On the Critical Importance of the U.S.-led Scientific Ocean Drilling

Director, Dr. Sethuraman Panchanathan (<u>spanchan@nsf.gov</u>) National Science Foundation

 CC: Assistant Director, Geosciences Directorate, Dr. Alexandra R. Isern (<u>aisern@nsf.gov</u>) Division Director, Ocean Sciences, Dr. Terrence M. Quinn (<u>tquinn@nsf.gov</u>) Section Head, Ocean Sciences, Integrative Programs, Mr. Bauke H. Houtman (<u>bhoutman@nsf.gov</u>) Chair, US-SODA, Dr. Anthony A.P. Koppers (<u>anthony.koppers@oregonstate.edu</u>)

Dear Dr. Panchanathan,

We are a self-organized group of graduate students, post-doctoral researchers, and other early career scientists writing to express our concern regarding the future of NSF funding for U.S. scientific ocean drilling (SciOD). Over the past five decades, SciOD has led to tremendous advancements and substantial breakthroughs in Earth science. For many of us, the discoveries enabled by SciOD were what first inspired us to become Earth and ocean scientists. We are motivated by what remains to be discovered, as described in the <u>2050 Scientific Framework: Exploring Earth by Scientific Ocean Drilling</u> and are alarmed by what the potential termination of NSF support for U.S. SciOD would mean for (1) the advancement of Earth science, (2) the United States' position as a leader in this science, (3) our ability to help society prepare for the future effects of climate change and natural hazards, and (4) the educational potential of SciOD to inspire future generations of scientists.

SciOD has played a central role in shaping our understanding of the Earth system, and the success of previous and current SciOD programs is firmly established. These programs have allowed us to push the boundary of knowledge on many frontiers as evidenced by numerous discoveries and accomplishments, including verifying plate tectonics, providing detailed records of global climate change, establishing the field of paleoceanography, characterizing fault zones that result in megathrust earthquakes, and enabling the discovery of a subseafloor microbiome that contributes to the cycling of much of the planet's carbon. How many other mysteries do the oceans hold that will remain undiscovered without SciOD?

SciOD has far-reaching implications for both science and society. This research program is especially relevant now given the pressing climate challenges facing our planet, manifested by extreme weather events, ice-sheet melting, sea-level rise, ocean acidification, and ecosystem changes. SciOD represents a unique opportunity to tackle these issues by providing access to long term and high resolution climate archives that are otherwise inaccessible. Beyond climate, SciOD provides critical information on natural hazards that enriches our understanding of their underlying mechanisms, allowing us to better predict the rate and magnitude of future occurrences. All of these issues have direct and monumental societal impacts.

In addition to contributing to the advancement of science and achieving societal goals, we view SciOD as a valuable educational tool with great potential to inspire and train the next generation of U.S. scientists. Many of us have sailed aboard the *JOIDES Resolution* or participated in the workshops and meetings IODP hosts, and we can attest to the critical role these opportunities have played in enabling us to conduct impactful research, effectively communicate science, and develop a variety of skills. Thus, SciOD represents a platform to train a competitive U.S. workforce, broaden access to science, and engage students from historically marginalized groups, as well as students from smaller universities and community colleagues. We can not overstate how detrimental the termination of NSF support for U.S. SciOD would be for future generations of scientists and society as a whole, in both the loss of opportunity and the loss of critical knowledge of our Earth system.

Importantly, what we have highlighted in this letter represents only a small proportion of what SciOD is capable of providing. Rather than terminating funding for such a successful program, we hope that NSF will fund a newly built, U.S.-led, globally ranging vessel with a design tailored to meet the <u>Science</u> <u>Mission Requirements</u>. The new vessel would revolutionize Earth and ocean sciences, allowing us to take deeper cores and drill in extreme environments, such as the currently inaccessible polar regions. The proposed new vessel would also recover higher quality cores that would allow us to make new discoveries, poising U.S. scientists to successfully tackle pressing questions in Earth science. While building a new drillship can take up to a decade, continuing SciOD in the interim period is critical. We thus would like to ask NSF to also support the 2024–2028 bridging program by extending the funding for the JOIDES Resolution during these pivotal transition years. The hiatus that would occur if NSF decided to divest from this essential research program would mean that we risk losing irreplaceable expertise in our workforce if existing knowledge is not passed on, which would make restarting such a large and sophisticated research program in the future nearly impossible.

