

SCIENTIFIC
OCEAN
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Digital Newsletter

the Drilling Dispatch

May 2023

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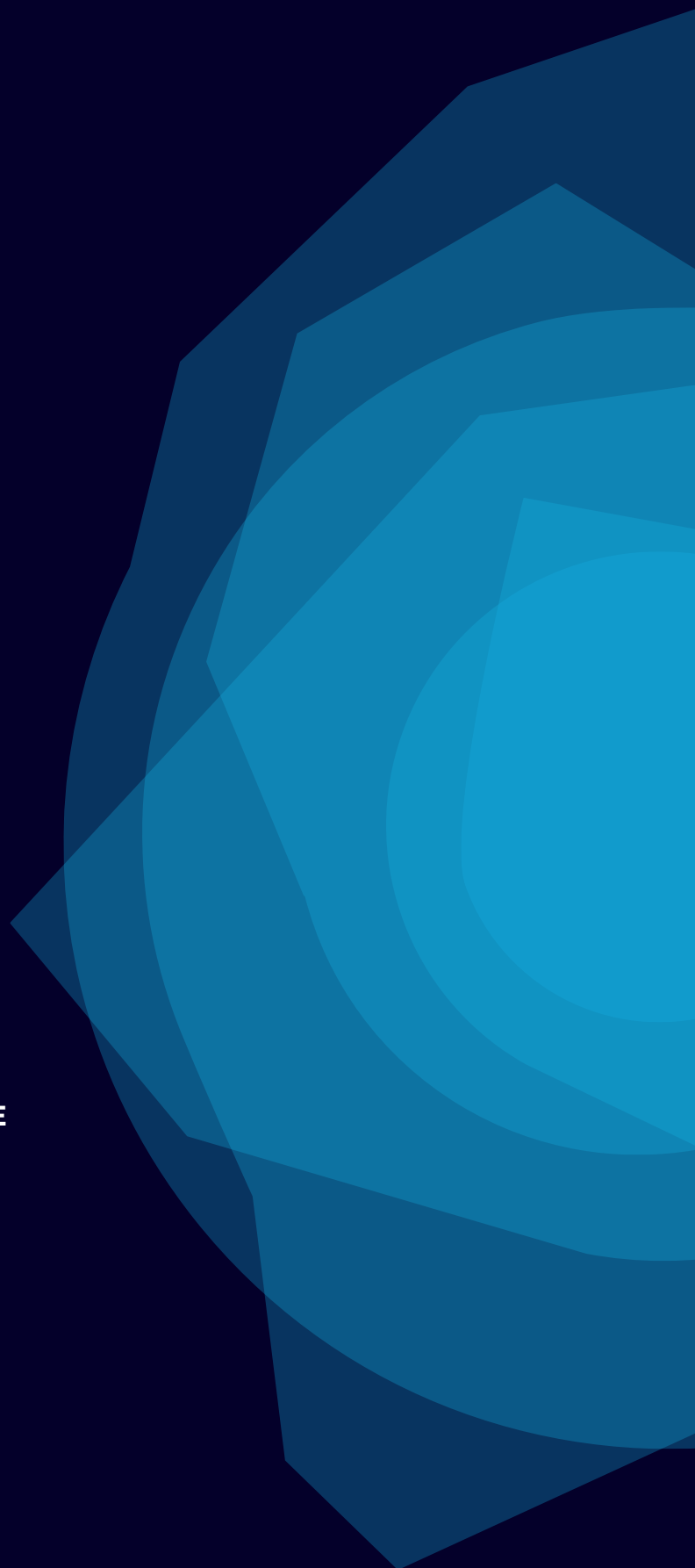
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Happening now...

Expedition 399: Building blocks of life, Atlantis Massif

Andrew McCaig and Susan Lang,
Expedition 399 Co-Chief Scientists

Day 6: April 17, 2023

*Written by Lesley Anderson and Sarah Treadwell
(IODP / USSSP)*

We are currently in transit to the the underwater mountain that hosts the Lost City hydrothermal field in the middle of the Atlantic Ocean, having left out of Ponta Delgada, Portugal around 14h00 on Saturday, April 15th. There was a lot of emotion from many scientists who acknowledged that this would be their last walk up the gangway of the *JOIDES Resolution*, after it was recently announced by the National Science Foundation that IODP will no longer be funded past Fiscal Year 2024. A mixture of excitement and nostalgia was heavy on the dock.

Our expedition was able to leave port a day early with a team excited to be heading out to sea. A tug boat pulled the ship around 180 degrees and a pilot boat escorted the JR out of the harbor.

