

**UNL Geophysics Team
Newsletter
Academic year of 2024-2025**

**GEOPHYSICS
ROCKS!**

GEOPHYSICS TEAM OF 2024-2025



We had an amazing school year of 2024-2025 with many achievements and multiple awards. This newsletter lists some highlights of this past academic year and outlines our projected plans for the upcoming 2025-2026.

- In Fall 2024, we welcomed **three new graduate students**:
 - **Anika Mayeesha** (projected MS in 2026)
 - **Tochukwu Onyebum** (projected PhD in 2027)
 - **Abdullah Salman** (projected PhD in 2027)
- In total, there were **8 students** (5 graduates and 3 undergrads) in our research team

WELCOME!

UNL Geophysics team welcomes
three new graduate students



Anika
Mayeesha



Tochukwu
Onyebum



Abdullah
Salman

CONGRATULATIONS TO OUR 2025 GRADUATES!



Katie Steinauer



Morgan Madsen



Hermione Lofton

Great job!
Very proud
of you!

- Three students have graduated at the end of this academic year:

- **Kaitlin Steinauer**, [Exploring the Application of Repeated Microgravity Surveys to Monitor Groundwater Level Variations in Nebraska](#), **MS**

- **Morgan Madsen**, [Integrated Geophysical Modeling of Newly Identified Pseudofaults within Southern Cascadia Subduction Zone](#), **Honors BS**

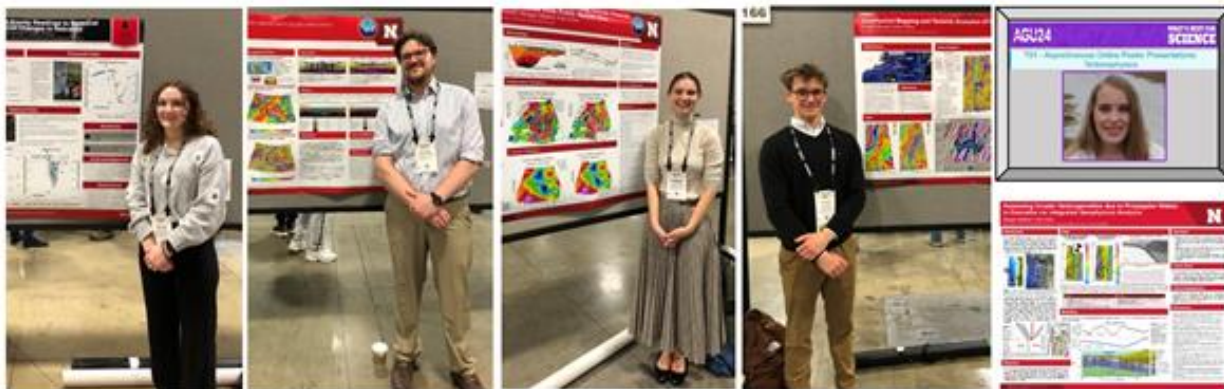
- **Hermione Lofton**, [Mapping Sedimentary and Crustal Thicknesses in the Northern Atlantic Ocean from Public Domain Geophysical Data](#), **BS**



We presented 6 posters at the annual convention of the **American Geophysical Union (AGU)** in December of 2024

- I. Filina, IODP402 Science Party**, Summary of Physical Properties of Rocks Collected During the IODP Expedition 402 in the Back-Arc Tyrrhenian Basin, *American Geophysical Union*, paper [T31E-3172](#)
- K. Steinauer, I. Filina**, Correlating Repeated Gravity Readings to Seasonal Groundwater Level Changes in Nebraska, *American Geophysical Union*, paper [NS13A-1227](#)
- H. Lofton, *E. Stowell, *M. Madsen, I. Filina**, Mapping Sedimentary Thickness and Interpreting Tectonic Elements in the Northern Atlantic Ocean from Public Domain Seismic Data, *American Geophysical Union*, paper [T31E-3176](#)
- Z. Clowdus, I. Filina**, Integrated Geophysical Analysis of the Greenland-Iceland-Faroe Ridge, *American Geophysical Union*, paper [T31E-3164](#)
- M. Madsen, I. Filina**, Assessing Crustal Heterogeneities due to Propagator Wakes in Cascadia via Integrated Geophysical Analysis. *American Geophysical Union*, paper [T01-25](#)
- E. Stowell, I. Filina**, Revisiting the Tectonic Evolution of the Kolbeinsey Ridge via an Integrated Geophysical Approach, *American Geophysical Union*, paper [T31E-3166](#)

