Gabriel Duran

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EDUCATION

University of Maryland Baltimore County (UMBC) — Baltimore, MD

- Biology B.A., Geography and Environmental Science B.S. — Expected Fall 2019
- NIH funded BUILD trainee

SKILLS

- Computer: R, MATLAB, Arc GIS, and Microsoft Office.
- Lab: Micropipettes, PCR, Gel Electrophoresis, Spectrophotometer, Lachat, Seal Analytical and LIDAR.

EXPERIENCE

Woods Hole Oceanographic Institution — **Woods Hole, MA**
Research Intern — Summer 2019

- Performed daily laboratory procedures including: acid washing, rinsing, drying, pipetting, weighing, and general laboratory maintenance.
- Assisted in running the Seal AA3 Nutrient Autoanalyzer by preparing standards and reagents for sample analysis, and cleaning and shutting down the instrument.
- Prepared standards and samples for analysis on a Flash EA1112 Carbon Hydrogen and Nitrogen (CHN) Analyzer.
- Prepared over 150 water filters for an oceanographic cruise coating them with Manganese oxide for the quantitative measurement of short and long-lived radium isotopes (223,224,226, and 228-radium).
- Performed radium measurements using a radon extraction line to analyze for 226-radium in determining radium adsorption efficiencies.
- Assisted in preparing cartridge samples for analysis on the Radium delayed Coincidence Counters (RaDeCC) from the 2018 Pacific GEOTRACES cruise.
- Prepared sediment samples for analysis on the High Purity Germanium (HPGe) Radiation Detectors.

The Polaris Project – Woods Hole Research Center — **Woods Hole, MA**
Research Intern — Summer 2019

- Participated in a two-week long research expedition in the Yukon-Kuskokwim Delta, Alaska to analyze wildfire impacts on nutrient concentrations and infiltration rates.
- Ran falling head hydraulic conductivity to determine infiltration rates from soil cores collected throughout the tundra.
- Conducted water extraction experiments on soil samples to leach nutrients for analysis.
- Measured the weights of soil samples (wet and dry) to quantify percent soil moisture.

Department of Biological Sciences — **Baltimore, MD**
Undergraduate Researcher — Spring 2019 - Present

- Conduct growth curves and prepare well plates to analyze the growth of bacteria when exposed to different metals.
- Prepare motility plates (0.3% agar) to measure bacterial growth when exposed to different concentrations of copper (growth inhibitor).
- Prepare standards and different media for bacterial growth.

Marine Biological Laboratory — **Woods Hole, MA**
Research Intern — Summer 2018

- Determined concentrations of ammonium, nitrate, phosphates and dissolved organic nitrogen.
- Analyzed concentrations of nutrients through colorimetric analysis with the use of Cary 50 Spectrophotometer and the Lachat Flow Injection Analyzer.

- Conducted fieldwork at groundwater monitoring wells and recorded certain water quality indicators including temperature, salinity, pH, conductivity, turbulence, and dissolved oxygen.

National Aquarium **Baltimore, MD**
Animal Husbandry Aide Winter 2017 – Present

- Work directly with seals, pinnipeds and sea turtles in rehabilitation.
- Assist in daily observations including respiration, behavior, and environmental interaction.
- Record water quality, including salinity, pH, and temperature (°F).
- Assist in sea turtle and seal medical examinations in preparation for release back into the ocean.

National Aquarium **Baltimore, MD**
Education Intern Fall 2018 – Spring 2019

- Instructed 6th grade level students through water quality lab techniques including measuring for turbidity, pH, salinity, dissolved oxygen, and temperature.
- Aided students in determining whether the Baltimore Harbor is suitable for certain species that are native to the Baltimore ecosystem.

National Aquarium **Baltimore, MD**
Field Conservation and Community Engagement Intern Winter 2017

- Supported staff with planning of service projects and community engagement events in and around the area of Baltimore City and Baltimore County.
- Assisted with Bio-hut inventories in the Harbor.

Joint Center for Earth Systems Technology **Catonsville, MD**
Undergraduate Researcher June 2016-September 2017

- Worked firsthand with Air Quality data collection and processing from LIDAR, EBAM, BAM, and Nephelometer.
- Repaired EBAM so that it will retrieve the proper data we need and function properly.
- Learned to program in MATLAB and wrote code for our various machines.
- Blogged for UMBC's Atmospheric LIDAR group concerning Air Quality across North America.