Due to COVID protocols, we have been masked since we boarded the ship on Thursday morning. The science party has been going through many trainings and tours to become oriented with the labs, equipment, and workings of the ship. Expedition Project Manager Peter Blum led us through an orientation of the ship, and we were greeted by both the ship's Captain, Harm Nienhuis, and the ship's doctor, Gene Molina. Co-chief Scientists Andrew McCaig and Susan Lang presented a summary of the science that will be conducted and the timeline for each of the science activities. In smaller groups,



TOP: The Expedition 399 science party gathers for a group photo before boarding the *JOIDES Resolution* and setting sail to Atlantis Massif (Credit: Lesley Anderson & IODP). BOTTOM: Expedition 399 scientists gather in the core lab to discuss the sampling plan (Credit: Sarah Treadwell & IODP).



LEFT: A sample of serpentinized mantle rock recovered from near the Lost City hydrothermal field, with a flag to indicate the ideal area to turn into a thin section (Credit: Lesley Anderson & IODP). MIDDLE: Members of the Expedition 393 science party gather to watch the release of a reentry cone (Credit: Sarah Treadwell & IODP). RIGHT: Metamorphic petrologist Johan Lissenburg examines a core sample during a live ship-to-shore virtual connection (Credit: Lesley Anderson & IODP).

the science party received tours of individual lab spaces by specialists and of the drill floor by Operations Superintendent Bill Rheinhardt, in hard hats and safety glasses, of course.

This is the first time since the beginning of the pandemic that the science party has been able to participate in a face-to-face orientation—up to this point, all orientations took place during hotel quarantine. The crew and science party all seem eager to remove our masks after our shipboard quarantine period is up in a few days.

Swells have been approximately 2-3 meters in height and the ship has been traveling at a speed of around 11 knots. Most of the scientists on board have gotten their sea legs and adjusted to the swaying ship. There is a dry run being planned for the setup of the Kuster tool, a high-temperature bore hole water sampler.

Day 10: April 21, 2023

Written by Andrew McCaig (University of Leeds / IODP)

We have escaped from COVID restrictions and completed a 60m pilot hole, with some excellent recovery of serpentinized mantle rocks close to Lost City. The science team is currently working on these cores and soliciting shipboard samples for microscope thin sections, geochemical analysis, microbiology, palaeomagnetic work and physical properties. The team of scientists and technicians have been busy finalising methods and calibrating instruments, the ship's crew have been keeping us on station, the drillers have been working like a well-choreographed dance group, and the caterers and house keeping keeping us clean and well fed. All in all it is great to be in this community of over 100 people from so many countries, all with a common purpose to advance ocean science.

In the repository...

Expedition 398P: JR Academy and School of Rock

written by Maya Pincus (USSSP)



JR Academy participant Brayelin Cordones enjoys a peaceful sunset at sea (Credit: Brayelin Cordones & USSSP).

Thinking about the *JOIDES Resolution* typically conjures images of scientists hard at work, eyes glued to hand lenses, faces pressed close to core after core—or drillers boldly identified by their red jumpsuits, mapping an elegant ballet across the rig floor as their machines wrestle core barrels out of the ocean.

What often goes unacknowledged, hidden in the shadow of groundbreaking scientific discoveries, are the myriad other opportunities provided to less obvious demographics. Fortunately, through the creativity of the U.S. Science Support Program's Education and Outreach team, the *JOIDES Resolution* is able to act as host to students and teachers in the downtime between scientific expeditions.

Most recently, Expedition 398P commenced in February with the primary objective of transiting the ship from Heraklion, Greece, to Tarragona, Spain, for six weeks of maintenance and repair during a tie-up in port. With no scientists onboard for this full-length non-expedition, there was plenty of room to host other parties. First, 15 undergraduate students from all over the USA boarded the *JOIDES Resolution* in February. As the ship sailed, these students participated in JR Academy, a program developed to introduce undergraduates to scientific ocean drilling while developing skills in science communication. When the ship arrived in Tarragona, JR Academy participants were replaced by 12 educators from six states for School of Rock. In partnership with the American Geosciences Institute, School of Rock teachers endeavored to update and revise existing educational resources, modernizing them for the post-pandemic digital space and aligning them to national standards.

In the two months since, participants of JR Academy and School of Rock have had time to reflect on their experiences, and explore how their time on the ship will affect their personal and professional futures.



