



Curriculum Vitae

Zachary Caterer

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EDUCATION AND TRAINING

2020 - 2024 BS – Applied Mathematics and Statistics – 4.0/4.0
BS – Biochemistry, Molecular Biology – 3.93/4.0
University of Wisconsin-Eau Claire, Eau Claire, WI USA

RESEARCH EXPERIENCE

2023 - 2024 **Undergraduate Researcher**
Wheeler Lab
UWEC, Department of Biology

2021 - 2024 **Undergraduate Researcher**
Rahul Gomes' Lab
UWEC, Department of Computer Science

2023 - 2023 **Undergraduate Researcher**
The Kamariza Lab
UCLA, Department of Bioengineering

2020 - 2023 **Undergraduate Researcher**
Spectral Pathology Lab
UWEC, Department of Materials Science and Biomedical Engineering

TEACHING AND TUTORING

UWEC Tutoring

ACS Chemistry - Peer Mentor and Tutor
Spring 2024, Fall 2023, Spring 2023

Previous Tutoring

Math Lab - Peer Mentor and Tutor
Fall 2022

PUBLICATIONS

‡ Corresponding author(s) † Co-senior authors § Equal contribution UWEC undergraduate
Citations: 0, h-index: 0 | **Google Scholar** |

UWEC Affiliation

2. B Mathisen, §Z Caterer, §M Hady, J Stepanek, J Boyle, L Rook, V Suryadevara, M Willis, ‡M Walsh. *Analysis of Bcl2-Associated Anthranogene 3 Mutated Cardiac Tissue Using Fourier-Transform Infrared Spectroscopy (In Review)* 2023.
1. Z Caterer, §J Langois, §C McKeown, S Stumo, M Walsh, S Setty, S Akkina, ‡R. Gomes. *Exploring Feature Selection with Deep Learning for Kidney Tissue Microarray Classification using Infrared Spectral Imaging. (In Review)* 2023.

PRESENTATIONS AND PROJECTS

Oral Presentations: 1, Posters: 12, Applications: 2

UWEC undergraduate

7. **Identification of DNA Methylation Markers using Feature Selection and Deep Learning for Pancreatic Ductal Adenocarcinoma (PDAC) Diagnosis** (2023 -)
6. **wrmXpress GUI** (2023 -)
5. **Using environment-sensitive probes to detect *Mycobacterium Tuberculosis* with Machine Learning-based fluorescence microscope Octopi** (2023)
 - a) Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS), Phoenix, AZ, November 2023 (**Poster**)
 - b) Amgen Research Symposium, Los Angeles, CA, August 2023 (**Presentation**)
4. **SPLAD (Spectral Pathology Lab Application Data-Base)** (2022)
3. **Differentiating Between Non-Alcoholic Steatohepatitis and Alcoholic Steatohepatitis through FTIR Imaging** (2022 - 2023)
 - a) National Conference for Undergraduate Research, Eau Claire, WI, April 2023, (**Poster**)
2. **Exploring Feature Selection with Deep Learning for Kidney Tissue Microarray Classification using Infrared Spectral Imaging** (2021 - 2023)
 - b) National Conference for Undergraduate Research, Eau Claire, WI, April 2023, (**Poster**)
 - a) Celebration of Excellence in Research and Creative Activity, Eau Claire, WI, April 2022, (**Poster**)
1. **Comparing the Accuracy of FTIR Imaging and QCL Technology for the Differentiation between Chromophobe Renal Cell Carcinoma and Oncocytoma** (2021 - 2023)
 - d) National Conference for Undergraduate Research, Eau Claire, WI, April 2023, (**Poster**)
 - c) Celebration of Excellence in Research and Creative Activity, Eau Claire, WI, April 2022, (**Poster**)
 - b) Research in the Rotunda, Madison, WI, March 2022 (**Poster**)
 - a) Celebration of Excellence in Research and Creative Activity, Eau Claire, WI, April 2021, (**Poster**)

GRANTS & PROPOSALS

Submitted proposals

Using environment-sensitive probes to detect *Mycobacterium Tuberculosis* with Machine Learning-based fluorescence microscope Octopi

GEM Fellowship | Fall 2023

Development of Machine Learning Pipelines and Fluorescence Microscopy for Integration into Field Deployable Autonomous Microscope

NSF-GRFP | Fall 2023

UNDERGRADUATE MENTORSHIP

UWEC research mentorship

Samuel Morehead (2023 - | Biochemistry, Molecular Biology Student at University of Wisconsin Eau Claire)
 Biomedical Innovators Program
Primary Investigator: Rahul Gomes, PhD

Previous mentorship

Samuel Stumo (2022 - 2023 | Neuroscience & Psychology student at University of Wisconsin Eau Claire)
 Biomedical Innovators Program
Primary Investigator: Rahul Gomes, PhD

AFFILIATIONS AND PROFESSIONAL DEVELOPMENT

- 2022 - **American Chemical Society**
 – Member
- 2021 - **Biomedical Engineering Society**
 – Member

SERVICE

Community Service:

- 2020 - 2023 Pet Therapy Volunteer, *Pet Partners*
- 2015 - 2023 Meals on Wheels Driver, *Sacred Heart Hospital*

Other service:

- 2022: Metropolitan General, *Athens, Attika, GR*
- 2021: Irish Wheelchair Association, *Dublin, Leinster, IE*

HONORS & AWARDS

- 2020 - 2024 Provost Academic Distinction, University of Wisconsin Eau Claire
- 2020 - 2024 Dean's List, University of Wisconsin Eau Claire
- 2023: Travel Awardee, ABRCMS
- 2023: Amgen Scholar, University of California Los Angeles
- 2020: Merit Scholar Award

LANGUAGES

- English:** Native
- French:** Intermediate - B2
- Spanish:** Basic - A1