We, early career scientists, would like to express our strong support for a U.S.-led SciOD program. The support of the scientific community for funding SciOD is evident by the **208** scientists, engineers, and educators who have signed this letter, representing **17** countries from **98** different institutions and universities. Importantly, **177** of the signees are based in the United States. While we are aware that funding decisions are difficult, supporting a U.S.-led SciOD program directly speaks to the NSF's values by making the U.S. "A nation that leads the world in science and engineering research and innovation, to the benefit of all, without barriers to participation," as highlighted in the <u>NSF 2022–2026 Strategic Plan</u>. Supporting SciOD will advance the progress of science, maintain the U.S. in a leadership role, train the next generation of scientists, and provide an opportunity to broaden access to science and engage students from historically marginalized groups. There is no more critical time than now to support such a crucial program.

Sincerely,

Mohammed Hashim, Ph.D.

Postdoctoral Scholar, Woods Hole Oceanographic Institution Sedimentary Geochemistry

Anya Hess

Doctoral Candidate, Rutgers, the State University of New Jersey Paleoceanography and Paleoclimatology

Ronnakrit Rattanasriampaipong

Doctoral Candidate, Texas A&M University Paleoceanography and Paleoclimatology/Organic Geochemistry

Basia Marcks

Doctoral Candidate, University of Rhode Island Marine Geology/Biogeochemistry

Shu Ying Wee

Doctoral Candidate, Texas A&M University Seafloor and Subseafloor Microbiology

On behalf of graduate students, post-doctoral researchers, and other early career scientists who have read, endorsed, and signed this letter. Signatures were collected **from June 17th to July 8th, 2022** via a <u>Google</u> Form survey.





Fig. 1 A <u>Summary Dashboard</u> Of The Signees By State, Country, And Career Stage.

A full list of endorsers are presented in alphabetical order hereunder:

John O. Ajayi

Graduate Student, University of Connecticut Organic Geochemistry

Sajjad Akam, Ph.D.

Postdoctoral researcher, Iowa State University Sedimentary Geochemistry/Biogeochemistry

Madelyn Akers

Graduate Student, Texas A&M University Ocean Science and Technology

Marwan Alhinaai

Undergraduate Student, Western Michigan University Sedimentary Geochemistry

Harry Allbrook

Graduate Student, Institute of Arctic and Alpine Research (INSTAAR), University of Colorado Boulder Organic Geochemistry Alyssa Alsante Graduate Student, Texas A&M University *Biological Oceanography*

Lloyd Anderson Graduate Student, Lamont-Doherty Earth Observatory of Columbia University *Paleoceanography and Paleoclimatology*

Jamie Asan Undergraduate Student, Queens College, City University of New York *Earth and Environmental Sciences*

Jeanine Ash, Ph.D. Research Scientist, Rice University *Biogeochemistry*

Alexandra Auderset, Ph.D. Postdoctoral Researcher, Princeton University Paleoceanography/Sediment Organic Geochemistry

Irita Aylward Graduate Student, University of Washington, Seattle Pore Water Geochemistry

Alan Baxter, Ph.D. Research Associate, University of Ottawa, Canada Marine Geology/Tectonics

Danielle Marie Becker Graduate Student, University of Rhode Island *Marine Biology*

Sarah Beethe Graduate Student, Oregon State University Geochronology/Igneous Petrology

Mathilde Bélair Graduate Student, University of Montreal, Canada Aquatic Biogeochemistry

Katherine Bell Graduate Student, University of Rhode Island Sediment Biogeochemistry

Dailson José Bertassoli Jr., Ph.D. Postdoctoral Researcher, University of São Paulo, Brazil *Paleoclimatology/Organic Geochemistry*

