

Sabrina Heiser
Department of Biology (UAB)
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Education:

University of Alabama at Birmingham: January 2016 – present
PhD Candidate since October 2018; mentor: Dr. Charles D. Amsler
current GPA: 4.0

Title: The ecology of secondary metabolite production in *Plocamium cartilagineum* and its population genetics on the Western Antarctic Peninsula.

Plymouth University: September 2009 – June 2012
BSc (Hons) Marine Biology – Second Class Honours (Upper Division)

Independent research topic – Distribution of the non-native kelp species *Undaria pinnatifida* in Plymouth Sound SAC

Professional Appointments:

British Antarctic Survey (UK) Sept 2012-April 2015
Marine Assistant at Rothera Research Station (Antarctica), continuing the Rothera Biological and Oceanographic Time Series (CTD measurements, taking and processing water samples, fulfilling dive tasks, science cruise which involved Agassiz trawls, Epibenthic Sledge work, deep camera work and processing water samples).

Countryside Council for Wales (UK) May 2012-Sept 2012
Contract Diver for Cross Wales Diving Monitoring Project and *Didemnum vexillum* eradication.

Funding:

2019	The Harold Martin Outstanding Student Development Award	\$2000
2018	Phycological Society of America Grants-in-Aid of Research	\$1974
2017	Sigma Xi Grants in Aid of Research	\$730
2017	Antarctic Science Bursary	(£3730) \$4500

Not funded:

2018 The Harold Martin Outstanding Student Development Award
“Gene flow as a potential driver of the spatial distribution of chemical defense groups in the red seaweed *Plocamium cartilagineum* around Anvers Island (Antarctica)”

2018 Evolutionary, Ecological, or Conservation Genomics Research Award
“Gene flow as a potential driver of spatial distribution of chemical defense groups in the red seaweed *Plocamium cartilagineum*”

2017 Systematic Research Fund Award
“Unraveling geographic patterns of gene flow in the red Antarctic macroalga ‘*Plocamium cartilagineum*’”

2017 The Harold Martin Outstanding Student Development Award
“Unraveling the genetic patterns driving the distribution of chemical defense groups in the red macroalga *Plocamium cartilagineum*”

2017 British Phycological Society Project Award
“Unraveling the seascape genetics of the subtidal Antarctic macroalga *Plocamium cartilagineum*”

2017 PADI Foundation
“Unraveling the genetic patterns driving the distribution of chemical defense groups in the red macroalga *Plocamium cartilagineum* in a rapidly changing environment (Anvers Island, Antarctica)”

2017 Phycological Society of America Grant-In-Aid-of-Research
“Unraveling genetic patterns driving the distribution of chemical defense groups of *Plocamium cartilagineum* around Anvers Island (Antarctica)”

Publications:

Ryan W.H., **Heiser S.**, Curtis M.D., Amsler C.D., Bayer T., Bonthond G., Wang G., Weinberger F. and Krueger-Hadfield S.A. (accepted) The use of photographic color information for high-throughput phenotyping of pigment composition in *Agarophyton vermiculophyllum*. *Cryptogamie Algologie*.

Morley S.A., Peck L.S., Sunday J., **Heiser S.**, and Bates A.E. (in press) Physiological acclimation and persistence of ectothermic species under extreme heat events. *Global Ecology and Biogeography*. DOI:10.1111/geb.12911.

Krueger-Hadfield S.A., Stephens T.A., Ryan W.H. and **Heiser S.** (2018) Everywhere you look, everywhere you go, there's an estuary invaded by the red seaweed *Gracilaria vermiculophylla* (Ohmi) Papenfuss, 1967. *BioInvasions Records*. **7**: doi:<https://doi.org/10.3391/bir.2018.7.4.01>.