UMBC Phage Hunters **Baltimore, MD**
Undergraduate Researcher Summer 2016

- Isolated and characterized novel bacteriophages from soil microbes.
- Analyzed bacteriophages through Transmission Electron Microscopy (TEM) images.
- Characterized DNA from isolated phages via Polymerase Chain Reaction (PCR).

PUBLICATIONS

1. Cusick, K., Polson, S., **Duran, G.**, Hill, R. *Multiple Mega-plasmids Confer Extremely High Metal Tolerance in Alteromonas Strains*. Applied and Environmental Microbiology Nov 2019, AEM.01831-19; DOI: 10.1128/AEM.01831-19
2. Lee, M, Puglisi, KM,… **Duran, G**… Erill I, Caruso SM. (2018) The Complete Genome Sequences of HonestAbe, Anthony, and Taffo16; Three Cluster C *Bacillus cereus* Group Bacteriophages. *Genome Announc* 6(25):e00493-18. doi: 10.1128/genomeA.00493-18.

PRESENTATIONS

1. Duran G, Foreman K. Water Quality Analysis of Little Pond in Falmouth, MA.
    - American Association for the Advancement of Science; 2019 Feb 14-17; Washington, D.C.
    - Undergraduate Research Symposium; 2018 Oct 20; Baltimore, MD
    - 45th Annual National Diversity in STEM Conference; Society for Advancing Chicanos/Hispanics and Native Americans in Science; 2018 Oct 11-13; San Antonio, TX
    - National Technical Association; 2018 Sept 26-28; Hampton, VA

2. Duran G, Schade J, Natali S, Ludwig S, Sistla A, Mann P, Rodriguez-Cardona B, Sanders A. Fire Legacy on Infiltration Rates and Nitrogen Species. Abstract has been submitted to:
    - Undergraduate Research Symposium; 2019 Oct 19; Baltimore, MD
    - National Technical Association; 2019 Sept 25-27; Baltimore, MD
    - American Geophysical Union; 2019 Dec 9-13; San Francisco, CA

AWARDS

1. USM Louis Stokes Alliances for Minority Participation, supported by NSF LSAMP Award #1619676
2. 2nd place in Chemistry for presentation of Fire Legacy on Infiltration Rates and Nitrogen Species at *The 22nd Annual Undergraduate Research Symposium in the Chemical and Biological Sciences*; 2019 Oct 19; Baltimore, MD.
3. Travel Scholarship awarded to attend *the 45th Annual National Diversity in STEM Conference*; Society for Advancing Chicanos/Hispanics and Native Americans in Science; 2018 Oct 11-13; San Antonio, TX.
4. Travel Scholarship to attend National Technical Association; 2018 Sept 26-28; Hampton, VA.
5. Travel Scholarship to attend National Technical Association; 2019 Sept 25-27; Baltimore, MD.

VOLUNTEER EXPERIENCE

Charm City Connection **Baltimore, MD**
President June 2018 – Present

- Work closely with community leaders in Baltimore on certain topics that their communities face, including incarceration, unaccompanied immigrant minors, food deserts, education, and poverty.
- Work closely on collaborations with surrounding organizations in the metropolitan area, including the National Aquarium, Southwest Partnership, University of Maryland, Baltimore, Volunteers of America, Hombres De Palabra and Youth for Tomorrow.
- Lead groups of students through community issues and interact with community members.
- Teach undergraduate students how to best serve and work with community members and the importance of service and volunteering.

Center for Democracy and Civic Life **Baltimore, MD**
Alternative Spring Break Trip Leader Fall 2018 – Spring 2019

- Organized and led a week-long Alternative Spring Break trip.
- Interviewed Baltimore's community organizers including politicians, activists and residents.
- Facilitated conversation between college students and organizers about topics such as gentrification, mass incarceration and racism.

National Aquarium **Baltimore, MD**
Aquarium Conservation Team January 2018 – Present

- Work closely with community members in Baltimore City with the organizing and planning of community cleanups.
- Assist aquarium staff with community events that engage community members and promotes stewardship, conservation and sustainability of natural habitats that exist in Baltimore.
- Aid Aquarium staff in Bio-hut Inventories that includes helping identify animal and plant species in and around the Baltimore community for the 2018 City Nature Challenge.

Booomers Bikes **Baltimore, MD**
U.S. Representative January 2017 – September 2017

- Researched environmental engineering and applied sciences for creating bamboo bicycles.
- Facilitated writing of grant proposals and applications for the Yonso Project.
- Established connections with local bike shops and athletic programs.
- Supported social outreaches in Yonso, Ghana including private schools and scholarships for children.