Courtney-Grace Neizer

Raleigh, NC

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EDUCATION:

University of North Carolina at Charlotte 2023 - Present
Bachelor of Arts in Computer Science - Bioinformatics Concentration
Expected Graduation May 2025

Wake Technical Community College 2021- 2024
Associate in Science | Associate in Arts
Mentor: Luc Dunoyer, PhD

PUBLICATIONS

Neizer, C.G., Dunoyer, L., & Gibbs, M. (2024). *Species Biodiversity Utilizing eDNA Analysis in Mill Branch Creek. Eureka! Journal of Undergraduate Research.*

RESEARCH GRANTS & FELLOWSHIPS total awarded $5000

- Black In Genetics Fellowship Award, Fall 2024, $5000 Sep 2024
  Awarded annually to one undergraduate and one graduate student, recognizing outstanding contributions and potential in genetics.

AWARDS & RECOGNITIONS **(M)** merit **(F)** financial need **(L)** leadership

- **(M)** UNCC Dean's List Recipient, Fall 2024, 3.5+ GPA, 12+ credits Dec 2024
- **(L)** ACM Tapia Conference Travel Award, Fall 2024, $1400 Jul 2024
  Chosen as one of 10 graduate/undergraduate students from UNC Charlotte to attend the ACM Tapia Diversity in Computing Conference in San Diego, CA.
- **(M)** UNCC Dean's List Recipient, Spring 2024, 3.5+ GPA, 12+ credits May 2024
- **(M)** UNCC Chancellor's List Recipient, Fall 2023, 3.8+ GPA, 12+ credits Dec 2023
- **(M)** WTCC President's List Recipient, 4.0 GPA, & Full-time Enrollment May 2023

RESEARCH EXPERIENCE

Undergraduate Research Assistant
University of North Carolina at Charlotte, Charlotte, North Carolina Aug 2024 – Present
Principal Investigator(s): Dr. Elaine Luo; Co-PI: Dr. Wenyu Gao
Predicting Ecosystem Functions Through Machine Learning Analysis of Microbial Proteins

- Currently working in the Luo Lab under Dr. Elaine Luo (Bioinformatics) and collaborating with Dr. Wenyu Gao (Statistics) to apply machine learning techniques in microbial data analysis, exploring their role in predicting ecosystem functions like carbon cycling.

University of North Carolina at Charlotte, Charlotte, North Carolina Jan 2024 – May 2024
Undergraduate Research Assistant
Principal Investigator(s): Dr. Richard Allen White III & Dr. Alex Dornburg
Resolving reassortment in Hantavirus

- Chosen as one of 57 undergraduate students for the OUR Research Scholar Program. I worked under Dr. Richard Allen White III and Dr. Alex Dornburg in predicting the risk of Hantavirus spread in the College of Computing & Informatics.

University of North Carolina at Chapel Hill, Chapel Hill, North Carolina Jun 2022 - Jul 2023
University of North Carolina at Chapel Hill, Educational Pathways to Increase Diversity in GEnomics
Summer Undergraduate Research Intern
Principal Investigator: Dr. Doug Phanstiel; Co-Mentors: Dr. Zack Drum & Dr. Markia Smith
Mapping Genomic Data to the Telomere to Telomere (T2T) Assembly

- Genomics, ethics, laws and regulations, social issues in genomics, and the application of genomics in medicine
- Applied multiple genomic assays to research Mapping Genomic Data to the Telomere to Telomere (T2T) Assembly.
- Analyzed this data using Bash Script (Linux) and R

STEM Academic Research & Training, Wake Technical Community College Aug 2022 - Dec 2022
Raleigh, North Carolina
Fall Undergraduate Research Intern
Species Biodiversity Utilizing eDNA Analysis in Mill Branch Creek
Co-Mentors: Melinda Gibbs, MSc, and Dr. Luc Dunoyer

- Researched species biodiversity found in Mill Branch Creek, Wake County using Excel data and visualization analytics.
- Environmental DNA (eDNA) analysis of organisms' primers.

TEACHING , MENTORING, & OUTREACH

UNC Charlotte College of Computing & Informatics, Charlotte, NC Aug 2024 - Dec 2024
ITSC 1600 (Computing Professionals)
Teacher's Assistant

- Lead first-year students in navigating their transition into the computing field with coursework, conducting discussions, and managing classroom activities to keep students engaged in their learning process.

University of North Carolina at Chapel Hill, Chapel Hill, NC Jul 2024
UNC Educational Pathways to Increase Diversity in GEnomics (EDGE)
Undergraduate Peer Mentor, Mentoring Circles

- Worked with students in developing confidence, networking skills, and professional profiles through structured sessions and discussions on mentoring, career paths, and LinkedIn optimization, in the Educational Pathways to Increase Diversity in Genomics (EDGE) program.

Jamil Niner Student Pantry Jan 2024 - May 2024
Student Volunteer

- Assisted UNC Charlotte students and employees facing food insecurity by volunteering bi-weekly. Engaging with registered students and employees experiencing food insecurity, contributing to packing sanitary kits and ensuring proper cleanup of perishable foods and waste.

Raising Smart Girls, UNC Charlotte Oct 2023
Student Volunteer

- Volunteered at Bruns Elementary through the STEM initiative Smart Girls, assisting students in building a parallel circuit within a picture frame. Responsibilities included cutting tape, ensuring circuit paths, decorating, and organizing materials.

