

UC San Diego



Ocean Biosciences Program

Graduate Department

Scripps Institution of Oceanography

University of California San Diego

Prof. James Leichter

23 Oct 2024

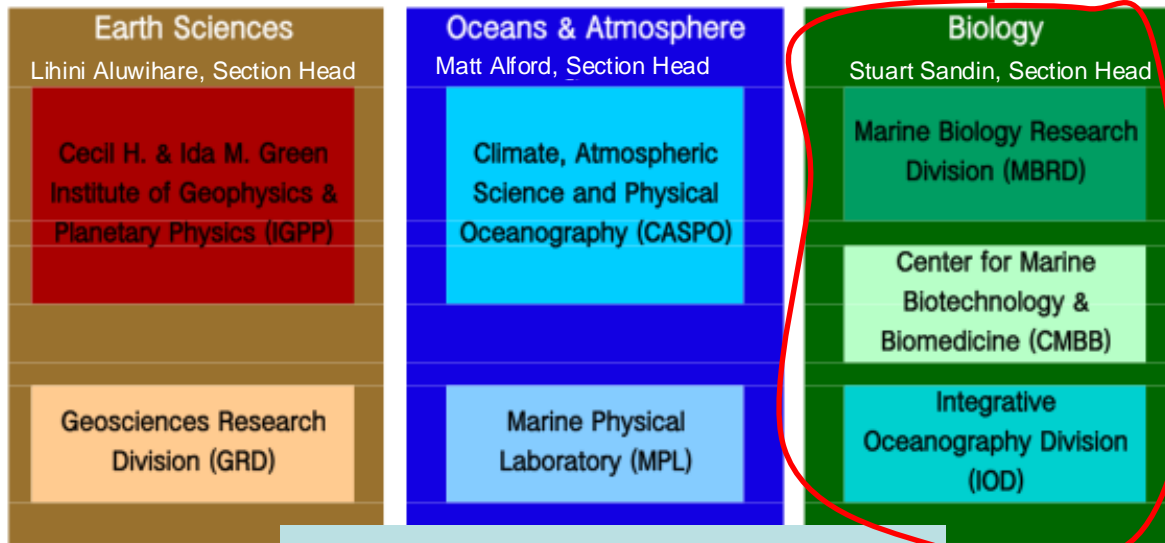
Outline:

- Admissions Process (mostly CC info)
- What is OBP?
- Who are the academic faculty?
- Some major resources here

Overview of the Application Process

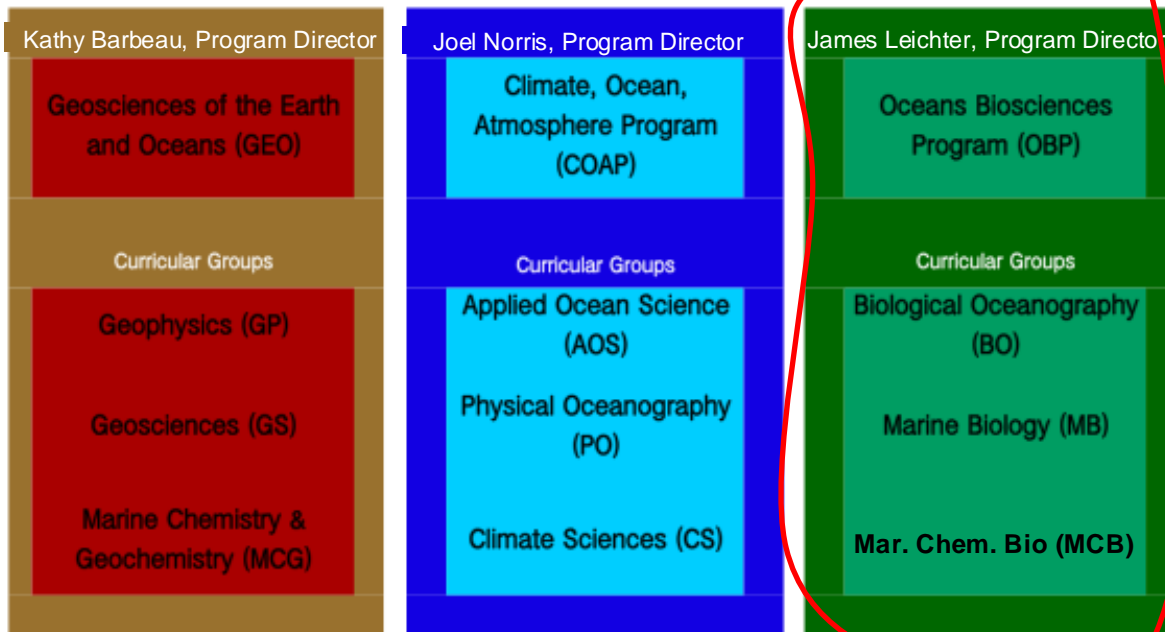
1. Identifying potential Faculty Advisor(s). Reach out to these people and assess interest. Email is challenging, don't be discouraged
2. Applying for fellowships especially NSF
3. SIO application with focus on research experience, and statement of research interests. Background and recommendation letters can help
4. Onsite interviews/recruiting
5. Internal Admissions decisions and internal fellowship awards