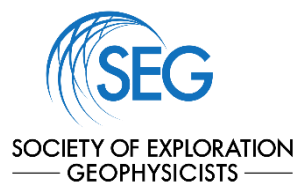
AGU 2024



Katie Zach Hermione Ethan Morgan

So proud of you, TEAM!

GEOPHYSICS ROCKS!



We were very active in the Society of Exploration Geophysicists (SEG) through our UNL SEG Student chapter

- In 2025, we participated in [SEG EVOLVE](#) Energy Exploration program again. This year, our team worked on geothermal project (in 2024, we were assigned to the petroleum exploration project)

Geothermal Resource Assessment in the Cooper Basin: Evaluating the Namur Sandstone for Sustainable Energy Production

A Viable Path to Decarbonization



TEAM MEMBERS



Dr. Irina Filina
Faculty Advisor
Associate Professor
University of Nebraska-Lincoln



Abdullah Salman
Reservoir Engineer/Team Lead
PhD Student, Earth & Atmospheric Sciences
University of Nebraska-Lincoln



Tochukwu Onyebum
Petrophysicist
PhD Student, Earth & Atmospheric Sciences
University of Nebraska-Lincoln



Anika Mayeesha
Geophysicist
Msc Student, Earth & Atmospheric Sciences
University of Nebraska-Lincoln



Ethan Stowell
Geologist
Undergraduate (Geology Major)
Earth & Atmospheric Sciences
University of Nebraska-Lincoln

- Our team did very well in this 9-month long program.

- All students were sponsored by SEG to attend the [IMAGE2025](#) event in August 2025 in Houston, TX (Thank you!).


- We were also featured at the SEG website



"We are extremely lucky to have been accepted to the SEG EVOLVE program for the second year. THANK YOU, SEG!!! This is an absolutely invaluable opportunity for your students to get exposed to industry mentors and gain experiences that they would not get otherwise. In 2024, three students from our chapter were sponsored by SEG to attend the IMAGE event — we cannot THANK YOU enough for your generosity, SEG!!! This was an unforgettable and priceless experience for them, which resulted in one of the students getting an internship with an industry company! Here in Nebraska, we do not have that much exposure to the industry in general, so our engagement with SEG and the opportunities that we are provided with are crucial for our students' professional development and future job search. Again and again, THANK YOU, SEG!!!

— Irina Filina, Associate, Professor University of Nebraska, SEG Student Chapter Faculty Advisor

- Our Team Huskers won the Regional SEG Challenge Bowl (U.S.) and will compete in the World Challenge in October 2025.



Our students will participate in 2025 U.S. REGIONAL CHALLENGE BOWL



| | | |
|--------------------|--------------------|--------------------|
| Abdullah and Anika | Katie and Hermione | Tochukwu and Ethan |
|--------------------|--------------------|--------------------|

Good luck to THREE Nebraska teams!

CONGRATULATIONS!


Team Huskers

For winning the 2025 SEG U.S. Regional Challenge Bowl!


Will attend at the SEG Challenge Bowl World Finals in IMAGE'25, Houston, TX.

- Our UNL SEG chapter, despite being only 3 years old, is very successful



University of Nebraska-Lincoln SEG Student Chapter

Anika Nawar Mayeeshah, Chapter Vice President
University of Nebraska-Lincoln
Lincoln, United States of America



1. About Us

2. Chapter Activities

3. Future Plans

4. Chapter Achievements

5. Personal Information



We also remained very active in the **Nebraska Academy of Science**

- In April of 2025, we presented **8 talks** at the annual meeting in **Lincoln, NE**



CONGRATULATIONS!



