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Letter from the Editor

Dear Limnogeology Division members,

Welcome to the latest edition of our newsletter! This issue features an interview with ChatGPT, the large language model trained by OpenAI, about a topic that has been on many educators' minds lately - students cheating by using ChatGPT.



In the interview, ChatGPT shares its thoughts on the issue, discussing the ethical implications of using artificial intelligence for academic purposes and suggesting ways to prevent cheating in the classroom. It's a fascinating read that is sure to generate discussion among our members.

In addition to the interview, this issue also includes some lake poetry written by ChatGPT. We were blown away by the creativity and depth of emotion expressed in these poems, and we're excited to share them with you.

Finally, we have a section on weird lakes that we think you'll find intriguing. From pink lakes to exploding lakes, these bodies of water are truly one-of-a-kind and offer a glimpse into the incredible diversity of our planet's geological features.

We hope you enjoy this issue and look forward to hearing your feedback. As always, if you have any ideas or contributions for future editions, please don't hesitate to get in touch.

Best regards,

Andrea Shilling, *Limnogeology Division Secretary & Muckreader Editor*, shilling.andrea@gmail.com

*This Letter from the Editor was brought to you by... ChatGPT :)

Message from the Chair

Dear members of the GSA Limnogeology Division:

Though it has been several months since GSA Connects 2022 in Denver, it is worth recognizing the robust presence of the limnogeology community at the meeting. There were two oral “Lakes Past, Present, and Future” sessions co-convened by past-chair **Scott Starratt**, with both sessions incredibly well attended. The accompanying poster session received dozens of abstracts. **Scott** also deserves additional thanks for serving on the GSA Connects 2022 Joint Technical Program Committee. The Limnogeology Division booth in the exhibit hall was visited by numerous division members, those interested in the division, and passer-byes who simply wanted something sweet to eat with light conversation. A big thank you to Vice-Chair **Kirsten Menking** for organizing the booth, and the volunteers who staffed the booth which includes **Scott Starratt**, Graduate Student Representative **Elena Robakiewicz**, Undergraduate Student Representative **Mackenzie Eskey**, Division Webmaster **Jordan Booth**, geoscience enthusiast **Sumi Koh**, and division members **Eva Lyon**, **Peter Fawcett**, **Savannah Cutler**, and **Jeremiah Bernau**. Sincere apologies to anyone who was inadvertently missed from this list. It was also a pleasure to present the Israel C. Russell Award to **Christopher A. Scholz** at the Limnogeology Division Awards Reception.



“Because of its small size, the Limnogeology Division offers an extremely supportive community for anyone at any career stage.”

Especially satisfying at GSA Connects 2022 lake-related events were the number of colleagues I encountered who had never indicated an interest in limnogeology. These individuals include senior scientists who had worked on lakes earlier in their career, mid-career scientists who have recently recognized the importance of lakes in their research, and students deciding that they wish to pursue a career focusing on lakes. Geoscientists wishing to learn more about limnogeology should not be surprising as lakes are a fundamental unit of the hydrobiogeochemical landscape and may provide an incredible paleoenvironmental record. Regardless of career stage, every scientist benefits from even the most informal scholarly discussions, conversations with like-minded people, and/or mentoring from individuals within the same intellectual community.

Because of its small size, the Limnogeology Division offers an extremely supportive community for anyone at any career stage. Please consider including the Limnogeology Division as one of your core professional communities and take advantage of all it has to offer. Perhaps also consider serving the division; opportunities are outlined below.

Respectfully submitted,

Jason R. Price, *Chair, Limnogeology Division, Wayne State College*
japrice1@wsc.edu

News, Events, & Opportunities

Service Opportunities in the Limnogeology Division

Because the Limnogeology Division is the smallest GSA division a single member can make a major contribution to its success. The Division currently needs members to serve in the following capacities:

•Vice-Chair → In early spring 2024 nominations will be open for the vice-chair position, with the elected individual starting a two-year term at GSA Connects 2024. Following the two-year term, the vice-chair becomes the chair for an additional two-years.

•Nominating Committee → Solicits nominees for the Division officers, Russell Award, and GSA Fellows.

•Israel C. Russell Award Committee → Two-year term that may be repeated.

•Program Committee → Solicit, plan, organize, facilitate division program activities including topical and Pardee sessions at the annual and section meetings, core workshops, shortcourses, and field trips.