Scripps Research Sections and Divisions



Chair Sarah Gille; Vice Chair Lihini Aluwihare

Scripps Educational Programs



Two Curricular groups in Ocean Biosciences Program

Marine Biology Curricular Group

Marine Biology: study of all aspects of cell bio, development, physiology, genetics, behavior, ecology, and evolution of marine organisms.

Coordinator: Prof. Dede Lyons

Marine Chemical Biology Track

Marine bio at the chemistry-biology interface.

Curricular Advisor: Prof. Brad Moore

Biological Oceanography Curricular Group

Biological Oceanography: **interdisciplinary** marine ecology-- strong tradition on including physical and chemical environment.

Coordinator: Prof. Andrew Barton

~BO Academic Staff (partial list)

Faculty

ALLEN, ANDY*
ANDERSSON, Andreas#
BARTON, Andrew (joint with Biology)
BAUMANN-PICKERING, Simone
BOWMAN, Jeff
BURTON, Ronald*
CHOY, Anela
DECIMA, Moira
DIAZ, Julia #
FRANKS, Peter (RTAD)
HAMDOUN, Amro*
HILDEBRAND, John†
LANDRY, Michael (RTAD)
LEICHTER, James*
LEVIN, Lisa (RTAD)
OHMAN, Mark (RTAD)
PALENIK, Brian*
PETRIK, Colleen
SANDIN, Stuart*
SEMMENS, Brice*
SMITH, Jennifer*
SUGIHARA, George*
TRESGUERRES, Martin*

Researchers/Lecturers

JAFFE, Jules†
PARNELL, Ed (RTAD)

Emeriti

CHECKLEY, David
DAYTON, Paul
HASTINGS, Philip*
MITCHELL, Greg
VERNET, Maria

Adjunct faculty

BARLOW, Jay (SWFSC)
EZCURRA, Exequiel (UC Riverside
& UC Mexus)
KNOWLTON, Nancy* (Smithsonian Inst.)

* BO & MB
† BO & COAP
BO & GEO

~BO Academic Staff (some of our newer faces)

Faculty

ALLEN, AND
ANDERSSON
BARTON, A
BAUMANN-F
BOWMAN, J



ology)
e

Researchers/Lect

JAFFE, Jules†
PARNELL, Ed



Emeriti

Moira Decima
Zooplankton Ecology, Curator



Y,
Paul
S, Philip*
a
-, Greg
Maria

Colleen Petrik
Biol. oceanography of
zooplankton and fishes,
biophysical modeling, climate

