ocean Sciences, New Orleans, LA.
- Glenn, S., Kohut, J., Schofield, O., Saba, G.K., Miles, T. 2015. The ocean is our classroom: A 4-year research track for undergraduate exploration, research and discovery in oceanography. A talk presented at MTS/IEEE Oceans, Washington DC.
- Bockus, A., **Saba, G.K.**, Seibel, B.A. 2014. The synergistic effects of ocean acidification and warming on Antarctic krill (*Euphausia superba*): Acid-base balance, metabolism and growth. First Ocean Global Change Biology Gordon Research Conference, Waterville Valley, NH.
- Hunter-Thomson, K.I., **Saba, G.K.**, Krehbiel, M.D. 2014. Ocean acidification, krill, and Kansas: scientists share research experience in Antarctica to inspire high school teachers and students. Talk presented at Ocean Sciences, Honolulu, HI.
- Saba, G.K.**, Fraser, W.R., Saba, V.S., Iannuzzi, R.A., Coleman, K.E., Doney, S.C., Ducklow, H.W., Martinson, D.G., Miles, T.N., Patterson-Fraser, D.L., Stammerjohn, S.E., Steinberg, D.K., Schofield, O. 2014. Austral Winter and Spring Controls on the Food Web at Palmer Station, West Antarctic Peninsula (WAP). Poster presented at Ocean Sciences, Honolulu, HI.
- Saba, G.K.**, Saba, V., Fraser, W., Stammerjohn, S., Ducklow, H., Martinson, D., Steinberg, D.K., Schofield, O. 2012. Large scale forcing through the Antarctic food web: Physical drivers of the interannual variability at Palmer Station, Antarctica. Poster presented at the Long Term Ecological Research All Scientists Meeting (LTER ASM), Estes Park, CO.
- Schofield, O., Kahl, A., **Saba, G.K.**, Finkel, Z., Irwin, A., Moline, M., Vernet, M., Prezelin, B., Ducklow, H. 2012. Climate induced shifts in the phytoplankton community biomass and community structure along the West Antarctica Peninsula. Poster presented at the Long Term Ecological Research All Scientists Meeting (LTER ASM), Estes Park, CO.
- Saba, G.K.** 2012. Impacts of Ocean Acidification on Marine Organisms and Polar Ecosystems. Invited keynote talk at XXXII Scientific Committee on Antarctic Research (SCAR), Portland, OR.
- Saba, G.K.**, Schofield, O., Torres, J., Hudson, E., Steinberg, D.K. 2012. Increased feeding and nutrient excretion of adult Antarctic krill, *Euphausia superba*, exposed to enhanced carbon dioxide (CO₂). Talk presented at XXXII Scientific Committee on Antarctic Research (SCAR), Portland, OR.

- Saba, G.K.**, Jones, B., Coleman, K., Ducklow, H., Erickson, M., Garzio, M., Iglesias-Rodriguez, D., Miles, T., Schofield, O. 2012. Differential response of natural phytoplankton communities to enhanced carbon dioxide (CO₂) along the West Antarctic Peninsula. Talk presented at Ocean Sciences, Salt Lake City, UT.
- Saba, G.K.**, Steinberg, D.K., Bronk, D.A., Place, A.R. 2010. The effects of harmful algal species and food concentration on zooplankton grazer production of dissolved organic matter and inorganic nutrients. Poster presented at Ocean Sciences, Portland, OR.
- Saba, G.K.**, Steinberg, D.K., Bronk, D.A. 2008. Grazing and nutrient release from *Acartia tonsa* copepods feeding on toxin-producing *Karlodinium veneficum*: Interactions of top-down and bottom-up control. Talk presented at Ocean Sciences, Orlando, FL.
- *Price, L.M., **Saba, G.K.**, Steinberg, D.K. 2008. Zooplankton grazing on two ecologically important harmful algal species in the Chesapeake Bay. Poster presented at Ocean Sciences, Orlando, FL.
- Saba, G.K.**, Steinberg, D.K. 2007. The impacts of carnivorous feeding by *Acartia* copepods on production of dissolved organic matter (DOM). Talk presented at ASLO, Santa Fe, NM.
- Henderson, G.K.**, Steinberg, D.K., Bronk, D.A. 2006. Dissolved organic matter (DOM) composition and release rates from meso- and micro-zooplankton grazers in the Chesapeake Bay: Implications of prey type. Talk presented at Ocean Sciences, Honolulu, HI.
- Henderson, G.K.**, Steinberg, D.K., Bronk, D.A. 2005. The role of mesozooplankton and microzooplankton grazers in the production of dissolved organic matter (DOM). Poster presented at ERF, Norfolk, VA.

