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February 2024

News from Michigan EARTH



Greetings from Ann Arbor!

I hope this finds you enjoying the season!

With this message, I'm embarking on more frequent communication with Earth alumni. In addition to our annual print newsletter, I'll be sending email updates roughly every 3 months. Wonderful things are happening in the department! In parallel, we have refreshed our "Alumni and Friends" website – check it out [here](#), and let me know what you think.

Here in Ann Arbor, it's still winter, but the days are growing longer and snowdrops are popping up, signaling the slow coming of spring.

Another sure sign of renewal is the annual Visit Day – as I write this, we are hosting nearly 30 prospective graduate students to give them an in-person taste of our department. This follows a virtual "Preview" event, held in November, where we engage students from backgrounds underrepresented in Earth and environmental sciences. When students choose to come to Michigan, they will work with amazing faculty at the cutting edge of Earth and environmental sciences, and they will benefit from departmental programs like the annual Turner research grants and faculty-led field trips to awe-inspiring settings. They will join a department characterized by collegiality, respect, and excellence, with faculty who are deeply invested in student success. I could not be more proud to represent our department to these (potential) future Wolverines!

Our undergraduate program is strong, with nearly 200 majors, and continues to evolve to meet new challenges. For example, we are in the final stages of establishing a new minor in Geospatial Science, to prepare students for a wider array of data-intensive careers and graduate programs. This program has one final

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Alumni turned out in force for a stimulating reception at October's Geological society of America meeting; we also joined an AGU reception co-hosted with the Climate and Space Sciences department (CLaSP). Please mark your calendars for next year's receptions at these annual meetings (in Anaheim and Washington DC, respectively). Here, we continue to meet up for weekly bagels on Monday mornings and to celebrate momentous occasions. Our holiday party featured the first annual Art Fair and Contest, revealing the hidden talents of our community.

Other upcoming events include the annual Dorr dinner in late March, where we recognize student achievements with a range of awards. On April 5, the annual student-run [MGU research symposium](#) will showcase student research – please join us if you can! And you'll be hearing more from us around Giving Blue Day (March 13) – our [website](#) will have all the links you need.

Earth researchers and alumni continue to do amazing work that is widely recognized – in the media, on campus, and through scholarly awards. We are enabled by a great staff – including two new additions in the student services area, Nathan Sadowsky and Katie Brennan. Welcome Nathan and Katie! Below are a few additional stories from recent months that I hope you will find engaging.

Warmly,
Julie



Dr. Collin Ward named 2024 James J. Morgan Early Career Award Winner

The James J. Morgan Early Career Award is given each year by Environmental Science & Technology (ES&T), Environmental Science & Technology Letters (ES&T Letters), and the Environmental Chemistry Division of the American Chemical Society (ACS). Named in honor of the first Editor-in-Chief of ES&T, the Award recognizes imaginative early career colleagues who are making waves in environmental science and technology.

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woods Hole Oceanographic Institution (WHOI). He completed his doctorate in 2015 with Michigan EARTH and stayed on as a postdoc until 2016. He finished his postdoctoral research at WHOI in 2018.

Dr. Ward's research has focused on aquatic photochemistry, marine pollution, and biogeochemistry. He is considered an expert leader in oil spills, plastic pollution, and developing sustainable materials. He has published research on the rates, products, and impacts of sunlight and photochemical degradation of spilled petroleum hydrocarbons and demonstrated that sunlight plays a more significant role in the degradation of spilled oil than previously thought, which has led to a swift and accepted paradigm shift.

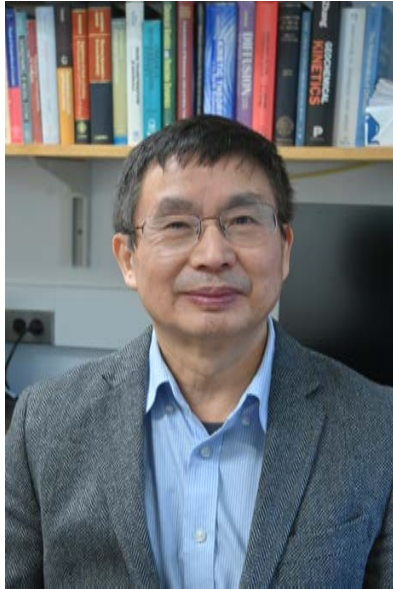
[Read more](#) about Dr. Ward and the other recipients.