For the students of JR Academy, the most profound takeaway was the exposure to new career paths, both in science and ocean exploration. To

LEFT: JR Academy participants pose on the dock in Heraklion, Greece, before boarding the *JOIDES Resolution* (Credit: Brayelin Cordones & USSSP). RIGHT: Chai Comrie helps make a film (Credit: Chai Comrie & USSSP).

some, like Brayelin Cordones, it was a chance to think about her future through a new lens. She explains it in a way that many people can likely relate to: *“As someone who spends most of their life in one spot, it was an eye-opening experience... Before this trip, I felt like my life was just a straight path. Go to college, study for four years, and get a job. But now I know that there’s an entire world to explore. A lot of the workers started out in completely different career paths, from the military to working as an automotive engineer. I learned that there’s no shame in change.”* Chai Comrie adds *“I am much more at ease stepping outside my comfort zone. In fact, I’ve become more adventurous and open to new experiences. Currently, I am exploring internship opportunities without limiting myself to just one area. This experience reminded me of my love of the environment and am now considering pursuing a minor in Global and Environmental Sustainability.”*

Others, like Chelsea McDonald, were empowered to continue their geology education with renewed vigor. *“The JR Academy has shown me an avenue I could take with my degree in geology,”* she says. *“Since I was a freshman in college I have dreamed of being able to go on the JR to do research with core samples. The JR Academy gave me that experience and helped assure me that geology is one of the best careers out there (in my biased opinion). It also helped me see the importance of science communication. As a scientist it’s crucial to be able to share your findings with the public, especially the community that you will be working in. Geology is important to the well being of our earth and to the people living in it. When you are a good science communicator you can help inspire others around you and be a voice to enact change.”*

It is clear from their reflections that the JR Academy students are at the forefront of a new generation of passionate Earth scientists, and will lead the future of research, communication, and stewardship of the planet. Not far behind them are the students of the School of Rock teachers, who are participating in lessons based on data collected during IODP expeditions.

Inspired by the [Secrets of the Sediments lesson](#), Nicoline Chambers is having her students make connections between scientific ocean drilling and space exploration. She (and her students) learned that *“bringing a sample up from Earth’s interior has a LOT in common with bringing a*



FROM TOP: JR Academy students learn about all the instruments used to collect core data (Credit: Mike Toillion & USSSP). Rob McKinley takes pictures of cores to share with his students (Credit: Maya Pincus & USSSP). After washing and sieving, Nikki Chambers prepares foraminifera samples for her classroom (Credit: Maya Pincus & USSSP). Alejandra Martinez collaborates with School of Rock teachers to plan a lesson based on IODP data (Credit: Alejandra Martinez & USSSP).

sample home from Mars. In both cases, you don't know what you're going to encounter in your sample. In both cases, you are exposing your sample to vastly different environmental factors, simply by bringing them home." In her revised version of Secrets of the Sediments, students developed an understanding of how the fossilized foraminiferan life in the sediment samples can be used as a proxy to understand how Earth's climate was once vastly different. To make the activity as authentic as possibly, Nikki brought foraminifera samples home from the JOIDES Resolution ("loads of thanks, Fabricio!"). To drive the interdisciplinary investigation home, they "followed that with studying the 'Mars samples' to look for life: we did a DNA extraction, looked for cells/life structures, and used various methods to reanimate dormant life. All of the things that biologists do with core samples here on Earth can/will be done with the Mars samples that will be returned in 8 years...so cool!!"

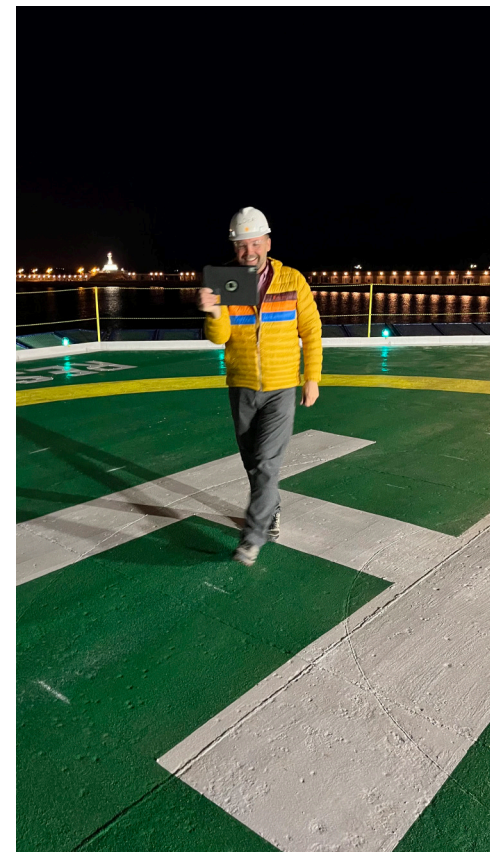
Rob McKinley is another teacher using his experiences in School of Rock to bring scientific ocean drilling to life in his classroom. He says, "Our school is in the process of piloting some new phenomena and storyline-based units in our 9th grade physical science course, and the lessons in tectonics that my group worked on are going to be an immediate centerpiece of this. School of Rock was not only a hugely valuable professional experience for me, but working with a really amazing group of participants and instructors (not to mention doing it on the JOIDES Resolution!) was inspiring and invigorating at a time in the school year when I needed it most."

