

Curriculum Vitae
Suzannah Miller

smiller@uccs.edu

(701) 390-2128 • Colorado Springs, CO 80917

[linkedin.com/in/suzannah-miller-a47947208](https://www.linkedin.com/in/suzannah-miller-a47947208)

github.com/Suzannah-Miller

EDUCATION

Doctor of Philosophy – Biochemistry 09/2016 - 12/2022

University of Colorado, Boulder, CO

- *Dissertation title:* “Identification of the ERM Family Proteins at the WRAMP Structure”
- Advisor: Dr. Natalie Ahn, Department of Biochemistry
- Certificate in College Teaching

Bachelor of Arts – Chemistry and Music 08/2011 - 05/2016

Minot State University, Minot, ND

- *Summa cum laude* (GPA: 4.0)
- Minor in Mathematics, Concentration in Honor

TEACHING EXPERIENCE

Assistant Teaching Professor (Full Time) 08/2024 - present

University of Colorado Colorado Springs, Dept. of Chemistry & Biochemistry

- Courses: CHEM 4232 Advanced Techniques in Biochemistry, CHEM 4221 Biochemistry I, CHEM 4222 Biochemistry Lab, CHEM 4211 Biochemistry, CHEM 1201 Introduction to Chemistry Lab
- Teaching Online Program: Online Course Design Badge

12/2023 – 05/2024

Adjunct Instructor, Chemistry (Part Time)

Aims Community College, Greeley, CO

- Lecture and lab instructor for CHE 1011 Introduction to Chemistry I.

Tutor, Science and Math (Part Time)

Laramie County Community College Learning Commons

11/2023 – 07/2024

- Tutor chemistry and algebra, design study skills workshops.

Private Tutor, Biochemistry

10/2023 - 12/2023

Certificate in College Teaching

Awarded 04/2023

University of Colorado Boulder, Center for Teaching & Learning

- Completed 2 semesters of teaching, 20+ hours of workshop, 20+ discipline-specific hours, video consultations, faculty evaluation, and teaching portfolio.

Guest Lecturer, Physical Chemistry for Biochemists

03/2019 - 04/2019

University of Colorado Boulder, Department of Biochemistry

- Designed and conducted lecture and subsequent recitation activity on fluorescence.

Teaching Assistant, Principles of Biochemistry (Part Time 50% Appointment)

01/2017 - 05/2017

University of Colorado Boulder, Department of Chemistry & Biochemistry

- Met one-on-one with students during weekly office hours, administered and graded exams.

Teaching Assistant, General Chemistry I (Part Time 50% Appointment)

09/2016 - 12/2016

University of Colorado Boulder, Department of Chemistry & Biochemistry

- Led laboratory and recitation sections and completed all grading, designed review materials.
- Received Teaching Assistant award.

Supplemental Instruction Leader, Introductory Chemistry (Part Time) 08/2015 - 05/2016

Minot State University, Center for Engaged Teaching & Learning

- Designed review materials and led weekly Supplemental Instruction sessions, met one-on-one.

Graduate-level coursework in teaching

- *Transforming Your Research into Teaching* (Summer 2020), Center for the Integration of Research, Teaching and Learning network – Developed outline of introductory biochemistry course.
- *Teaching and Learning Chemistry* (Spring 2021), University of Colorado Boulder (EDUC 5822)

Peer Tutor, General Chemistry and Introductory Biology (Part Time) 08/2012 - 12/2013

Minot State University POWER (TRIO Student Support Service)

EDUCATIONAL OUTREACH AND SERVICE

Science Community Outreach Program and Education (SCOPE) 08/2021 - 05/2022

University of Colorado Boulder, Department of Biochemistry

- Collaborated in design/implementation of 5-week program at Timberline PK-8, Longmont, CO.
- Co-wrote successful Community Impact Grant from the Office of Outreach and Engagement.

