Delmar Guido Azevedo Cabral
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EDUCATION

Yale University — New Haven, Connecticut
Doctorate of Philosophy in Chemistry — August 2020 - Present

University of California at Berkeley — Berkeley, California
Bachelor of Science in Chemistry — May 2019

Merced Community College — Merced, California
Associate Degree in Chemistry — May 2017

RESEARCH EXPERIENCE

Undergraduate Researcher in Computational Chemistry — August 2018 – December 2019
University of California at Berkeley, Prof. Martin Head-Gordon's Group — Berkeley, California

- Assessed performance of various density functionals (DFT) for modelling catalytic action of transition metal complex for CO_2 reduction, based on literature search and quantitative parameters relevant to the specific system
- Performed DFT and CASSCF simulations to elucidate the reactivity of the catalyst, obtaining reaction intermediates and transition state structures
- Analyzed data and used chemical insight to propose a catalytic cycle

Undergraduate Research Intern — May 2016 - August 2016
University of California at Merced, Prof. Tao Ye's Group — Merced, California

- Executed experimental procedures, including preparation and purification of PNA-DNA hybrid scaffolds
- Prepared weekly research reports for faculty advisor and presented data during lab meetings

RESEARCH COMMUNICATION

Loipersberger, M., **Cabral, D.**, Chu, D., Head-Gordon, M. (2019). Mechanistic Insights into Co and Fe Quarterpyridine Based CO_2 Reduction Catalysts: Metal-Ligand Orbital Interaction as the Key Driving Force for Distinct Pathways. Manuscript accepted to the Journal of the American Chemical Society

Cabral, D., Loipersberger, M., Head-Gordon, M. (April 2019). Computational Study of Electrochemical Reduction of CO_2 via an Iron (II) Molecular Catalyst. Poster presentation at Alpha Chi Sigma Research Symposium, Berkeley, CA

Cabral, D., Loipersberger, M., Head-Gordon, M. (April 2019). Computational Study of Electrochemical Reduction of CO_2 via an Iron (II) Molecular Catalyst. Poster presentation at the UC Berkeley College of Chemistry Undergraduate Research Fair, Berkeley, CA

Cabral, D., Cao, H. H., Ye, T. (August 2016) Assembling Synthetic Single-Stranded DNA Scaffolds for PNA-DNA Hybrid Origami Structures. Poster and oral presentation at the UC Merced Undergraduate Summer Research Symposium, Merced, CA

TEACHING & WORK EXPERIENCE

Teaching Fellow for General Chemistry Laboratory I August 2020 – December 2020

Yale University New Haven, Connecticut

- Taught laboratory course sections twice weekly, in a remote format, demonstrating experiments and concepts in the field of chemistry according to the established curriculum and examples
- Guided student understanding by answering questions in class and during office hours
- Encouraged scientific curiosity and critical thinking
- Reinforced safety tenets and consciousness in laboratory practice
- Graded laboratory reports and pre/post-lab assessments

Laboratory Technician January 2020 – July 2020

Chevron Corporation – Lubricants Division Richmond, California

- Coordinated efforts with product development team to efficiently prepare, test and ship lubricant samples according to specifications
- Communicated across teams to ensure timely testing schedule, and compiled and reported testing data
- Assisted with chemical inventory management, developing an automated software tool to automatically order expired chemical components from vendors

Supplemental Instruction Leader for General Chemistry January 2017 - May 2017

Merced Community College Merced, California

- Held three weekly meetings for students and guided discussion of course content among the group, emphasizing peer collaboration
- Worked with faculty to prepare content for meetings
- Prepared session plans and exam review worksheets
- Demonstrated concepts through sample exercises
- Provided techniques to master the course material and efficiently solve exercises

Tutor for Mathematics and General Chemistry October 2016 – May 2017

Merced Community College Merced, California

- Provided tailored assistance based on assessed learning style and areas of difficulty
- Demonstrated concepts through examples
- Provided recommendations for improvement and indicated other resources available for student success

AWARDS

Summer Research Stipend, UC Berkeley Summer 2019

Dean's Honor List (top 10% College of Chemistry students), UC Berkeley Spring 2018

MACES Undergraduate Research Fellowship, UC Merced Summer 2016

ADDITIONAL SKILLS

Software: Microsoft Word, Excel and PowerPoint, QChem, ChemDraw, C++, Python

Linguistic: Fluent in English and Portuguese