B
C
D
D
F
H
LAN
LEIC
OHM
PALE
PETI
SAN
SEM
SMIT
SUG
TRF



faculty

Julia Diaz
Marine microbio, Phytoplankton (Sr
& algal biofuels,
biogeochemistry



Andrew Barton
Plankton macroecology,
biodiversity

Anela Choy
Open ocean food webs

* BO & MB
† BO & COAP
BO & GEO

~MB Academic Staff (overlaps between MB and BO)

Faculty

ABURTO, Octavio
ALUWIHARE, Lihini
ALLEN, Eric (w/ Biology)
ALLEN, Andy*
ARCILA, Dahiana
BARTLETT, Douglas
BENMARHIA, Tarik
BETANCUR, Ricardo
BOWMAN, Jeff*
BURTON, Ronald*
GAASTERLAND, Terry
GERWICK, William^o
GILBERT, Jack (w/ Medicine)
HAMDOUN, Amro*
HECHINGER, Ryan
JENSEN, Paul^o
LEICHTER, James*
LUKOWSKI, April
LYONS, Deirdre
MOORE, Bradley^o
NORRIS, Richard †
PALENIK, Brian*
ROUSE, Greg
SANDIN, Stuart*
SEMMENS, Brice*
SMITH, Jennifer*
SUGIHARA, George*
TAYLOR, Jennifer
TRESGUERRES, Martin*

Researchers

DEHEYN, Dimitri
GERWICK, Lena
KELLY, Linda
PONGANIS, Paul
ZEIGLER-ALLEN, Lisa

Emeriti

AZAM, Farooq
BRAHAMSHA, Bianca
FELBECK, Horst
FENICAL, William^o
HASTINGS, Philip*
HOLLAND, Linda
HOLLAND, Nicholas
KOOYMAN, Gerald
VACQUIER, Victor
YAYANOS, Aristides
JACKSON, Jeremy †
LATZ, Michael

Adjunct faculty

ARCHER, Eric (SWFSC)
KNOWLTON, Nancy* (Smithsonian Inst.)
MESNICK, Sarah (SWFSC)

* MB & BO
^o MB & MCG
† MB & GEO

~MB Academic Staff

Faculty

ABURTO
ALLEN,
ALLEN,
BARTLE
BENMA
BOWMA
BURTO



Lisa Zeigler-Allen
Virus/microbial ecology,
metagenomics

G
G
G
H
H

JENSEN, Paul^o
LEICHTER, James*
LYONS, Deirdre
MOORE, Brad
NORRIS, Rich
PALENIK, Bri
ROUSE, Greg
SANDIN, Stua
SEMMENS, B
SMITH, Jennif
SUGIHARA, G



April Lukowski
Biosynthetic enzyme discovery
& function

Researchers

DEHEYN, Dimitri
GER
KELL
PON
ZEIG



Linda Kelly
Microbial ecology & biogeochemistry

Eme

PERONE, William
HASTINGS, Philip*
HOLLAND, Linda
HOLLAND, Nicholas
KOOYMAN, Gerald
VACQUIER, Victor



Christides
Jeremy †
el



Dahiana Arcila & Ricardo Benancur-R
Fish Evolution

culty
ic (SWF
Nancy

^o MB & MCG
† MB & GEO

Attending Research Seminars

Ecology seminars Wednesday, 12:15-1:15p
(organized by BO 2nd yr grad students)

MB seminars, Fridays, 12:15-1:15p
(organized by MB 4th yr grad students)

Example, Fall 2024 Ecology Seminars



The poster features a light blue background with a stylized coral reef graphic in the top left and a large, faint map of California in the background. A dark blue box in the top right contains the event title and schedule. Six circular portraits of speakers are arranged in a grid, each with a date label in a blue box to its left. Below each portrait is the speaker's name, affiliation, and research interests. A paragraph of text is located to the right of the top two speakers, and another line of text is below it. At the bottom left, there is a contact information section.