Biology Club, WTCC Aug 2021 - May 2023
Secretary, Officer Member

- Engaged in science outreach, volunteering, and learning about global scientific issues. Maintained meeting records, coordinated outreach events, and volunteered annually at a science fair for 3rd graders in Duplin and Wayne counties.

Wake Relief, WTCC Dec 2022
Student Volunteer

- Assisted at Wake Relief food bank: Unloaded trucks, and stocked shelves for residents in need.

LEADERSHIP

UNC Charlotte's E.T.H.E.L. Undergraduate Research Journal, Charlotte, NC Aug 2024 - Present
Podcast Director

- Assist in podcast production, guest coordination, and promotion of undergraduate research. Manage post-production, including video/audio editing and transcription for accessibility. Directed and produced a Hispanic Heritage Month episode featuring interviews with student researchers, highlighting bilingualism and cultural insights.

BIGxCareers: Sept 2022
Interviewer

- Interviewed Markia Smith, PhD, and Lesley Weaver, PhD as an early career student in BIG's BigxCareer panel discussion on careers for PhDs.

https://youtu.be/Rab_H9UPN3k

PRESENTATIONS

Courtney-Grace Neizer. Resolving reassortment in Hantavirus. Undergraduate Research Conference at UNC Charlotte. Charlotte, NC (2024). *Poster Presentation.*

Courtney-Grace Neizer. Mapping Genomic Data to the Telomere to Telomere (T2T) Assembly. NHGRI Research Training & Career Development Annual Meeting. Seattle, WA (2024). *Poster Presentation.*

Courtney-Grace Neizer. Trash Bots Environmentally Friendly Website. Hackathon at Davidson College. Davidson, NC (2024). *Project Demo.*

Courtney-Grace Neizer. Mapping Genomic Data to the Telomere to Telomere (T2T) Assembly. University of North Carolina at Chapel Hill School of Medicine. Chapel Hill, NC (2023). *Oral Presentation.*

Courtney-Grace Neizer. Species Biodiversity Utilizing eDNA Analysis in Mill Branch Creek. Wake Tech Community College Undergraduate Research Symposium. Raleigh, NC (2022). *Poster Presentation.*

TRAINING/CERTIFICATIONS

- How To Learn To Code R Certificate Of Completion — Aug 2023
- Certificate of Completion in Educational Pathways to Increase Diversity in Genomics Training — Jul 2023
- KnowBe4, Cyber Security Awareness Foundations Certificate — Aug 2022

EXTRA-CURRICULAR ACTIVITIES

- UNC Charlotte's Bioinformatic Buddies — Aug 2024 - Present

  Core Member

  Engaged in hands-on programming projects using Python and R, while receiving guidance on internships, graduate school, and research opportunities. Analyzed the BRCA gene in a coding workshop, calculating GC content and translating/transcribing the sequence.

- UNC Charlotte's Gold Rush Robotics — Aug 2024

  Co-led team to customize robot for Sumo Smackdown competition

  Competed in the Sumobot Smackdown, where my team won with a customized LEGO robot that moved forward, backward, and performed three-point turns, demonstrating creativity and technical skill.

- UNC Charlotte's Association for Computing Machinery - Women — Sept 2023 - Present

  Campus Relations Chair

  I organize and coordinate in-person events to foster community among women in computing on our campus. I assist with presentations, talks about our club, and create promotional materials like flyers to engage new members. Additionally, I collaborate with the E-board to brainstorm ideas and expand our club's presence within the campus computing community.

- Blog - The "STEMinist" Blog — Feb 2021 - Present

  Scientific Blog Writer

  Provides educational resources and materials to inspire young girls globally in STEM, featuring vlog-style contributions from women in the field, showcasing their day-to-day experiences and insights.

  https://www.instagram.com/thesteministblog/

PROJECTS

Trash Bots | HTML, JavaScript, CSS

- Collaboration web application project developed and showcased at Davidson College's 2024 annual hackathon, utilizing Artificial Intelligence to demonstrate an automated system that supports the identification and enhancement of environmental efforts.
  https://github.com/cgrezien/Trash-Bots

PROFESSIONAL SKILLS

Computer: Proficiency in Microsoft Excel, BLAST, Data Analysis, Github, Intermediate in JAVA, Intermediate in Python, R, and Bash Scripting (Linux).

Research: Field Work, eDNA (environmental DNA) analysis, visualization of Data with R, Utilized computational assays RNAseq, ATACseq, ChIPseq, Cut&Run, application of basic machine learning for data analysis

RELEVANT COURSES

General Biology I (w/Lab), General Biology II (w/Lab), JAVA Programming I (w/Lab), JAVA Programming II (w/Lab), Statistics I, Calculus, Intro to Bioinformatics/Genomics (w/Lab), Intro to Bioinformatics Computing (w/Lab), Logic & Algorithms, Data Structures & Algorithms, General Chemistry I (w/Lab), General Chemistry II (w/Lab), Statistics for Bioinformatics, Intro to Sequence Analysis, Genetics, Business of Biotechnology, Communicating Science: Grant Writing & Presentation Skills (Audited Graduate Course), Bioinformatics/Genomics Seminar