If you are interested in potentially seeking a position as a division officer, serving on any of these committees, or have questions about involvement in the Division, please contact the Chair at japrice1@wsc.edu.

GSA Connects 2023 Sessions

Please consider submitting an abstract to one of the following two sessions being organized by the Limnogeology Division.

✳ **LAKES OF THE WORLD THROUGH TIME AND SPACE - ARCHIVES OF CLIMATE VARIABILITY, PALEOENVIRONMENT, GEOHAZARDS, AND ECONOMIC RESOURCES**

Description: This session celebrates lacustrine research across the globe. Sediments are archives of local and regional change, local human impact, economic resources, and ecological succession. This session explores terrestrial and extraterrestrial lacustrine research.

Conveners: Scott Starratt, Eva Lyon, and Chris Schiller

✳ **CYCLES OF CLIMATE AND LAYERS OF TIME: THE SCIENTIFIC LEGACIES OF ROGER Y. ANDERSON AND WALTER E. DEAN, JR.**

Description: This session explores climatic cycles encoded in the geologic

record at all timescales and honors the memories of Roger Y. Anderson and Walter E. Dean, Jr., who pioneered many innovative techniques in paleoclimatology/paleoceanography.

Conveners: Kirsten Menking, Lesleigh Anderson, and Peter Fawcett

2023 Kerry Kelts Student Research Award

The Limnogeology Division is delighted to recognize **James Thayer** as the recipient of the 2023 Kerry Kelts Student Research Award for his research entitled, “Reconstructing Holocene hydroclimate in south-central Ontario, Canada from lithostratigraphy, oxygen-isotopes, and pollen”. James is currently completing his Ph.D. at The University of Western Ontario. Congratulations James!

News from the 2019 Kerry Kelts Student Research Award Recipient

Sarah Katz is a Ph.D. student at the University of Michigan and received the Kerry Kerry Kelts Student Research Award in 2019. Her research funded by the award has recently been published in Earth and Planetary Science Letters with the following citation:

Sarah A. Katz, Naomi E. Levin, Donald T. Rodbell, David P. Gillikin, Phoebe G. Aron, Benjamin H. Passey, Pedro M. Tapia, Analucía R. Serrepe, Mark B. Abbott, 2023. Detecting hydrologic distinctions among Andean lakes using clumped and triple oxygen isotopes: Earth and Planetary Science Letters, v. 602, 117927. <https://doi.org/10.1016/j.epsl.2022.117927>.

Thank you for sharing this fantastic news, Sarah! It is great that the Limnogeology Division can support such outstanding work.

Student Representative Elections

The student representative invaluable to the Division Management Board as they provide a student perspective for decision making. This year we have two candidates; **Mustuque Munim**, a second-year Ph.D. student at Louisiana State University, and **Godspower E. Ubit**, a first-year Ph.D. student at the University of Pittsburgh. Their statements of interest are provided on the following page (page 5). Please watch your email this summer for the opportunity to vote for the candidate of your choice.

Mustuque Munim

Hello! This is Mustuque Munim. I am interested in the student representative position in the GSA limnogeology section. I'm a 2nd year Ph.D. student in the Department of Geology and Geophysics at Louisiana State University. My research focus is to understand the limnogeology as well as paleoecology and paleo-ecohydrology of the Rocky Mountain region during the Eocene-Oligocene transition. In order to accomplish this, I am using molecular biomarkers, stable isotopes, and microanalysis of geomaterial. I have been a student member of GSA since 2016, and have participated in several GSA meetings through posters, short courses, the OTF program, and professional development activities. I served as a student leader (2016-17) for the Cross-Cultural Center at Auburn University, which aims to increase diversity and inclusion. I have also served as the president of the Bangladesh Student Association at Florida State University (2018-19) and treasurer of the Bangladesh Student Association at Auburn University (2016-17). I look forward to connecting with people of similar interests and building social capital. Thank you very much for your consideration.