Scripps Institution of Oceanography
Ecology Seminar
Wednesdays, 12:15 - 1:15pm
Hubbs Hall 4500, in-person

10/16
Adam Martiny
University of California,
Irvine
microbial ecology, biogeochemistry

10/23
Stephan Munch
University of California,
Santa Cruz
population dynamics, forecasting

10/30
Sasha Kramer
Monterey Bay Aquarium
Research Institute
phytoplankton ecology, ocean optics

11/06
Donatella Zona
San Diego State
University
Arctic ecosystems, gas fluxes

11/13
Paolo Guidetti
Stazione Zoologica
Anton Dohrn
marine conservation, climate change

11/20
Tyler Coale
University of California,
Santa Cruz
molecular biology, phytoplankton

12/11
Daniele Bianchi
University of California,
Los Angeles
biogeochemistry, global change

Join us for the Scripps Ecology Seminar Series! Discover the latest research in marine ecology, covering everything from biogeochemistry and plankton to fisheries and ecosystem modeling.

Coffee and snacks provided!

QUESTIONS? CONTACT:
AARON DEANS (wadeans@ucsd.edu)
JONATHAN FALCIANI (jfalciani@ucsd.edu)
DEBORAH KUTNER (desigaudkutner@ucsd.edu)

Opportunities for Research Seminars by grad students

SIO 291 MB Grad Student Research
Presentations Seminar, thematic.

SIO 296 BO Grad Student Research
Presentations Seminar.

1 unit course can be very useful
experience

Other Campus Seminars

SIO: All Curricular Groups

http://scrippseducation.ucsd.edu/Calendar_and_Events/Seminars/

SWFSC - NOAA

Southwest Fisheries Science Center

The Southwest Fisheries Science Center is the research arm of NOAA's National Marine Fisheries Service in the Southwest Region. Center scientists conduct biological, economic and oceanographic research on marine resources throughout the Pacific Ocean and in the Southern Ocean off Antarctica to ensure that these populations remain healthy and at sustainable levels.

UCSD Upper Campus

Biology Division Seminar Program: Wednesdays, 4:00 p.m. in the Large Conference Room (first floor) of the Center For Molecular Genetics.

Ecology, Behavior and Evolution Seminars: Fridays, 11:00 a.m. in 1103 Muir Biology Building, UCSD Muir College Campus.

Biology Graduate Seminars: Tuesdays, 12:00 p.m. (noon) in Pacific Hall, UCSD Revelle College Campus.

Resources of Interest to SIO Ocean Biosciences Students

Southwest Fisheries Science Center

The Southwest Fisheries Science Center is the research arm of NOAA's National Marine Fisheries Service in the Southwest Region. Center scientists conduct biological, economic and oceanographic research on marine resources throughout the Pacific Ocean and in the Southern Ocean off Antarctica to ensure that these populations remain healthy and at sustainable levels.



Possible collaborators & mentors

SWFSC staff that are adjunct SIO faculty

Dr. Eric Archer - genetics of marine mammals

Dr. Sarah Mesnick- Marine conservation

Some facilities we have:
Experimental Aquariums;

Hydraulics Lab

Makers Space(s) aka shops



Two large experimental aquarium rooms. Hubbs Hall facility is 2751 square feet with 12 trays and 30 tanks of volumes ranging from 1020 l to 7560 l, using an '**open seawater system**' that can deliver **chilled** (8 deg C), **ambient** (12 deg C-21 deg C), and **warm** (28 deg C) seawater. Chilled and warm seawater temperatures are very reliable, usually fluctuating no more than +/- 1 C deg. **Four additional aquarium wet labs** exist throughout Hubbs Hall, including a chilled 'closed system' in a controlled temperature room.

The **Ritter Hall** facility is 2150 square feet with 18 trays and 19 tanks with volumes ranging from 300 l to 21,000 l, a two chambered controlled light room and three each 3 m square cubicle rooms. **Chilled** (10 deg C) and **ambient** (12 deg C-21 deg C) seawater is also available via an '**open system**'.

Scientific Diving Program

The oldest and one of the largest and most active scientific diving programs in the nation.

