William P. Dwyer

Research Assistant | Prospective PhD Student

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Work Experience

CARNEGIE INSTITUTION FOR SCIENCE | Research Assistant

June 2020 – Current | Stanford, CA

- Spearheaded cloning, vector assembly, and genotyping efforts for experimental projects in S. bicolor and A. thaliana.
- Generated, curated and maintained novel species-specific metabolic databases as part of the Plant Metabolic Network (PMN).
- Generated and incorporated a library of 80,000+ modeled protein structures into enzyme function prediction algorithms to improve performance.

VASSAR COLLEGE, BIOCHEMISTRY DEPT | Teaching Assistant

September 2019 – May 2020 | Poughkeepsie, NY.

- Led weekly workshop sessions and held office hours for students enrolled in Introductory Biology (fall) and Biochemistry courses (spring) .
- Assisted undergraduate-level students with benchwork during laboratory sessions.

VASSAR COLLEGE WRITING CENTER | Writing Consultant

September 2019 – May 2020 | Poughkeepsie, NY

- Provided mentorship and feedback to undergraduate students with writing assignments at any stage of the writing process.

Refereed Publications

TOWARDS BUILDING A SORGHUM CELL ATLAS Karia, Dwyer et al. | In Prep

- Experimentally localized hundreds of Sorghum bicolor enzymes to build a comprehensive map of the crop's metabolic network.
- Received funding for a successful Joint Genome Institute grant to support gene synthesis and cloning efforts.

ELUCIDATING THE FUNCTION OF THE NOVEL PHASE-SEPARATING RHAMNOSOME ORGANELLE Field, Dorone, Dwyer et al. | In Prep

- Spearheaded confocal microscopy and cloning work to probe the function of rhamnose-biosynthesis phase-separating compartments.

RENAMING INDIGENOUS CROPS AND ADDRESSING COLONIAL BIAS IN SCIENTIFIC LANGUAGE Dwyer et al. | Trends in Plant Science

Published September 2022

- Proposed a renaming of 'orphan crop' to 'indigenous crops' to address existing colonial bias in scientific terminology.
- Reviewed existing research on indigenous crops and emphasized the importance of local communities' knowledge and guardianship in future studies of these crops.

PLANT METABOLIC NETWORK 15: A RESOURCE OF GENOME-WIDE METABOLISM DATABASES FOR 126 PLANTS AND ALGAE Hawkins et al. | JIPB

Published August 2021

- Conducted metabolic domain enrichments from pathway and reaction multiple component analysis data contained within PMN.
- Assisted senior biocurators with the development, curation and maintenance of PMN's databases.

Skills

COMPUTATIONAL

Programming:
Python • R • Lisp • Unix

Tools/Platforms:
Git • Excel • Geneious • Weebly • PyMol

LANGUAGE

French (native) • English (fluent) • Spanish (conversational)

LABORATORY

ICP-MS • CRISPR-Cas9 • Licor 6800 • Sterile Technique • Cloning • Biolistics • Confocal Microscopy • Protoplasting

Education

VASSAR COLLEGE

B.A. Biochemistry

Aug 2016 - May 2020 | Poughkeepsie, NY

Cum. GPA: 3.80 / 4.0

With Departmental Honors

Honors

CHURCHILL FELLOWSHIP

Nominee and Finalist

Accepted at Cambridge University, Dept of Plant Sciences

ASPB, ASBMB

Member

CUM LAUDE SOCIETY

Inductee

References

Sue Rhee, Senior Staff Scientist, Carnegie Institution for Science

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Jennifer Kennell, Director of Biochemistry, Vassar College

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