The creativity driving School of Rock teachers in their adaptation of pre-existing lesson plans is evident in the classroom of Tony Del Campo as well. He is planning a "Rocks Tell Stories" unit, in which students will participate in fieldwork "that is similar to what is being done upon the JOIDES Resolution."

Perhaps the most powerful component of School of Rock was the opportunity for educators to collaborate, bounce ideas off each other, and work together to not just improve the educational materials already available, but also to find new ways to make complex science accessible to all learners. Alejandra Martinez is confident about her growth as an educator, saying "What I learned while working on my lesson and collaborating with the other teachers has made me feel even more knowledgeable and enthusiastic about integrating more earth science concepts into my curriculum, concepts that coring can shed light on. Teaching them through that lens will connect my students to current and past research and makes the science relevant to their lives and the work we do in the classroom." Tony adds, "Being surrounded by outstanding educators from across the United States who were selected to be part of School of Rock was incredible. I am so grateful for how welcoming and inclusive the other teachers were. There were so many informal moments when the other teachers were open to sharing their classroom ideas with me. They modeled what collaboration should be. You can not help but be inspired to become a better teacher like them."

Anyone who has sailed aboard the JOIDES Resolution, whether as a scientist, technician, student or educator, knows it is an experience like no other. From countless scientific discoveries to advances in STEM education, the floating laboratory welcomes people in all walks of life, and brings them together to increase our understanding of our planet.

School of Rock teacher David Thesenga takes his students on a virtual tour of the ship (Credit: Alejandra Martinez & USSSP).



From the field...

A perspective on science education, from School of Rock instructor Ed Robeck

written by Ed Robeck (AGI)



Ed poses on the top deck of the *JOIDES Resolution* (Credit: Ed Robeck & IODP).

The research vessel, *JOIDES Resolution* (JR), stands out as an icon of scientific discovery. As someone who loves learning and teaching about how scientific ideas develop, the opportunity I had to spend time on the JR in February 2023 as part of the *School of Rock* program reinforced my commitment to sharing the excitement of scientific discovery with students, especially in terms of connecting science concepts to the processes by which the data supporting those ideas are collected, analyzed, and interpreted.

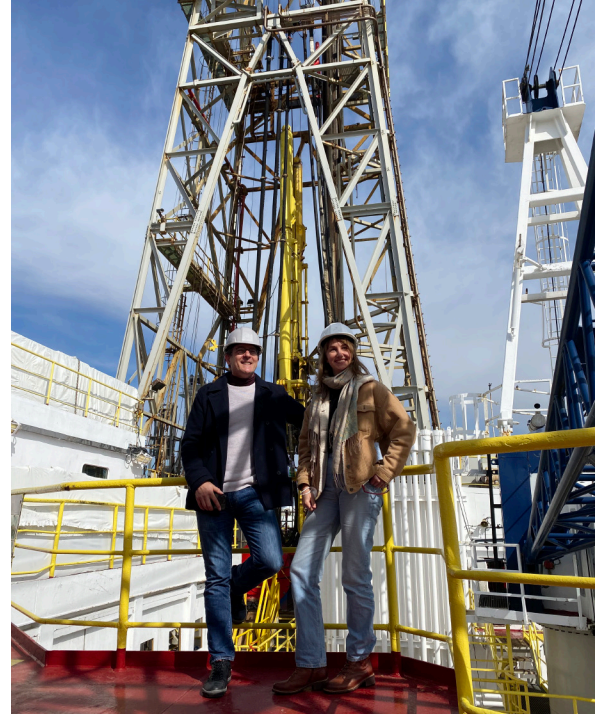
Today's science education is informed by standards—especially the *Next Generation Science Standards*, but also others—that call for attention to the evidence and reasoning that support the scientific conclusions being shared with students. The work done on the JR exemplifies those vital connections between data, evidence, reasoning, and conclusions. The ocean cores that are drilled by the JR at depths as much as 1.5 km below the ocean floor go through initial processing as soon as they are brought on board, where they are tagged so samples can be identified with respect to the specific location, depth, and position from which they were collected. The JR has lab facilities that can begin the analysis of the samples by examining the paleontological, biological, mineralogical, and other evidence the samples contain. All these data, and much more, are used by scientists—on board and across the globe—to answer a range of questions about the Earth, its history, and the processes that have operated across geologic time.



School of Rock participants visit the gothic basilica of Montserrat (Credit: Ed Robeck & IODP).

During this particular *School of Rock*, the connections between ocean core data and understanding Earth's history were illustrated by a team who visited the JR. Drs. Hanneke Heida and Daniel Garcia-Castellanos from Geosciences Barcelona, the Spanish National Research Council (CSIC) presented to the *School of Rock* participants about their research into what is known as the Messinian Salinity Crisis—which involves attempts to explain large-scale salt deposits in sediments that are found in cores taken from under the Mediterranean Sea. Their research demonstrates the importance of the data provided by scientific ocean drilling. Seeing the facilities on the JR and coming to understand the role they have played in fundamental science for almost five decades is in itself deeply inspiring.