Or M. Bialik, Ph.D. Postdoctoral Researcher, University of Malta Sedimentology/Geochemistry/Paleoceanography

Samantha Bova, Ph.D. Assistant Professor, San Diego State University Paleoceanography and Paleoclimatology

Melissa Doyle Boyd Graduate Student, Rutgers University Sedimentary Geochemistry

David Brankovits, Ph.D. Postdoctoral Research, Consiglio Nazionale delle Ricerche – Istituto di Ricerca Sulle Acque (CNR–IRSA; Water Research Institute), Italy *Marine Geochemistry*

Imogen Browne Graduate Student, University of South Florida *Paleoceanography and Paleoclimatology*

Reid Ezekiel Buskirk Graduate Student, Texas A&M University Aqueous Geochemistry

Julia Campbell Graduate Student, University of Michigan Paleoclimatology

Daniel Campos Graduate Student, The University of Texas at Austin *Thermochronology* Hannah Carney Graduate Student, San Diego State University Sedimentary Geochemistry

Alejandra Cartagena-Sierra Graduate Student, University of Notre Dame Organic Geochemistry

Alice Carter-Champion, Ph.D. Postdoctoral Researcher, Aarhus University, Denmark Paleoceanography

Keyi Cheng Graduate Student, Michigan State University Paleoceanography and Paleoclimatology

Zakiya Chikwendu Graduate Student, Rutgers University Paleontology

Vincent Clementi Graduate Student, Rutgers University Sediment-Pore Fluid Geochemistry/Paleoceanography and Paleoclimatology

Jason James Coenen, Ph.D. Postdoctoral Researcher, University of Nebraska-Lincoln Diatom micropaleontologist

Grant Colip Graduate Student, North Carolina State University Paleoclimatology/Sedimentology

Michael Comas Graduate Student, University of Houston Physical Sedimentology

Margaret Conley Graduate Student, Oregon State University Estuarine Oceanography

Julia Criscione Graduate Student, Rutgers University Paleontology

Jose Cuevas Graduate Student, Boston College Marine Biogeochemistry

Peter Davidson Graduate Student, Oregon State University *Geochronology*

Catherine Davis, Ph.D. Assistant Professor, North Carolina State University *Paleoceanography*

Sara De Caroli Graduate Student, Cardiff University, UK Structural Geology

Christine de Silva Graduate Student, University of Rhode Island Deep Sea Biology

Bruna de Jesus Silva Graduate Student, University of São Paulo, Brazil *Paleoclimatology/Micropaleontology*

Bruna Borba Dias, Ph.D. Postdoctoral Researcher, University of São Paulo, Brazil *Paleoceanography*

Thiago Pereira dos Santos, Ph.D. Postdoctoral Researcher, Universidade Federal Fluminense, Brazil *Paleoceanography and Paleoclimatology*

Isabel Dove Graduate Student, University of Rhode Island Paleoceanography

Anna Joy Drury, Ph.D. Postdoctoral Researcher, University College London, UK Paleoceanography and Paleoclimatology/Sedimentary Geochemistry/Stratigraphy and Geological Time Scales

Xiaojing Du, Ph.D. Postdoctoral Researcher, Brown University *Paleoceanography and Paleoclimatology*

Deepa Dwyer Graduate Student, Oregon State University *Paleomagnetism/Paleoclimate*

Eric Elias Graduate Student, University of Dar es Salaam, Tanzania Isotope Geochemistry/Basin Analysis/Paleoclimate

Sara ElShafie, Ph.D. Science Storytelling Coach/Global Change Biologist, Science Through Story, LLC Paleoclimatology/Paleoecology/Science Communication

Hannah Epstein Graduate Student, University of Rhode Island *Coastal and Open Ocean Modeling*

James Michael Fiorendino Graduate Student, Texas A&M University *Biological Oceanography*

Trenity Ford Graduate Student, Oklahoma State University *Paleontology/Paleoceanography*

