BIOGRAPHICAL SKETCH

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NAME: Elizabeth Shedroff

eRA COMMONS USER NAME (credential, e.g., agency login): eshedr71

POSITION TITLE: First-year Medical Student (OMS-1)

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Start Date MM/YYYY	Completion Date MM/YYYY	FIELD OF STUDY
The University of Toledo, Toledo OH	BS	08/2017	05/2021	Biology
The University of Salford, Manchester, U.K.		08/2018	05/2019	Biochemistry (Level 5)
The University of Toledo, Toledo OH	MS	05/2021	05/2022	Bioinformatics
Des Moines University, Des Moines IA	DO	08/2024	present	Medicine

A. Personal Statement

Inspired by my parents who work in healthcare, I decided on a pre-medical track as a teenager. I started undergrad at the University of Toledo intending to earn my bachelors in biology and go straight into medical school. I was quickly convinced to join the BS-Biology to MS-Bioinformatics dual-degree track where I earned both my bachelor's in biology (with pre-med concentration) and a master's in bioinformatics in 5 years. Though I wasn't familiar with the field, I soon fell in love with how versatile of a scientist it made me with a unique perspective.

My previous research experience includes multi-omic analysis, predominantly differential gene expression studies with publicly available transcriptomic datasets and kinome studies. I did my graduate research in the University of Toledo's Cognitive Disorders Research Lab (CDRL) and contributed to projects that studied Alzheimer's Disease and schizophrenia. Though I had a background in neurological research, my thesis research aimed to use bioinformatics to predict renal transplant outcomes.

Research had only fueled and reinforced my love of medicine, as I knew it would be the beginning of a long and fruitful career understanding, diagnosing, and treating disease. I intended to take a few gap years before medical school to utilize my bioinformatics degree, grow as a scientist, and decide if a DO-PhD or DO-MPH program might be a good fit in my future academic pursuits.Thus, I did a research fellowship at the Centers for Disease Control and Prevention where I helped with Next-Generation Sequencing (NGS) of viral hemorrhagic fevers (VHFs), such as Ebolavirus, Hantavirus, Arenavirus, and Crimean-Congo Hemorrhagic Fever (CCHF). Public health is such an integral part of medicine and healthcare so using bioinformatics tools to track, diagnose, and discover disease was the perfect fit for my passions and skills.

I am currently a member of Des Moines University's D.O. class of 2028.

B. Positions, Scientific Appointments and Honors

August 2022 – June 2024	APHL-CDC Public Health Laboratory Fellow, Viral Special Pathogens Branch
August 2020 – May 2022	Medical Scribe, Medical Scribing Solutions
January 2022 – May 2022	Director of Training & Development, Medical Scribing Solutions
June 2021 – May 2022	Graduate Student Researcher, Cognitive Disorders Research Lab
October 2019 – December 2020	Undergraduate Student Researcher, Dr. G. Liu's Developmental neurobiology Lab

C. Contributions to Science

APHL-CDC Fellowship

1. **Shedroff, E**.; Martin, M.L.; Whitmer, S.L.M.; Brignone, J.; Garcia, J.B.; Sen, C.; Nazar, Y.; Fabbri, C.; Morales-Betoulle, M.; Mendez, J.; et al. Novel Oliveros-like Clade C *Mammarenaviruses* from Rodents in Argentina, 1990–2020. *Viruses* **2024**, *16*, 340. https://doi.org/10.3390/v16030340

2. Shannon L.M. Whitmer, Amy Whitesell, Melissa Mobley, Emir Talundzic, **Elizabeth Shedroff**, Caitlin M. Cossaboom, Sharon Messenger, Mojgan Deldari, Julu Bhatnagar, Lindsey Estetter, Sara Zufan, Debi Cannon, Cheng-Feng Chiang, Ardith Gibbons, Inna Krapiunaya, Maria Morales-Betoulle, Mary Choi, Barbara Knust, Brian Amman, Joel M. Montgomery, Trevor Shoemaker, John D. Klena, Human Orthohantavirus disease prevalence and genotype distribution in the U.S., 2008–2020: a retrospective observational study, The Lancet Regional Health - Americas, Volume 37, 2024, 100836, ISSN 2667-193X, https://doi.org/10.1016/j.lana.2024.100836.

