SCIENTIFIC OCEAN DRILLING

CREDIT: Tiffany Liao & IODP JRSO

Digital Newsletter

the Drilling Dispatch

September 2024

SCIENTIFIC OCEAN DRILLING

In This Issue

In the repository...
Expedition 403: Eastern Fram Strait Paleo-Archive

Kristen St. John and Renata Giulia Lucchi,
Expedition 403 Co-Chief Scientists;
Thomas Ronge, Expedition 403 Project Manager

written by Tim Lyons, Expedition 403 Onboard Outreach Officer

The Long Road Home

What was once an endless expanse of sea is replaced by a Dutch industrial landscape that slowly trods by as the *JOIDES Resolution* (JR) makes its way back into the port of Amsterdam. Greeted by two tugboats at the mouth of Lock IJmuiden, the expedition would end the same way it began. With the North Sea to its back the large gates of the lock closed, allowing the water table to lower and match that of the 30km of canal ahead. It was a symbolic transition that meant after two months of working under the Arctic sun, Expedition 403 was coming to an end.

A crowd gathers on the picnic tables below the bridge, overlooked by the same looming windmills that hung overhead at the start of the Expedition. With every kilometer passed, the crowd grows larger until enthusiastic shouts from the dock can be heard. In a blink, the offloading process flew by, from the first mooring lines being cast to the shuffling luggage onto buses.

What made this return to port so different was there wasn't another science party waiting on that dock; instead waited a group of technicians ready to begin the process of decommissioning the vessel. All of the specialized lab equipment that has been refined expedition after expedition would have to be painstakingly removed and brought into storage. With this in mind, every step of Expedition 403, from the arrival of the last core on deck to the serving of the last lava cake, was infused with significance.

For a program that has devoted so much time and and so many resources toward looking into the past, the vision of both the expedition and extended groups of people that made it possible remained dutifully upon the future. As a high-recovery cruise, over 5 kilometers of sediment cores were successfully retrieved, and upon reading this, they will have already arrived safely to their final resting place at the University of Bremen's core repository. The samples will serve as a source of analysis to better understand the complex inner workings of the Arctic for decades to come.

Science Objectives

Led by Renata Giulia Lucchi (National Institute of Oceanography and Applied Geophysics-OGS) and Kristen St. John (James Madison University), Expedition 403 was focused on achieving three primary objectives:

- to reconstruct the West Spitsbergen Current variability transporting warm North Atlantic Water to the Arctic Ocean,
- to understand the influence of oceanic water patterns on climate changes particularly during key climate transitions (late Miocene–Pliocene transition, late Pliocene–Pleistocene transition, MPT, mid-Brunhes transition, and suborbital Heinrich-like events),
- and, to measure the impact this exchange has on the Arctic glaciations, ice shelf development and stability, and sea ice distribution.

High-resolution, continuous, and undisturbed sedimentary sequences are the only method available for attaining the information required for meeting the stated objectives. After two months at sea, samples at the selected drill sites along the Vestnesa Ridge, the Svyatogor Ridge, the Bellsund Drift, and the Isfjorden Drift were successfully retrieved. This data will be valuable for ground-truthing climate models of projected future CO_2, temperature, and ice sheet stability.

With every new batch of core to arrive on the sample table from below the seafloor, members of the science party would swarm around to see what distinguishing features could help solve the puzzle of the when and what they were looking at. The silty clay/clayey silt, sandy mud intervals, various amounts of evidence of bioturbation, and the occasional mixture of dropstones all provided useful hints. Excitement continually came from being the first humans to see the sediments since they originally came to rest on the seafloor. Co-chief Renata Giulia Lucchi described the experience as feeling like visiting another planet for the first time. Our planet's climate has changed so much throughout its history that if we were to go back in time far enough, what we would find would be a place that is completely unrecognizable. Perhaps the projection of visiting another planet is appropriate.

This glimpse into the Eastern Fram Strait's history will help fill in knowledge gaps and provide higher-resolution views of the region's past. Through a better understanding of the formation and history of the West Spitsbergen Current, researchers can gain a deeper understanding of the role it plays in bringing heat, moisture, and salt into the Arctic Region. Equally as important is the modality of decay of a former ice sheet that covered Svalbard and the Barents Sea roughly 21,000 years ago. The ice sheet is considered the best available analog to the modern, marine-based West Antarctic Ice Sheet (WAIS), which poses a significant threat to sea level rise, if warming global temperatures lead to significant melting.