Trains and supports students, PIs, & technicians in the safe and effective use of SCUBA and other diving technologies for research.

Opportunities to become certified for Scientific Diving

Boating Operations

Small boats, near shore work

MBRD Boating Handbook

New Boat Operator Authorization Procedure

Opportunities to become certified for small boat operations

Many facilities and opportunities on the main UCSD Campus

Many very strong academic and research departments, e.g. Medicine, Biology, Engineering, Computing, Cognitive Sciences, Music etc

Sports and Recreation, Restaurants, Bookstore, etc

Visual and performing arts

Student advising, tutoring, writing support etc

SIO's Fleet

Oceanographic research vessels
Opportunities to work at sea



R/V Roger Revelle



R/V Sally Ride



R/V Robert Gordon Sproul



R/V Bob and Betty Beyster



SIO Natural History Collections

Marine Vertebrates



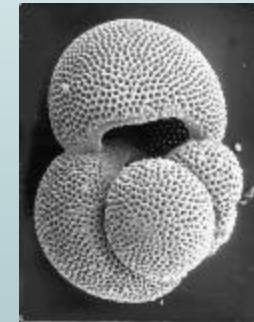
Pelagic Invertebrates



Benthic Invertebrates



Cored Sediments & Microfossils



Dredged Rocks



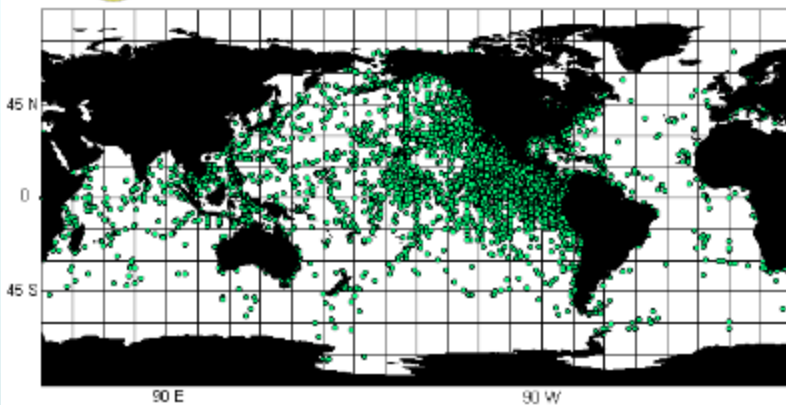
Each has a curator and a collections manager

<http://collections.ucsd.edu/>



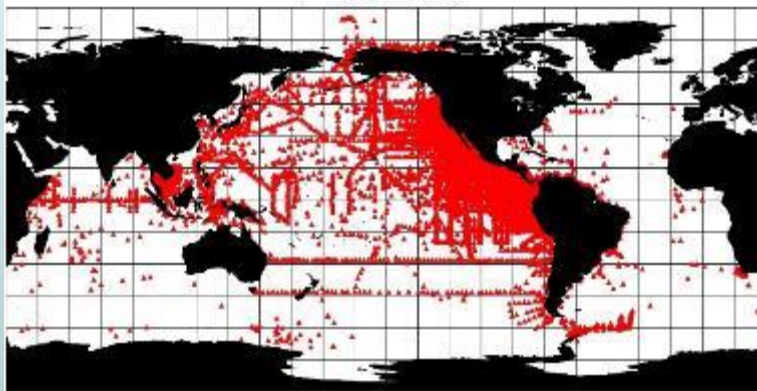
S.I.O. Marine Vertebrates Collection

Collection locations (N = 21,000)