3. Balinandi S, Whitmer S, Mulei S, Nassuna C, Pimundu G, Muyigi T, Kainulainen M, **Shedroff E**, Krapiunaya I, Scholte F, Nyakarahuka L, Tumusiime A, Kyondo J, Baluku J, Kiconco J, Harris JR, Ario AR, Kagirita A, Bosa HK, Ssewanyana I, Nabadda S, Mwebesa HG, Aceng JR, Atwine D, Lutwama JJ, Shoemaker TR, Montgomery JM, Kaleebu P, Klena JD. Molecular characterization of the 2022 Sudan virus disease outbreak in Uganda. J Virol. 2023 Sep 26:e0059023. doi: 10.1128/jvi.00590-23. Epub ahead of print. PMID: 37750724.

4. Eddy Kinganda-Lusamaki, Shannon Whitmer, Emmanuel Lokilo-Lofiko, Adrienne Amuri-Aziza, Francisca Muyembe-Mawete, Jean Claude Makangara-Cigolo, Gerry Makaya, Francis Mbuyi, Amy Whitesell, Ruth Kallay, Mary Choi, Catherine Pratt, Daniel Mukadi-Bamuleka, Hugo Kavunga-Membo, Meris Matondo-Kuamfumu, Fabrice Mambu-Mbika, Richard Ekila-Ifinji, Trevor Shoemaker, Miles Stewart, Julia Eng, Abraham Rajan, Gnakub N Soke, Peter N Fonjungo, John Otokoye Otshudiema, Gervais Léon Tengomo Folefack, Elisabeth Pukuta-Simbu, Emir Talundzic, **Elizabeth Shedroff**, Jacques Likofata Bokete, Anaïs Legand, Pierre Formenty, Christopher N Mores, Abigail J Porzucek, Sarah R Tritsch, John Kombe, Gaston Tshapenda, Felix Mulangu, Ahidjo Ayouba, Eric Delaporte, Martine Peeters, Michael R Wiley, Joel M Montgomery, John D Klena, Jean-Jacques Muyembe-Tamfum, Steve Ahuka-Mundeke, Placide Mbala-Kingebeni,2020 Ebola virus disease outbreak in Équateur Province, Democratic Republic of the Congo: a retrospective genomic characterisation. The Lancet Microbe, 2024, ISSN 2666-5247, https://doi.org/10.1016/S2666-5247(23)00259-8.

5. Cintron R, Whitmer SLM, Moscoso E, Campbell EM, Kelly R, Talundzic E, Mobley M, Chiu KW, **Shedroff E**, Shankar A, et al. HantaNet: A New MicrobeTrace Application for Hantavirus Classification, Genomic Surveillance, Epidemiology and Outbreak Investigations. *Viruses*. 2023; 15(11):2208. https://doi.org/10.3390/v15112208

6. **Shedroff, Elizabeth**, Whitmer, Shannon, Montgomery, Joel, & Klena, John. (2023). Genome Sequence of Serodino virus, a novel Oliveros-like Clade C Mammarenavirus. Poster presented at: APHL 2023 Annual Conference 05/22/23. Zenodo. https://doi.org/10.5281/zenodo.8070267

7. Balinandi, Stephen, Whitmer, Shannon, Mulei, Sophia, Nassuna, Angella C., Kainulainen, Markus, **Shedroff, Elizabeth**, Krapiunaya, Inna, Scholte, Florine, Nyakarahuka, Luke, Tumusiime, Alex, Kyondo, Jackson, Baluku, Jimmy, Kiconco, Jocelyn, Lutwama, Julius, Shoemaker, Trevor R., Montgomery, Joel, Kaleebu, Pontiano, & Klena, John D. (2023). Session 3 ePoster: Using Nextstrain to Visualize Genomic Data from the 2022 Sudan Ebolavirus Outbreak in Uganda. AMD Days 2023, Atlanta, GA. Zenodo. https://doi.org/10.5281/zenodo.8346932

Graduate Research

1. **Shedroff, Elizabeth**. Assessment of the Active Kinome Profile in Peripheral Blood Mononuclear Cells in Renal Transplant Patients. 2022. University of Toledo, Master's thesis. OhioLINK Electronic Theses and Dissertations Center, http://rave.ohiolink.edu/etdc/view?acc_num=mco1651495126586052.