Yet, for me that inspiration was extended, in that the Education & Outreach team I work with at the American Geosciences Institute (AGI) had the opportunity to partner with professionals in the International Ocean Discovery Program (IODP) to share those connections with other science educators at the spring 2023 National Science Teaching Association (NSTA) conference in Atlanta, GA. The partnership between AGI and IODP staff involves using the trove of lesson plans developed by sixteen years of *School of Rock* participants and Outreach Officers aboard the JR to address the needs of today's Earth science teachers. Our NSTA presentation was designed to share several of those lessons with the more than 50 teachers who attended so that they could see how the data collected by the JR could inform lessons on plate tectonics, climate change, and more. By focusing on the IODP data, we were able to share not only the concepts and principles that are key to understanding our Earth, but also the data, analyses, and reasoning patterns that provide the foundation for those ideas. As they had direct, hands-on experience with the data and materials from the JR, and worked through the analyses for themselves, the teachers felt the same enthusiasm that students exhibit when they are introduced to authentic science. Such experiences demonstrate the profound role the JR continues to have in invigorating science education.



FROM TOP: Dr. Daniel Garcia-Castellanos and Dr. Hanneke Heida from the Geosciences Barcelona - CSIC take a tour of the *JOIDES Resolution* after presenting to *School of Rock* participants about their research into the Messinian salinity crisis (Credit: Maya Pincus & USSSP). *School of Rock* instructors and participants visit Roman ruins in Tarragona, Spain, before boarding the *JOIDES Resolution* (Credit: Maya Pincus & USSSP). AGI instructors Sequoyah McGee and Ed Robeck pose in front of the *JOIDES Resolution* one last time before leaving the ship (Credit: Ed Robeck & IODP).

FEATURED VIDEO

Ship-to-Shore Broadcasts from the JR

Why sign up for a live virtual ship-to-shore connection? Outreach officers onboard the JOIDES Resolution will customize the event to meet the needs of any group. From Pre-K to graduate oceanography; classroom, museum, or summer camp, learners are guaranteed to enjoy a tour of the ship and opportunity to speak with real scientists at sea.

For your calendar

- **Submit site data for an IODP Drilling Proposal**
(Deadline: 1 May 2023; [learn more here](#))
- **Call for Scientific Committee on Oceanic Research Working Groups**
(Deadline: 12 May 2023; [learn more here](#))
- **24th Annual Roger Revelle Lecture**
(19 May 2023; [learn more here](#))
- **JOIDES Resolution Facility Board Meeting**
(16-17 May 2023; Washington, D.C., USA)
- **Apply to host an Ocean Discovery Distinguished Lecturer**
(Deadline: 22 May 2023; [learn more here](#))
- **Submit an Ocean Sciences Meeting 2024 session proposal**
(Deadline: 24 May 2023; [learn more here](#))

SCI COMM RESOURCE OF THE MONTH

Even if you missed us at the National Science Teaching Association conference last month, you can still check out one of our newest learning activities, developed by our partners at the American Geosciences Institute. Students will discover the connections between sediment and ice cores, then make an evidence-based argument about why we should #KeepDrilling.

Climate Data from Arctic Coring

Spotlight on...

Peter Blum

written by Maya Pincus (USSSP)

No one says workplace dedication quite like IODP Expedition Project Manager Dr. Peter Blum. During the recent Expedition 397T: Transit and Return to Walvis Ridge, he celebrated his 30-year anniversary with the scientific ocean drilling program, and is currently on board the *JOIDES Resolution* one last time to manage Expedition 399: Building Blocks of Life, Atlantis Massif. Some accomplished scientists persist in their field to dive ever deeper into a specific area of expertise, but Peter chose a path that allowed him to stay involved in a diverse array of research and pursue the various projects that excite him. In this role, he is clearly a leader, both professionally and personally.



Credit: Tim Fulton
& IODP JRSO.

Though Peter did not begin his career knowing the adventures that awaited him, he soon recognized his love for discovery. On completion of his general geology training in the Swiss Alps where he grew up, he immediately moved to Japan to continue his studies. In addition to the cultural interest that brought him there, as a sedimentologist he could not resist the geological intrigue of the area. He describes it poetically: “It’s a place where a lot of things are happening. Arcs are colliding, volcanoes are erupting, earthquakes are shaking cities...” Japan was also the place where Peter met a key influencer (“baby boomer style”) for the construction of the Chikyū and a top scientific administrator for its operation, Dr. Asahiko Taira. For Peter, Dr. Taira quickly became a mentor who played a key role in setting Peter on his path with scientific ocean drilling.

