

## **CURRICULUM VITAE**

### **Shayna R. Killam, PharmD, MS**

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#### **EDUCATION**

- 2022 – present      **Pharmacogenomics Fellowship**  
Postdoctoral Fellow  
L.S. Skaggs Institute for Health Innovation  
University of Montana, Missoula, Montana  
*Mentors:* Drs. Erica Woodahl and Karen Brown
- 2018 – 2022      **Doctor of Pharmacy (PharmD)**  
**Master of Science (MS) - Pharmaceutical Sciences and Drug Design**  
Skaggs School of Pharmacy  
University of Montana, Missoula, Montana  
*Mentor:* Dr. Erica Woodahl  
*Committee:* Drs. Hayley Blackburn, Erin Simmons, and Susan B. Trinidad
- 2016 – 2018      **Associate of Arts (AA) - General Education**  
Great Falls College  
Montana State University, Great Falls, Montana

#### **RESEARCH EXPERIENCE**

- 2022 – present      **Postdoctoral Fellow**  
Research laboratory of Dr. Erica Woodahl in the L.S. Skaggs Institute for Health Innovation and Precision Medicine Project, University of Montana, Missoula, MT
- 1) Psychiatric pharmacogenetics for rural and underserved children in Montana: Implementing a pilot pharmacogenetic testing consultation program offered through the University of Montana and Shodair Children's Hospital. I am evaluating provider uptake and utilization and patient perspectives and satisfaction of telehealth-driven pharmacogenetic implementation in pediatric psychiatry through post-consultation surveys and intervention metrics.
  - 2) Tobacco cessation and pharmacogenomic predictors in American Indian and Alaska Native (AIAN) populations: Conducting a survey with Confederated Salish and Kootenai Tribes tribal members and descendants to assess views about commercial and cultural tobacco use, precision medicine research with AIAN people, and pharmacogenetic testing as a tool to guide personalized treatment for tobacco cessation.
  - 3) Dietary and genomic predictors of anti-platelet response in American Indian

and Alaska Native populations: Managed participant recruitment for determining the extent to which genetic variation and dietary w-3 polyunsaturated fatty acid consumption modifies platelet structure, function, and antiplatelet drug response; and to apply this knowledge towards improving therapeutic outcomes in underserved AIAN populations receiving antiplatelet therapy.

2019 – 2022

**Graduate Student Researcher**

*Thesis Advisor:* Erica Woodahl, PhD, Department of Biomedical and Pharmaceutical Sciences, University of Montana, Missoula, MT

*Thesis Title:* Equitable Pharmacogenomics for Rural and Underserved Populations. Assessed the barriers and facilitators to pharmacogenetic testing implementation unique to rural and underserved populations in Montana, as well as the use of telehealth to equitably deliver pharmacogenetics services.

## RESEARCH INTERESTS

- Equitable pharmacogenetic testing implementation strategies for underserved populations including rural and tribal communities.
- Provider and patient utilization of pharmacogenetic-guided prescribing and the impact of pharmacogenetics on health outcomes for pediatric patients receiving psychiatric care.

## AWARDS

- 2023                    **Presidential Trainee Award** for poster titled, “Building a Telehealth Pharmacogenetic Testing Program in Rural and Pediatric Psychiatry”, *American Society of Clinical Pharmacology and Therapeutics Annual Meeting*, Atlanta, GA
- 2022                    **Faculty Research Award**, Skaggs School of Pharmacy, University of Montana, Missoula, MT
- 2022                    **Faculty Award**, Skaggs School of Pharmacy, University of Montana, Missoula, MT
- 2021 – 2022           **Rosanne Gantz Memorial Scholarship**, Skaggs School of Pharmacy, University of Montana, Missoula, MT
- 2021                    **Best of Poster 2.0 Award** for poster titled, “Precision Medicine Under the Big Sky: Pharmacogenetic Implementation in Rural Settings.” *American Society of Clinical Pharmacology and Therapeutics Annual Meeting* (Virtual)
- 2020 – 2021           **L.D. (Lud) Polich Scholarship Endowment**, Skaggs School of Pharmacy, University of Montana, Missoula, MT
- 2020                    **Center for Translation Medicine Summer Internship Award**, Department of Biomedical and Pharmaceutical Sciences, University of Montana, Missoula, MT
- 2019 – 2021           **Albertsons Safeway Scholarship**, Skaggs School of Pharmacy, University of Montana, Missoula, MT

## TEACHING EXPERIENCE

### Skaggs School of Pharmacy, University of Montana, Missoula, MT

#### Fall 2023

Lecturer, "Clinical Pharmacokinetics," presented several lectures to pharmacy students on drug transporters, pharmacokinetics of biologics, and pharmacogenomics.

