

NICOLE MUNNE

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EDUCATION

Massachusetts Institute of Technology

Pursuing a B.S. in Chemical Engineering · GPA: 5.0/5.0

Cambridge, MA

Graduation Date 05/2022

SKILLS

- **Computer:** Microsoft Packages, FlowJo, DataLog, Python, MATLAB, \LaTeX
- **Laboratory techniques:** titration, spectroscopy, rotating disk electrode and linear sweep voltammetry, electrochemical cell construction, live cell culture, VTI scans, flow cytometry
- **Other:** bilingual (Spanish and English), strong writing skills

RESEARCH EXPERIENCE

Hatton Carbon Capture Lab

Paid Undergraduate Researcher, Supervisor: Professor Alan Hatton

Cambridge, MA

10/2018 - 08/2019

- Conducted research involving the optimization of Electrochemically Mediated Amine Regeneration (EMAR) for post-combustion CO_2 polarization data through rotating disk electrode experiments and thus evaluating impacts of operating conditions and electrolyte formulations on the kinetics of EMAR.
- Fabricated electrochemical cells and maintained an automated bench-scale system while implementing upgrades to it and characterizing system states.

University of Pittsburgh Drug Discovery Institute

Paid Summer Researcher, Supervisor: Professor Lawrence Vernetti

Pittsburgh, PA

06/2017 - 08/2017

- Developed an in vitro human liver model for nonalcoholic fatty liver disease that is used for drug screening. Specific research roles included plating cells weekly and treating them with stressors to induce disease before assessing disease progression with flow cytometry and VTI scans.

University of Pittsburgh Cancer Institute

Paid Summer Researcher, Supervisor: Professor Walter Storkus

Pittsburgh, PA

06/2016 - 08/2016

- Tested the effects of anti-vascular drugs on immune checkpoint expression in RENCA cells, with an inverse correlation found. Lab tasks included plating and treating cells and analyzing for checkpoint expression using fluorescence techniques.

TEACHING EXPERIENCE

MIT Office of Minority Education

Interphase Residential Facilitator and Teaching Assistant

Cambridge, MA

05/2019 - 08/2019

- Teaching assistant for a chemistry course in Interphase EDGE, an intensive seven week summer program for incoming MIT students who are minorities or come from disadvantaged backgrounds
- Lead and created material for one and a half hour long recitations with twenty students twice a week that complemented lectures and focused on solving problems, graded assignments and exams

LEADERSHIP POSITIONS

Society of Women Engineers

Outreach Chair

12/18 - present

- Plan and execute outreach events involving local schools
- Volunteer at other SWE Outreach events and mentor less experienced SWE leaders

MIT Tech Catholic Community

Service Chair

12/18 - present

- Plan service events including regular volunteering at a local elderly home, a "buddy" system with elderly home residents, and volunteering at the Harvard Homeless Shelter

Undergraduate Student Advisory Board

2022 Class Representative

10/19 - present

- Represent the Chemical Engineering Class of 2022 in regular meetings with department heads to discuss curriculum

AWARDS

- **MIT Ellen King Prize for First Year Writing 2nd Place:** Awarded to the author of the best written work
- **Ricoh Sustainable Development Award:** Awarded to a student who "develops innovative and practical solutions to tackle environmental issues"
- **Regeneron Science Talent Search Scholar:** Awarded for a highly promising research record
- **International Science and Engineering Fair Finalist**
- **Society for Women Engineers Achievement in Math and Science:** Awarded to the high school student with the most success in science and math classes
- **Best Presentation at UPCI Academy Symposium:** Awarded to the best presented poster at the annual symposium
- **Stockholm Junior Water Regional Prize:** Awarded to the best research projects dealing with water innovation