Heather Furlong Graduate Student, Northern Illinois University *Antarctic Paleoclimate* Mariya Galochkina Graduate Student, MIT/WHOI Joint Program in Oceanography Paleoceanography and Paleoclimatology

Joshua Garber Graduate Student, Virginia Institute of Marine Science Harmful Algal Bloom (HAB) Toxins

Daniel Gebregiorgis, Ph.D. Assistant Professor, Georgia State University *Paleoceanography and Paleoclimatology*

Ersegun Deniz Gedikli Assistant Professor, University of Hawai'i at Manoa *Ocean Engineering*

Layla Ghazi Graduate Student, Oregon State University Biogeochemistry/Chemical Oceanography

Ryan Glaubke Graduate Student, Rutgers University *Paleoceanography and Paleoclimatology*

Michael Gray Graduate Student, North Carolina State University *Physical Oceanography*

Nicole Greco Graduate Student, University of Florida Sedimentology

Cedric Hagen, Ph.D. Postdoctoral Researcher, Princeton University *Stratigraphy/Paleoclimatology*

Brynnydd Hamilton Graduate Student, MIT/WHOI Joint Program in Physical Oceanography *Paleoceanography and Paleoclimatology*

Dustin T. Harper, Ph.D. Postdoctoral Researcher, University of Utah *Paleoceanography and Paleoclimatology*

Amanda Hartstein Graduate Student, University of Nebraska-Lincoln Carbonate Sedimentology

Nicholas Hawco, Ph.D. Assistant Professor, University of Hawai'i at Manoa *Chemical Oceanography*

Tyler Hayduk Graduate Student, San Diego State University *Paleoclimatology*

Lauren Haygood Graduate Student, Oklahoma State University *Biogeochemistry*

Sara Hayes Graduate Student, Western Michigan University Carbonate Geochemistry

Laura Haynes, Ph.D. Assistant Professor, Vassar College Paleoceanography

Megan Heins Graduate Student, University of Nebraska-Lincoln Micropaleontology/Sedimentology

Matthew Hemenway Senior Geologist, Premier Oilfield Group Sedimentology/Stratigraphy

Jordon Hemingway, Ph.D. Assistant Professor, Geological Institute at ETH Zürich, Switzerland *Geochemistry*

Lisa Herbert, Ph.D. Postdoctoral Researcher, Rutgers University Sediment Biogeochemistry

Saray Valdez Hernandez Graduate Student, Oregon State University *Paleoclimate*

Sophia Hines, Ph.D. Assistant Scientist, Woods Hole Oceanographic Institution (WHOI) *Paleoceanography*

Katharina Hochmuth, Ph.D. Postdoctoral Researcher, University of Leicester, UK Marine Geophysics/sediment physics

Colleen Hoffman, Ph.D. Postdoctoral Researcher, University of Washington *Low-Temperature Geochemistry*

Charlie Holmes Graduate Student, Texas A&M University *Geomicrobiology*

Kira Louise Homola, Ph.D. Postdoctoral Research, University of California, Los Angeles *Biogeochemistry*

Thomas Howe Senior Geosciences Specialist, Western Michigan University *Hydrogeology*

Hunter Passman Hughes Graduate Student, University of North Carolina at Chapel Hill Paleoclimatology Matthew Hunt Graduate Student, Queen's University Belfast, UK Paleoceanography and Paleoclimatology

Brittany Hupp, Ph.D. Assistant Professor, George Mason University Sedimentary Geochemistry/Paleoceanography

Jack A. Hutchings, Ph.D. Researcher, Washington University in St. Louis Organic Geochemistry

Daniel Enrique Ibarra Assistant Professor, Brown University *Paleoclimatology*

Miquela Ingalls, Ph.D. Assistant Professor, Pennsylvania State University Carbonate Geochemistry/Geobiology

Nil Irvali, Ph.D. Research Scientist, University of Bergen, Norway Paleoceanography

Debadrita Jana Graduate Student, Rice University *Paleoceanography*

Ryan Jardee Undergraduate Student, University of Wyoming *Petroleum and Chemical Engineering*

