

Janel Abbott

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Education

- Masters of Science in Chemical & Biological Engineering (Thesis)** February 2020
University at Buffalo (UB), Buffalo NY
- Bachelors of Science in Chemical & Biological Engineering** May 2017
Colorado State University (CSU), Fort Collins CO

Work Experience

Graduate Researcher | Environmental Electrochemical Lab | Buffalo, NY Jan. 2018 – Jan. 2020

- Improving green hydrogen gas production via water electrolysis material selection
- Optimizing non-precious metal selection for catalysts used in water electrolysis under acidic conditions
- Performing electrochemical experiments with three-way electrochemical cell and electrolyzer test station to understand the activity of the catalysts with cyclic voltammetry data
- Engineering new formulations of non-precious metals in catalysts for higher stability in acidic media; researching methods performed by different researchers to facilitate new pathways for the research approach
- Installing and developing proton exchange membrane water electrolyzer (PEMWE) testing station
- Assembling and maintaining accurate technical documents outlining research for DOE quarterly and yearly progress reports

REV Grant Student Assistant | UB Sustainability Dept. | Buffalo, NY Jan. 2018 – Jan. 2020

- Educating the community on renewable energy initiatives through the sustainable energy Revitalizing Energy Vision (REV) grant for Western New York
- Creating engaging social media language for flyers, posters, and symposiums regarding renewable energy
- Leading solar outreach events for youth in the WNY area (Tinker, Engineering Youth Camp, Future Engineering Camp, Sustainability Camp)
- Determine feasibility studies of renewable energy exhibits to have featured in UB's Garden Relax of Work (GRoW) home
- Facilitating discussion between the university and its collaborators on generating 100 MW of clean energy through solar power by 2030 within the Buffalo Niagara area

Intern | Boston Valley Terra Cotta | Buffalo, NY Jan. 2018 – May 2018

- Characterizing and analyzing glaze and terra cotta materials used in past and present projects
- Programming a working code in Python to read information about the glaze and terra cotta materials
- Operating a spectrometer and glossmeter to determine glass metric and colorimetric information of each material and placing that into the electronic database
- Upgrading the current material classification system to an electronic system with all of the material information
- Collaborating with personnel on retrofitting the output data to be presented in a user-friendly format

Undergraduate Researcher | Biomedical Research Lab | Fort Collins CO May 2015 – Aug. 2017

- Characterizing and analyzing 3D printed thermoplastic polyurethane (TPU) with SEM, FTIR, and CA for a feasible skin graft
- Manufacture Silylated Hyaluronan complex (Silyl HA-CTA) for manufacture; manage two-week timeline production of Silyl HA-CTA and oversee seven undergraduates to produce the product
- Perform various treatments on linear low density polyethylene for heart valve research project
- Ensure hazardous waste generated in the laboratory by all students is safely disposed of in accordance to EHS and sent to EHS for ultimate disposal of waste
- Received training in Biosafety fume hoods 1 & 2, and Blood pathogen training

Leadership and Service

NSF funded, Navigate Project 2018, *participant*

Chemical Engineering Graduate Student Association, *President (2018-2019), Treasurer, (2017-2018)*

Publications (Co-authorship)

1. Lei, Chaojun, Chen, Hengquan, Cao, Junhui, Yang, Jian, Qiu, Ming, Xia, Ying, Yuan, Chris, Yang, Bin, Li, Zhongjian, Zhang, Xingwang, Lei, Lecheng, **Abbott, Janel**, Zhong, Yu, Xia, Xinhui, Wu, Gang, He, Qinggang, & Hou, Yang. (2018). Fe•N4 Sites Embedded into Carbon Nanofiber Integrated with Electrochemically Exfoliated Graphene for Oxygen Evolution in Acidic Medium. *Advanced Energy Materials*. doi:10.1002/aenm.201801912
2. Zheng, Xiangjun, Wu, Jiao, Cao, Xuecheng, **Abbott, Janel**, Jin, Chao, Wang, Haibo, Strasser, Peter, Yang, Ruizhi, Chen, Xin, & Wu, Gang. (2019). N-, P-, and S-doped graphene-like carbon catalysts derived from onium salts with enhanced oxygen chemisorption for Zn-air battery cathodes. *Applied Catalysis B: Environmental*, 241, 442-451. doi:10.1016/j.apcatb.2018.09.054
3. Q. Tan, C. Y. Shu, **J. Abbott**, Q. Zhao, L. Liu, T. Qu, Y. Chen, H. Zhu, Y. Ni. Liu, G. Wu, “[Highly dispersed Pd-CeO2 Nanoparticles Supported on N-doped Core-Shell Structured Mesoporous Carbon for Methanol Oxidation in Alkaline Media](#)”, *ACS Catalysis* **9**, 6362-6371 (2019).
4. Y. Li, **J. Abbott**, Y. Sun, Y. Du, X. Han, G. Wu, P. Xu, “[Ru Nanoassembly Catalysts for Hydrogen Evolution and Oxidation Reactions in Electrolytes at Various pH Values](#)”, *Appl. Catal. B-Environ.* **258**, 117952 (2019).

Presentations & Awards

1. **Janel Abbott**, Qiang Tan, Gang Wu. Hetero-atom doped MOF catalysts for water splitting. University at Buffalo SUNY, 21st Annual Chemical & Biological Engineering Graduate Student Research Symposium. October 2018.
2. **Janel Abbott**, Gang Wu. Design of Active Earth-Abundant Electrocatalysts for Electrochemical Oxygen Generation Under Acidic Conditions. University at Buffalo SUNY, 22nd Annual Chemical & Biological Engineering Graduate Student Research Symposium. October 2019.
3. **Janel Abbott**. Student Choice Poster Award. University at Buffalo SUNY, 22nd Annual Chemical & Biological Engineering Graduate Student Research Symposium. October 2019.
4. **Janel Abbott**, Gang Wu. Design of Active Earth-Abundant Electrocatalysts for Electrochemical Oxygen Generation Under Acidic Conditions. Sustainability Conference, Rochester Institute of Technology. November 2019.