

Melyssa Minto

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EDUCATION

- August 2014 -May 2017 **B.S. in Mathematics and B.S. in Biology**, Meredith College, Raleigh, NC
Relevant Coursework: Intro to MATLAB, Biostatistics, Statistics, Differential Equations, Linear Algebra, Microbiology, Molecular Biology and Biotechnology, Intro to Java
- September 2017- Present **PhD in Computational Biology and Bioinformatics**, Duke University, Durham, NC

RESEARCH EXPERIENCE

January 2017 – August 2017 **ScitoVation**

Supervisor: Dr. Chantel Nicolas, Computational Toxicology

Analyze gene enrichment data to characterize differences between treated hepatocytes from mid-zonal, periportal, and centrilobular regions and identify their respective ontologies. Curated and harmonized multiple chemical datasets that will inform models used for prioritizing the next wave of wet lab studies based on predicted assay failures and/or poor environmental chemical recovery due to low assay plate resistivity.

June 2016 – Present **Prairie Ridge Ecostation, North Carolina Museum of Natural Sciences**

Principle Investigator: Dr. Bronwyn Williams

Make use of a combination of genetic and 2D and 3D morphometric approaches to delimit crayfish species. Incorporated machine learning algorithms to automate morphometric analysis and aid in identification of characteristics that can be used to distinguish crayfishes.

June 2016 – August 2016 **ENBISYS Lab, North Carolina State University**

Principle Investigator: Dr. Cranos Williams

Wrote a program in R that evaluated the log fold change and false discovery rate of to determine untargeted differentially expressed genes for the lignin biosynthesis RNAseq data.

June 2015 – Dec 2016

Biomedical/Biotechnology Research Institute, North Carolina Central University

Principle Investigator: Dr. ClarLynda Williams-DeVane

Served as a lead statistician on a dynamic team for a research project analyzing growth data, epigenetic data, and genetic data. Created R package, MonoInc, to clean longitudinal data. It flags data that is either outside of a range or non-monotonic and performs a single or weighted imputation.

Principle Investigator: Dr. Gregory Cole

Helped to develop the study design and statistical methodology for a behavioral zebrafish study that modeled fetal alcohol syndrome.

May 2015 – May 2016

Meredith College

The Implications Associated with the Perceptions of Farmwork and Agriculture Distributed a survey and used R to analyze the awareness of farmworkers among Meredith College community. Determined the steps to increase awareness the unfair conditions of farmworkers.
A Study of the Risks of Teenage Pregnancy in the U.S.

Conducted statistical analyses to identify risk factors for teenage pregnancy using data provided by the National Survey for Family Growth.

May 2014 – August 2014

DREAM STEM, North Carolina Central University

Principle Investigator: Dr. Goalin Milledge

Analyzed the genetic risk for type-2 diabetes using various statistical tests conducted in R.

HONORS AND AWARDS

- 2017 Deborah K. Smith Award for Achievement in Biology
2017 Ford Foundation Predoctoral Fellowship – Honorable Mention

2016 – Current	Silver Shield Society – Meredith College Honors Society
2016 – Current	Who's Who Among Students in American Universities and Colleges
2016 – Current	<i>Beta Beta Beta</i> – National Biological Honor Society
2016 – Current	<i>Pi Mu Epsilon</i> – National Mathematics Honors Society
2016	Outstanding Student Researcher of the Year, NC Central University
2014 – Current	Meredith Honors Program
2015 – Current	Dean's List

SKILLS

R	R Markdown- Knitr	MATLAB	Data Mining	Java
Python	DNA Extraction	Gel Electrophoresis	Aseptic Technique	Tissue Culture

LEADERSHIP AND INVOLVEMENT

2016-2017	Senior Class Representative, Honors Committee Serve on a committee that plans all events, trips, and classes for the honors program, and work towards the continuous improvement of the Honors Program.
2016-2017	Vice President, Black Student Union Serve on a team that plans events and forums to create awareness about black culture and the empowerment of black people especially black women.
2015-2017	Treasurer, International Society for Pharmaceutical Engineers Manage the finances of ISPE as it relates to dues, events, and trips for the club. Apply for institutional funding for ISPE hosted events.
2015-2017	Student representative, Title IX Committee Provide the students perspective on a team dedicated to the improvement of Title IX policies and help to plan events that bring awareness to offenses that violate Title IX
2015-2016	Junior Class Representative, Honors Committee
2015-2016	Honors Newsletter Editor Coedited the Honors Newsletter, by keeping up with all of the happenings of my fellow Honors classmates and creatively representing them in the newsletter.

PUBLICATIONS

2016	Minto, M.S. , Josey, M. and Williams-DeVane, C. (2016). <i>Monolnc: Monotonic Increasing</i> . R package version 1.1. https://CRAN.R-project.org/package=Monolnc
2018	McMullen, P. D., Andersen, M. D. , Cholewa, B., Clewell, H. J., Dunnick K., Hartman, J., Mansouri, K., Minto, M. S. , Nicolas, C. I., Phillips, M., Slattery, S., Yoon, M., Clewell , R. A. (2018). Evaluating opportunities for advancing the use of alternative methods in risk assessment through the development of fit-for-purpose in vitro assays. <i>Toxicology in Vitro</i> .

SEMINAR/CONFERENCE PRESENTATIONS

February 2017	<i>Cray Cray Morphometrics: Advancing Morphometric Delimitation of Species of Crayfish</i> at Shaw University Research Symposium
November 2016	<i>Cleaning Electronic Medical Records Using Novel R Package Monolnc</i> at Annual Biomedical Research Conference for Minority Students
November 2016	<i>Cray Cray Morphometrics: Advancing Morphometric Delimitation of Species of Crayfish</i> at State of North Carolina Undergraduate Research & Creativity Symposium
May 2016	<i>Monolnc: An R Package</i> presented at North Carolina Central University

- May 2016 *A Study of the Risks of Teenage Pregnancy in the U.S.* presented at Meredith College CSA Day Celebrating Student Achievement Day (CSA Day) alongside a Meredith student, Aletheia Burrell.
- May 2015 *The Implications Associated with the Perceptions of Farmwork and Agriculture* presented at Meredith College CSA day with a Meredith Student Vanessa Cupil-Garcia