Considered a "sentinel of climate change," the area around Svalbard is very sensitive to climatic variability. The samples retrieved on Expedition 403 will provide a clearer view of that "sentinel" and, in doing so, help guard us against changes to come, whether that be a warming Arctic or rising seas.

Outreach

Like the core samples safely stored in Bremen the outreach efforts of this Expedition were primarily focused on capturing history with the future in mind. Although typical outreach objectives were achieved in the form of a YouTube web series, multiple magazine articles, blogposts, and social media posts, a vast majority of the focus was put onto shooting a feature length documentary on the subject of paleoclimate research and its methods.

Every working member of the Expedition went above and beyond to assist in reaching this goal. These efforts included allowing time for in-depth interviews, a continuous exchange to keep the representation of the science accurate, and, above all, unprecedented access to the vessel while in action. One example of this was an exciting perspective directly above the moon pool taken while a free fall funnel was dropped into place. This was achieved through the mounting of a cinema camera to an extended crane above the funnel as it was released into the pool. The resulting drop had the splash land squarely in the center of the frame, paying homage to the compositional style of science fiction films taking place in space.

Unique angles can be exciting, but the goal was to capture the amount of coordinated work that goes into a single expedition. The Arctic Ocean provided a surreal backdrop to tell this larger story, and with the help of everyone onboard, over 40 terabytes of footage successfully made it home. Like with the core samples now safely in Bremen, the hope is that this story will provide inspiration for future scientists for decades to come.

Image credits:

(1) Tim Lyons & IODP
(2) Tim Lyons & IODP
(3) Thomas Ronge, IODP JRSO
(4) Chris Lyons & IODP

How to...
Get your work published in *the Drilling Dispatch*

written by Maya Pincus (USSSP)

Historically, *the Drilling Dispatch* has focused on the science of upcoming, ongoing, and recently completed expeditions, while highlighting the community members who make this invaluable research possible. The scheduled end of IODP-2 does not mean the end of this newsletter. We are still looking to feature your research, experiences, and creative endeavors. Read on to learn how you can get involved!

- **Research:** Everyone involved with scientific ocean drilling knows the science doesn't end when the expedition is over. In fact, it's just getting started! Whether you're considering a new project, immersed in lab work, or ready to publish, we want to know what you're up to. You are welcome to submit an article about your own work, or reach out to be interviewed by *Dispatch* staff.

- **Narratives:** In our "From the field" articles, we share stories about our involvement in scientific ocean drilling. What was it like to sail for the first time? How are you bringing your research back to your own community? What did you learn from participating in a professional development or outreach event? This is your opportunity to reflect on your experiences with scientific ocean drilling and share them with the community.

- **Education:** Do you have a skill that would be helpful for other people to learn? Consider writing a "How to" article in which you teach readers something useful. This could be a scientific process, a technical matter, an outreach activity, or whatever you dream up! Readers will benefit from a step-by-step guide that introduces them to a new ability.

- **Spotlight:** Do you know someone who's making waves in the scientific ocean drilling community? You can nominate them to be interviewed by *Dispatch* staff for a "Spotlight on..." article, or you can write up their accolades and submit them yourself! Self-nominations are welcome.

- **Art:** Scientists are creators too! Send in your paintings, drawings, digital designs, poems, short stories, sculptures, or any other ocean science art you've made.

To learn more about the different types of articles published in *the Drilling Dispatch*, read past issues on the U.S. Science Support Program website. To get your work published in an upcoming issue, contact the editor, Maya Pincus (mpincus@ldeo.columbia.edu).

FEATURED VIDEO

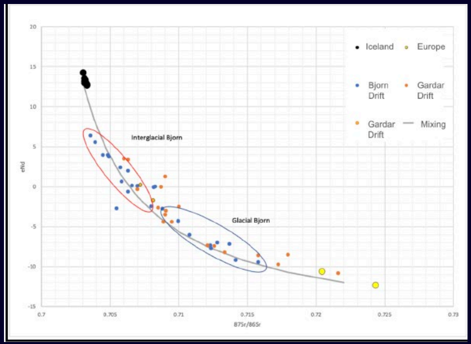
[Using Chemistry to Discover Earth's Secrets]

Continuing the science story of Expedition 395: Reykjanes Mantle Convection and Climate, this video follows the cores from drilling to data and explains how scientists use basic chemistry principles to solve the secrets of the seafloor.