RESEARCH CRUISE/FIELDWORK PARTICIPATION

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| Jan/Feb 2017/2018 | Laboratory studies of thermal optima: Spiny dogfish, NOAA J.J. Howard Laboratory |
| Jul/Aug 2016/2017 | Laboratory studies of thermal optima: Black sea bass, NOAA J.J. Howard Laboratory |
| Nov 2014 | NOAA/NEFSC Ecosystem Monitoring cruise, U.S. Northeast Shelf, R/V Pisces |
| Jan 2014 | Synergistic effects of Elevated Carbon Dioxide (CO ₂) and Temperature on the Metabolism, Growth, and Reproduction of Antarctic Krill (<i>Euphausia superba</i>), Palmer Station, Antarctica |
| Jan 2012 | Palmer Long-Term Ecological Research (PAL-LTER) Annual cruise, West Antarctic Peninsula, R/V Laurence M. Gould |
| Jan 2011 | PAL-LTER Annual cruise, West Antarctic Peninsula, R/V Laurence M. Gould |
| Apr 2006 | NSF Biocomplexity project cruise, Santa Barbara Channel, R/V Point Sur |
| Apr 2005 | NSF Biocomplexity project cruise, Chesapeake Bay, R/V Cape Henlopen |
| Dec 2004 | IVARS: Interannual Variations in the Ross Sea, Antarctica, USCGC Polar Star |
| July 2004 | NSF Biocomplexity project cruise, Chesapeake Bay, R/V Cape Henlopen |
| Dec 2002 | Hydrothermal vent cruise, 9° North, East Pacific Rise, DSV2 Alvin dive #3850 |
| Dec 2002 | Hydrothermal vent cruise, 9° North, East Pacific Rise, R/V New Horizon |
| Aug 2002 | Marine Snow cruise, Santa Barbara Channel, R/V Point Sur |
| Dec 2001 | Hydrothermal vent cruise, 9° North, East Pacific Rise, R/V New Horizon |
| Apr 2001 | Marine Snow cruise, Santa Barbara Channel, R/V Point Sur |

SERVICE

DEPARTMENT

- Member, EOAS Polar Change Strategic Planning Committee (2017)
- Member, Scholastic Review Committee, Graduate Program in Oceanography (2016 – present)
- Chair/Member, Senior Award Committee (2016 – present)

REGIONAL/NATIONAL

- Co-coordinator of the Mid-Atlantic Coastal Acidification Network (MACAN) (2016 – present)
- Ocean Acidification Innovation Lead for MARACOOS, Rutgers University (2015 – present)
- Operations Director of MARACOOS, Rutgers University (2014 – 2015)

INTERNATIONAL

- Steering Committee Member, Ross Sea Research Coordination Network (2017 – present)

ADVISING

UNDERGRADUATE

Rachael Young, Rutgers (G.H. Cook Honor's)
Bekah Lane, Emporia State University (REU)
Gabrielle Quadrado, Rutgers (Study Abroad Summer Intern, Brazil)
Brendan Campbell, Rutgers (G.H. Cook Honor's)
Monisha Sugla, Rutgers (G.H. Cook Honor's)
Oliver Ho, Rutgers (G.H. Cook Honor's)
Ryan Fantasia, Rutgers
Grace Coogan, Occidental College (Summer Intern)
Amanda Williams, Rutgers
Emily Pirl, Rutgers
Amelia Snow, Rutgers (G.H. Cook Honor's)
Miram Gleiber, VIMS
Lori Price (Garzio), VIMS

GRADUATE

Elizabeth Wright-Fairbanks (2017 – present)
Emily Slesinger (2016 – present)

POST-DOCTORAL

Corie Charpentier (2017 – present)

THESIS COMMITTEE MEMBER

Jaelyn Specht (M.S. awarded in 2017)

HONORS AND AWARDS

2005	Top 50 student poster presentation from the Estuarine Research Federation (Norfolk, VA)
2004	Craig L. Smith Memorial Educational Scholarship Award (VIMS)
2004, 2011	Antarctic Service Medal
2003, 2005	NSF Graduate Fellowship Honorable Mention
2002	Beatrice M. Sweeney Award (UCSB)
2002	Highest Honors and Distinction in the major (UCSB)
2002	Department of Biological Sciences Senior Honors Research Program (UCSB)

OUTREACH ACTIVITIES

2016	Science Days, NOAA James. J. Howard Marine Science Laboratory
2014	Invited speaker for “Entertaining Science” (Cornelia Café, Greenwich Village, NYC)
2014	Invited speaker for Rutgers Ocean Days 2014
2013-present	Lead PI of Project PARKA (Planting Antarctica in Kansas); http://coseenow.net/project-parka/
2013	Invited speaker for Rutgers IMCS and Institute of Instructional Design teacher professional development event “STEM Educators’ Series”
2012	Invited speaker for Princeton Harmony Schools science fair, Toddler-Kindergarten
2012	Invited speaker for Stony Brook University outreach program entitled “Polar Climate Change Research: A Workshop for Educators”
2012	Participant in COSEE NOW outreach program “Gear Professional Development Series”
2012	Participant in COSEE NOW outreach program “Science Stories 2012”

SYNERGISTIC ACTIVITIES

Editorial Board Member of *Scientific Reports* journal (July 2012-present); Serve on NSF review panels and review NSF proposals (2010-present); Review manuscripts for Aquatic Microbial Ecology, Biogeochemistry, Biogeosciences, Functional Ecology, Geophysical Research Letters, Global Biogeochemical Cycles, Journal of Plankton Research, Limnology & Oceanography, Marine Biology, Nature Climate Change, Polar Biology (2010-present)