2. Henkel, Nicholas & **Shedroff, Elizabeth** & Joyce, Alex & Wu, Xiaojun & Alganem, Khaled & Creeden, Justin & Meares, Gordon & Wen, Zhexing & Mccullumsmith, Robert. (2022). P98. AMPK in Alzheimer's Disease: A Bioinformatic and Biochemical Intersection. Biological Psychiatry. 91. S126-S127. 10.1016/j.biopsych.2022.02.332.
3. Nicholas D. Henkel, Alex Joyce, **Elizabeth Shedroff**, Ali Sajid Imami, Khaled Alganem, Abdul-rizaq Hamoud, Chongchong Xu, Benjamin Siciliano, Tao Ma, Zhexing Wen, Robert E. McCullumsmith. Alterations in protein kinase networks in astrocytes and neurons derived from patients with familial Alzheimer's Disease. bioRxiv 2022.06.14.496149; doi: https://doi.org/10.1101/2022.06.14.496149

4. **Shedroff, Elizabeth**, Henkel, Nicholas, Pulvender, Priyanka, Hammoud, Abdul, Imami, Ali Sajid, Ryan, William, Joyce, Alex, Alganem, Khaled, & McCullumsmith, Robert. (2022, March 9). Assessment of the Active Kinome in Hippocampal Subfields. Poster presented at: Society for Neuroscience (SFN) 11/09/21. Zenodo. https://doi.org/10.5281/zenodo.8383307

5. **Shedroff, Elizabeth**, Ryan, WIlliam, Nadiminty, Nagalakshmi, Sindhwani, Puneet, Yadav, Kunal, Imami, Ali Sajid, Alganem, Khaled, Eby, Hunter, Meller, Jarek, Dowrkin, Lance, & McCullumsmith, Robert. (2021). Assessment of Active Kinome Profiles in Peripheral Blood Mononuclear Cells in Renal Transplant Patients. Poster presented at: University of Toledo Department of Medicine First Annual Research Symposium, Toledo, OH 09/30/21. Zenodo. https://doi.org/10.5281/zenodo.6342057

6. Henkel Nicholas, Alganem Khaled, Imami Ali, Joyce Alex, **Shedroff Elizabeth**, Hamoud Abdul, Meller Jarek, Wen Zhexin, O'Donovan Sinead, McCullumsmith Robert E. (2022, March 6-8). Active Kinome Profiling of Disorders of Cognition. Molecular Psychiatry Meeting 2022, Maui, HI.

7. Emily A. Devine, Alex W. Joyce, Ali S. Imami, Abdul-rizaq Hammoud, Hasti Golchin, Hunter Eby, **Elizabeth S. Shedroff**, Sophie M. Asah, Consuelo Walss-Bass, Sinead O'Donovan, Robert E. McCullumsmith. (2023). Neuronal alterations in AKT isotype expression in schizophrenia. bioRxiv 2023.06.19.545479; doi: https://doi.org/10.1101/2023.06.19.545479

8. Imami AS, **Shedroff ES**, Joyce AW, Sahay S, Alganem K, Ryan W, Henkel ND, McCullumsmith RE, Perturbation of Cell-subtype specific Active Kinome Networks in Schizophrenia, Poster Presented at: Society for Neuroscience 2021, 11/09/2

9. Nicholas D. Henkel, **Elizabeth S. Shedroff**, Alex Joyce, Xiaojun Wu, Khaled Alganem, Justin Creeden, Gordon Meares, Zhexing Wen, and Robert McCullumsmith, Perturbations of protein kinase signaling in Alzheimer's Disease, Poster Presented at: Society for Neuroscience 2021, 11/11/2