Dr. Adam Simon and Dr. Nedal Nassar talk with Dr. Scott Tinker on Energy Switch

Alum Scott Tinker and Professor Adam Simon on *Energy Switch*, PBS

Critical minerals and rare earth elements, essential for new energy technologies, are largely controlled by China. Global supply and demand and potential new mines in the US are pressing issues. Professor Adam Simon and Dr. Nedal Nassar, Chief of the Materials Intelligence Research at the US Geological Survey, discuss these concerns with EARTH alumni and host of PBS' *Energy Switch*, Dr. Scott Tinker. [Watch the full video.](#)

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Professor Youxue Zhang

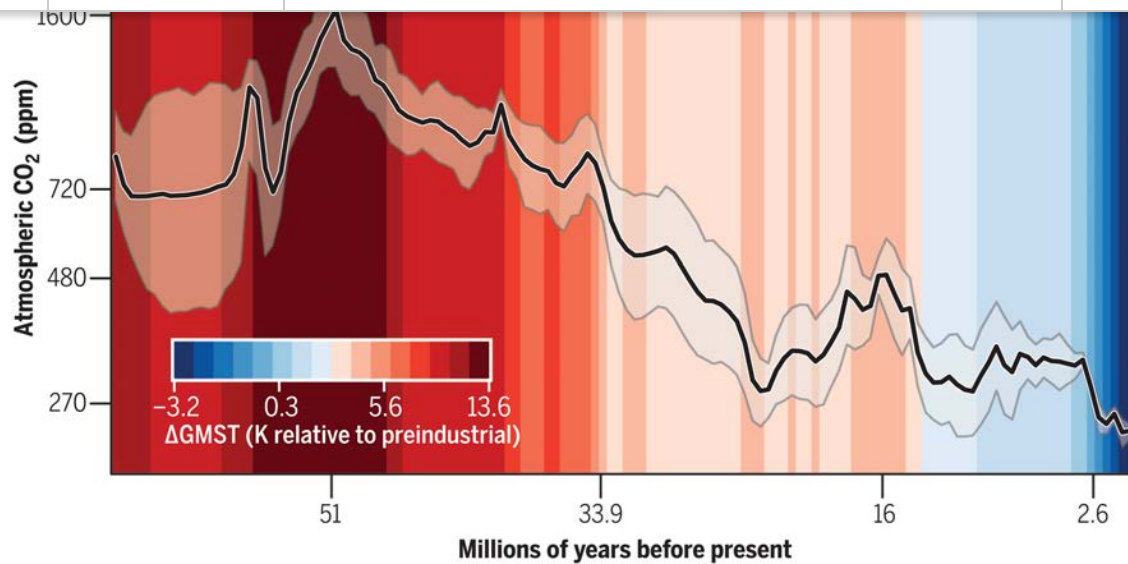
Youxue Zhang elected as Geochemistry Fellow of the Geochemical Society

Professor Youxue Zhang is one of sixteen fellows elected by the Geochemical Society for 2024. He is being recognized for his work contributing to our understanding of the concept and theory for multi-species diffusion, hydrous species reaction kinetics with applications to geospeedometry, and water and other volatiles in the Moon.

The Geochemical Society and the European Association of Geochemistry established the title of Geochemistry Fellow to be granted to accomplished scientists who have made major contributions to the field of geochemistry over the years. Other Michigan EARTH faculty who have been elected include Jim O'Neil (1998), Phil Meyers (2002), Lynn Walter (2005), Rod Ewing (2009), Joel Blum (2010), and Becky Lange (2014). [Read more here.](#)