Partners for Informal Science Education in the Community (PISEC) Mentor Fall 2018, Spring 2021,

Summer Multicultural Access to Research Training (SMART) Research Mentor 06/2017 - 08/2017

University of Colorado Boulder

Beta Gamma Phi Science Club 09/2011 - 05/2016

Minot State University

- Secretary (2014 - 2015), vice president (2015 - 2016)
- Assistant for Minot Open House chemistry magic show, event facilitator for Science Olympiad.

CU Science Discovery Family Engineering Day (2020)

Event volunteer for National Science Olympiad, Colorado State University (May 2017)

Event volunteer for Cool Science Festival Carnival Day, Univ. of Colorado Colorado Springs (Sept 2025)

RESEARCH EXPERIENCE

Graduate Research Assistant (50% Appointment), 06/2017 - 07/2022

Postdoctoral Research Associate (Full Time) 08/2022 - 06/2023

University of Colorado Boulder, Department of Biochemistry

Principal Investigator: Dr. Natalie Ahn

- Identified the ERM (ezrin/radixin/moesin) proteins as members of the WRAMP (Wnt5a-Receptor-Actin-Myosin-Polarity) polarized protein network using BioID proximity proteomics.
- Visualized ERM protein localization using widefield/confocal microscopy of fixed and live cells.
- Designed custom MATLAB and R scripts for single-cell image analysis of protein polarization, including classification of cell phenotypes using machine learning and colocalization analysis.
- Funded by NSF Graduate Research Fellowship Program and NIH T32 training grant.

Graduate Student Research Rotations 09/2016 - 05/2017

University of Colorado Boulder, Department of Biochemistry

- Dr. Sabrina Spencer: Single-cell tracking in MATLAB of live- and fixed-cell imaging.
- Dr. Amy Palmer: Generation of multiple cell lines stably expressing shRNA.
- Dr. Zhongping Tan: Synthesis and mass spectrometry of glycoproteins; resulted in publication.

Undergraduate Researcher

Minot State University, Department of Science (Part Time) 02/2014 - 05/2016

- Faculty advisor: Dr. Bryan Schmidt
- *Thesis title: "Investigating the Role of Disulfide Bonds in Lactoferrin's Antimicrobial Properties"*

Minot State University, Dept. of Mathematics and Computer Science (Part Time) 09/2014 - 05/2015

- Faculty advisor: Dr. Narayan Thapa
- Funded by North Dakota Space Grant Consortium grant (Spring 2015).
 - Team member for selected presentation at MathFest, August 8, 2015, Washington, D.C.

Johns Hopkins University, Baltimore, MD 06/2015 - 08/2015

- NSF Research Experience for Undergraduates (10 week full-time fellowship)
- Principal investigator: Dr. Karen Fleming, Department of Biophysics

FELLOWSHIPS AND GRANTS

NSF Graduate Research Fellowship Program (GRFP) 09/2018 - 08/2022

NIH T32 Signaling and Cellular Regulation Graduate Training Program,
University of Colorado Boulder 09/2017 - 06/2018

North Dakota Space Grant Consortium 01/2015 - 05/2015

F31 Ruth L. Kirschstein Predoctoral Individual National Research Service Award (2018 awardee; declined)

PUBLICATIONS

- **Miller S**, Hoh M, Ebmeier C, Tay J, Ahn N (2024). Cooperative polarization of MCAM/CD146 and ERM family proteins in melanoma. *Molecular Biol. of the Cell*, 35(3):ar31. PMID: 38117590.
<https://www.molbiolcell.org/doi/10.1091/mbc.E23-06-0255>
- Cordaro NJ, Kavran AJ, Smallegan M, Palacio M, Lammar N, Brant TS, Dumont V, Garcia ND, **Miller S**, Jourabchi T, Sawyer SL, Clauset A. Optimizing polymerase chain reaction (PCR) using machine learning. *bioRxiv* 2021.08.12.455589. (Submitted).
- Chaffey P, Guan X, Wang X, Ruan Y, Li Y, **Miller S**, Tran A, Koelsch T, Pass L, Tan Z (2017). Quantitative Effects of O-linked Glycans on Protein Folding. *Biochemistry*, 56 (34), 4539-4548. PMID: 28745859.
<https://pubs.acs.org/doi/10.1021/acs.biochem.7b00483>
- **Miller S** (2014). Under Pressure: Hydraulic Fracturing. *Honors Review*, 7, 15-32.

