Brent Allman

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Education

Emory University	Ph.D. Population Biology, Ecology, and Evolution. GPA: 3.83	08/16-present
University of Georgia	Post-Baccalaureate Research Education Program in Infectious Disease (PREP)	07/15-06/16
University of San Diego	B.A. Mathematics; Biology minor GPA: overall: 3.28, major: 3.15	09/12-05/15
Queen Mary University of London (Studies Abroad)	Cryptography and War: How Mathematics Saved Democracy	07/13-08/13

Research Experience

Graduate Research Trainee **University of Georgia** 07/15-06/16

Mentors: Dr. Jessica Kissinger, UGA Genetics; and Dr. Juan Gutierrez, UGA Mathematics.
Programs: PREP

- My research focuses on the creation of a mathematical model to describe various aspects of the population structure of *Toxoplasma gondii*.
- Learn how to analyze genomic data using bioinformatics tools.
- Actively participated in seminars and journal clubs.
- Gained wet lab experience by assisting a graduate student on cell culture and PCR.

Senior Research Project **University of San Diego** 09/14-05/15

Mentors: Dr. Ani Velo, USD Mathematics.

- Developed a research project to be completed over one academic year with another student.
- Goal is to build a deterministic mathematical model to determine HIV transmission dynamics for San Diego County populations. Stochastic modeling is also used.
- Particular interest is paid to the underserved population of men who have sex with men since they contract the disease at a disproportionately large rate to the general population.
- A secondary aim of the project is to apply theoretical treatments in the model to verify that prevention and education will lower HIV transmission rates.

Research Assistant **University of San Diego** 05/11-06/15

Mentor: Dr. Hugh Ellis, USD Biology.

Programs:	Ronald E. McNair Scholars Program	05/13-06/15
	Summer Undergraduate Research Experience (SURE)	05/13-09/13
	Pre-Undergraduate Research Experience (PURE)	05/11-09/11

- The project focuses on whether the Eared Grebe, a flightless waterbird, changes metabolic intensity of their organs independent of the mass of those organs.
- Performed enzyme assays on digestive organs and locomotory muscles. Enzymes of interest are citrate synthase, lactate dehydrogenase, pyruvate kinase, and hydroxyacylCoA dehydrogenase.
- Dissected specimens prior to running assays.
- Ran statistical analyses using Excel and R. Created figures for poster and oral presentations.
- Performed enzyme assays on digestive organs and locomotory muscles.
- Awarded the position of lead undergraduate in the lab at the end of my freshman year.
- Update lab protocol and train new members of the lab.
- Data collection, organization and analysis. Organized lab materials and specimens.
- As a SURE scholar, I mentored an incoming undergraduate student in proper lab technique and project-specific knowledge.
- Began training as a PURE student under the supervision of a McNair Scholar. This summer before entrance into USD, was my first research experience.

Research Intern **University of Colorado, Boulder** 06/14-08/14
Mentors: Dr. Robin Dowell and Dr. Mary Allen, CU Boulder BioFrontiers Institute.
Program: Leadership Alliance; Summer Multicultural Access to Research Training (SMART)

- Was selected to be one of 19 undergraduate interns for the SMART program to participate in faculty mentored research, graduate school seminars, graduate student mentored activities, dissertation research seminars. The 10 week program culminated in a final research paper and conference with oral and poster presentations.
- Helped develop an open-source piece of software called Nudge. Nudge is an interface for case-based ethics trainings in the sciences. The user-generated stories are "Choose-Your-Own-Adventure" style, with stochastic models used for determining outcomes of a users ethical decisions.
- Self-taught programming languages for the project: HTML, PHP, CSS, jQuery, and MySQL.
- Nudge is available at `http://dowell.colorado.edu/nudge/`.

Mathematical Modeling **University of San Diego** 09/12-12/12
Mentor: Dr. Diane Hoffoss, USD Mathematics.

- On a team of 3 undergraduates we developed the class project, "Drug Elimination of Birth Control in Humans," which focused on the effects of women not taking a pill in her birth control cycle.
- Modeled the outcome for various points of the menstruation cycle. My responsibilities were to translate graphical output of the model into biologically relevant analysis.

Research Grants and Fellowships

Emory Graduate Diversity Fellowship	August 2016
Initiative to Maximize Sudent Development Fellow	August 2016
USD Associated Students Research Grant	Spring 2012, 13, 14
SURE Research Grant	Summer 2013
PURE Research Grant	Summer 2011

Awards & Recognitions

Outstanding Contributions to Multicultural Awareness	May 2015
L. Reuben Mitchell Award for Campus Wide Impact	May 2015
NSF Scholar in STEM	Spring 2014-Spring 2015
Ronald E. McNair Scholar	Spring 2013-Spring 2015
Changemaker Scholarship	Fall 2014-Spring 2015
Coca-Cola First Generation Scholarship	April 2014
Multicultural Center's Student Leader of the Month	April 2014
Putnam Participant	Dec. 2013
AVID Founders Scholarship Finalist	May 2011
Nancy Staab Award	May 2011

Conference Participation

"Quantitative *in silico* approaches to inferring sexual recombination events among *Toxoplasma gondii* populations."