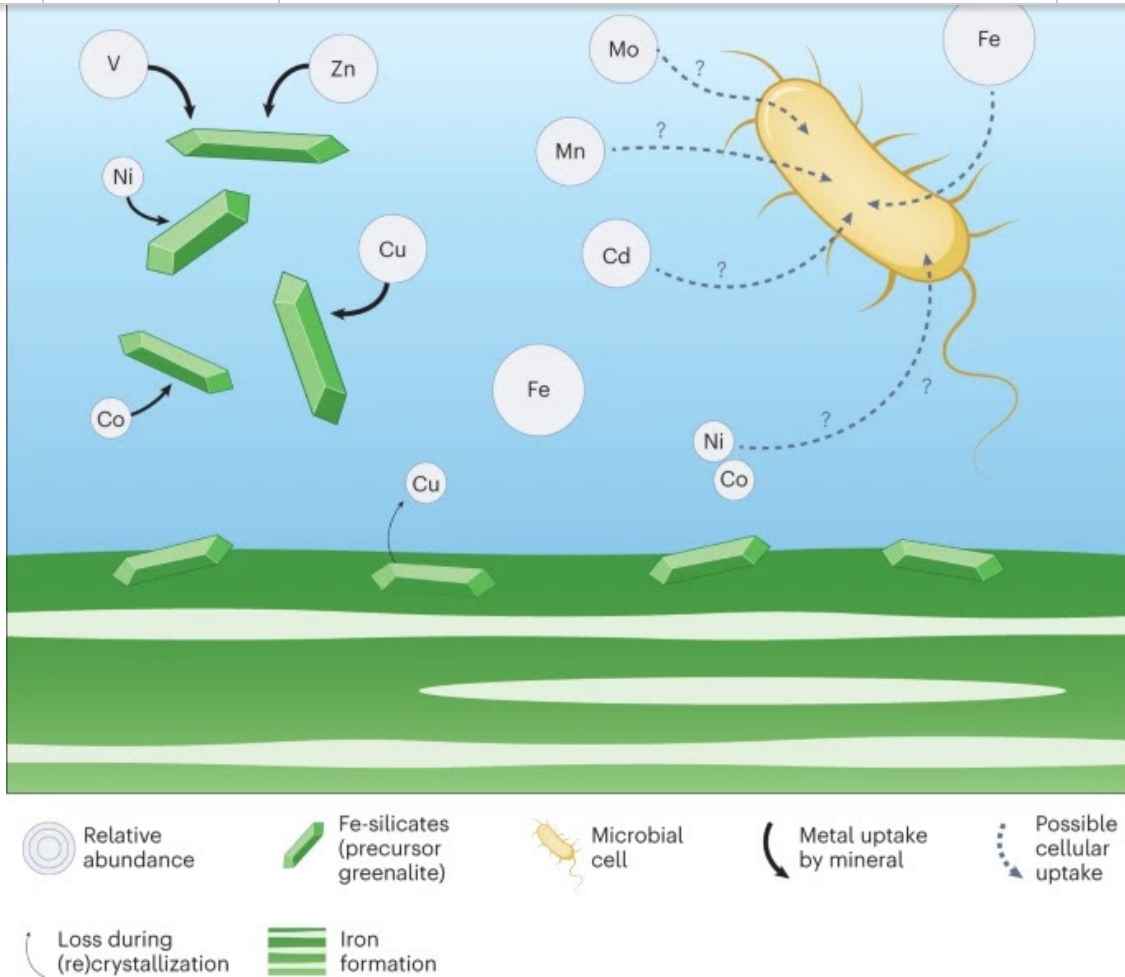
Join us in congratulating Professor Zhang on this accomplishment!



[Subscribe](#)[Past Issues](#)[Translate](#) ▼Community-vetted quantitative CO₂ record.

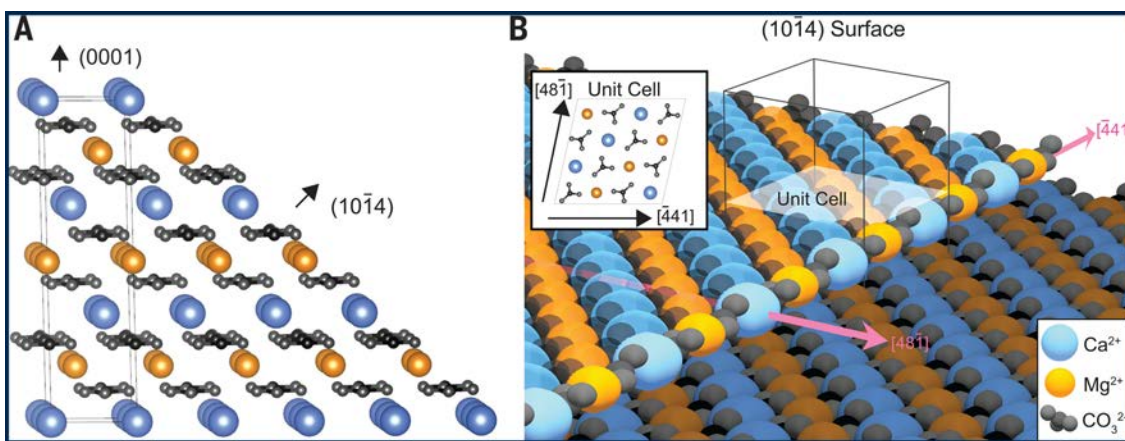
Kelsey Dyez and Nathan Sheldon, *CO₂ Across Geologic, Science*

The atmospheric concentration of CO₂ is fundamentally important to Earth's climate, yet the geologic record of past CO₂ has been challenging to decipher beyond ~800,000 years ago. A team of 84 authors, including lab specialist Kelsey Dyez and Professor Nathan Sheldon, provide a state-of-the-art estimate of CO₂ extending back 66 million years and show that Earth's temperature is highly sensitive to changes in atmospheric CO₂. [Read more here.](#)



