William P. Dwyer

Knight-Hennessy Scholar | Ph.D. Candidate in Biology

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Work Experience

CARNEGIE INSTITUTION FOR SCIENCE | Research Assistant

June 2020 – June 2023 | 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.

Selected 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

SCIENTIFIC

Computational:
Python • R • Lisp • Unix • Git • Geneious • Weebly • PyMol

LABORATORY:

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

LANGUAGE:

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

Education

STANFORD UNIVERSITY

Ph.D. Biology

Sep 2023 - Present

VASSAR COLLEGE

B.A. Biochemistry

Aug 2016 - May 2020 | Poughkeepsie, NY

Cum. GPA: 3.80 / 4.0, Dept Honors

Honors

KNIGHT-HENNESSY SCHOLARSHIP

2023 Cohort

Stanford University

CHURCHILL FELLOWSHIP

Nominee and Finalist

Accepted at Cambridge University, Dept of Plant Sciences

References

Sue Rhee, Director, Plant Resilience Institute
rheeseu6@msu.edu

Alison Keimowitz, Chair of Chemistry, Vassar College
alspodek@vassar.edu

Jennifer Kennell, Associate Professor of Biology, Vassar College
jekennell@vassar.edu