Encouraged by Dr. Taira to transfer to the University of Texas Institute of Geophysics and join the Joint Oceanographic Institutes for Deep Earth Sampling (JOIDES) office as a “Japanese representative,” Peter soon became inundated—in the best possible sense—with all the work involved in managing drilling proposals. He advised panels, planned committee meetings, traveled all over the world, and even created a database to organize proposals. When he found out about an open position in College Station for a staff scientist he said, “Yeah! That’s what I want to do!”

What thrilled him most was the interdisciplinary nature of the job. Not only would he expand his knowledge by participating in expeditions that explored all aspects of Earth and ocean sciences, but he also

LEFT: The EXP360 team gathers on the drill floor to gauge the progress of the upcoming junk basket (Credit: Benoit Ildefonse & IODP). RIGHT: Peter battles it out in a ping-pong tournament after shift (Credit: Sarah Kachovich & IODP JRSO).





FROM TOP: Peter studies EXP384 whole round data (Credit: Lisa Crowder & IODP JRSO). Peter and EXP360 Co-Chiefs celebrate a successful expedition (Credit: Bill Crawford & IODP JRSO). EXP360 scientists hold a record-breaking core (Credit: Bill Crawford and IODP JRSO). Peter holds up a photo from his first expedition during his 30th anniversary party (Credit: Maya Pincus & IODP).

would have the opportunity to work towards his true passions: software development and instrumentation aboard the *JOIDES Resolution*.

If you have sailed on the JR any time in the past couple decades, you have interacted with at least some of Peter's handiwork. In the days of the Ocean Drilling Program, he helped to develop many of the physical properties instruments and their associated methods and software. During the early IODP he initiated the construction of the state-of-the-art natural gamma ray logger, and was part of the core group designing the LIMS database system, which serves as the data backbone to this day. Perhaps most notably, Peter has been responsible for GEODESC, the new core description software that went live for Expedition 397. For many years, this was the project closest to his heart. Since the use of personal computers became prevalent, shipboard scientists expressed a desire for a method to log observations digitally. Early attempts failed because the collaborative description process using thousands of words and scientists' diverse training and experience is so much more complex than instrumented data acquisition. Users expect a delicate balance between firm guidance and reasonable flexibility. Today, Peter happily reports that GEODESC has set a new standard and is working great.

One thing that stands out about Peter is his positive outlook regarding just about everything. He admits that at times he has wondered if this was the right career path for him (*Should he have dedicated himself to research in one specialty instead? What would it be like to be the reigning expert on one topic?*), but when it comes down to it, he knows he made the right choice. When asked if he had a favorite expedition, all he could do was laugh. "You know, I've obviously been on quite a number of expeditions and they are always different, just because the project objective is different, the location is different, the team of people is different. That's really what's fun. I like to see the advance of science in different areas. I find it really interesting to learn new aspects of Earth sciences and I admire people who are experts in their field."

Peter also gives good advice. Reflecting on Expedition 342 ("If I had to pick a favorite...") he recalls the joy of working with Dr. Richard Norris, "the greatest storyteller geologist that I've encountered." After recounting the numerous challenges they faced during that expedition, he repeated Norris's unanticipated conclusion: "This is what's fun about science. If everything worked out the way you predicted, it wasn't that great science because you were already right. It gets interesting when you actually fail and you're wrong and therefore you learn new things."

And for those trying to figure out if science is the right path for them? "There are people who have the 'curiosity bug' and there are people who

don't. If you have that, you should absolutely go for it. If you don't you'll be unhappy. Scientific research has so many forms, so many different aspects, jobs, support needs, and types of contributions. You may not be a Nobel Prize scientist and you may not get rich but... It's a noble thing to be part of creating knowledge."

Spotlight on...

Yige Zhang

written by Maya Pincus (USSSP)

With only a year left for the *JOIDES Resolution* to collect new cores from the ocean floor, the scientific ocean drilling community must look to the existing cores, preserved in three repositories around the world, and legacy data, available in digital databases, to continue the exploration into Earth's secrets.