#### Spring 2023

Instructor, "Integrated Studies," facilitated discussions on case studies incorporating medical genetics and personalized medicine initiatives.

Instructor, "Pharmacy Practice," facilitated discussions on choosing career pathways within multiple areas of pharmacy including retail, hospital, ambulatory, and research.

Instructor, "Pharmacy Practice Lab I," presented information to pharmacy students on injectable medications related to diabetes management including injection technique and clinical guidelines for diabetes and hypoglycemia.

Instructor, "Pharmacy Practice Lab III," presented information to pharmacy students on the clinical guidelines of pain management including opioid conversions and naloxone use.

Lecturer, "Capstone, APPE Preparation," presented information to pharmacy students preparing for clinical rotations on pharmacogenetic testing, clinical guidelines, implementation, and resources.

Lecturer, "Montana Pharmacy Law and the MPJE," presented a review to recently graduated pharmacy students on current Federal and Montana State pharmacy laws.

#### Fall 2022

Instructor, "Integrated Studies," facilitated discussions on basic pharmacokinetic concepts and pharmacogenetic case studies.

Instructor, "Pharmacy Science Lab I," led pharmacy students through experimental procedures and calculations to determine drug properties including solubility and acid/base parameters.

Instructor, "Pharmacy Practice Lab II," presented information and facilitated case studies with pharmacy students on electrolyte imbalances and drug-drug interactions.

### Students and Mentees

Current	Daniela Wall, PharmD and MS Candidate, graduate student researcher Madeline Davies, PharmD and MS Candidate, graduate student researcher Scotty Wilson, PharmD and MS Candidate, graduate student researcher Lea Amish, high school student, research intern
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Former	Rachel Matt, student researcher (2022-2023)
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## PROFESSIONAL AFFILIATIONS

2022 – present	University of Minnesota PGx-ECHO Project
2021 – present	Montana Pharmacy Association
2020 – present	American Society of Clinical Pharmacology and Therapeutics
2019 – present	Pharmacogenomics Global Research Network
2019 – present	American College of Clinical Pharmacy

## SERVICE

### National Service

- American Society for Clinical Pharmacology and Therapeutics. Student and Trainee Steering Committee (2023-present); Student and Trainee Community Webinar and Communications Team (2023-present); 2024 Annual Meeting Abstract and Proposal reviewer (2023-present)

### Scientific Review

- Ad hoc reviewer for: *Journal of Hospital Management and Health Policy*

### University of Montana Service

- Interviewer for prospective pharmacy students (2022-present)
- Chapter President, Kappa Epsilon Fraternity – Delta Chapter (2020-2021)
- Cancer Awareness Chair, Kappa Epsilon Fraternity – Delta Chapter (2019-2020)
- Immunizer at pharmacist led vaccination clinics (2018-present)
- Skaggs School of Pharmacy Health Fairs. Provided education, medication therapy management, and immunizations (2018-2021)
- Operation Generation Rx. Provided education on prescription drug use and abuse to high school students (2018-2019)

### Community Service

- Western Montana LGBTQ+ Community Center. Western Montana Pride festival clean-up crew (2023); Queer Women’s Group program lead (2021-2023); city-wide COVID-19 mask and necessities delivery (2020)
- Lewis and Clark Elementary. Bike to School event volunteer (2023); Kindergarten class assistant (2018-2019)
- Search party volunteer with The Lifeguard Group (2022-present)
- Bi-monthly meal preparation for families staying at Ronald McDonald House Charities (2018-2020)

