

# Brook B. Tilahun

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## EDUCATION

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### Bachelor of Arts in Neuroscience; Data Analytics, Psychology

Dec 2022

Concordia College - Moorhead, MN

GPA: 3.90/4.00

## RESEARCH EXPERIENCE

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### University of Central Florida

Orlando, FL

Research Assistant (Volunteer)

June 2023 - Present

- Assist with the management and analysis of NGS experiments
- Investigate, evaluate, and implement the latest research methods and analysis pipelines for single-cell and spatial transcriptomics experiments to address research questions

### Center for Virology and Vaccine Research, BIDMC

Boston, MA

Research Assistant (Volunteer)

September 2022 – January 2023

- Analyzed high-throughput data from Nanopore long-read RNA sequencing experiments to identify differences in methylation patterns within study groups
- Maintained computing clusters for data storage and analysis while contributing to the design and debugging of the sequencing analysis pipeline

### Center for Virology and Vaccine Research, BIDMC

Boston, MA

Research Student

May 2022 – August 2022

- Investigated the distribution of CLEC4a gene in NK cells in tissue samples from Macaques infected with SIV using Immunohistochemistry and Immunofluorescence techniques
- Collected and analyzed data on the morphological structures of Microglia from images taken from SIV-infected tissue samples
- Used flow cytometers to test the efficacy of NK cell transfection experiments comparing different transfection methods

### Concordia College

Moorhead, MN

Student Researcher

May 2021 – August 2021

- Collaborated with a team of researchers to design and conduct experiments using a novel tank and novel object test, to investigate environmental enrichment in wild-type Zebrafish (*Danio rerio*)
- Utilized R for statistical analysis of experiment data obtained from Ethovision XT 14

### Concordia College

Moorhead, MN

Student Researcher

May 2020 – August 2020

- Reviewed multiple papers on the neuroscience of sleep and presented to faculty in the neuroscience and psychology department to assist with the selection of keynote speakers and theme
- Organized the 2021 Nornes' Lectureship in Neuroscience and invited keynote speakers including Dr. Robert Stickgold

## CONFERENCES AND POSTER PRESENTATIONS

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**Tilahun B.,** Le Z., Scheele I., Howard J., Jeppesen N., Loidolt K., Gikundiro, E., Umutoniwase Y., DeSilva Feelixge, H.S., BA, Strand K., Ph.D. *Effect of Vivaldi Music Enrichment on Anxiety and Memory in Wild-Type Striped and Leopard Zebrafish.*

Poster presented at:

- MIDBRAINS – Midwest Regional Neuroscience Conference, University of Wisconsin-Eau Claire, October 2022
- Celebration of Student Scholarship, Concordia College, April 2022
- Sigma-Zeta National Convention, hosted virtually in March 2022
- MIDBRAINS – mGluRs Joint Regional Neuroscience Conference, hosted virtually in October 2021
- Concordia College Homecoming Poster Session, October 2021

## RELEVANT CERTIFICATIONS AND PROJECTS

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- Genomic Data Science by Johns Hopkins University on Coursera *November 2023*
- Data Analytics by Google on Coursera *December 2022*
- NDSU/CCAST Advanced Research Computing Training *Fall 2022*
- Analysis of differentially expressed genes in Lupus Mice models using microarray data in R
- Deployed a NextFlow analysis pipeline on Oracle Cloud Servers to analyze data from Nanopore sequencing utilizing Python and Shell scripts
- Analysis of genomics data to identify variants in control vs treatment samples using tools such as BLAST alignments and BEDTools
- Data mining and optimizing predictive machine learning models using R and PyTorch

## HONORS AND AWARDS

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- Travel Award, Regional Neuroscience Conference *2022*
- Special Projects and Initiatives Fund, Concordia College *2022*
- Academic scholarship, Concordia College, Moorhead, MN *2019 – 2022*

## STUDENT MEMBERSHIP

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- Member, CSSE: Computer Science and Software Engineering Club *2021 – 2022*
- Member, Sigma Zeta National Honor Society; Gamma Gamma Chapter *2021 – 2022*
- Member, CNS: Concordia Neuroscience Society *2019 – 2022*
- Events and Outreach Coordinator, Concordia Black Student Union *2019 – 2021*
- Member, Concordia Handball Team *2019 – 2021*

## TECHNICAL SKILLS

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**Computational:** Python, R, Java, C++, Bash, SQL, NoSQL, RStudio, NextFlow, Snakemake, Docker, Tableau, GraphPad, FlowJo, ImageJ, EthoVision, Microsoft Office Suite, Adobe Suite

**Wet Laboratory:** Immunohistochemistry, SDS-PAGE, Western Blot, Cell culture, Flow Cytometry, Zebrafish CNS dissection

## PROFESSIONAL EXPERIENCE

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**Aldevron** Fargo, ND  
*Quality Assurance Specialist II* *January 2023 – Present*

- Perform final review and investigation of documentation, to ensure GMP compliance and product quality and safety
- Extract data points across multiple databases to give an accurate forecast for process completion

**Sanford Health Medical Center**

*Lab Assistant*

Fargo, ND

*September 2022 – March 2023*

- Prepared and collected requested samples from patients for various laboratory tests
- Labeled and processed specimens with a focus on accuracy and efficiency

**Concordia College Information Technology Solutions Center**

*IT Support Student Manager*

Moorhead, Minnesota

*August 2022 – December 2022*

- Led a team of technicians and provided guidance and direction to resolve technical issues
- Tracked and maintained hardware and software inventory

**Concordia College Information Technology Solutions Center**

*IT Support Technician*

Moorhead, MN

*October 2021 – May 2022*

- Resolved IT problems for students and faculty and performed routine updates on computers in our network

**SERVICE & COMMUNITY OUTREACH**

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**Concordia College Black Student Union**

*Outreach and Events Coordinator*

Moorhead, MN

*January 2020 – May 2021*

- Led impactful outreach initiatives and organized engaging events to bring the community together

**Up To Us**

*Campus Outreach Coordinator*

Moorhead, MN

*December 2019 – May 2020*

- Enhanced education and awareness of the National debt through community programs and activities
- Represented Concordia College at the 2020 annual Up to Us conference in San Francisco, California

**British Red Cross**

*Voluntary Worker*

Cardiff, UK

*January 2018 – May 2019*

- Collaborated with other volunteers and program leaders to initiate and organize fundraising events