Jena Johnson, Microbes and Minerals, *Nature Geoscience*

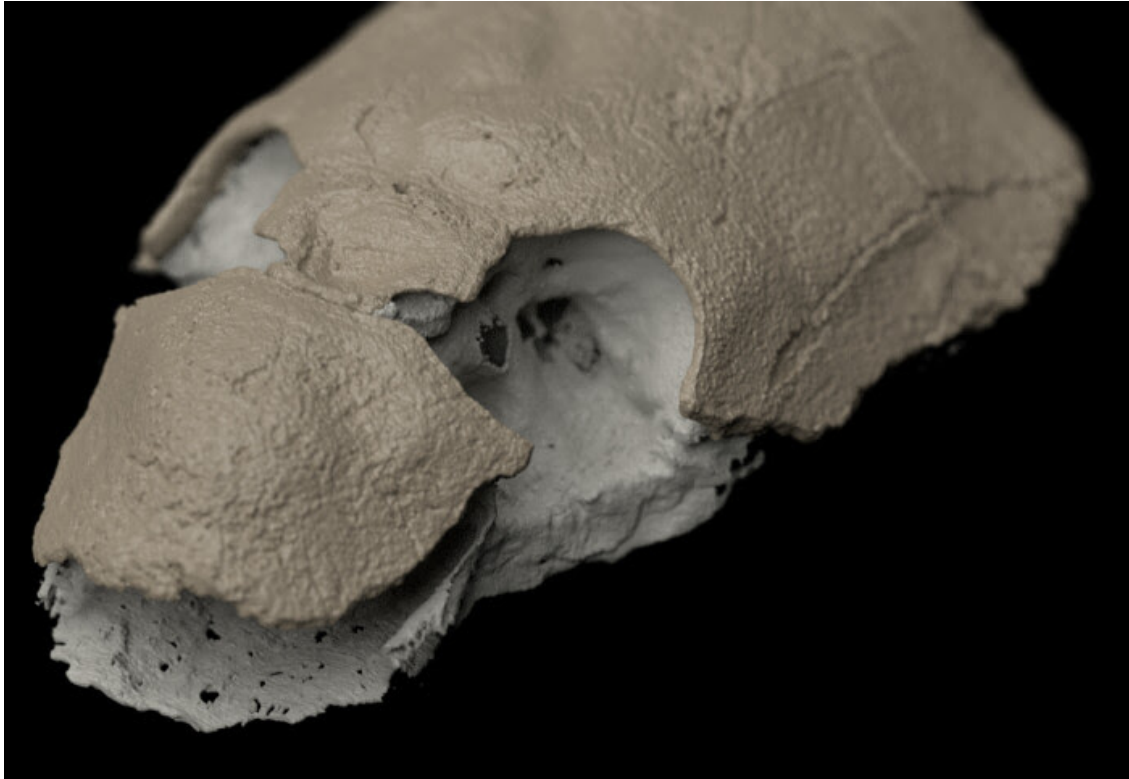
“The emergence of microbes in the early ocean, and how they interacted with their environment, touch on some of the most enduring enigmas in the Earth sciences,” writes Professor Jena Johnson. Her invited commentary explores how the chemistry of early seawater can reveal the biochemical pathways utilized by the Earth’s earliest life. [Read more here.](#)



Dolomite crystal structure and growth surface.

UDO BECKER, THE DOLOMITE Conundrum, *Science*

The mineral dolomite is geologically abundant, yet the processes behind its formation remain obscure. A team of UM scientists including EARTH Professor Udo Becker tested a theoretical model of dolomite formation with laboratory experiments to shed light on this longstanding conundrum. [Read more here.](#)



Matt Friedman, Where Did Fins Come From?, *Nature*

How did vertebrates first develop paired appendages? One theory, based in developmental biology, holds that fins emerged from the gill region – a part of fish that is rarely preserved. Professor Matt Friedman used CT images of a Devonian fish fossil to provide some of the first fossil evidence for this idea. [Read more here.](#)



Lynnea Jackson on *The Kelly Clarkson Show*

EARTH grad student Lynnea Jackson made an appearance on the *Kelly Clarkson Show* to talk about her viral tweet. Lynnea posted side-by-side images of herself at age 7 holding a fossil at the Field Museum and a recent image of her again at the Field Museum holding the same fossil. After her tweet generated more than 27,000 reposts and 479,000 likes, she joined host Kelly Clarkson to talk about how she fell in love with paleontology as a child and fulfilling her dreams of becoming a real-life paleontologist. [Watch the full interview.](#)

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