## PROFESSIONAL DEVELOPMENT

2022 – 2023	Residency Teaching Program Certificate, Skaggs School of Pharmacy, University of Montana, Missoula, MT
2022	Scientific Teaching Fellow Certificate, Howard Hughes Traveling Medical Institute, University of Montana, Missoula, MT

## DIGITAL AND PRINT MEDIA

Equitable Pharmacogenomic Implementation in Underserved Populations. *University of Minnesota College of Pharmacy PGx-ECHO*. <https://www.youtube.com/watch?v=Sy246jvbpHg&list=PLYjScx9k-wxE0TWPRtNHH5sPGglmuzYCb&index=19&t=1s>

I am ASCPT. *ASCPT News*. <https://www.ascpt.org/Resources/ASCPT-News/View/ArticleId/28277/I-am-ASCPT-Shayna-Killam>

Telemedicine Boosts Access, Decreases Inequities in Montana. *Healthcare IT News*. <https://www.healthcareitnews.com/news/telemedicine-boosts-access-decreases-inequities-montana>

[Solving the puzzle of precision medicine at the 2020 UF Precision Medicine Conference](https://pharmacy.ufl.edu/2020/03/02/solving-the-puzzle-of-precision-medicine-at-the-2020-uf-precision-medicine-conference/). *University of Florida College of Pharmacy News*. <https://pharmacy.ufl.edu/2020/03/02/solving-the-puzzle-of-precision-medicine-at-the-2020-uf-precision-medicine-conference/>

## CLINICAL LICENSURE

2022 (current)	Pharmacist License, Montana Board of Pharmacy, Helena, MT
2018 (current)	American Heart Association Basic Life Support Certification (CPR and AED)

## RESEARCH GRANTS

### ***Funding Awarded***

“Psychiatric pharmacogenetics for rural and underserved children in Montana” Pharmacogenomics Global Research Network and Myriad Genetics Grant. Awarded April 2023. \$20,000. Principal Investigator.

## BIBLIOGRAPHY

### ***Publications***

#### *Peer-reviewed publications*

1. Killam SR<sup>†</sup>, Leitch TM<sup>†</sup>, Brown KE, Katseanes KC, George KM, Schwanke C, Loveland J, Elias AF, Trinidad SB, Woodahl EL. Improving access to pharmacogenetic testing for Montana’s children. *In preparation*.
2. Killam SR<sup>†</sup>, Leitch TM<sup>†</sup>, Brown KE, Katseanes KC, George KM, Schwanke C, Loveland J, Elias AF, Haney K, Krebsbach K, Muzquiz LI, Trinidad SB, Woodahl EL. Ensuring equity: Pharmacogenetic implementation in rural and tribal communities. *Front Pharmacol*, 13:953142, 2022.

#### *Book chapters*

1. Fohner AE, Killam SR, Volk KG, Woodahl EL. Advancing Equity in the Promise of Pharmacogenomics. In: Clinical Decision Support for Pharmacogenomic Precision Medicine: Foundations and Implementation. Ed: Devine B, Boyce RD, Wiisanen K. *Elsevier*, Amsterdam, Netherlands, 2022.

