



Curriculum Vitae

Zachary T. Caterer

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EDUCATION AND TRAINING

- | | |
|-------------|--|
| 2026 - 2029 | Ph.D – Biological Engineering
Interdisciplinary Quantitative Biology Certificate
University of Colorado Boulder , Boulder, CO USA |
| 2024 - 2026 | MS – Computer Science
Interdisciplinary Quantitative Biology Program
University of Colorado Boulder , Boulder, CO USA |
| 2020 - 2024 | BS – Applied Mathematics and Statistics
BS – Biochemistry, Molecular Biology
Honors – <i>summa cum laude</i>
University of Wisconsin-Eau Claire , Eau Claire, WI USA |

RESEARCH EXPERIENCE

Graduate Research

- | | |
|-------------|---|
| 2024 - 2025 | <i>IQ Biology rotations</i>
RDI Group, CU Boulder, Department of Chemical and Biological Engineering
Stanislowski Lab, CU Anschutz, Department of Biomedical Informatics
Zhang Lab, CU Anschutz, School of Medicine Division of Rheumatology |
|-------------|---|

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 Mentees

Citations: o, h-index: o | **Google Scholar** |

CU Boulder Graduate

UWEC Undergraduate

4. ‡P Keller, ‡§Z Caterer, §S Morehead, K Hansen, N Paul, R Jansen, †R Gomes. *A Machine Learning Approach Towards Prediction of Pancreatic Cancer Using Gene Expression and DNA Methylation (In Development)* 2024.
3. §Z Caterer, §R Horejsi, §C Weber, B Mathisen, C Nelson, M Bagatta, I Coughlin, M Wettien, M Zamanian, †N Wheeler. *A Graphical-User Interface for wrmXpress Democratizes Phenotypic Screening of Parasitic Worms (In Review)* 2024.
2. M Hady, §Z Caterer, §B Mathisen, S Setty, †M Walsh. *Using Label-Free Infrared Spectroscopic Imaging to Examine Kidney Cancer Biochemistry in Normal and Diabetic Patients (In Review)* 2024.
1. †Z Caterer, §J Langois, §C McKeown, §Stumo, M Hady †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)* 2024

PRESENTATIONS AND PROJECTS

Oral Presentations: 3, Posters: 12, ^ΦApplications: 3

CU Boulder Graduate

1. **pyCellPhenoX^Φ** (2024)
2. **Benchmarking strategies to identify single-cell phenotypic changes: pyCellPhenoX and miloR** (2024) [a.1]
 - a) Interdisciplinary Quantitative Biology Rotation Project, Boulder CO, [a.1] Oct 2024, **(Presentation)**

UWEC Undergraduate

7. **Identification of DNA Methylation Markers using Feature Selection and Deep Learning for Pancreatic Ductal Adenocarcinoma (PDAC) Diagnosis** (2023 -) [a.3*, f, g**, h]
6. **wrmXpress GUI^Φ** (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)^Φ** (2022)
3. **Differentiating Between Non-Alcoholic Steatohepatitis and Alcoholic Steatohepatitis though 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. **N** (2021 - 2023) [a.1, a.2, b, c]
 - h) American Society for Human Genetics, Denver Co, November 2024, **(Poster)**
 - g) WiSys Quick Pitch Competition, Eau Claire, Wi, May 2024, **(Presentation)**
 - f) IEEE International Conference on Electro Information Technology, Eau Claire WI, May 2024, **(Poster)**
 - e) Annual Biomedical Research Conference for Minoritized Scientists (ABRCMS), Phoenix AZ, November 2023, **(Poster)**
 - d) Amgen Research Symposium, Los Angeles, CA, August 2023, **(Presentation)**

- c) National Conference for Undergraduate Research, Eau Claire, WI, April 2023, **(Poster)**
- b) Research in the Rotunda, Madison, WI, 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

MENTORSHIP

CU Boulder Mentorship

UWEC Research Mentorship

Samuel Morehead (2023 - 2024 | 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

2021 -	Biomedical Engineering Society
	– Member
2022 - 2024	American Chemical Society
	– Member

SERVICE

Community Service:

2024 - S.C.O.P.E. Program Support Team Volunteer, *CU Boulder Office for Outreach and Engagement*

2024 - Colorado Triathlon Team Volunteer, *CU Tri Team*

2020 - Pet Therapy Volunteer, *Pet Partners*

2023 - 2024 Pet Therapy Volunteer, *Dove Healthcare, South*

2020 - 2023 Pet Therapy Volunteer, *Oakwood Hills Retirement Community*

2015 - 2023 Meals on Wheels Driver, *Sacred Heart Hospital*

Departmental service:

2024 - Quantitative Exploration and Discussion (QED Supergroup) Director, *CU Boulder, Biofrontiers Institute*

2024: High Impact Practices Live Session: Undergraduate Research, *UWEC ORSP*

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: ** WiSys Quick Pitch Award Winner, WiSys

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