For your calendar

- **IODP Forum and PMO meeting**
  (3-5 September 2024; Shizuoko, Japan; learn more)
- **Future Directions for Scientific Ocean Drilling Interstitial Water Research workshop**
  (3-6 September 2024; Stone Laboratory, OH, USA; learn more)
- **Geological Society of America Connects 2024**
  (22-25 September 2024; Washington, D.C., USA; learn more)
- **Targeting Pacific Highs for Past Records of Climate Change workshop**
  (1-4 October 2024; Stone Laboratory, OH, USA; learn more)
- **Autonomous Investigation during Drilling (AID) workshop**
  (registration deadline: 15 October 2024; learn more)
- **Provide input on Future Ocean Drilling in the US (FOCUS)**
  (open deadline; learn more)

SCI COMM RESOURCE OF THE MONTH



Students will apply their knowledge of isotopes to understand how scientists use chemistry to discover the origins of ocean sediments and infer changes in climate.

[Radiogenic Isotope Tracers]

Spotlight on... Celeste Pallone

written by Maya Pincus (USSSP)

Credit:
Celeste Pallone

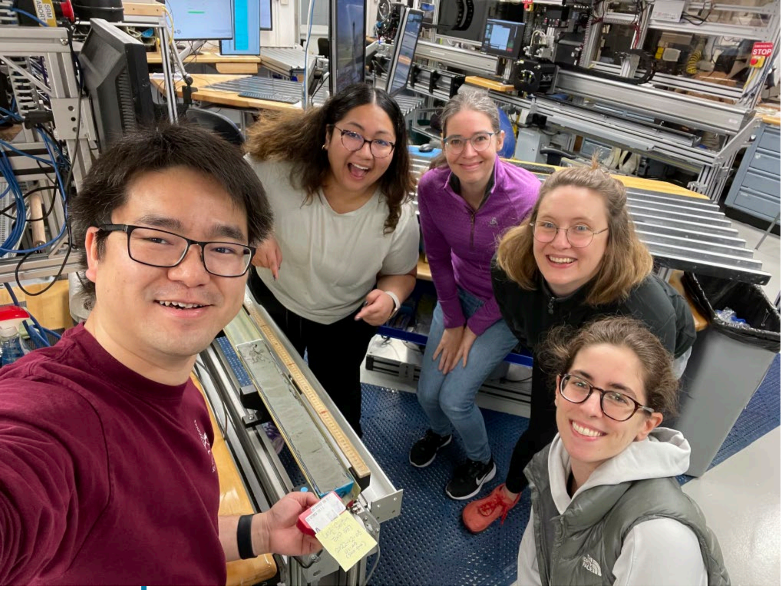
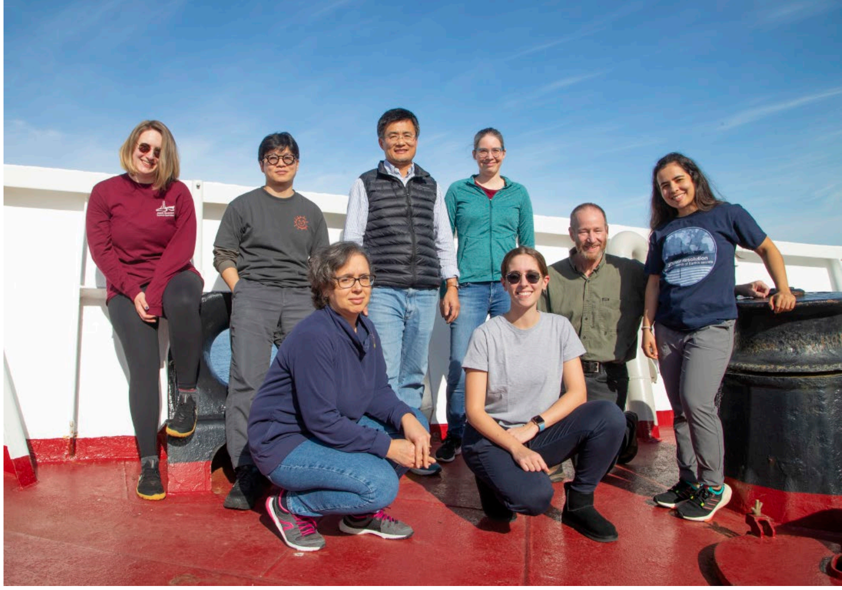
Summarizing the résumé of 2023-2024 Schlanger Fellow Celeste Pallone, it looks like a checklist of steps one could take to end up as a researcher working with the International Ocean Discovery Program. While an undergraduate student at Barnard College she participated in several research cruises. She then completed a summer internship at Lamont-Doherty Earth Observatory, based in sedimentological and geochemical analytical methods. It may therefore come as a surprise to readers that "I definitely did not always want to do science and I wasn't a particularly science-y kid growing up." In fact, Celeste always assumed she would grow up to be a high school teacher, possibly in English or social studies.