Abstracts of Presentations at Scientific Meetings

1. Killam SR, Brown KE, Bosc-Reiniger J, Blackburn H, Loveland J, Schwanke C, Elias AF, and Woodahl EL. Building a Telehealth Pharmacogenetic Testing Program in Rural and Pediatric Psychiatry. *American Society for Clinical Pharmacology and Therapeutics Annual Meeting*, Abstract PT-029, 2023.
2. Brown KE, Leitch T, Killam SR, Katseanes KC, George KM, Schwanke C, Loveland J, Elias AF, Trinidad SB, and Woodahl EL. Pharmacogenetics in Pediatric Psychiatry: Considerations for Implementation in Rural Communities. *American Society of Clinical Pharmacology and Therapeutics Annual Meeting*, Abstract P-021, 2022.
3. Brown KE, Bosc-Reiniger J, Leitch TM, Killam SR, Katseanes KC, George KM, Loveland J, Schwanke C, Elias AF, Trinidad SB, Blackburn H, Woodahl EL. Implementation of a pharmacist-led, state-wide pharmacogenetics consultation service in partnership with a rural pediatric psychiatric hospital. *Clinical Pharmacogenetics Implementation Consortium / Pharmacogenomics Global Research Network Meeting*, 2022.
4. Bosc-Reiniger J, Brown KE, Leitch T, Killam SR, Loveland J, Schwanke C, Elias AF, Trinidad SB, Blackburn H, and Woodahl EL. Implementation of a Pharmacist-led, State-wide Pharmacogenetics Consultation Service in Partnership with a Rural, Pediatric Psychiatric Hospital. *American Pharmacist Association Annual Meeting*, 2022.
5. Leitch T, Killam SR, Katseanes KC, Brown KE, Schwanke C, Elias AF, Trinidad SB, Woodahl EL. Pharmacogenetic testing implementation in a rural pediatric psychiatric hospital. *College of Psychiatric and Neurologic Pharmacists Annual Meeting*, 2021.
6. Killam SR, Leitch T, Brown KE, Katseanes KC, George KM, Schwanke C, Loveland J, Elias AF, Haney K, Krebsbach K, Muzquiz LI, Trinidad SB, and Woodahl EL. Precision Medicine Under the Big Sky: Pharmacogenetic Implementation in Rural Settings. *American Society of Clinical Pharmacology and Therapeutics Annual Meeting*, Abstract PII-015, 2021.
7. Leitch T, Killam SR, Katseanes KC, Brown KE, Schwanke C, Elias AF, Trinidad SB, Woodahl EL. Pharmacogenetic testing implementation in a rural pediatric psychiatric hospital. *University of Montana GradCon*, 2021.
8. Leitch T, Killam SR, Katseanes KC, Brown KE, George KM, Loveland J, Schwanke C, Elias AF, Trinidad SB, Woodahl EL. Pharmacogenetics in pediatric psychiatry: considerations for implementation in rural communities. *Pharmacogenomics Global Research Network Annual Meeting*, 2021.
9. Killam SR, Leitch T, Brown KE, Katseanes KC, George KM, Schwanke C, Loveland J, Elias AF, Haney K, Krebsbach K, Muzquiz LI, Trinidad SB, and Woodahl EL. Precision Medicine Under the Big Sky: Pharmacogenetic Implementation in Rural Settings. *Pharmacogenomics Global Research Network Annual Meeting*, Abstract 38, 2020.
10. Killam SR, Leitch T, Katseanes KC, Trinidad SB, Muzquiz LI, Krebsbach K, Schwanke C, Elias AF, Woodahl EL. Precision medicine under the Big Sky: pharmacogenetic implementation in rural settings. *University of Montana GradCon*, 2020.
11. Killam SR, Leitch T, Brown KE, Katseanes KC, George KM, Corbin C, Loveland J, Elias AF, Haney K, Krebsbach K, Muzquiz LI, Trinidad SB, and Woodahl EL. Precision Medicine Under the Big Sky: Pharmacogenetic Implementation in Rural Settings. *University of Florida Precision Medicine Conference*, 2020.

## PRESENTATIONS

1. "Equitable Pharmacogenomic Implementation in Underserved Populations." PGx-ECHO (Extension for Community Healthcare Outcomes) at the University of Minnesota College of Pharmacy, August, 2023.
2. "Psychiatric pharmacogenetics for rural and underserved children in Montana" Pharmacogenomics Global Research Network Research in Progress Seminar, February 2023.
3. "Equitable Pharmacogenomics for Rural and Underserved Populations." Master Thesis Defense Seminar, Skaggs School of Pharmacy, University of Montana, April, 2022.
4. "Pharmacogenetic Implementation in a Montana Children's Psychiatric Center: A Case Study." GradCon, University of Montana, April 2021.
5. Best of Poster 2.0: "Precision Medicine Under the Big Sky: Pharmacogenetic Implementation in Rural Settings." American Society of Clinical Pharmacology and Therapeutics Annual Meeting, March 2021 (virtual).
6. "Precision Medicine Under the Big Sky: Pharmacogenetic Implementation in Rural Settings." Pharmacogenomics Global Research Network Research in Progress Seminar, February 2021.
7. "Precision Medicine Under the Big Sky: Pharmacogenetic Implementation in Rural Settings." GradCon, University of Montana, April 2020.