Kind regards,
Munim

Godspower E. Ubit

My name is Godspower E. Ubit, and I am currently a first-year PhD student at the University of Pittsburgh. My research focuses on elucidating the hydroclimate and climate dynamics of Chilean Patagonia from a suite of lake sediments through the use of organic/stable biogeochemistry and paleo-data assimilation. I previously worked as an uphole refraction seismologist with the Bureau of Geophysical Prospecting (a subsidiary of the China National Petroleum Corporation in Nigeria). My goals as a student representative of the Limnogeology Division will be to organize more workshops, outreach, and events for early-career scientists whose research focuses on limnogeology. Also, I will establish a career and graduate mentorship initiative within the division where undergraduates and early-stage graduate students can be paired with experienced graduate students, postdocs, and senior members of the division to gain guidance on their career and graduate school pathways and processes.

Chatting about cheating with ChatGPT

If you are not familiar with ChatGPT buckle up.

I asked ChatGPT to explain what ChatGPT is in simple terms.

ChatGPT's response:

Sure, I'd be happy to explain what I am!

ChatGPT is an AI language model that has been trained on a massive amount of text data to understand human language and generate human-like responses. Essentially, I'm a computer program that can understand and respond to questions and conversations just like a human would.

Think of me as a smart and helpful digital assistant that you can chat with and ask all sorts of questions. Whether you need help with homework, want to know the weather, or just want to have a conversation, I'm here to assist you.

I asked ChatGPT to explain how ChatGPT might increase cheating in college courses

ChatGPT's response:

As an AI language model, ChatGPT does not have the ability to increase cheating in college courses. However, if ChatGPT were used in a way that encourages or enables

cheating, it could contribute to an increase in cheating behavior.

For example, if students were able to use ChatGPT to find answers to exam questions or complete assignments without putting in the necessary effort themselves, this could be seen as a form of cheating. Similarly, if ChatGPT were used to facilitate communication between students during an exam or to access materials that are not allowed during the exam, this would also be considered cheating.

It is important to note, however, that the responsibility for preventing cheating ultimately falls on the individuals involved in the educational process, including instructors and students. The use of technology like ChatGPT should be carefully considered and monitored to ensure that it is not being used in a way that undermines academic integrity.

I asked: Could a student use ChatGPT to write a paper with citations?

ChatGPT's response:

Yes, a student could potentially use ChatGPT to write a paper with citations. As an AI language model, ChatGPT has been trained on a vast amount of text, including academic journals and articles, which means it has the ability to generate high-quality writing on a variety of topics.

However, it's important to note that using ChatGPT in this way could still potentially

be considered academic dishonesty if the student is not properly citing their sources or if they are relying too heavily on the AI-generated text without actually understanding the content.

Additionally, while ChatGPT can provide suggestions for citations, it is ultimately up to the student to ensure that their citations are accurate and appropriate for the content they are including in their paper.

Overall, students should be cautious when using technology like ChatGPT to aid in their academic work and should always make sure they are using it in a way that does not compromise their academic integrity.

I asked: Is using ChatGPT's responses as your own words cheating?

ChatGPT's response:

Using ChatGPT's responses as your own words without proper attribution can be considered plagiarism, which is a form of academic dishonesty and is typically considered cheating.

When you use ChatGPT to generate text, you are essentially using someone else's words to express your own ideas. If you don't give proper credit to the original source, whether it's ChatGPT or a human author, you are presenting someone else's work as your own, which is considered dishonest.

However, if you use ChatGPT's responses as a starting point and then modify and incorporate them into your own writing while properly citing the source, it can be considered an appropriate use of technology to aid in your academic work.

Ultimately, it's important to always use ChatGPT and other technology tools ethically and responsibly, and to follow the guidelines set by your instructor or academic institution to avoid any potential academic integrity violations.

I asked: Is there anything else about cheating with ChatGPT I should know?

ChatGPT's response:

Yes, there are some additional considerations related to cheating with ChatGPT that are important to keep in mind:

1. **Plagiarism:** As I mentioned earlier, using ChatGPT's responses without proper attribution can be considered plagiarism, which is a form of academic dishonesty and is typically considered cheating. To avoid plagiarism, always cite your sources properly, whether they are human authors or AI language models like ChatGPT.
2. **Collaboration:** ChatGPT can also be used to facilitate collaboration between students, which can be a good thing in some contexts. However, it's important

to be aware of the specific guidelines set by your instructor or academic institution regarding collaboration, as unauthorized collaboration can also be considered cheating.