It does make sense, however, given her interest in history: "I always wanted to study the past, I think that's something that's true even before I was involved in science." But once she entered the realm of research, working in paleoclimate with her undergraduate professors, it all fell into place. "How I think about the world is very similar to a lot of science," Celeste eventually realized, and from there "it just drew me in… really quickly."

Celeste and her PhD advisor Dr. Jerry McManus pose for a photo on the bow of the *JOIDES Resolution* during Expedition 397 (Credit: Sandra Herrmann & IODP JRSO).

Celeste graduated college and moved across the street, beginning the PhD program in the Department of Earth and Environmental Sciences at Columbia Univeristy in 2019. She returned to Lamont, where, as a paleoclimatologist, she was quickly immersed in the world of scientific ocean drilling—"It's a huge part of Lamont's whole legacy." Now in her fifth and final year, she is well on her way to becoming an expert in ocean-atmosphere interactions.

It all comes down to one Ocean Drilling Program expedition, which took place almost two decades before Celeste was even thinking about paleoceanography. [Leg 202: Southwest

LEFT: Celeste and other scientists on her shift pause for a quick selfie with the last core section of the expedition (Credit: Chuang Xuan & IODP). RIGHT: The Expedition 397 sedimentology team (Credit: Sandra Herrmann & IODP JRSO).

Pacific Paleoceanographic Transects collected cores from Eastern Equatorial Pacific (EEP), a region renowned among geoscientists for what it can reveal about marine carbon capture as well as the carbon cycle in general. What makes this area unique is its primary productivity, a main focus in Celeste's research. This refers to the activity of photosynthetic organisms, such as algae, that live in the near-surface ocean and are responsible for significant uptake of carbon from the atmosphere into the sea. The EEP tends to be more productive than other parts of the ocean not just due to equatorial insolation but also because it is an area characterized by the upwelling of nutrients. Much of Celeste's work in this region is "motivated by a desire to understand the system generally," but it goes beyond that. "There's also the larger motivation of seeing how this equatorial Pacific system changed in the past, and whether that is relevant for future climate change." In particular, Celeste is curious if past conditions contributed to increased carbon uptake, and if so, how she can relate that knowledge to the modern world.

An additional point of interest for Celeste is the connection between the EEP and the El Niño Southern Oscillation (ENSO) climate pattern. Despite the fact that El Niño and La Niña events "change weather and extreme events in the U.S. and all across the world," ENSO is still poorly understood in terms of its periodicity and triggering factors. Moreover, because ENSO is closely linked to the sea surface temperature of the Pacific Ocean, there is a lot of uncertainty with regards how it will change in response to the changing climate. "We assume things will just get more and more extreme," Celeste predicts, "but we don't necessarily know that for sure."

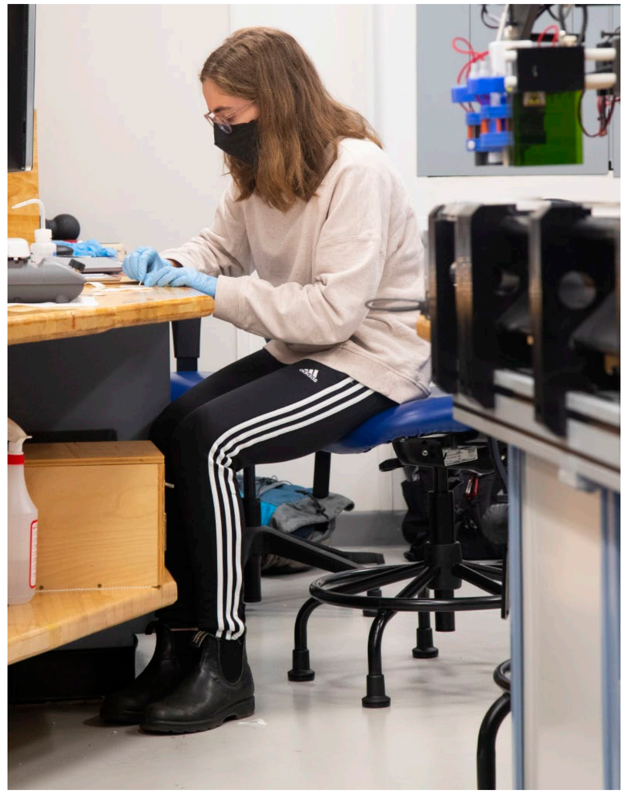
This led Celeste to Site 1240, where the science party of ODP Leg 202 recovered sediment cores deposited over the last few hundred millennia. It may be difficult to envision how samples from just one drilling site can tell her what she needs to know, but the solution to this is evident in the very title of her dissertation. "The first word is 'multi-proxy,'" she admits with a chuckle. "I'm all about a bunch of different proxies."