10. Jacob B. Rethman, Abdul-rizaq Hamoud, Khaled Alganem, Ali S. Imami, **Elizabeth S. Shedroff**, Nicholas D. Henkel, and Robert E. McCullumsmith, Measurement of PIM1 Kinase Activity in Alzheimer's Dementia, Poster Presented at: Society for Neuroscience 2021, 11/11/21

D. Scholastic Performance

YEAR	COURSE TITLE	GRADE
Fall 2017	BIOL 2160 Fu Life Sci Lab Div Life Ev Ad	B
Fall 2017	CHEM 1090 Elementary Chemistry-L3	A
Fall 2017	MATH 1750 Calculus-Life Sci w/App I-L3	B+
Fall 2017	NSM 1000 Natural Sciences & Mathematics	A
Spring 2018	CHEM 1200 Problem Solving-General Chem	NC
Spring 2018	CHEM 1230 General Chemistry I-L1	A-
Spring 2018	CHEM 1280 General Chemistry Lab I	B-
Spring 2018	MATH 1760 Calculus-Life Sci w/App II-L3	B
Spring 2018	MUS 2220 History of Jazz	B+

YEAR	COURSE TITLE	GRADE
Spring 2018	WGST 3010 Issues in Women's Studies-WAC	B+
Fall 2018	BIOL 3010 Molecular Genetics - Salford	B
Fall 2018	BIOL 3020 Molecular Genetics Lab-SA/HON	B
Fall 2018	BIOL 3070 Human Physiology -Salford	A
Fall 2018	BIOL 4330 Parasitology - Salford	A-
Fall 2018	BIOL 4940 Extramural Studies in Bio-Hon	A-
Fall 2018	BIOL 4990 IS/Bio: Cell Molecular Biology	PS
Fall 2018	CHEM 3510 Biochemistry I	B
Spring 2019	BIOL 4010 Molecular Biology-Salford	A
Spring 2019	BIOL 4790 Biology Field Trip-Salford	A
Spring 2019	BIOL 4940 Extr Studies Biology-Salford	A
Spring 2019	CHEM 3520 Biochemistry II - Salford	A
Spring 2019	CHEM 3560 Biochemistry Lab-HON-SA	A
Fall 2019	BIOL 4910 UG Rsrch:Dvlpmntl Neurobiology	A
Fall 2019	CHEM 2410 Organic Chemistry I	C
Fall 2019	CHEM 2460 Organic Chem Lab I Non Major	A-
Fall 2019	EEES 2010 Intro to Environmental Studies	A
Fall 2019	PHYS 2070 General Physics I L1	B+
Spring 2020	BIOL 4910 Undergrad Res Neurosci-Honors	A
Spring 2020	CHEM 2420 Organic Chemistry II	B-
Spring 2020	CHEM 2440 Recitation-Organic Chem II	PS
Spring 2020	CHEM 2470 Organic Chem Lab II Non Major	A
Spring 2020	PHYS 2080 General Physics II - L1	A-
Fall 2020	BIOL 4700 Biol Lit and Comm-WAC	A-
Fall 2020	BIOL 4910 Undergraduate Research Honors	A
Spring 2021	HEAL 1800 Medical Terminology	A-
Fall 2021	BIPG 5300 Current Topics in BPG	A
Fall 2021	BIPG 6990 Thesis in Bioinformatics	S
Fall 2021	MGMT 6150 Leading and Developing Yourself	A
Spring 2022	BIPG 6990 Thesis in Bioinformatics	S
Spring 2022	PUBH 8060 Advanced Biostatistics	A
Fall 2020	BIPG 5100 Fund Bioinformatics Proteomics	A-
Fall 2020	BIPG 5200 Statistical Meth Bioinformatic	A
Spring 2021	BIPG 6100 Bioinformatic Computation	B
Spring 2021	BIPG 6400 Applications of Bioinformatics	B
Spring 2021	BMSP 6350 Cell Biology & Signaling	B
Spring 2021	BMSP 6390 Mentored Research	S
Summer 2021	BIPG 5400 Biodatabases	S
Summer 2021	BIPG 5500 Microarray Analysis	A
Summer 2021	BIPG 6890 Independent Study in BPG	A
Summer 2021	INDI 6020 On Being a Scientist	S