Henley S.F., Jones E.M., Venables H.J., Meredith M.P., Firing Y.L., Dittrich R., **Heiser S.**, Stefels J., Dougans J. (2018) Macronutrient and carbon supply, uptake and cycling across the Antarctic Peninsula shelf during summer. *Phil. Trans.R.Soc.A*. **376**: doi:<http://dx.doi.org/10.1098/rsta.2017.0168>

Peck L.S., **Heiser S.** and Clark M. (2016) Very slow embryonic and larval development in the Antarctic limpet *Nacella polaris*. *Polar Biology*. doi:10.1007/s00300-016-1894-1.

Heiser S., Hall-Spencer J. and Hiscock K. (2014) Assessing the extent of establishment of *Undaria pinnatifida* in Plymouth Sound Special Area of Conservation, UK. *Marine Biodiversity Records*. **7**: e93.

Non-peer Reviewed Publications:

Heiser S. (2018) Phycology, Crepés and Rain. Expertise in Flora - Phycology Class in Roscoff (France); 17th – 30th of July 2017. *The Phycologist*. 94.

Heiser S. (2017) Have we got the power? *The Molecular Ecologist*. <http://www.molecularecologist.com/2017/03/have-we-got-the-power/#more-9889>.

Heiser S. (2015) Sampling in a somewhat different, but challenging environment. *The Phycologist*. 90.

Heiser S. (2012) BPS Winter Meeting: A student's perspective. *The Phycologist*. 82.

Travel Grants:

2018	Phycological Society of America Hoshaw Travel Award for attending the 2018 PSA Annual Meeting in Vancouver (Canada)	\$590
2017	Phycological Society of America Hoshaw Travel Award for attending the 2017 PSA Annual Meeting in Monterey (CA)	\$500
2017	British Phycological Society Student Bursary for attending the Taxonomy of Marine Flora Course at Roscoff Biological Station	(£664) \$856
2017	AnT-ERA (Scientific Committee of Antarctic Research) for attending the XIIth Scientific Committee of Antarctic Research Biology Symposium	(€440) \$465

2017	National Science Foundation for attending the XIIIth Scientific Committee of Antarctic Research Biology Symposium	airfare (to Belgium) and registration
2015	British Phycological Society Student Bursary for attending the European Phycological Congress 6	(£600) \$750
2011	Plymouth University Bursary for attending 9 th International Temperate Reef Symposium	registration waived

Awards:

Winner of the Ralph A. Lewin Poster Award by the Phycological Society of America	2017
Head of School Prize for outstanding academic achievement in Marine Biology (Plymouth University)	2012
Winner of the 60 th British Phycological Society Winter Meeting Student Poster Prize	2012
Highly commended SSTAR (student, staff, teaching and representation) prize As Course Representative of the Year for the department of Science and Technology	2012
Course Representative Gold Award	2012
Plymouth Special Recognition Award (demonstrating a drive to enhance employability)	2012
Second year field course research prize	2011
Dean's List in recognition of excellent performance	2011
Dean's List in recognition of excellent performance	2010

Presentations:

Invited presentation

Heiser S., Shilling A. J., Amsler C.D., Amsler M.O., Krueger-Hadfield S.A., McClintock J.B. and Baker B.J. (2017) The chemistry between Antarctic macroalgae and their associated mesograzers. Alfred Wegener Institut, Bremerhaven (Germany). (oral presentation)

Conferences
(Presenting author)

Krueger-Hadfield S.A., Stephens T.A., Ryan W.H. and **Heiser S.** (2018) Everywhere you look, everywhere you go, there's another estuary invaded by the red seaweed *Gracilaria vermiculophylla*. Western Society of Naturalists Meeting, Tacoma (Washington, US). (poster presentation)

Heiser S., Shilling A. J., Brothers C.J., Amsler C.D., Amsler M.O., McClintock J.B. and Baker B.J. (2018) The Antarctic red seaweed *Plocamium "cartilagineum"* and its wealth of defensive secondary metabolites. Southeastern Phycological Colloquy, Jacksonville (Florida, US). (oral presentation)

Ryan W.H., **Heiser S.**, Curtis M.D., Amsler C.D., Bayer T., Bonthond G., Wang G., Weinberger F. and Krueger-Hadfield S.A. (2018) A method for using photographic color information as a proxy for pigment composition in macroalgae. Southeastern Phycological Colloquy, Jacksonville (Florida, US). (poster presentation)