Claire Jasper Graduate Student, Lamont-Doherty Earth Observatory of Columbia University Paleoceanography and Paleoclimatology

Issac Sujay Anand John Jayachandran Graduate Student, Texas A&M University *Digital Sedimentology*

Colin Jones, Ph.D. Habitat Assessment & Monitoring Coordinator, Tillamook Estuaries Partnership *Paleoceanography and Paleoclimatology*

Stephen Emil Kaczmarek, Ph.D. Associate Professor, Western Michigan University Sedimentary Petrology/Geochemistry

Nancy Karas Graduate Student, San Diego State University Geochemistry

Emma Kast, Ph.D. Postdoctoral Researcher, University of Cambridge, UK *Paleoceanography/Biogeochemistry*

Ankita Katkar Graduate Student, Mississippi State University Paleoceanography

Samuel Katz Graduate Student, University of Rhode Island Environmental Organic Chemistry

Ronan Keating Graduate Student, Rutgers University *Paleoclimatology*

Bradley Keith Graduate Student, San Diego State University *Paleoceanography*

Preston Cosslett Kemeny Graduate Student, California Institute of Technology *Isotope Geochemistry*

Bumsoo Kim Graduate Student, Texas A&M University *Organic Geochemistry/Paleoceanography*

Yerim Kim Graduate Student, Texas A&M University Chemical Oceanography

Daniel King Graduate Student, Victoria University of Wellington, New Zealand *Paleoceanography and Paleoclimatology*

Laurin Kolb Graduate Student, University of Heidelberg, Germany Palynology

Alec Krueger Graduate Student, Texas A&M University Chemical Oceanography

Ellen Laaker Graduate Student, Texas A&M University Sedimentary Geochemistry

Jessica Labonté, Ph.D. Assistant Professor, Texas A&M University at Galveston *Geomicrobiology*

Ellen Lalk Graduate Student, Massachusetts Institute of Technology *Geochemistry*

Adriane R. Lam, Ph.D. Assistant Professor, Binghamton University Paleontology/Paleoceanography

Vera J. Lawson Graduate Student, Rutgers University Paleoceanography and Paleoclimatology

Danielle E. LeBlanc Graduate Student, Boston College *Paleoceanography and Paleoclimatology* Charles Tyler Lewis Graduate Student, Oregon State University Volcanological and Magnetic Processes

Shihan Li Graduate Student, Texas A&M University Geochemistry

Kuan-Yu Lin Graduate Student, University of Delaware Petrology/Geochemistry

Garrett W. Link Graduate Student, Western Michigan University Contaminant Hydrogeology

Rebecca Lippitt Graduate Student, University of Rhode Island *Igneous petrology/Geochemistry*

Xiaoqing Liu Graduate Student, Texas A&M University Paleoceanography and Paleoclimatology

Christopher Lowery, Ph.D. Research Associate, Institute for Geophysics, The University of Texas at Austin *Paleoceanography*

Cameron J. Manche, Ph.D. Postdoctoral Researcher, Texas A&M University *Sedimentary Petrology*

Ariel S. Martin Graduate Student, Western Michigan University *Geochemistry*

Renê Hamada Magalhães Graduate Student, University of São Paulo, Brazil Paleoclimatology/Sedimentology

Alessandro Mauceri Graduate Student, Washington University in St. Louis Paleoclimatology/Organic Geochemistry

Rodolfo Uranga Moran Graduate Student, University of Barcelona, Spain *Marine Geology*

Lindsey Monito Graduate Student, Oregon State University Paleoceanography and Paleoclimatology/ Paleomagnetism/Environmental Magnetism

Miguel Moravec Graduate Student, Vanderbilt University *Civil and Environmental Engineering*

Lindsay Mossa Education Specialist, American Geosciences Institute Science Education

Nicole Mucci Graduate Student, University of Rhode Island *Biogeochemistry*

Aldiyar Mukhatzhanov Graduate Student, Rutgers University Marine Geology

Megan Mullis, Ph.D. Laboratory Supervisor, Massachusetts Department of Public Health *Microbiology*

