

Scientific Ocean Drilling Program 2050

NEW SCIENCE FRAMEWORK

Deadline June 2020

Science Framework Writing Team

LEAD EDITORS (2)

Anthony Koppers Oregon State University U.S.
Rosalind Coggon University of Southampton U.K.

WRITING TEAMS FOR STRATEGIC OBJECTIVES (8)

• **Habitability on Earth**

Defining the conditions for and role of life in the sub-seafloor

- **Primary Author:** **Anais Pages**, CSIRO, Australia
- **Secondary Author:** **Steve D'Hondt**, University of Rhode Island, U.S.
- **Reviewer:** **Verena Heuer**, MARUM, Universität Bremen, Germany
- **Reviewer:** **Yuki Morono**, KCC, JAMSTEC, Japan
- **Reviewer:** **Beth Orcutt**, Bigelow Laboratory for Ocean Sciences, U.S.

• **Feedbacks in the Earth System**

Constraining the processes that operate between oceans, Earth, life, and climate

- **Primary Author:** **Brian Romans**, Virginia Tech Geosciences, U.S.
- **Secondary Author:** **Kliti Grice**, Curtin University, Australia
- **Reviewer:** **Heiko Pälike**, MARUM, Universität Bremen, Germany
- **Reviewer:** **Yohey Suzuki**, University of Tokyo, Japan

• **Earth's Climate Factory**

Examining the ice sheets, global ocean circulation, the monsoon, and sea level under different climate states

- **Primary Author:** **Matt O'Regan**, Stockholm University, Sweden
- **Secondary Author:** **Rob McKay**, Victoria University of Wellington, New Zealand
- **Reviewer:** **Ken Miller**, Rutgers University, U.S.
- **Reviewer:** **Jun Tian**, Tongji University, China

• **Earth's Past as a Spotlight on the Future**

Elucidating our future climate and environment using marine records of Earth's history

- **Primary Author:** **Patrick Grunert**, University of Cologne, Germany
- **Secondary Author:** **Sarah Feakins**, University of Southern California, U.S.
- **Reviewer:** **Chris Charles**, Scripps Institution of Oceanography, U.S.
- **Reviewer:** **Junichiro Kuroda**, University of Tokyo, Japan

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- **Tipping Points in Earth's History**

Identifying the causes, scales, and consequences of climatic and environmental perturbations

- **Primary Author: Chris Lowery**, University of Texas Institute for Geophysics, U.S.
- **Secondary Author: Patrick Grunert**, University of Cologne, Germany
- **Reviewer: Sean Gulick**, University of Texas Institute for Geophysics, U.S.
- **Reviewer: Yusuke Yokoyama**, University of Tokyo, Japan

- **The Life Cycle of Earth's Tectonic Plates**

Investigating the generation, aging, and death of lithospheric plates and their impacts on the Earth system

- **Primary Author: Ross Parnell-Turner**, Scripps Institution of Oceanography, U.S.
- **Secondary Author: Katsuyoshi Michibayashi**, Nagoya University, Japan
- **Reviewer: Donna Blackman**, University of California Santa Cruz, U.S.
- **Reviewer: Antony Morris**, University of Plymouth, U.K.
- **Reviewer: Julie Prytulak**, Durham University, U.K.

- **Global Cycles of Energy and Matter**

Determining the nature, magnitude and impacts of water, energy and matter transfer in the Earth system

- **Primary Author: Cara Burberry**, University of Nebraska–Lincoln, U.S.
- **Secondary Author: Marguerite Godard**, Université de Montpellier, France
- **Tertiary Author: Ken Miller**, Rutgers University, U.S.
- **Reviewer: Liz Screatton**, University of Florida, U.S.
- **Reviewer: Geoff Wheat**, MBARI, U.S.

- **Natural Hazards Impacting Society**

Researching and monitoring natural hazards in the marine environment

- **Primary Author: Patrick Fulton**, Cornell University, U.S.
- **Secondary Author: Laura Wallace**, GNS Science, New Zealand
- **Reviewer: Lisa McNeill**, University of Southampton, U.K.
- **Reviewer: Masataka Kinoshita**, University of Tokyo, Japan
- **Reviewer: Harold Tobin**, University of Washington, U.S.