Henley S.F., Jones E.M., Venables H.J., Meredith M.P., Firing Y.L., Dittrich R., **Heiser S.**, Stefels J. and Dougans J. (2018) Macronutrient and carbon dynamics across the Antarctic Peninsula shelf during summer. Challenger Conference, Newcastle (UK). (oral presentation)

Heiser S., Shilling A. J., Brothers C.J., Amsler C.D., Amsler M.O., McClintock J.B. and Baker, B.J. (2018) The Antarctic red seaweed *Plocamium "cartilagineum"* and its wealth of defensive secondary metabolites. Phycological Society of America Meeting, Vancouver (Canada). (oral presentation)

Ryan W.H., Bayer T., **Heiser S.**, Nakaoka M., Wang G., Weinberger F. and Krueger-Hadfield S.A. (2018) One diploid to rule them all? Phase-specific responses to environmental variation in a red alga. Phycological Society of America Meeting, Vancouver (Canada). (oral presentation)

Heiser S., Shilling A. J., Amsler C.D., Amsler M.O., McClintock J. B. and Baker B. J. (2017) Factors driving the production of defensive secondary metabolites in the Antarctic red seaweed "*Plocamium cartilagineum*". Western Society of Naturalists Meeting, Pasadena (California, US). (poster)

Heiser S., Shilling A., Amsler C.D., Amsler M.O., Krueger-Hadfield S.A., McClintock J.B. and Baker B.J. (2017) Factors driving the production of defensive secondary metabolites in the Antarctic red seaweed *Plocamium cartilagineum*. Southeastern Phycological Colloquy, Wilmington (North Carolina, US). (oral presentation)

Heiser S., Amsler C.D., Amsler M.O., Shilling A., McClintock J.B., Krueger-Hadfield S.A. and Baker B.J. (2017) Factors driving the production of defensive secondary metabolites in the Antarctic red seaweed "*Plocamium cartilagineum*". Scientific

Committee on Antarctic Research Biology Symposium, Leuven (Belgium). (oral presentation)

Amsler C.D., Heiser S., Shilling A.J., Young R.M., Amsler M.O., McClintock J.B. and Baker B.J. (2017) Ecology of Antarctic macroalgae: factors influencing macroalgal defensive chemistry. Symposium talk at Xth Chilean Congress on Micro and Macroalgae, Coquimbo (Chile).

Heiser S., Amsler C.D., Amsler M.O., Shilling A. J., McClintock J. B., Krueger-Hadfield S.A. and Baker B. J. (2017) Factors driving the production of defensive secondary metabolites in the Antarctic red seaweed "*Plocamium cartilagineum*". Phycological Society of America Meeting, Monterey Bay (California, US). (poster)

Heiser S., Amsler C. D., Amsler M., Krueger-Hadfield S. A., McClintock J. B. and Baker B. J. (2016) Is there any chemistry between amphipods and their macroalgal hosts? Southeastern Phycological Colloquy, Valdosta (Georgia, US). (oral presentation)

Heiser S., Venables H., Meredith M. and Clarke A. (2015) Inter- and intra-annual patterns of phytoplankton blooms in Ryder Bay (Adelaide Island, Antarctica), Phycological Society of America Meeting, Cleveland (Ohio, US). (poster)

Heiser S., Venables H., Meredith M. and Clarke A. (2015) Inter- and intra-annual patterns of phytoplankton blooms in Ryder Bay (Adelaide Island, Antarctica), Southeastern Phycological Colloquy, Harbor Branch (Florida, US). (poster)

Heiser S., Venables H., Meredith M. and Clarke A. (2015) Inter- and intra-annual patterns of phytoplankton blooms in Ryder Bay (Adelaide Island, Antarctica), European Phycological Congress 6, London (UK). (poster)