Katie Steinauer **Hermione Lofton**



- Our students got **two out of three best students awards**. The prizes were provided by the **Nebraska Geological Society** (Thank you!)

K. Steinauer, I. Filina, Monitoring irrigation and recharge in Nebraska's aquifers with repeated gravity surveys (**award**)

H. Lofton, A. Salman, T. Onyebum, I. Filina, Refining sedimentary and crustal thickness maps of the Northern Atlantic Ocean from legacy seismic reflection and refraction data (**award**)

T. Onyebum, I. Filina, F. Loreto, Integrated Geophysical analysis and 2D modeling of tectonic and crustal structures across the Tyrrhenian Sea

E. Stowell, I. Filina, Exploring the tectonic evolution of the Kolbeinsey Ridge via integrated geophysical analysis of a propagator wake series

A. Salman, M. Madsen, I. Filina, Integrated geophysical analysis of seamounts, propagator wakes and pseudofaults in Southern Cascadia

A. Mayeesha, K. Steinauer, I. Filina, Geophysical analysis of conjugate Greenland and Voring margins

Z. Clowdus, I. Filina, Continental or Oceanic? Modeling the crust beneath the Greenland-Iceland-Faroe ridge

A. Salman, T. Onyebum, A. Mayeesha, E. Stowell, I. Filina, Bridging Academia and Industry: UNL Geology students in the 2025 SEG EVOLVE Program

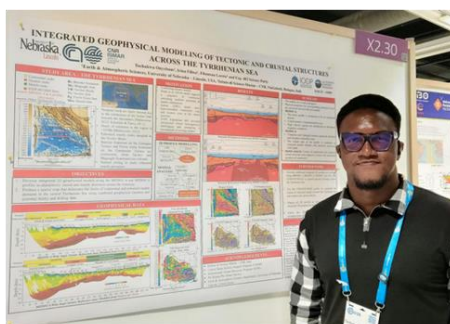


In 2025, we participated in the **European Geoscience Union (EGU)** meeting for the first time.

CONGRATULATIONS!

Tochukwu Onyebum

- **Tochukwu Onyebum** (first year PhD student) presented his initial results at **EGU2025** in Vienna.



Presented his research during **the 2025 European Geosciences Union** in Vienna in April

So proud of you, Tochukwu!

- **Our publications:**

Sanfilippo, A. and **IODP402 Science Party, 2025**, Heterogeneous Earth's mantle drilled at an embryonic ocean. **Nature Communications**, 16(1), p.2016,
<https://www.nature.com/articles/s41467-025-57121-0>

Malinverno, A. and **IODP402 Science Party, 2025**, International Ocean Discovery Program, Expedition 402 Preliminary Report, Tyrrhenian Continent–Ocean Transition: Tyrrhenian Magmatism and Mantle Exhumation (TIME),
http://publications.iodp.org/preliminary_report/402/

- In 2025, our team taught another **summer camp for high-school students**. Our camp is getting larger, and some kids even came from neighboring Kansas!

Geoscience Camp

UNL-based summer camp (including housing and food) for high school students

Have you ever wondered why continents move? And why and how do oceans evolve?

Are you curious about earthquakes and volcanoes?

Do you want to know how the Earth works?

Come spend a week in this interactive camp on June 8-13, 2025!

gh.unl.edu/big-red-camps

We will:

- Go over the basics of geoscience
- Have a field trip and deploy some geophysical instruments
- Go to the Robber's Cave and the UNL State Museum
- Reconstruct Earth's past and predict its future!



AWARDS AND RECOGNITIONS



**Katie
Steinauer**

Received **Yatkola –
Edwards grant** from
**Nebraska Geological
Society** for the 2024-
2025 academic year!

