Joseph S. Nocua Tole

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EDUCATION

CORNELL UNIVERSITY, COLLEGE OF AGRICULTURE AND LIFE SCIENCES, Ithaca, NY

- *Candidate for Bachelor of Science Degree in Biological Engineering, May 2024*
- *CEE 4010 (Undergraduate Teaching Assistant in Civil and Environmental Engineering): Leadership in AguaClara Project Team*
- *OADI Research Scholar, McNair Scholar*

EXPERIENCE

CORNELL UNIVERSITY , Ithaca, NY

Undergraduate Researcher at Richardson Lab in Applied Microbiology (August 2021– present)

- Working on developing a model that relates Harmful Algal Bloom (HAB) toxicity and bloom density.
- Using ImageJ script to determine bloom toxicity (presence of microcystin) without using qPCR analysis or genetic testing.
- Working with the lake associations from all Finger Lakes to organize volunteer sample taking.
- Working on developing a method of HABs screening that can used by communities without access to genetic testing methods in Upstate New York, hoping to eventually expand.
- This research project is currently supported by Engineering Learning Initiatives' Undergraduate Research Award #3240.

AguaClara Lab Humic Acid Removal Researcher (October 2020 – May 2021)

- Conducted research on optimization of Humic Acid removal from groundwater and freshwater bodies. Focused on using alternatives to pure Aluminum as coagulant.
- Focused especially on the use Polyaluminum Chloride as optimal coagulant for Humic Acid-contaminated bodies of water.

AguaClara Project Team Recruitment & Onboarding Executive Chair (April 2021 – present)

- Member of the executive board of Cornell University's AguaClara, currently directing the recruitment process ofnew undergraduates into the team (laboratory branch, business branch, outreach branch, and media branch).
- In charge of introducing the new members of the team to the basics on the science of water treatment, specifically the science behind AguaClara's patented gravity-powered water treatment plants.
- Liaison for AguaClara expansion to University of Puerto Rico.

NEW YORK STATE WATER RESOURCES INSTITUTE, Ithaca, NY

Harmful Algal Bloom (HABs) Researcher (May 2021 – August 2021)

- Researched and monitored HABs in the Finger Lakes Regions.
- Researched alternative software-reliant technologies to detect HABs without using expensive qPCR technologies.
- Reported to the New York State Department of Environmental Conservation in order to better assess access to clean water bodies in the state of New York

Flood Risk Perception Researcher in the Hudson Valley (May 2021 – August 2021)

- Studied flood risk and flood risk perception in the Hudson Valley (emphasis on Troy NY) via household surveying and hydrological data analysis.
- Wrote a soon-to-be-published policy brief with Cornell's Global Development Office, the City of Troy, and the Hudson River Estuary Program. This policy brief is aimed at NYS local government officials.

UNIVERSITY OF PUERTO RICO, San Juan , PR

Researcher at Department of Physics, Feng Lab (November 2017 – August 2018)

- Conducted independent research on the UV radiation conductivity of Boron Nitride and Methane gas conductivity of Tungsten Carbide.
- Used PASCO Capstone software and hardware in order to obtain live information (voltage and conductivity) of laminated Boron Nitride samples.
- Constructed Tungsten Carbide-based affordable and environment-resistant methane gas sensor for El Yaguazo, Puerto Rico.

Researcher at Department of Biology, Giray Lab (August 2018 – August 2019)

- Conducted independent research on the effect of plant-based stimulants (adenosine receptor agonists and adenosine receptor antagonists) on the aversive behavior of different arthropods (special emphasis on the Apis Mellifera).
- Gained wet lab skills ranging from hemocytometry to micropipette use.
- Gained intermediate skills using animal tracking softwares such as Tox Trac.

PUBLICATIONS

- Nocua Tole et al. (2021) ***Responding to Risk from Floods and COVID-19: Beyond Partisanship, Through Experience.*** (Issue number 95).
  Found at: https://cals.cornell.edu/global-development/our-work/publications

EXTRACURRICULAR ACTIVITIES

- Cornell University Speech and Debate Team
- Mexico City Model United Nations Staff Member (President of UN Commission on Science and Technology for Development).
- Holland International Living Center Advisory Council
- Fundación Kinesis Youth Mentor

SKILLS AND LANGUAGES

Computer:

- Microsoft Office Specialist (Word, PowerPoint, Excel). Microsoft Technology Associate (OS & Fundamentals)
- Intermediate skills in R, ProCoDa, ImageJ, and Origin9.

Languages: Fluent Native Spanish, Fluent Native English