3. **Exam-taking:** Using ChatGPT to access or share answers during an exam is also considered cheating. It's important to follow the guidelines set by your instructor or academic institution regarding the use of technology during exams and to avoid any behavior that could be considered cheating.

In general, it's important to use ChatGPT and other technology tools ethically and responsibly, and to follow the guidelines set by your instructor or academic institution to avoid any potential academic integrity violations. If you are ever unsure about whether a particular use of ChatGPT is appropriate, it's always best to consult with your instructor or academic advisor.

I asked: How could instructors prevent cheating with ChatGPT?

ChatGPT's response:

There are several steps that instructors can take to prevent cheating with ChatGPT:

1. **Clearly communicate expectations:** Instructors should clearly communicate their expectations for academic integrity in their courses, including guidelines on the appropriate use of

technology like ChatGPT. This can help students understand what behavior is expected of them and what constitutes cheating.

2. **Use plagiarism detection software:** Instructors can use plagiarism detection software to check student work for plagiarism, including work that may have been generated with the help of ChatGPT. These tools can identify instances of copied text, even if the student has modified it slightly.
3. **Monitor exams:** During exams, instructors can take steps to prevent cheating with ChatGPT by monitoring the use of technology and enforcing guidelines on what materials are allowed during the exam. In some cases, instructors may also choose to use proctoring software or other methods to monitor student behavior during exams.
4. **Assign original work:** Instructors can also assign original work, such as essays or research papers, that require students to demonstrate their own understanding of the material. This can make it more difficult for students to rely on ChatGPT to complete assignments.
5. **Educate students:** Finally, instructors can take proactive steps to educate students about the risks and consequences of cheating, including

cheating with ChatGPT. By providing students with a clear understanding of what behavior is considered cheating and why it is important to maintain academic integrity, instructors can help prevent cheating before it occurs.

Overall, preventing cheating with ChatGPT requires a combination of clear communication, monitoring, and education. By taking proactive steps to prevent cheating and promoting academic integrity, instructors can help ensure that students are learning and succeeding on their own merits.

I asked: How is ChatGPT beneficial to students?

ChatGPT's response:

There are several ways that ChatGPT can be beneficial to students:

1. Homework help: Students can ask me questions about their homework, and I can provide them with relevant information or explanations. Whether it's solving a math problem, understanding a difficult concept, or writing an essay, I can assist with a wide range of academic topics.
2. Learning new things: Students can ask me about any topic they're curious about, and I can provide them with information and resources to learn more. This can help them expand their

knowledge and learn new things that they may not have been exposed to in school.

3. Improving writing skills: Students can ask me for writing advice or help with proofreading their work. I can provide suggestions for improving sentence structure, grammar, and punctuation, which can help students improve their writing skills.
4. Study support: Students can ask me for tips and strategies for studying more effectively. I can provide advice on time management, organization, and other study skills to help students achieve their academic goals.

Overall, ChatGPT can be a valuable tool for students to enhance their learning, improve their academic performance, and expand their knowledge.

Poetry Corner

Featuring limnologically themed poems written by ChatGPT

Limnogeologists Unveiling Lake Mysteries.

Beneath the earth's surface, hidden from our sight,
A world of water lies waiting, dark as night.

In this secret realm, where the depths are vast,
Limnogeologists delve, exploring the past.

They study the sediments, the rocks and the clay,
Piecing together the puzzle of what lay
Beneath the surface of the lakes long ago,
And what they can tell us, we're yet to know.

With tools in hand, and a keen eye for detail,
They sift through the mud, determined to unveil
The secrets of time, the stories untold,
Of ancient creatures, and climates of old.

For every layer they unearth, a new chapter unfolds,
Of long-lost worlds and forgotten tales to be told.
The depth of knowledge they bring to the fore,
Is as vast as the lakes they explore.

So here's to the limnogeologists,
Who journey beneath the water's abyss,
Bringing to light the hidden history,
Of the lakes and their mysteries.

Egbert, Guardian of the Lakes

Oh Egbert, limnologist of great renown,
Your passion for lakes knows no bounds,
In waders and hat, you wade through the muck,
With every step, another discovery struck.

Your mind is sharp, your eyes trained well,
You see what others cannot tell,
The smallest changes in the water's hue,
Reveal to you the secrets anew.

With every sample, every measurement you take,
A story of the lake's history awakes,
From the algae to the sediments below,
You piece together a tale of long ago.