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WRITING TEAMS FOR FLAGSHIP INITIATIVES (8)

• Ground-truthing Future Climate Change

- **Primary Author:** **Rob McKay**, Victoria University of Wellington, New Zealand
- **Secondary Author:** **Matt O'Regan**, Stockholm University, Sweden
- **Reviewer:** **Chris Charles**, Scripps Institution of Oceanography, U.S.
- **Reviewer:** **Junichiro Kuroda**, University of Tokyo, Japan
- **Reviewer:** **Heiko Pälike**, MARUM, Universität Bremen, Germany

• Probing the Deep Earth

- **Primary Author:** **Katsuyoshi Michibayashi**, Nagoya University, Japan
- **Secondary Author:** **Ross Parnell-Turner**, Scripps Institution of Oceanography, U.S.
- **Tertiary Author:** **Antony Morris**, University of Plymouth, U.K.
- **Reviewer:** **Donna Blackman**, University of California Santa Cruz, U.S.
- **Reviewer:** **Zhen Sun**, S. China Sea Inst. of Oceanology, China

• Diagnosing Ocean Health

- **Primary Author:** **Kliti Grice**, Curtin University, Australia
- **Secondary Author:** **Brian Romans**, Virginia Tech Geosciences, U.S.
- **Reviewer:** **Kristen St. John**, James Madison University, U.S.
- **Reviewer:** **Jun Tian**, Tongji University, China
- **Reviewer:** **Yusuke Yokoyama**, University of Tokyo, Japan

• Exploring Life and Its Origin

- **Primary Author:** **Steve D'Hondt**, University of Rhode Island, U.S.
- **Secondary Author:** **Richard Norris**, Scripps Inst. of Oceanography, U.S.
- **Reviewer:** **Verena Heuer**, MARUM, Universität Bremen, Germany
- **Reviewer:** **Yuki Morono**, KCC, JAMSTEC, Japan
- **Reviewer:** **Clive Neal**, University of Notre Dame, U.S.
- **Reviewer:** **Beth Orcutt**, Bigelow Laboratory for Ocean Sciences, U.S.

• Assessing Tsunami and Earthquake Hazards to Society

- **Primary Author:** **Laura Wallace**, GNS Science, New Zealand
- **Secondary Author:** **Patrick Fulton**, Cornell University, U.S.
- **Reviewer:** **Lisa McNeill**, University of Southampton, U.K.
- **Reviewer:** **Harold Tobin**, University of Washington, U.S.
- **Reviewer:** **Masataka Kinoshita**, University of Tokyo, Japan

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WRITING TEAMS FOR FUNDAMENTAL PROGRAM FACETS (4)

- **Broader Impacts and Outreach**

- **Primary Author:** [Richard Norris](#), Scripps Inst. of Oceanography, U.S.
- **Secondary Author:** [Lead Editors](#)
- **Reviewer:** [Antony Morris](#), University of Plymouth, U.K.
- **Reviewer:** [Kristen St. John](#), James Madison University, U.S.

- **Land to Sea Drilling (link to ICDP)**

- **Primary Author:** [Marguerite Godard](#), Université de Montpellier, France
- **Secondary Author:** [Cara Burberry](#), University of Nebraska–Lincoln, U.S.
- **Reviewer:** [Sean Gulick](#), University of Texas Institute for Geophysics, U.S.
- **Reviewer:** [Ken Miller](#), Rutgers University, U.S.
- **Reviewer:** [Liz Screaton](#), University of Florida, U.S.
- **Reviewer:** [Clive Neal](#), University of Notre Dame, U.S.

- **Terrestrial to Extraterrestrial (link to NASA and other space agencies)**

- **Primary Author:** [Anais Pages](#), CSIRO, Australia
- **Secondary Author:** [Lead Editors](#)
- **Reviewer:** [Clive Neal](#), University of Notre Dame, U.S.
- **Reviewer:** [Yohey Suzuki](#), University of Tokyo, Japan

- **Data Analytics and Technology Development**

- **Primary Author:** [Lead Editors](#)
- **Secondary Author:** [Lead Editors](#)
- **Reviewer:** [Masataka Kinoshita](#), University of Tokyo, Japan
- **Reviewer:** [Geoff Wheat](#), MBARI, U.S.