Poster. *Inteligent Systems for Molecular Biology*, Orlando, FL.	07/2016
Oral. *PREP Symposium*, UGA.	05/2016
Poster. *Molecular Parasitology and Vector Biology Symposium*, UGA.	05/2015

Attendee

Tenth International Conference on Bioinformatics, Atlanta, GA	11/2015

Exhibitor and Recruiter for PREP

Annual Society for Advancement of Chicanos/Hispanics and Native Americans in Science Coference, Washington, D.C.	10/2015

"Applications and Development of a Mathematic Model for HIV Transmission Dynamics of Men Who Have Sex With Men in San Diego County."

Poster.*Annual Biomedical Conference for Minority Students*, Seattle, WA.	11/2015
-Awarded travel scholarship from conference hosts via competitive application	
Oral. *Mathematics & Computer Science Senior Project Showcase*, USD.	05/2015
Poster. *USD Creative Collaborations*.	04/2015

"Metabolic Intensity in Eared Grebes."

Poster; 2^{nd} author. *American Society Biochemistry and Molecular Biology Annual Meeting*, Boston, MA. Did not attend.	03/2015
Oral. *Senior Capstone Seminar to Biology Majors and Faculty*, USD.	10/2014
Poster. *USD Creative Collaborations*, USD.	04/2014
Oral. *Univ. of California San Diego Summer Research Conference*, UCSD.	09/2013
Poster. *USD Undergraduate Research Conference*, USD.	04/2013

"Nudge Software Development: Training Scientists in Ethical Decision-Making."
Oral and Poster. *Out to Innovate National Conference*, Atlanta, GA. 11/2014
-Awarded travel scholarship from conference hosts via competitive application
Oral. *Leadership Alliance National Symposium*, Stamford, CT. 07/2014
Poster. *S.M.A.R.T. Symposium*, University of Colorado at Boulder 07/2014

"DNA and Knot Theory: Topological Applications to Biology."
Oral. *UCSD Undergraduate Math Day*, UCSD. 04/2014
Oral. *Pacific Coast Undergraduate Math Conference*, Pepperdine Univ. 03/2014

COMAP Math Modeling Competition, Successful Participant Spring 2012, 13, 14, 15

Computer Languages & Tools

-MATLAB	-R	-Bioconductor	-Java	-JavaScript	-jQuery
-LaTeX	-Python	-Unix	-HTML	-CSS	-PHP

Professional Development & Training Certifications

Big Data Challenges in Life Sciences Symposium at UGA, Attendee 10/2015
Mathematical Association of America, Member 06/2015
International Society for Computational Biology, Member 04/2016
National Organization of Gay & Lesbian Scientists and Technical Professionals, Member 09/2014
Leadership Alliance National Symposium 07/2014
McNair Scholar Graduate Seminar 05/2013
Biomedical Responsible Conduct of Research Course, CITI 05/2013
University Ministry Men's Retreat 02/2013
Laboratory Safety Training (Basic and Radioactive Sodium) many dates
Family Educational Rights and Privacy Act (FERPA) Training 08/2012

Student Leadership and Involvement

PRIDE *President* (2014-15), *VP Institutional Advocacy* (2013-14), *Historian* (2012-13).

- Led student organization at USD with over 120 registered members and an executive board of nine members.
- Planned educational drag show, Supreme Drag Superstar, for three consecutive years with over 500 attendees.
- Planned educational and social events including a networking event between Pride and the LGBT Faculty and Staff Employee Group.
- Challenged administration on the University's commitment to inclusion and diversity through dialogue and assessment.
- Obtained over $\$10,000$ for events from Associated Students.

Rainbow Educator

Rainbow Educator Management Team Member (2013-14), *Rainbow Educator* (2012-15).

- Facilitated workshops as small as 10 and as large as 150 persons.
- Worked closely with staff, students, faculty, and alumni to facilitate trainings and workshops to educate the USD community around sexual orientation, gender, race, ethnicity, and class.

Resident Assistant (RA)

Graduate and Law Student RA (2014-15), *First Year Experience RA* (2012-14), *Living and Learning Theme Coordinator* (2013-14).

- Foster an environment in the residence halls where all students could be successful and feel welcome.
- Form relationships with all residents.
- Collaborate with other RAs and campus partners to create intentional programs for residents to connect and learn.
- Serve as a resource regarding university services.
- Enforce policy, manage conflict, log damages to the residence hall.

Teaching Experience

Teaching Assistant **Emory University** 01/17-05/17

Mentor: Dr. Rachelle Spell, Emory Biology.
Class: Foundations of Modern Biology II (BIOL 142).

- Develop curriculum incorporating quantitative approaches to concepts in genetics.
- Grade exams.
- Actively participated in seminars and journal clubs with Biology faculty.
- Prepare lectures throughout the semester.

Tutor **University of San Diego** 01/15-05/15

Mentor: Dr. Cameron Parker, USD Mathematics.

- Tutor students individually and in groups.
- Primarily tutored algebra and first semester calculus courses.