SELECTED CONFERENCE PRESENTATIONS

- "Interrogating the Organization of the WRAMP Structure Through Proximity Proteomics and Quantitative Image Analysis." Oral presentation at Signaling and Cellular Regulation Symposium, University of Colorado Boulder, May 9, 2022.
- **Miller S**, Hoh M, Lee T, Connacher M, Witze E, Wang N, Ahn N. "Identifying potential protein-protein interactions at the WRAMP structure to explore regulation of directional cell migration." Poster presentation at American Society for Cell Biology (ASCB) and European Molecular Biology Organization (EMBO) Joint Annual Meeting, Washington, D.C., Dec. 7-11, 2019.
- **Miller S**, Murillo B, Connacher M, Ahn N. "Defining the Role of Protein Interactions at WRAMP Structures in Directional Migration." Poster presentation at American Society for Biochemistry and Molecular Biology Annual Meeting, San Diego, CA, April 21-25, 2018.
- **Miller S**, Schmidt B. "Investigating the Role of Allosteric Disulfide Bonds in the Antibacterial Mechanism of Lactoferrin." Oral presentation at 108th Annual Meeting of the North Dakota Academy of Science, Fargo, ND, April 15, 2016.
 - 1st runner up in A. Rodger Denison undergraduate student research talk competition.
- "Comparison of Numerical Procedures in Water Pollutant Transport Modeling." Oral presentation at Joint Mathematics Meeting, San Antonio, TX, January 13, 2015.

PROFESSIONAL MEMBERSHIPS

American Society for Biochemistry and Molecular Biology 2018 - present
American Chemical Society 2015 – 2023, 2024 - present
American Society for Cell Biology 2019 - 2020

TECHNICAL SKILLS

- Teaching science concepts to diverse learners and tutoring.
- Online course design, curriculum design, and lesson planning.
- Writing laboratory protocols, method development, troubleshooting, assessing safety, and training.
- Quantitative data analysis, including machine learning.
- 6+ years of experience with human cell culture, including lentiviral and non-viral transfections.
- 5+ years of experience with fluorescence microscopy.
- Biochemistry and molecular biology techniques.
- Strong written communication skills, including experience with funding applications.

SCHOLARSHIPS AND AWARDS

- Great Plains Scholar at Minot State University (full tuition scholarship, 8 semesters)
- North Dakota Scholar (full tuition scholarship, 8 semesters)
- UND Aerospace Scholarship (2 semesters), Gary Stenehjem (10 semesters) music scholarship, and Nell E. Boozenny Sander scholarship (2 semesters)
- Who's Who Among Students in American Universities and Colleges (2014 - 2015)
- Minot Symphony Senior Honors Competition winner (featured soloist - 2015)
- Minot State University Honors Program, President's Honor Roll (10 semesters)

ADDITIONAL WORK EXPERIENCE

Chemistry Technician (Water Quality) (Full Time, Summers)	05/2013 - 08/2013,
North Dakota Dept. of Health, Bismarck, ND	05/2014 - 08/2014
POWER (TRIO Student Support Service) Peer Mentor (Part Time)	08/2012 - 05/2013
Minot State University, Minot, ND	
Summer Safari Youth Leader (Part Time)	06/2012 - 08/2012
Missouri Valley Family YMCA, Bismarck, ND	
Qualified Service Provider (In-home Caregiver) (Part Time)	06/2011 - 07/2016
Self-employed/North Dakota Dept. of Health, Mandan, ND	