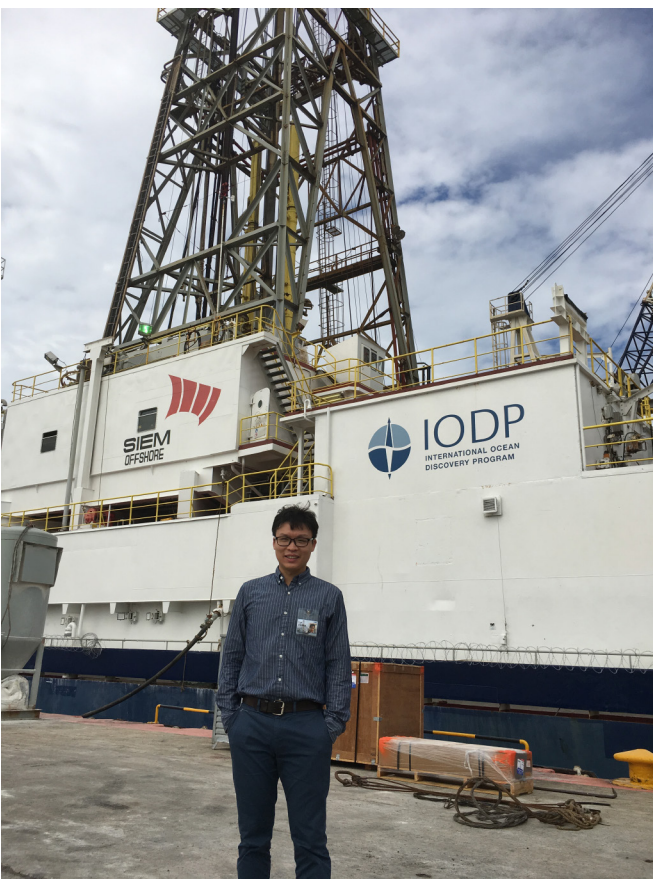
Who better to lead this effort than Dr. Yige Zhang, of Texas A&M University? Since he first began research as an undergraduate student at Nanjing University, Yige has been working with IODP samples and data to investigate the chemical evolution of Earth's surficial systems and past climate changes. Those in the paleoceanography community often talk about marine sediments as archives of the past. Yige's research makes clear the many ways that ocean cores are libraries stocked with tomes that can aid in ocean temperature reconstructions, atmospheric CO₂ reconstructions, and the development and refinement of geochemical proxies.

As he advanced in his career, one urgent question became the driving force of Yige's work: How do we make our science more relevant? Frustrated by the constant "wiggly lines" generated by his data (a sentiment echoed by paleoceanographers and paleoclimatologists around the world), he set out to find novel approaches to interpret and translate Earth's deep climate record. It was this dedication to making clear how the past affects the present and future that led him to collaborate with climate modelers to visualize Earth's past climate in a completely new way: [analyzing trends spatially rather than temporally](#).

This isn't his only big-picture endeavor to increase the relevancy of paleoceanography. Just a couple months ago, Yige's investigation into organic carbon burial in the global ocean was [published in Nature](#). This is the first study to report organic carbon burial rates from globally distributed data, and *the results are surprisingly different from what scientists expected for decades*. Though this study may just seem like a natural continuation of his work, the story behind it is more motivating than one might expect. Sailing as a geochemist on IODP



Credit: Yige Zhang



Yige poses in front of the *JOIDES Resolution* at the onset of Expedition 363: Western Pacific Warm Pool (Credit: Yige Zhang).

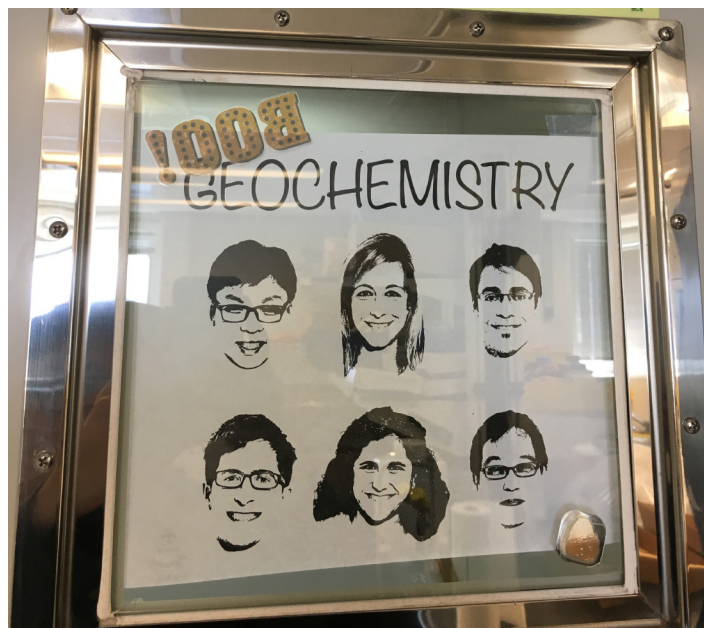


LEFT: Yige collects a headspace gas sample on the catwalk after the core is cut into sections (Credit: William Crawford & IODP JRSO). RIGHT: Members of the Expedition 363 science party take advantage of the nice weather to enjoy a meal at one of the picnic tables.

Expedition 363: Western Pacific Warm Pool, Yige was surprised to discover an unspoken hierarchy among the lab teams. He describes it, “Everyone is really excited about the paleontologists, because they can give you an age right away, but the geochemistry lab gets very lonely.” Every day he spent twelve hours crushing samples to measure organic carbon, and every day he noticed his numbers were very similar. In other words, pretty boring. “One day I looked down and realized I had developed a callus in my palm from spending so much time crushing the samples!” he lamented. Determined to validate the time and efforts of all shipboard geochemists, he didn’t limit himself to his own data, but dove into the data archives in search of global trends. Through this analysis, he discovered a new method for establishing the history of organic carbon burial.