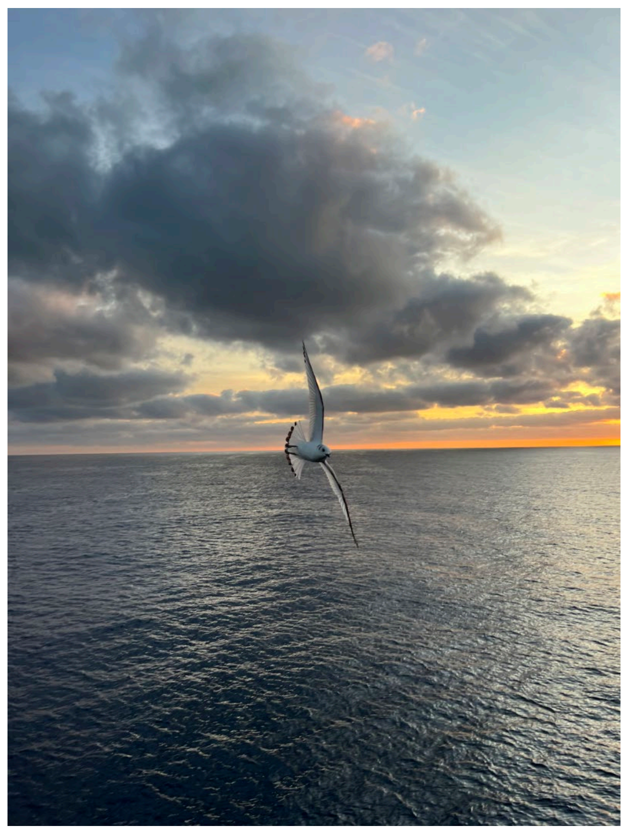
As a geochemist, her main line of work is with the isotopes of elements found in different splits from her samples. She analyzes bulk sediments as well as the constituents of those sediments, such as foraminifera microfossils. To reconstruct past ocean and atmosphere temperatures, she measures stable isotopes like oxygen and carbon. Radiogenic isotopes such as uranium, thorium, and protactinium are proxies for biological productivity, as well as indicators for past sedimentation rates.

Because "it's always good when you can make reconstructions from multiple sites," Celeste is working with samples from two other holes to supplement her data. Site 1239, also collected during Leg 202, is further east than 1240, closer to the South American coast. Site 849, collected during Ocean Drilling Program Leg 138: Eastern Equatorial Pacific, is located farther to the west, also on the equator. However, "not every site will tell you the same story, so it can get a little confusing." This is why Celeste integrates so many proxies into her research; these multiple methods allow her to tease out a clearer story about Earth's history.

Having spent much of her research career analyzing cores collected by other scientists in previous expeditions, Celeste was eager to get involved in an International Ocean Discovery Program expedition herself. She knew that no expeditions were planned for her target region of the Eastern Equatorial Pacific in the foreseeable future, so instead she sought out something where she could apply her expertise in other ways. Though based in the northern Atlantic Ocean, Expedition 397: Iberian Margin Paleoclimate focused on similar time periods as her dissertation work and utilized the same methods to analyze cores and reconstruct past climates. And so, "I kind of just went all in for it, and I'm really glad that I did."