Evangelia Murgia Graduate Student, Western Michigan University *Hydrogeology*

Gemakrisindo Naa Graduate Student, Western Michigan University *Geosciences*

Fawz Naim Graduate Student, Ohio State University Downhole Measurements (Well logging)

Emily Nicholson Graduate Student, Rutgers University *Paleoceanography and Paleoclimatology*

Jared Nirenberg Graduate Student, Brown University Paleoceanography/Organic Geochemistry

Gael Nkwain Graduate Student, Texas A&M University Paleoceanography and Paleoclimatology

Joseph Mayala Nsingi Graduate Student, Montclair State University Paleoclimatology/Geochemistry

Tia Ogus Graduate Student, North Carolina State University Marine Geochemistry

Oghalomeno Ononeme Graduate Student, Oklahoma State University *Micropaleontology*

Elizabeth Padilla-Crespo, Ph.D. Assistant Professor, Inter American University of Puerto Rico-Aguadilla, Puerto Rico *Microbiology*

Hannah Pankratz, Ph.D. Postdoctoral Researcher, the University of Alabama in Huntsville *Geological Hazards*

Chanho Park Graduate Student, Western Michigan University Environmental Geophysics **Ross Parnell-Turner, Ph.D.** Assistant Professor, Scripps Institution of Oceanography, University of California, San Diego *Marine Geophysics*

Lizethe Pendleton Graduate Student, University of Utah Environmental Microbiology

Brennan Phillips, Ph.D. Assistant Professor, University of Rhode Island *Ocean Engineering/Geochemistry/Geophysics*

Joshua Pi Graduate Student, University of Rhode Island Ocean Ecogeochemistry

Tainã Marcos Lima PinhoGraduate Student, Alfred Wegener Institute, GermanyPaleoceanography and Paleoclimatology

Loic Piret Graduate Student, Ghent University, Belgium *Glacial Sedimentology*

Bryan Plankenhorn Graduate Student, University of Rhode Island *Biological Oceanography*

Jonas Preine Graduate Student, University of Hamburg, Germany Marine Volcanology

Call Madison Provenza Graduate Student, American Geophysical Union (AGU) Voices for Science Cohort member *Geochemistry*

Ellie Pryor Graduate Student, Cardiff University Paleoceanography and Paleoclimatology

Sangeetha Puthigai Graduate Student, Texas A&M University Chemical Oceanography

Munira Raji, Ph.D. Postdoctoral Researcher, University of Hull, United Kingdom Geochemistry/Science Policy and Sustainable Geoscience

Brendan Reilly, Ph.D. Postdoctoral Researcher, Scripps Institution of Oceanography, University of California, San Diego Paleoceanography/Paleomagnetism

Alex J. Reis Graduate Student, University of Kentucky Stable Isotope Geochemistry

Heather Renyck Educator, Bolivar-Richburg High School Science Education

Hailey Riechelson Graduate Student, Rutgers University Paleoclimatology

Philip Riekenberg, Ph.D. Postdoctoral researcher, NIOZ Royal Netherlands Institute for Sea Research, the Netherlands *Biogeochemistry*

Molly Robinson Graduate Student, University of Rhode Island *Paleoceanography*

Viviane dos Santos Rocha Graduate Student, Northern Illinois University Paleoceanography and Paleoclimatology

Sara Morgado Rodrigues, Ph.D. Postdoctoral Researcher, Royal Holloway University of London, Portugal *Marine Geology/Sedimentology/Paleoceanography*

Richard Rosas Graduate Student, Texas A&M University *Oceanography*

Katharine G. Rose Graduate Student, Mississippi State University Diagenetic Geochemistry

Joshua H. Rosenfeld, Ph.D. Independent Geologist *Geosciences*

Valerie Rountree, Ph.D. Assistant Professor, University of Redlands *Climate and Energy Studies*