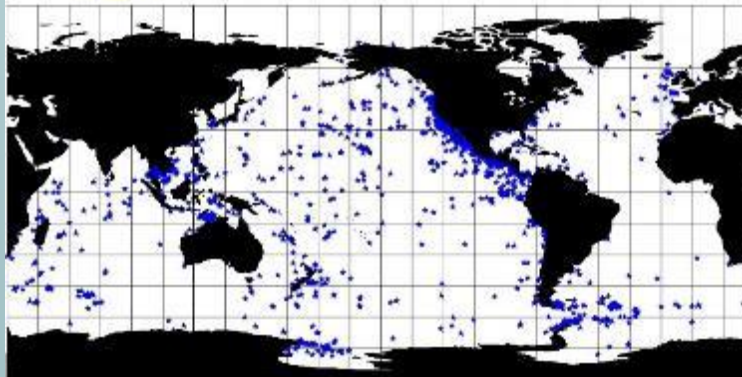
S.I.O. Pelagic Invertebrates Collection

(> 110,000 samples)



S.I.O. Benthic Invertebrates Collection

40 % of lots

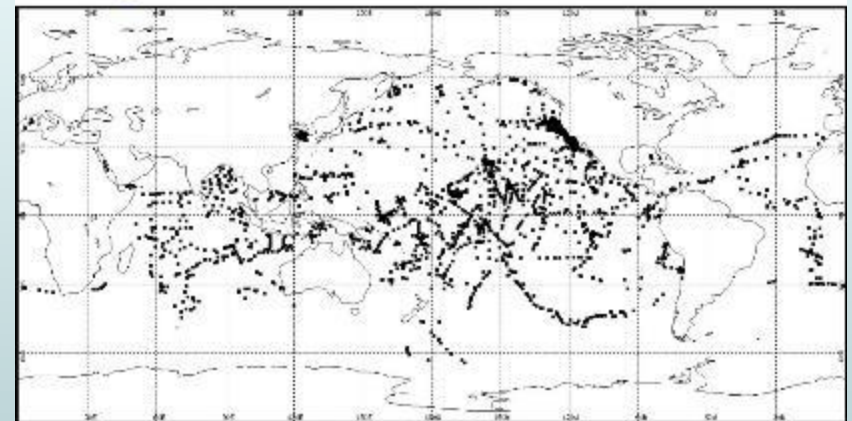


SIO Oceanographic Collections: Sample Locations



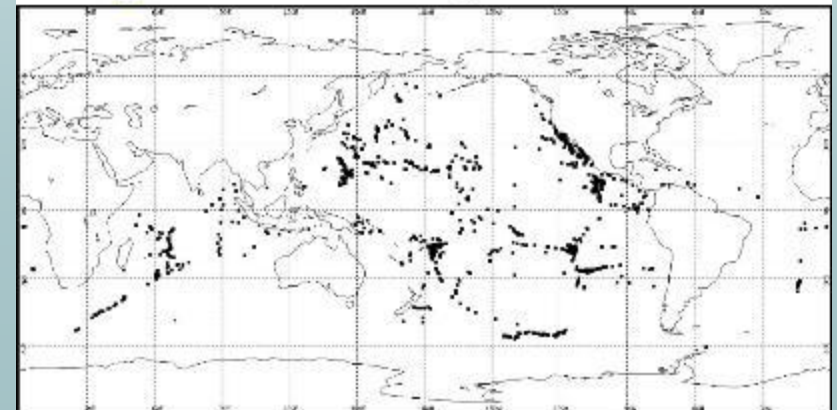
S.I.O. Sediment Cores Collection

~ 75 % of core locations



S.I.O. Dredged Rocks Collection

~ 75 % of dredge locations





SIO Oceanographic Collections: Student Training

Support of Classroom Teaching

- **31** courses at UCSD depend on collection materials
- **20** SIO Graduate Courses
- **11** UCSD undergraduate courses

Support of Thesis and Postdoctoral Studies

In 2008, SIO Collections supported the research of at least

- **20** Scripps graduate students
- **7** Scripps postdoctoral scientists
- **50** students from other universities

68 PhD and Master's degrees based on MVC alone



Ocean Biosciences Graduate Program

- What and who we are
- Resources available to grad students

Next up: CG-specific/application-focused sessions

MB

BO