

Shelby Elizabeth Gantt

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Education

Doctor of Philosophy, Biology

University of Alabama at Birmingham, AL USA

GPA: 3.80 (based on 4.0)

Attended: August 2018 - Present

Master of Science, Marine Biology

University of North Carolina, Wilmington, NC USA

Overall GPA: 3.9162 (based on 4.0)

Attended: August 2016-May 2018

Bachelor of Science, Biology (Research Option)

Georgia Institute of Technology, Atlanta, GA USA

Overall GPA: 3.67 (based on 4.0)

Attended: January 2014-May 2016

Awards: Williams-Walls Life Science Award, Graduated with Highest Honors

Certificate in Marine Science

Bachelor of Science, Biology

Kennesaw State University, Kennesaw, GA USA

Overall GPA: 3.71 (based on 4.0)

Attended: August 2012-December 2013

Research Interests

- Microbial Symbioses and Effects on Host Behavior/Fitness
- Climate Change
- Marine and Benthic Ecosystems
- Conservation

Publications

Peer Reviewed:

3. **Gantt SE**, McMurray SE, Stubler AD, Finelli CM, Pawlik JR & Erwin PM (2019) Testing the relationship between microbiome composition and flux of carbon and nutrients in Caribbean coral reef sponges. *Microbiome* 7: 124.
2. **Gantt SE**, López-Legentil S & Erwin PM (2017) Stable microbial communities in the sponge *Crambe crambe* from inside and outside a polluted Mediterranean harbor. *FEMS Microbiology Letters* 364(11): fnx105. doi: 10.1093/femsle/fnx105

1. Padilla CC, Ganesh S, **Gantt S**, Huhman A, Parris DJ, Sarode N and Stewart F (2015) Standard filtration practices may significantly distort planktonic microbial diversity estimates. *Front. Microbiol.* **6**:547. doi: 10.3389/fmicb.2015.00547

Other Publications:

1. **Gantt S**. 2016. Effects on the *Pocillopora verrucosa* microbiome when in contact with macroalgae under ocean acidification. Undergraduate Research Option Thesis. Georgia Institute of Technology. <http://hdl.handle.net/1853/55388>

Research Experience

- Aug 2018 – Present **Graduate Researcher**, Biology, University of Alabama at Birmingham, PI: Dr. Dustin W. Kemp, Projects: Assessing the metagenomic response of Anemones and corals under heat stress, 40-50 hours per week.
- July 2016 – May 2018 **Graduate Researcher**, Biology and Marine Biology, University of North Carolina Wilmington, PI: Dr. Patrick Erwin, Project: Assessing Caribbean sponge microbial communities in connection with the sponge loop hypothesis, worked 20-40 hours per week.
- June 2015 – Aug 2015 **REU Intern**, Aquatic Chemical Ecology, Georgia Institute of Technology, PI: Dr. Mark Hay, Project: Assessing coral microbiomes under algal competition and ocean acidification, worked 50-60 hours per week.
- May 2015-May 2016 **Undergraduate Researcher**, Biology Department, Georgia Institute of Technology, PI: Dr. Mark Hay, Project: Effect of algal proximity on the coral microbiome, worked 10-14 hours per week.
- April 2014-May 2016 **Undergraduate Researcher**, Biology Department, Georgia Institute of Technology, PI: Dr. Frank Stewart, Project: Standard filtration bias associated with diversity estimates, worked 9 hours per week.

Field Experience

- Dec 14 – Sept 1, 2019 **Key Largo, FL**. Research included: Boat based diving on coral reefs to maintain a long-term dataset and the setup/running of a heat stress experiment using anemones collected from the wild. Work completed under Dr. Dustin W. Kemp.
- May 2017 – Jun 2017 **Wilmington, NC**. Research included: boat-based collections of sun sponge tissue for microbiome analysis. Work completed under Dr. Patrick Erwin.
- May 31, 2017-Jun 11, 2017 **Key Largo, FL**. Research included: Scuba based sponge microbiome sample collections and maintenance of long-term reef sampling quadrats. Work completed under Dr. Joe Pawlik.
- Jul 7, 2015- Aug 5, 2015 **Gump Field Station**, a site for LTER research in Mo'orea, French Polynesia. Research included: field collection of coral and algae

samples, along with coral microbiome sampling, PAM measurements, and experiment construction/maintenance in high ocean acidification flumes. Work completed under Dr. Mark Hay.