Jarunetr Nadia Sae-Lim Graduate Student, Washington University in St. Louis Paleoclimatology

Zulqarnain Sajid, Ph.D. Independent Researcher Sedimentary Geochemistry/Paleoclimatology

Silas Adeoluwa Samuel Graduate Student, Oklahoma State University Geology/Geophysics

Danielle Schimmenti Graduate Student, Texas A&M University *Paleoceanography and Paleoclimatology*

Dylan Schlichting Graduate Student, Texas A&M University *Ocean Modeling* Ashley Scott Graduate Student, Western Michigan University Carbonate Sedimentology

Rosie Sheward, Ph.D. Postdoctoral Research, Goethe-Universität Frankfurt am Main, Germany *Micropaleontology/Paleoecology/Paleoceanography*

Stéphanie Shousha. Ph.D. Postdoctoral Researcher, University of Montreal, Canada *Aquatic Biogeochemistry*

Weimin Si, Ph.D. Postdoctoral Researcher, Brown University Paleoceanography and Paleoclimatology

Elizabeth Sibert, Ph.D. Postdoctoral Researcher, Yale University *Paleoceanography/Micropaleontology*

Aidan Starr, Ph.D. Postdoctoral Researcher, Rutgers University Paleoceanography and Paleoclimatology

Maya Stefanelli Graduate Student, Rutgers University Paleoceanography

Ioana C. Stefanescu, Ph.D. Postdoctoral Researcher, University of Wyoming *Paleoclimate*

Kirsten Steinke Graduate Student, Oregon State University Zooplankton Ecology

Emma Strand Graduate Student, University of Rhode Island *Marine Biology*

Adam Subhas, Ph.D. Assistant Scientist, Woods Hole Oceanographic Institution Biogeochemistry

Anne Tamalavage, Ph.D. Postdoctoral Researcher, University of Montreal, Canada Paleoceanography/Sediment Organic Geochemistry

Alexandria Thompson Graduate Student, Oregon State University Paleoceanography and Paleoclimatology

Leah Travis-Taylor Graduate Student, The University of Massachusetts Amherst Paleoclimatology

Victoria Treadaway, Ph.D. Postdoctoral Researcher, University of Miami *Chemical Oceanography*

Neal S. Turluck Self-employed Petroleum Producer Sedimentology/Geophysics/Hydrology

Kyle J. Turner Research Associate, City College of New York Ocean Biogeochemistry

Loes van Dam Graduate Student, University of Rhode Island *Geodynamics*

Tim van Peer, Ph.D. Postdoctoral Researcher, University College London, UK *Paleoclimatology*

Mirko Alessandro Uy Graduate Student, University of Notre Dame Paleoceanography and Paleoclimatology

Natalie Varela Graduate Student, Virginia Polytechnic Institute and State University (Virginia Tech) Sedimentology/Paleoceanography

Nathan Vinhateiro, Ph.D. Associate Research Professor, University of Rhode Island *Coastal Geology/Paleoclimatology*

Donovan Vitale Laboratory Assistant, Western Michigan University *Geophysics*

Courtney L. Wagner, Ph.D. Postdoctoral Researcher, Smithsonian Institution National Museum of Natural History *Biogeomagnetism*

Taylor Walton Graduate Student, University of Washington, Seattle Sediment Biogeochemistry

Yi Wang, Ph.D. Postdoctoral Researcher, Woods Hole Oceanographic Institution Sedimentary Geochemistry/Paleoceanography and Paleoclimatology

Jacob P. Warner, Ph.D. Postdoctoral Researcher, University of Louisiana at Lafayette Paleoclimatology

Nicholas Wellbrock Graduate Student, Texas A&M University Marine Geology

Olivia Williams Graduate Student, Oregon State University *Paleoclimatology* Xiaolei Xu Graduate Student, Texas A&M University Chemical Oceanography

Stacy L. Yager Graduate Student, Ball State University *Paleoceanography and Paleoclimatology*

Yan Zhang Graduate Student, University of California, Santa Cruz Paleoceanography and Paleoclimatology