When Celeste boarded the *JOIDES Resolution*, she was already well-versed in research at sea. She participated in her first cruises as an undergraduate student at Barnard College, studying modern sediments in the Long Island Sound. Though these expeditions were never more than a few days long, and sometimes didn't even involve staying on the ship overnight, Celeste knew right away that "I really loved being on ships and in that field environment." She took a deeper dive down this path in a Sea Education Association Semester. In this course, she spent a month in the Caribbean sea, learning the basics of shipboard measurements and research. So by the time she got to the JR, she was ready for that unique feeling that "your whole life is all about what you're doing there in the moment." And for Celeste, it was well worth it: "It was very fulfilling because we did so much and we know that we accomplished things that will go beyond just us and our own research."



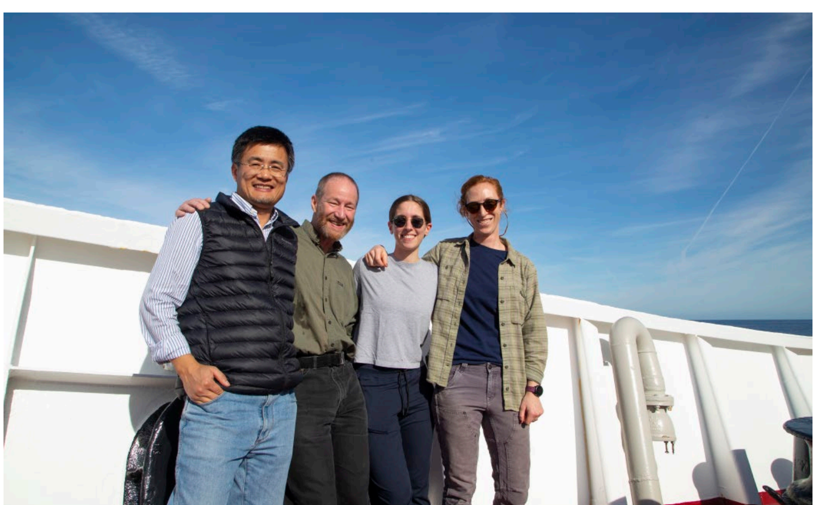


TOP: Celeste prepares smear slides for microscopic description during Expedition 397 (Credit: Sandra Herrmann & IODP JRSO). BOTTOM: Outside the lab, Celeste enjoyed ocean views and wildlife (Credit: Celeste Pallone & IODP).

One complication of adding Expedition 397 samples to her collection is that "not every proxy has the same meaning in each location." For example, the proxies that help her study paleo-productivity in the equatorial Pacific are better applied to interpreting ocean circulation near the Iberian Peninsula. However, Celeste is not letting this become an obstacle—instead, she's using it as an opportunity to fuel her other scientific curiosities. She has "always had an interest in ocean circulation because it's one of the regulators of global climate and CO_2 exchange between the deep ocean and the atmosphere." Considering data from Expedition 397 in the context of what she already knows from Leg 202 allows her to think more deeply about the global ocean-atmosphere system as a whole. It's also making her a better scientist, because it's "turning my normal understanding of working with these proxies on its head, looking at the flip side."

Her samples from Expedition 397 have also been useful as a teaching tool for the undergraduate interns she mentors. In this role, she has been able to revisit her love for education, and has found it to be reinvigorating for her research as well. Celeste is in part driven to teach because "it was the graduate student mentors that I worked with that helped draw me in to all the research that I'm doing now." She's happy to now have the chance to "pay it forward." Even more valuable, is how working as a mentor helps her think about her own work. "A lot of academic research can be really challenging," she admits. "Writing papers, all these milestones and the applications… that can all be really grueling and maybe not as rewarding." When she is able to talk about geology and climate with younger students she finds that "it just breathes new life into the lab and the community," which is "a big motivating factor for me."

Approaching the final semester of her PhD, Celeste is wrapping up her dissertation, getting ready for her defense, and also looking to the future. She already lined up a postdoc opportunity at the Massachusetts Institute of Technology, where she will employ similar methods as her current work, but on samples from millions, instead of thousands of years ago. While she worries that "I'm definitely out of my wheelhouse there because I know a lot less about those older periods," her previous experiences have more than sufficiently prepared her for the job. She also looks forward to an opportunity to continue in her role as a mentor to younger students, because "I think working with undergraduate interns really helps remind me of the greater purpose of what we're doing."



LEFT: Current and past researchers from Lamont-Doherty Earth Observatory collaborated during Expedition 397, including Celeste (Credit: Sandra Herrmann & IODP JRSO). RIGHT: The Expedition 397 patch (Credit: IODP JRDO).