In addition to serving as a tenured Associate Professor and PhD advisor at Texas A&M University, Yige currently supports the scientific ocean drilling community as a member of the U.S. Advisory Committee, helping to maximize the results of each expedition through his contributions to the Staffing Subcommittee. Though he is disappointed that he won’t have another opportunity to sail aboard the *JOIDES Resolution* before it is demobilized, he looks optimistically to a future of creative applications of legacy data, and eventually, a new ship.

LEFT: The Expedition 363 geochemistry team shows their enthusiasm for interstitial water (IW) sampling (Credit: William Crawford & IODP JRSO). RIGHT: The EXP363 geochemists proudly displayed on their lab door (Credit: Yige Zhang & IODP).



How to...

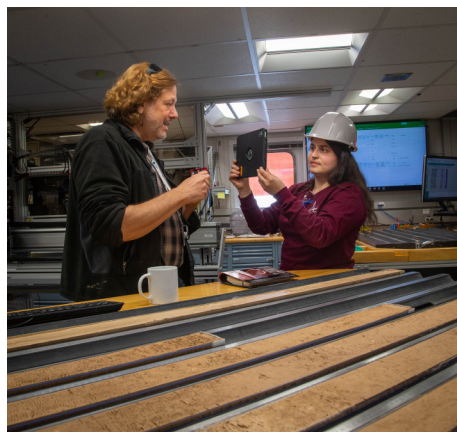
Schedule a virtual ship-to-shore connection

written by Maya Pincus (USSSP)

Why sign up for a live virtual ship-to-shore connection? Outreach officers onboard the *JOIDES Resolution* will customize the event to meet the needs of any group. From Pre-K to graduate oceanography; classroom, museum, or summer camp, learners are guaranteed to enjoy a tour of the ship and opportunity to speak with real scientists at sea.

- **Step 1:** Navigate to the live video events page on the *JOIDES Resolution* website (<https://joidesresolution.org/about-the-jr/live-video-events-with-the-joides-resolution/>).
- **Step 2:** Scroll to the bottom of the page to view the calendar of ship-to-shore events.
- **Step 3:** Choose a day that does not already have two events scheduled.
- **Step 4:** Decide what time works best for you. Make sure to leave at least an hour before or after any event already on the calendar.
- **Step 5:** Create an event at your chosen date and time in your own personal calendar. Be sure to include the name of your school, number and age of your students, and any special requests in the event description. Invite thejoidesresolution@gmail.com to your event.
- **Step 7:** Stay tuned for an email from thejoidesresolution@gmail.com with confirmation for your event and resources you can share with your students.
- **Step 8:** Prepare your students for the connection by showing them our [introductory video](#) and asking them to brainstorm questions they want to ask when they meet shipboard scientists.

During ship-to-shore connections, students virtually tour the ship and have the opportunity to speak with crew members and scientists (Credit, left to right: Sandra Herrmann & IODP JRSO, Erick Bravo & IODP JRSO, Elizabeth Wood).



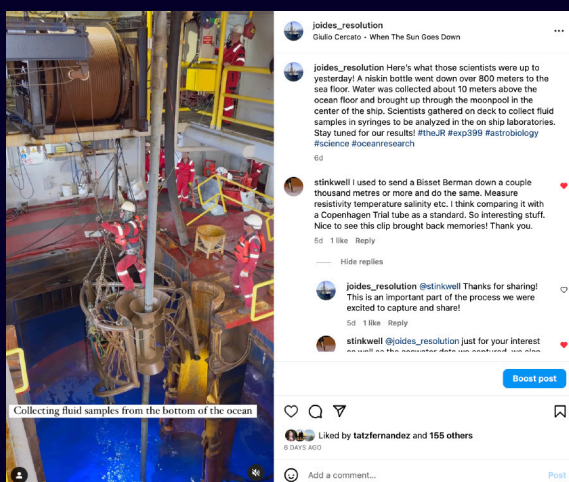
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Find us on the web!



You don't need to wait for next month's newsletter to keep up-to-date with our adventures in science! We update our blog and social media regularly. Get involved, and stay in touch!

Twitter: **TheJR**

Facebook: **JOIDES Resolution**

Instagram: **joides_resolution**

Web: **<https://joidesresolution.org>**

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 Program), 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** - Thanks to everyone who submitted photos for past themes! June is our annual celebration of National Oceans Month, so for next edition please send in your photos that illustrate the theme **World Oceans**.
- **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 May 20, 2023 to be featured in next month's newsletter.

See you next month!