



December 8, 2022

Greetings,

We are looking for early career scientists and/or sea-going technicians with experience in physical or chemical oceanography (hydrography) who would be interested in participating as **co-Chief Scientist** on the decadal re-occupation of the U.S. GO-SHIP hydrographic long-line known as I05 (32°S in the Indian Ocean). This cruise ~8 weeks long (**mid-July to mid-September 2023**).

Deadline for applications (see below for details): January 16, 2023

PARTICULARS:

- We will be sailing on the **R/V Revelle** (<https://scripps.ucsd.edu/ships/revelle>)
- Chief Scientist – Brendan Carter brendan.carter@noaa.gov
- 55 Days at Sea (Fremantle, Australia to Cape Town, South Africa)
- U.S. GO-SHIP Contacts
 - PI: Lynne Talley ltalley@ucsd.edu (she/her)
 - Project Manager: Alison Macdonald amacdonald@whoi.edu (she/her)

The US GO-SHIP program collects data for global CO₂ and climate variability programs. The website is <http://usgoship.ucsd.edu>. Scripps Institution of Oceanography (UCSD) operates the NSF-funded portion of the US national program, which covers this upcoming 2023 cruise. The website of the international GO-SHIP (Global Ocean Ship-based Hydrographic Investigations Program) program is <http://go-ship.org>. GO-SHIP is part of the Global Ocean Observing System (GOOS) <https://www.goosocean.org/>. This will be the fifth occupation this line that was also sampled in 1987, 1995 (occupied in 3 legs), 2002 and 2009.

DUTIES:

Pre-cruise: Assist Chief Scientist with pre-cruise planning as needed. Attend pre-cruise meeting if feasible. Assisting with the selection of the CTD-watch students.

At sea: Co-Chief will be scientist-in-charge of one 12-hour watch, opposite the Chief Scientist with the following responsibilities: ensuring the CTD watch runs the CTD console and completes routine forms and tasks for each station; mentoring students assigned to the watch; deciding sampling levels for each parameter in accordance with the chief scientist; organizing the CTD watch and assisting with water sampling (directing operations (sample cop) and/or obtaining water parameter samples (e.g. salinity, nutrients); and assisting in at-sea data reviews, reports, and documentation. (See¹ below)

Post-cruise: Assist the Chief Scientist with cruise report finalization and review of data, quality codes, and documentation.

SUPPORT: Salary support for academic co-Chief Scientists will be negotiated, and is typically supplied via subawards from UCSD/SIO to the participant's institution (see² below). It typically covers time at-sea, in port, on travel, and about two weeks of salaried time for preparation. Travel will be paid by UCSD/SIO.

WHO CAN APPLY: The co-Chief positions are considered stepping-stones for early career scientists but are also open to higher-level scientists/technicians with graduate degrees or equivalent experience. No at-sea experience is necessary, although it can be a plus. The Chief Scientist will provide training on board. Although preference may be given to those with ongoing research in the Indian Ocean, all are welcome to apply. If there are multiple qualified applicants for these positions, the Chief Scientist in consultation Principal Investigators will provide recommendations to the U.S. GO-SHIP Executive Council who will approve final selection.

HOW TO APPLY: I05 will provide an excellent opportunity to work at sea and the co-Chief Scientist will have the opportunity to become familiar with and/or extend their knowledge of South Indian oceanography. To join us at-sea for some hard work that will lead to a rewarding experience observing the southern subtropical Indian Ocean first hand, email letters of application to Alison Macdonald (amacdonald@whoi.edu) and Brendan Carter (brendan.carter@noaa.gov).

Please provide your CV, a brief summary of your research interests and experience and include the name, email address and phone number of a reference. **DEADLINE: January 16, 2023**

The cruise is two months long and will likely encounter challenging weather with rough sea conditions at some point. We therefore recommend that those who apply be reasonably confident that they can handle such conditions. Candidates should think carefully before applying if they are prone to motion sickness, and should be free of pre-existing conditions requiring medical care that could flare up during a long period far from ports.

¹ **Further details on cruise activities:** The Data and Cruise Report from the recent GO-SHIP occupation (of the P02 line) can be found at <https://usgoship.ucsd.edu/p02-2022-student-blog/>. At-sea weekly reports from the same cruise are here: <https://usgoship.ucsd.edu/2022/04/16/weekly-reports-from-2022-p02-leg-1/>. Similar items for other recent U.S. GO-SHIP cruises can be found here <https://usgoship.ucsd.edu/news/>, respectively. Station stops are planned every ~55 kilometers (closer over steep topography and near coasts) where the CTD/rosette is lowered to measure the temperature, salinity, oxygen, currents, optical properties, and other dynamics from just below the sea surface to approximately 10 meters above the ocean bottom. During each of these stations up to 36 water samples are collected for measurement of various water properties, including a number of oceanic carbon-related parameters (dissolved organic and inorganic carbon, alkalinity, pH, $p\text{CO}_2$), along with dissolved chlorofluorocarbons and sulfur hexafluoride (SF_6), dissolved oxygen, salinity, and nutrients. While the ship is both underway and on station it continuously pumps surface seawater through sensors for temperature, salinity, and partial pressure of CO_2 ; operates standard meteorological sensors; operates a shipboard Acoustic Doppler Current Profiler; and collects along-track bathymetric data. Additional ancillary programs ("Level 2 and 3") are hosted aboard at a lower priority than the core ("Level 1") measurements. We also deploy floats and drifters along the track as requested.

² **Financial support** for the co-Chief Scientist is provided through an NSF grant to UCSD/SIO,

coordinated by Lynne Talley (ltalley@ucsd.edu). Except in the case of a directly supported project post-doc, there is no support from this NSF grant for post-cruise scientific analyses, only for time spent on final documentation, which is minimal for this program (almost all work is done at sea). This cruise-specific salary plus benefits support for the co-chief scientist should never exceed $(2.5 * D / 30)$ months (where D = number of days at sea), and in general will be less than this amount, in many cases much less (typically 1.5 times), depending largely on pre- and post-cruise project-related activities for each person. A contract agreeing to the guidelines set out by the US GO-SHIP Executive Council must be signed before travel preparations can be made.

STILL WANT MORE INFORMATION?

This cruise is a U.S. contribution to international GO-SHIP <https://www.go-ship.org/>, which is part of the Global Ocean Observing System (GOOS) (<https://www.goosocean.org/>). GO-SHIP is tracked along with other GOOS observing systems through OceanOps (<https://www.ocean-ops.org/board>).

You can read more about the U.S. GO-SHIP program at: <https://usgoship.ucsd.edu/>

You can find data and cruise reports from previous I05 occupations at:

<https://cchdo.ucsd.edu/search?q=I05>

Section-based graphics and maps from WOCE are available from the online Indian Ocean Atlas at http://whp-atlas.ucsd.edu/indian_index.html.

Further questions can be directed to Alison Macdonald (amacdonald@whoi.edu).