



## Curriculum Vitae

Zachary T. Caterer

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## EDUCATION AND TRAINING

- 2024 -                      Ph.D – Biological Engineering  
Interdisciplinary Quantitative Biology Certificate  
**University of Colorado Boulder**, Boulder, CO USA
- 2020 - 2024              BS – Applied Mathematics and Statistics  
BS – Biochemistry, Molecular Biology  
Honors – *summa cum laude*  
**University of Wisconsin-Eau Claire**, Eau Claire, WI USA

## RESEARCH EXPERIENCE

### Graduate Research

### Undergraduate Research

- 2023 - 2024              Wheeler Lab  
UWEC, Department of Biology
- 2021 - 2024              Rahul Gomes' Lab  
UWEC, Department of Computer Science
- 2023 - 2023              The Kamariza Lab  
Amgen Scholar  
UCLA, Department of Bioengineering
- 2020 - 2023              Spectral Pathology Lab  
NYIT, Department of Electrical and Computer Engineering

## TEACHING AND TUTORING

### CU Boulder Tutoring & Teaching

### UWEC Tutoring

**ACS Chemistry** - Peer Mentor and Tutor

Spring 2024, Fall 2023, Spring 2023

**Math Lab** - Peer Mentor and Tutor

Fall 2022

## PUBLICATIONS

‡ Corresponding author(s)    † Co-senior authors    § Equal contribution    [CU Boulder Graduate](#)  
Citations: 0, h-index: 0 | **Google Scholar** |

### CU Boulder Graduate

### UWEC Undergraduate

3. M Hady, **Z Caterer**<sup>§</sup>, B Mathisen<sup>§</sup>, S Setty, †M Walsh. *Using Label-Free Infrared Spectroscopic Imaging to Examine Kidney Cancer Biochemistry in Normal and Diabetic Patients (In Review)* 2024.

2. B Mathisen, <sup>§</sup>**Z Caterer**, <sup>§</sup>M Hady, J Stepanek, J Boyle, L Rook, V Suryadevara, M Willis, <sup>‡</sup>M Walsh. *Analysis of Bcl2-Associated Anthranogene 3 Mutated Cardiac Tissue Using Fourier-Transform Infrared Spectroscopy (In Review)* 2023.
1. **Z Caterer**, <sup>§</sup>J Langois, <sup>§</sup>C McKeown, S Stumo, M Hady M Walsh, S Setty, S Akkina, <sup>‡</sup>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*

### CU Boulder Graduate

### UWEC Undergraduate

7. **Identification of DNA Methylation Markers using Feature Selection and Deep Learning for Pancreatic Ductal Adenocarcinoma (PDAC) Diagnosis** (2023 - ) [a.3\*, f]
6. **wrmXpress GUI** (2023 - ) [a.3]
5. **Using environment-sensitive probes to detect *Mycobacterium Tuberculosis* with Machine Learning-based fluorescence microscope Octopi** [d, e]
4. **SPLAD (Spectral Pathology Lab Application Data-Base)** (2022)
3. **Differentiating Between Non-Alcoholic Steatohepatitis and Alcoholic Steatohepatitis through FTIR Imaging** (2022 - 2023) [c]
2. **Exploring Feature Selection with Deep Learning for Kidney Tissue Microarray Classification using Infrared Spectral Imaging** (2021 - 2023) [a.2, c]
1. **Comparing the Accuracy of FTIR Imaging and QCL Technology for the Differentiation between Chromophobe Renal Cell Carcinoma and Oncocytoma** (2021 - 2023) [a.1, a.2, b, c]
  - f) American Society for Human Genetics, Denver Co, [f] November 2024, **(Poster)**
  - e) Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS), Phoenix AZ, [e] November 2023, **(Poster)**
  - d) Amgen Research Symposium, Los Angeles, CA, [d] August 2023, **(Presentation)**
  - c) National Conference for Undergraduate Research, Eau Claire, WI, [c] April 2023, **(Poster)**
  - b) Research in the Rotunda, Madison, WI, [b] March 2022, **(Poster)**
  - a) Celebration of Excellence in Research and Creative Activity, Eau Claire, WI, [a.1] April 2021, [a.2] April 2022, [a.3] April 2024, **(Poster)**

## GRANTS & PROPOSALS

*Submitted proposals*

## UNDERGRADUATE MENTORSHIP

### *CU Boulder 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**

**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

- 2024 - 2025 NSF Integrated Data Science Fellow, University of Colorado Boulder  
 2024: BioFrontiers Institute Olke C. Uhlenbeck Fellowship, University of Colorado Boulder  
 2024: Dean's Future Leadership Fellowship, University of Colorado Boulder  
 2024: Dean's Fellowship for Excellence, University of Colorado Boulder  
 2024: Outstanding Senior Award, Department of Biology, University of Wisconsin Eau Claire  
 2024: \* Mayo Clinic Biomedical Bio-innovator's Award  
 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