Heiser S., Hall-Spencer J. and Hiscock K. (2012) The spread of *Undaria pinnatifida* (Harvey) Suringar in Plymouth Sound Special Area of Conservation, British Phycological Society Winter Meeting, Newcastle (UK). (poster)

Qualifications:

Diving since 1999, 608 logged dives, highest recreational qualification: CMAS^{***}/BSAC Advanced Diver

DAN First Aid for Professional Divers 2017

Chainsaw Operating Course, Lorry Loader Course 2012

European Scientific Diver 2011

SeaSearch Observer 2011

BSAC Open Water Instructor 2011

Reef Check Diver 2010

HSE Professional Scuba Diver Part IV, Manual Handling Techniques, Personal Safety and Social Responsibility, National Powerboat Certificate Level 2, Personal Survival Techniques, Short Range Certificate, Automatic External Defibrillation, Sea Survival)	2010
ORCA Marine Mammal Survey Training Course	2010

Outreach and Service Activities:

Judging of the UAB-CORD Regional Science and Engineering Fair	2019
Judging of the Alabama Junior Academy of Science Paper Reading Competition	2019
Chair of the Communication and Marketing Committee for the Graduate Student Government, UAB	Since February 2019
Member of the Program Committee for the next annual meeting of the Psychological Society of America (includes organizing the first Student Symposium).	Since Fall 2018
Senator for the Biology Department in the Graduate Student Government, UAB	Since Fall 2018
Member of the Seminar Planning Committee (Biology Department, UAB) (implemented one non-science seminar per semester for alternative career routes and advertising seminars on the department twitter in advance)	Since Fall 2018
Judging of UAB's "3 Minute Thesis" semifinal competition	2018
Contributor to the UAB in Antarctica Blog during the field season	2018
Judging of the Alabama Junior Academy of Science Paper Reading Competition	2018
Paper review for Polar Record	2016
Invited speaker for a dive club (Germany): Working and most importantly living in Antarctica	2016
Invited speaker to my former high school (Goetheschule Essen, Germany): Working and most importantly living in Antarctica	2015
Invited to a newspaper interview: How has the International Baccalaureate benefitted my career? (http://www.derwesten.de/staedte/essen/nord-west-borbeck/sabrina-heiser-ging-von-bredene-y-in-die-weite-welt-id11377430.html)	2015
Invited to a newspaper interview: Work-life balance on hold, for the love of Science (http://www.euroscientist.com/work-life-balance-on-hold-for-the-love-of-science/)	2015
Active member of a small community (20-130 people) overwintering in Antarctica: teaching German, band member, cooking for everyone, cleaning duties, taking non-scientists out on the boat	2012-2015

Student Ambassador: Widening participation, Open Days (Plymouth University, UK)	2011-2012
Course and School Representative for Marine Biology and School of Marine Science and Engineering respectively (Plymouth, UK)	2011-2012
Volunteer for animal husbandry care and as a diver at National Marine Aquarium (Plymouth, UK)	2010-2012
1 week intertidal surveys including site descriptions and identification of organisms (Natural England)	2011
1 week diving project, taking sediment samples around mooring chains (Natural England)	2011
2 week diving project, survey of cuttlefish eggs as part of CRESH (Marine Biological Association)	2011
Laboratory processing of estuarine biological samples to assist a PhD student (Plymouth, UK)	2011
Coral Reef Monitoring and Reef Conservation Project (collecting data, data analysis, clean-ups)	2010
Lifeguard for the German Lifeguard Association (teaching swimming, lifeguarding at the local lake and the coast in the summer, representing the association at public events, member of the youth committee)	2001-2007

Memberships:

Phi Sigma Biological Sciences Honor Society	since 2018
The American Genetic Association	since 2018
Sigma Xi	since 2017
The Systematics Association	since 2017
International Phycological Society	since 2016
Phycological Society of America	since 2016
British Phycological Society	since 2012
Marine Biological Association of the UK	since 2009

Skills:

Languages (fluent in German and English)

Good photography, filming and film editing skills
(<https://www.youtube.com/watch?v=tepr8cHYx8k>)