Morgan Madsen

Morgan received
**the Outstanding
Undergraduate Student in
Geology award**



**Tochukwu
Onyebum**



THE HONOR SOCIETY OF
PHI KAPPA PHI

Awarded the \$1500 travel
grant to attend the **2025
European Geosciences
Union** in Vienna in April

**So proud of you
Tochukwu!**

Department of Earth
and Planetary Sciences in
the 2024 academic year !

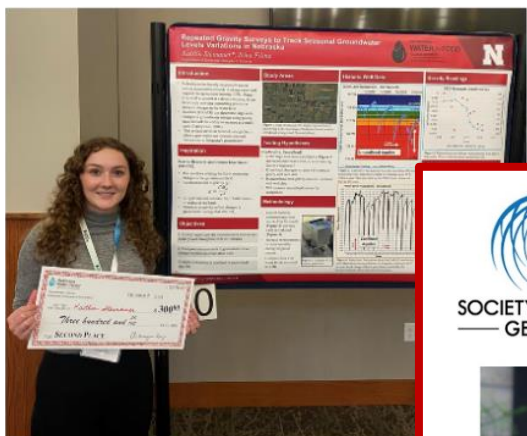
Anika is awarded a
travel grant to
participate in the
**SEG/Chevron
Student Leadership
Symposium** and attend
the **IMAGE 2025** in
Houston, TX in
August.



Anika Mayeesha

Katie Steinauer

Awarded second place
in the **Water Center
Conference** in
October 2024 for her
time-lapse
microgravity project
over Nebraska
aquifers!



Awesome job, Katie!

- Two of our team members recieved awards for their **GIS projects (Dr. Filina taught a GIS course in Fall 2024)**



SEG scholarship
recipients for
2025-2026
academic year



**Anika
Mayeesha**



**Tochukwu
Onyebum**

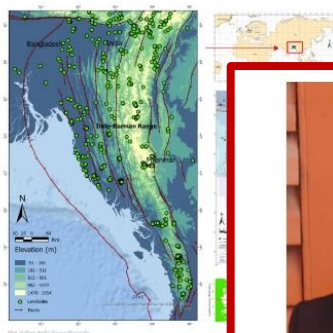
So proud of you,
Anika and Tochukwu!



**Anika
Mayeesha**

The 2nd palace in the 2024 UNL GIS Day Map Competition!

Geospatial Investigation of Fault Proximity and Landslide Occurrence in the Indo-Burman Range



Map Description

This map illustrates the relationship between faults and landslides within the Indo-Burman Range. Landslide locations are displayed as points, while faults are represented by red lines. A Digital Elevation Model (DEM) visualization is also shown.

Very proud



**Abdullah
Salman**

Abdulla's map has
been selected as one
of the top ten maps in
the **Big Ten GIS
Conference 2025!**

<https://gin.btaa.org/conference/2025/>

Evaluating Seismic Risk in
Bangladesh: Fault Structures and
Earthquake Distribution

CONGRATULATIONS!

OUR ALUMNI NEWS



- **Patrik Szopinski** (BS, 2019) starts his MS program at **Missouri S&T** in Fall of 2025!

We are very proud of you, Patrick! Best of luck with this new endeavor!

- **Katie Steinauer** (MS, 2025) starts her PhD program in forensic geophysics at the **University of Kansas** in Fall of 2025

All the best to you, Katie! Let us stay in touch!



- **Morgan Madsen** (BS, 2025) starts geophysical research toward her PhD degree at **Queen's University, Canada** in Fall of 2025

That is so exciting, Morgan! Happy for you!

- **Hermione Lofton** (BS, 2025) has a job interview next week!