Your dedication to the science is clear,
From the early morning, until it's near,
The end of the day, you work and you strive,
To uncover the hidden worlds of aquatic life.

Oh Egbert, we sing your praises high,
For the knowledge you bring to us nearby,
Your love for the lakes inspires us all,
To protect and cherish them, no matter how small.

Limnogeologists Ode

Oh limnogeologist, your passion so bright,
In the study of lakes, you find your delight.
Your mind is sharp, your knowledge profound,
As you delve into the mysteries of the underground.

You chart the depths of lakes and ponds,
And uncover secrets that lie beyond.
You analyze sediment, and study the stones,
To reveal the stories of water and earth's unknowns.

You map out the layers of time and space,
And trace the history of a lake's changing face.
You understand the patterns of ancient weather,
And how they shaped the world, forever and ever.

You show us how the land and water connect,
And the role they play in the earth's dialect.
You teach us about the cycles of life,
And how to preserve our planet, for a future that's bright.

Oh limnogeologist, your work is sublime,
As you unravel the mysteries of time.
You inspire us to learn and to explore,
And to cherish this world that we all adore.

Nature's Aquatic Gems:**A Haiku Tribute to Diatoms**

Tiny diatoms,
Aquatic gems in the sea,
Nature's artistry.

Alkanes in Nature

Carbon chains abound,
n-Alkanes found in nature,
Organic matter.

Green life in the depths

Green blanket on pond,
Algae sways in gentle breeze,
Life thrives in the depths.

Weird Lakes

I asked ChatGPT to provide me with a list of some of the weirdest lakes in the world and this is what I got. This information has not been checked for accuracy.

1. **Lake Hillier, Australia:** This is a bright pink lake located on Middle Island in Western Australia. The cause of its pink color is still unknown, but it is believed to be due to the presence of a type of algae.
2. **Lake Baikal, Russia:** This is the deepest lake in the world and is known for its crystal-clear water. The lake is also home to more than 3,500 species of plants and animals, including the Baikal seal.
3. **Dead Sea, Israel/Jordan:** This is one of the saltiest bodies of water in the world and is so dense that it is nearly impossible to sink in it. The high salt content also means that no fish or other marine life can survive in it.
4. **Lake Natron, Tanzania:** This lake has a very high alkalinity level, which makes it extremely dangerous for most animals to enter. However, it is home to a species of flamingo that has adapted to the harsh conditions.
5. **Boiling Lake, Dominica:** This lake is located in the Caribbean and is so hot that it is constantly boiling. The water temperature can reach up to 200°F (93°C) and is caused by volcanic activity beneath the lake.
6. **Spotted Lake, Canada:** This lake is located in British Columbia and is known for its unique spots. The spots are caused by the high concentration of minerals in the water, which crystallize and form circular patterns.
7. **Lake Nyos, Cameroon:** This lake is known for a tragic incident that occurred in 1986, when a large amount of carbon dioxide gas was released from the lake and killed over 1,700 people and thousands of animals.
8. **Lake McKenzie, Australia:** This lake is located on Fraser Island, and it is famous for its crystal-clear water and pure white sandy beaches. What makes it unique is that it is a perched lake, meaning it is not fed by streams or rivers, but rather by rainwater that filters through the sand dunes.
9. **Laguna Colorada, Bolivia:** This shallow salt lake is located in the Eduardo Avaroa Andean Fauna National Reserve in southwest Bolivia. The lake is famous for its bright red color, which is caused by red sediments and algae in the water.
10. **Lake Kaindy, Kazakhstan:** This lake is located in the Tian Shan Mountains in Kazakhstan and is famous for its submerged forest. The lake was formed after an earthquake in 1911 triggered a landslide that created a natural dam. The water flooded the forest, and the trees are still standing in the lake, preserved by the cold water.
11. **Lake Titicaca, Peru/Bolivia:** This is the highest navigable lake in the world and is located in the Andes Mountains on the border of Peru and Bolivia. The lake is famous for its floating islands, which are made of reeds and are home to the Uros people.
12. **Mono Lake, USA:** This lake is located in California and is known for its bizarre rock formations called tufa towers. The towers were formed when underwater springs mixed with the alkaline lake water, creating a chemical reaction that deposited limestone and formed the towers.