Spotlight on...
Madison Wood

written by Maya Pincus (USSSP)

Credit:
Madison Wood

Envisioning scientific ocean drilling, the image that often comes to mind is the *JOIDES Resolution* isolated in a remote region of the ocean, nothing but waves in sight for miles and miles. Its drillstring can grow longer than six kilometers, extending down to the great and mysterious depths of the ocean to collect sediments that will tell the story of climates past.

While this romanticized tale is often true, the venerated research vessel is just as likely to recover cores from shallower parts of the sea, where climate records are preserved in equally intriguing ways. Enter 2023-2024 Schlanger Fellow Madison Wood, paleoceanographer and graduate student at the University of California, Santa Cruz.

Since she was in high school, Madison knew two things: she absolutely loved science, and she was determined to use it in an applied way, "where I could work on solutions to some environmental problem." She entered the University of New Hampshire as a chemical engineering major, "broadly interested in climate and energy, and clean energy technologies," but completely changed directions after "one pivotal experience." As a college freshman, Madison was invited to participate in a Fulbright UK Summer Institute, a four-week program focused on global climate change. She spent the summer collecting cores from peatlands in the pouring rain, then bringing samples back to the lab to learn from scientists how they use proxies to reconstruct carbon sequestration through time. Madison remembers thinking to herself "*This* is the part of climate that I actually want to work on." Back in New Hampshire, Madison changed her major to Earth Science, and has never looked back.

This summer, Madison is wrapping up her PhD, having devoted herself to paleoceanography as "a lens into the global carbon cycle in the past." She has been thinking about ancient carbon from the perspective of an isotope geochemist, considering broad questions about the accumulation of carbonate sediments in the ocean through time, especially on shallow continental shelves, all related to the long-term carbon cycle, climate, and seawater chemistry. Her entire dissertation revolves around a single element, strontium, and its presence in geological samples collected from deep sea cores and, for her Schlanger Fellowship research, shallower drilling sites from the Inner Sea of the Maldives.

Madison collects a peat core during the 2016 Fulbright UKSI, where she "learned that sediments are Earth's 'history books' and became fascinated with reconstructing the past carbon cycle!" (Credit: Madison Wood)

As home to coral reefs, continental shelves are a critical component of Earth's climate system and global carbonate budget. Corals are primarily composed of calcium carbonate, so their growth naturally sequesters carbon out of the atmosphere and ocean. Importantly, their growth is directly linked to climate by sea level changes. When sea levels fall below the shelves corals inhabit, they can no longer grow. Carbon uptake is suspended, and carbon may even be released back to the ocean as weathering breaks down the now-exposed coral reefs. During climate changes like glacial/interglacial transitions, the rise and fall of sea level drives coral growth and decline. During warm, interglacial periods, shallow carbonate species thrive, sequestering carbon as they grow. During periods of glaciation, freezing ice causes sea level to drop, resulting in increased weathering of corals that were formerly covered by water. Such changes in coral accumulation can have a significant impact on the global carbon cycle.

However, it's not *exactly* the coral that is the focus of Madison's research. It is incredibly difficult to directly measure the global growth and decline of corals in the past, so Madison takes advantage of an element that is connected to coral accumulation and, consequently, climate. As corals form calcium carbonate, a small amount of strontium is also incorporated into their skeletons. When corals break down, the strontium is released back to the ocean. Because of this, the concentration and isotopic composition of strontium in the ocean is related to the shallow carbonate fluxes and sea level changes. Madison's primary focus is the stable strontium isotope ($\delta^{88/86}Sr$) proxy, which she measures in sedimentary layers to reconstruct the past seawater chemistry.

The way in which Madison employs the stable strontium isotope proxy is turning a longstanding assumption about strontium in the ocean on its head. For years, it has been assumed that strontium is only useful for interpreting long-term changes in the carbon cycle, those that occur on the order of millions of years. The reasoning behind this is strontium's long estimated residence time in seawater, which implies that its chemistry in the ocean should remain constant over periods shorter than a couple of million years. "If you open any textbook it's going to tell you this," Madison said of the prevailing idea that strontium remains in a steady state for much longer than the glacial/interglacial carbon cycle changes she is interested in. But she and her research team hypothesized that the geochemical tool might also apply on short timescales, and it was worth the effort to investigate.