Skills

Analysis Skills: PRIMER, JMP, mothur, Geneious, R, MatLab (basic biological modeling) and Python (basic language and coding)

Lab Skills: DNA extractions, PCR amplifications, DGGE, Gel Electrophoresis, T-RFLP, Sanger Sequencing, Sequencing PCR, Illumina Miseq Prep, Qubit and Nanodrop DNA quantification, Basic Culturing and staining

Scuba Certifications: Open Water Scuba, Advanced Open Water Scuba, Emergency First Responder, Emergency O₂ provider, Nitrox, AAUS

Presentations

- 2019 Symbiofest at the University of Georgia. Oral. Microbial Symbionts, Carbon and Nutrient Cycling in Caribbean Coral Reef Sponges. (April 25, 2019).
- 2019 Science Olympiad Presenter. Oral. Animal Biodiversity of Alabama. Co-presented with 5 other presenters for middle/ high school participants. Handled live animals. (February 16, 2019).
- 2018 Master of Science Thesis Defense. Oral. Microbial Symbionts, Carbon and Nutrient Cycling in Caribbean Coral Reef Sponges. (April 4, 2018).
- 2018 48th Annual Benthic Ecology Meeting, Corpus Christi, TX. Oral. Microbial Symbionts, Carbon and Nutrient Cycling in Caribbean Coral Reef Sponges.
- 2017 American Society for Microbiology, North Carolina Chapter Meeting, Raleigh, NC. Poster. Microbial Symbionts and Carbon Cycling in Caribbean Coral Reef Sponges.
- 2017 47th Annual Benthic Ecology Meeting, Myrtle Beach, NC. Oral. Hard Rock! Stable Sponge Microbiome in a Heavy Metal Polluted Environment.
- 2017 Graduate Student Symposium, University of North Carolina, Wilmington. Oral. Symbionts and the Sponge-loop.
- 2016 American Society for Microbiology, North Carolina Chapter Meeting, Wilmington, NC. Poster. Indifferent to pollution: Stable microbial communities in the sponge *Crambe crambe* from inside and outside a Mediterranean harbor.
- 2016 Spring Georgia Tech Undergraduate Research Symposium, Atlanta, GA. Poster. Effects on the *Pocillopora verrucosa* microbiome when in contact with macroalgae under ocean acidification.

Awards

Graduate:

- **Biology Graduate Student Association Travel Grant (March 2018):** Application and club participation based. Students are given up to \$200 of support for attending conferences to make presentations of original, creative research or projects.
- **Graduate Student Association Travel Grant (March 2018):** Application based. Students are given up to \$750 of support for conferences to make presentations of original, creative research or projects.
- **Graduate Student Association Travel Grant (April 2017):** Application based. Students are given up to \$600 of support for conferences to make presentations of original, creative research or projects.

Undergraduate:

- **Williams-Walls Life Science Award:** Faculty nominated. An award given annually to one or more senior women in the life sciences (Biology or Psychology) with a grade point average of 3.5 or above, and who has applied to graduate school. Includes a monetary award, and the student's name will be engraved on a plaque permanently displayed in the School of Biological Sciences office.