**Fingers are crossed for you, Hermione!
All the best to you!**



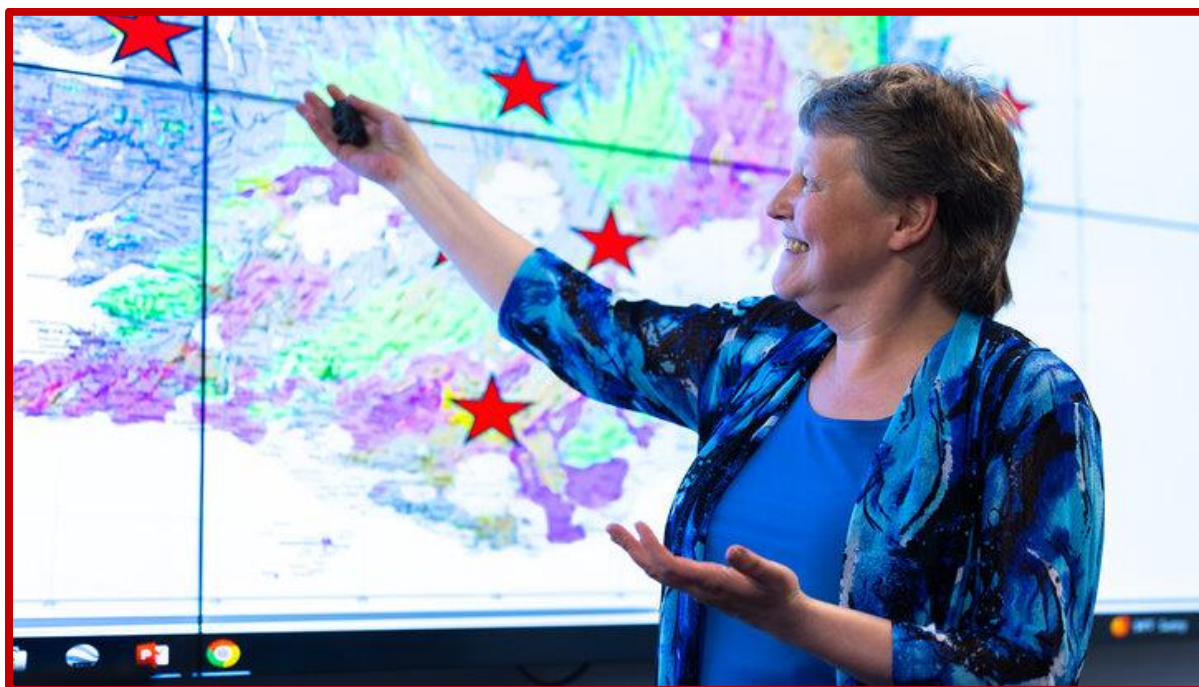
HEADS-UP FOR THE ACADEMIC YEAR OF 2025 - 2026

- We welcome **Anastasia Eriksen** to our team. **Anastasia** works on her Undergraduate Creative Activities and Research Experience (UCARE) project focused on modeling magnetic anomalies.



- Three students plan to graduate in 2025-2026 (**Zach Clowdus, Anika Mayeesha and Ethan Stowell**)
- We are working on a handful of manuscripts to be submitted in the upcoming 2025-2026 academic year
- Northern Atlantic remains our top priority project supported by the National Science Foundation through the [CAREER award](#) (**Zach Clowdus, Anika Mayesha, Abdullah Salman, Tochukwu Onyebum, Ethan Stowell**)
- We will continue our collaboration with our Italian colleagues followed the [IODP402](#) cruise. **Tochukwu Onyebum** is working on manuscript describing the first chapter of his PhD thesis
- We are wrapping up the Cascadia research direction that started with **Dr. Filina's** participation in [RR1718](#) cruise with three manuscripts in preparation to be submitted (**Ariful Islam, Morgan Madsen, Abdullah Salman**)

- We have submitted **4 abstracts** for **AGU2025**. **Dr. Filina** also is planning to convene the session about intraplate volcanism
- **Dr. Filina** is awarded **Fulbright Scholarship** for Summer 2026 ([details](#)). The award will allow her conduct research in **Iceland**



- **Dr. Filina** plans to offer **Schramm Course (GEOL 497/897 Economic and Exploration Geology)** in Summer 2026 with a **field trip to Iceland**. The course will target three aspects (1) tectonic history of Iceland, (2) geothermal exploration, and (3) carbon sequestration
- We will continue reporting our progress on our website <https://eas.unl.edu/geophysics-news/> and on our Instagram **@UNL_Geophysics**. Please follow us!