TOP: While volunteering as a student helper at the Goldschmidt conference, Madison takes a moment to pose with her labmate, Igor Pessoa and advisor Adina Paytan. BOTTOM: Madison teaches the public about biogeochemistry at Blue Innovation Day in Santa Cruz. (Credit: Madison Wood)

Her research focuses on "really dramatic climate swings" when coral accumulation likely changed substantially, to better evaluate the hypothesis that strontium records rapid fluctuations in carbonate fluxes. This includes the glacial/interglacial cycles of the Pleistocene and the Eocene-Oligocene transition. She primarily measures the isotopes of strontium in the mineral barite, which indirectly records the seawater chemistry when it crystallizes in marine environments and is preserved in deep sea sediments .

One of Madison's great joys is hiking in the mountains of the Eastern Sierra. (Credit: Madison Wood)

For her Schlanger Fellowship research, Madison is taking a different, unique approach to testing the short-term strontium fluctuation hypothesis by analyzing pore water from shallow ocean cores collected during Expedition 359: Maldives Monsoon and Sea Level, which drilled into a large carbonate platform near the Maldives. While barite is an indirect archive of seawater chemistry, the pore water extracted in increments from this core is a preserved record of what the ocean was like at a specific moment in Earth's history—the Last Glacial Maximum. "Which is incredible, right?" Madison enthused, eyes sparkling at the thought of this perfect sample. "It is literally a sample of the glacial ocean that we can go and measure and compare to today's ocean.

All the hard work that has gone into the years Madison spent in graduate school has paid off. Her data do indicate that strontium has fluctuated due to rapid glacial/interglacial processes, effectively rewriting the guidebook on how strontium can be applied to reconstruct carbon cycle fluxes. This is not a responsibility Madison takes lightly. Regarding the papers she will soon publish about her findings, she admitted, "It's a big paradigm shift to say this, to try to make the case that the data are telling us what we think they're telling us. There is a lot of work to do to confirm the mechanisms of the strontium changes we're seeing." Still, she has put in the effort to collect sufficient evidence to make a convincing case. And she's open to feedback. Right now she is crafting a perspective piece, in which she plans to publish all the compiled data as a way to say "This is what the observations show, we think maybe it's this, but… Please help us figure it out!" Open to new ideas and interpretations, she is optimistic that her contributions will be significant in the reconstruction of the past global carbon cycle.

As should be clear, Madison is admittedly the "happy to stand in a clean lab for ten hours a day kind of person." That focus and drive carries over to other parts of her life too. In her free time she loves trail running, and has been taking breaks from writing her dissertation to train for an ultramarathon, "which brings me a lot of joy, oddly." She also recently adopted a young puppy, a beautiful German Shepherd mix who "wants my attention constantly, so I'm basically writing and puppy training these days." She has also found enough free time to devote herself to outreach and workforce development within the geoscience community. She is "super proud" of one project in particular, "GROW" (Geoscience Resources on Opportunities in the Workforce), which provides a comprehensive career resource about non-academic jobs for geoscientists.

The impression Madison gives is someone who lives with exuberance, equally passionate about her work and her play. When reflecting on her career as a researcher so far, she expresses nothing but satisfaction: "I'm happy with how the process went. We have consistent results that suggest really interesting things about elements and carbonate in the ocean, and lots of work to do to understand exactly what it all means."

Call for contributions

If there's one thing that can be said about the International Ocean Discovery Program (and the Integrated Ocean Drilling Program, and the Ocean Drilling Program, and the Deep Sea Drilling Project), it's that we are a tight-knit community. Just as much as this newsletter is for you, we want it to be from you, too! In future editions we will highlight our readers by featuring the following community contributions:

- **From the Field** - Have you had an experience with scientific ocean drilling that you want to share? Write a piece to tell us your perspective "from the field" for our next edition. Bonus points if you include some pictures!
- **Scientist Spotlight** - Do you know someone who's making waves in the ocean drilling scene, whether it's a grad student or accomplished scientist? Send us a nomination! Briefly tell us why this person deserves a shout-out, and ideally how to get in touch with them. Self-nominations are also accepted.
- **Photo Montage** - We'll take any photos you want to share!
- **Creative COREner** - Scientists are creators too! Send in your paintings, drawings, digital designs, poems, short stories, sculptures, or any other ocean science art you've made.

Send your contributions (and questions and concerns) to mpincus@ldeo.columbia.edu no later than **September 20, 2024** to be featured in next month's newsletter.

See you next month!