Organizations

Academic:

- Phi Sigma: Biological Sciences Honor Society

Mentoring

Undergraduates:

- Rayna O'nan (Spring 2017)
- Dante Deascanis (Spring 2017)
- Sara Coble (Spring 2017)

Teaching

Courses Taught:

Fall, 2016	BioL 201	Principles of Biology: Cells Lab	24 students
Fall, 2016	BioL 201	Principles of Biology: Cells Lab	23 students
Spring, 2016	BioL 201	Principles of Biology: Cells Lab	24 students
Fall, 2017	BioL 425	Microbiology Lab	22 students
Spring, 2018	BioL 425	Microbiology Lab	22 students
Fall, 2018	BY 109	Lab in Environmental Science	21 students
Fall, 2018	BY 109	Lab in Environmental Science	20 students

Spring, 2019	BY 109	Lab in Environmental Science	21 students
Spring, 2019	BY 109	Lab in Environmental Science	20 students
Summer, 2019	BY 109	Lab in Environmental Science	9 students
Fall, 2019	BY 109	Lab in Environmental Science	20 students
Fall, 2019	BY 109	Lab in Environmental Science	20 students
Fall, 2019	BY 109	Lab in Environmental Science	19 students

Guest Lecturer:

- 2019 BY 109 - Environmental Science: “Coral Reefs: Forests of the Sea”. Lecture covered coral reef biodiversity and impacts of climate change on future of coral reefs. 40 mins.
- 2019 BY 474/674 - Chemical Ecology: “Predator Defense”. Lecture covered the different metabolic and structural adaptations predators use for prey defenses. 60 mins.

Community Outreach and Volunteering

Graduate:

- Girls Inc. Summer Camp – Taught basic principles of atoms and chemical bonds via the creation of various slimes for 4 days one hour each, and then taught about bacteria and the multi-faceted complexity of one’s identity for 4 days one hour each. Girls were minority dominated and between the ages of 6th - 11th grade. April – August 2019.
- Girls in Science and Engineering Day (GSED) - Taught Girls of Birmingham between the ages of 10 and 15 about Alabama biodiversity, tree identification and animal foraging through a program encouraging girls in Birmingham STEM. 6 hours, May 11, 2019.
- UAB Spring Expo – Judged the undergraduate research symposium poster sessions for Biology and Uncompleted Projects. 4 hours, April 19, 2019.
- UAB-CORD Central Alabama Regional Science and Engineering Fair – Judged the high school environmental science and earth science division. 5.5 hours, March 2, 2019.
- Guest Panel: Chasing Coral Viewing – Viewed “Chasing Corals” with 8-12th grade students at Indian Springs School and some local community members, then I participated a 6-person panel of experts to answer and discuss questions/topics of interest from the documentary.
- Darwin Day 2019 – Aided in the setup of a venue (chairs, cleaning, mural drawing, poster setup, etc.) for the event which showcases UAB College of Arts and Science research labs and hosts an invited speaker. Four hours, February 7, 2019.
- Science Olympiad Coach 2018 – Trained 6th and 7th grade girls from the all-girl G.L.O.W academy in the topic of “Ecology” for the March 10, 2018 Science Olympiad Competition. Meet one hour a week from October 2017-March 2018.
- Center for Marine Science Open House 2017 – A volunteer-based event to educate locals of New Hanover County, NC on the research being done at the UNCW campus. I volunteered for three hours to share research undertaken by the iMESA lab. September 23, 2017.

Gantt Curriculum Vitae

- MarineQuest Biotechnology Camp – **Paid** to Plan, lead, and teach a three-day camp on biomolecular and genetic analysis of invasive ascidians for 16- and 17-year-old students. Students processed *Styela plicata* samples from collection/dissection to genetic barcoding/species identification. 7 hours per day. July 10th-14th, 2017.
- Biology and Marine Biology TA Bootcamp 2017 –**Paid** to plan and run a 3-hour seminar on teaching techniques for graduate student teaching assistants. August 15, 2017.
- Biology Graduate Student Association – **Vice President** (2017-2018) and member (2016-2018) of the volunteer based departmental SGA. Planned volunteering opportunities for members. Coordinated BioGSA events including setup for departmental Seminar meetings.
- Science Olympiad Coach 2017 – Trained 6th grade girls from the all-girl G.L.O.W academy in the topics of “Invasive Species” and “Disease Detectives” for the March 4, 2017 Science Olympiad Competition. Meet twice a week for one hour from December 2016-March 2017.

References

Dr. Dustin Kemp

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Dr. Patrick Erwin

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Dr. Susanna López-Legentil

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Dr. Frank Stewart

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