Dylan Chambers

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Education

Northwestern University *Evanston, IL* September 2023 - Present
PhD in Earth and Planetary Sciences | Advisor: Dr. Elvira Mulyukova

Illinois State University *Normal, IL* August 2019 - May 2023
B.S. in Physics and Computational Physics (Dual Major) | Mathematics Minor
GPA: 3.96 (4.00 Scale), *University Honors Program*

Research Experience

Northwestern University Graduate Research *Evanston, IL* 2023 - Present
***Advisor**: Dr. Elvira Mulyukova*

- Developing a carbon residence time and flux model for subduction zones using microstructural and geodynamic principles.
- Applying microstructural evolution of rocks to link long and short timescale processes in subduction zones.
- Analyzing the microbial habitability of subduction zone subsurfaces through carbon release.

Northwestern CIERA Research Experience for Undergraduates *Evanston, IL* 2022
***Advisor**: Dr. Alvin Bayliss*

- Creating computational ecology models of three-species cyclic competitions.
- Included a new saturation effect within the models.
- Analyzed and identified competition patterns produced by numerical solutions.

Illinois State University Undergraduate Research *Normal, IL* 2021 - 2022
***Advisor**: Dr. Neil Christensen*

- Simulated protein levels in blood plasma after a dilution.
- Implemented new code to existing numerical model software.
- Analyzed and identified key characteristics present within the numerical solutions.

Illinois State University Undergraduate Research *Normal, IL* 2023
***Advisor**: Dr. Epaminondas Rosa*

- Simulated the neuronal reaction of the *C. elegans* worm to dynamic temperatures.
- Developed code to analyze results of numerically modeled neuron reactions.

Teaching Experience

Northwestern University Teaching Assistant *Evanston, IL* 2024
***Class**: Fantasy Worlds: How to Build Your Own Planet*

- Assisted students with assignments and understanding course content.
- Evaluated and graded students' assignments.

Illinois State University Teaching Assistant *Normal, IL* 2021

***Class**: Physics For Science And Engineering III*

- Teaching physics labs for undergraduate students.
- Involved tutoring students through computational based labs and grading their lab reports.

Illinois State University Volunteer Physics Tutor *Normal, IL* 2021 - 2023

- As a member of the physics club, I volunteered as a tutor in the physics tutoring office.
- The topics I covered included concepts in physics, mathematics, and programming (Python, Mathematica).

Technical Skills

Programming Languages
Python, Wolfram Language, C++

Software
Mathematica, LaTeX, gnuplot
Microsoft Word, Excel, and Powerpoint

Awards/Honors

- **Physics Outstanding Undergraduate**, *Illinois State University* 2022
- **Physics Outstanding Graduating Senior,** *Illinois State University* 2023
- **Skadron Award** (2nd Place & 1st Place), *Illinois State University* 2022 & 2023
- **Administrative/Professional Council Scholarship**, *Illinois State University* 2020
- **Redbird Scholarship**, *Illinois State University* 2019

Activities

- **Physics Club President**, *Illinois State University* 2022 - 2023
- **Physics Club Treasurer,** *Illinois State University* 2021 - 2022
- **Volunteer for Illinois State University Horticulture Center** *Normal, IL* 2011 - Present
- **Volunteer for ParkLands Foundation** *Normal, IL* 2016 - Present

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Publications/Presentations

Chambers, D., & Christensen, N. (2022). *Dynamical Systems Models for Plasma Dilution*. Re: GEN Open, 2(1), 110-135.

Chambers, D., & Christensen, N. (2022). *Dynamical Systems Models for Plasma Dilution.* Illinois State University Research Symposium | Poster

Chambers, D., & Bayliss A. (2023). *New Solutions in Three Species Cyclic Competition Models.* American Astronomical Society Conference | Poster

Retter, J., Chambers, D., Gomez, L., Rosa, E., & Follmann, R. (2023). *Mathematical Modeling of C. elegans' Thermotaxis Associated with Calcium Dynamics*. Illinois State University Research Symposium | Poster

Chambers, D., & Mulyukova, E. (2025). *Carbon Flow Through Subduction Zones: Long and Short Timescales.* CRESCENT Topical Workshop: Fluids in Cascadia | Poster

Chambers, D., & Mulyukova, E. (2025). *Carbon Flow Through Subduction Zones: Long and Short Timescales.* Interior of the Earth Gordon Research Conference | Poster