



Center for Marine Science and Technology (C-MaST)

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Logo



- History & current activities related to marine science & technology at Penn State
- C-MaST development overview



Oceanography at Penn State?

- Marine Science Minor
- Study Abroad
- Marine Science Society
- Worldwide Universities Network (WUN)
Graduate Exchange
- PSU Science Diving Program
- Highlights: undergraduate, graduate,
faculty research and opportunities

<http://www.ocean.psu.edu/>

Oceanography

If you think that Penn State University, because of its geographical location, is an unlikely place to find world-class research and study-abroad opportunities in oceanography, prepare to be surprised.

In fact, Penn State supports an exciting range of educational and research activities in the study of the ocean and its life, chemistry, physics, geology, and interaction with other parts of the Earth.

Our faculty and researchers are eager to share their excitement about the oceans with you. Check it out.

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Consortium for Ocean Leadership

- Penn State is a member
 - Washington, DC based nonprofit
 - Represents 99 leading public and private ocean research institutions
 - Manages ocean research and education programs
 - Ocean drilling
 - Ocean observation
 - Ocean exploration
 - Ocean partnerships





Campus Research

- Applied Research Laboratory
- Graduate Program in Acoustics
- Department of Biology
- Department of Chemistry
- Department of Mathematics
- Department of Geosciences
- Department of Meteorology
- Department of Ecosystem Science & Managements
- Department of Anthropology
- Department of Classics & Ancient Mediterranean Studies
- Department of English
- Pennsylvania Sea Grant

Funding research
in marine science
& technology
exceeds \$6
million/year at
Penn State



Marine Science and Technology courses

- ACS 597: Ocean Acoustics
- ACS 597: Marine Bioacoustics
- BIOL 482: Coastal Biology
- BIOL 499A: Tropical Field Biology
- EARTH 240: Coral Reef Systems
- EM SC 440: Science Diving
- EM SC 441: Advanced Science Diving
- GEOSC 40: The Sea Around Us
- GEOSC 410: Marine Biogeochemistry
- GEOSC 440: Marine Geology
- METEO 22: The Oceans
- METEO 451: Introduction to Physical Oceanography
- WFS 452: Ichthyology



Long-term, large-scale initiatives

- NSF Science and Technology Centers (STC) Integrative Partnerships
 - Penn State bid 2011
 - Center for Autonomous Undersea Scientific Exploration in Extreme Environments – CAUSE³
 - Multi-PI, multi-college effort (ARL, EMS, EESI, Mechanical & Industrial Eng.)
 - Highly ranked, but not successful
 - **Feedback: lack of institutional coordination of oceanography activities at Penn State**



Center for Marine Science and Technology (C-MaST)

- Purpose: To coordinate and promote diverse activities in the area of marine science and technology across campus



Center for Marine Science and Technology (C-MaST)

- **Goals**

- Develop a C-MaST Vision and Mission
- Promote interdisciplinary research and training grants
- Host a regular seminar series to bring together students, faculty, postdocs and staff around C-MaST topics
- Administer the Marine Science Minor
- Represent the University in the Consortium for Ocean Leadership (COL)
- Publicize C-MaST activities at Penn State through freshman recruiting, the Marine Science Society, graduate student recruiting, public seminars, community outreach activities, and maintenance of a website.



Center for Marine Science and Technology (C-MaST)

- Housed within PSIEE (Penn State Institutes of Energy and the Environment)
- Co-Directors
 - Iliana Baums (Department of Biology)
 - Jennifer Miksis-Olds (ARL)
- Advisory Board
 - David Bradley (ARL)
 - Chuck Fisher (Department of Biology)
 - Lee Kump (Geosciences)



Center for Marine Science and Technology (C-MaST)

- Seminar Series: Co-Sponsored by EESI and PSIEE

Earth Talks: Exploring the Oceans

- Fall 2014
- Mondays 4-5pm, Walker 112
- Two 2-min presentations each week
- <http://www.eesi.psu.edu/seminars-conferences/earthtalks-fall2014.shtml>
- www.SignUpGenius.com/go/4090D4BAAAF2FA75-earth/18788852

Date	Available Slot	
9/22/2014 (Mon. 4:00PM - 5:00PM)	Sept 22 (2)	<p>All slots filled</p> <p>✓ anthony lyons Acoustic Imaging of breaking internal waves</p> <p>✓ Jen Miksis-Olds C-MaST overview</p> <p>Edit Delete</p>
9/29/2014 (Mon. 4:00PM - 5:00PM)	Sept 29	<p>✓ Andrew Thurber (OSU) Ocean Conservation</p> <p>Edit Delete</p>
10/6/2014 (Mon. 4:00PM - 5:00PM)	Oct 6 (2)	<p>All slots filled</p> <p>✓ John Parkinson Coral Symbiosis</p> <p>✓ Raymond Najjar Impact of nitrogen deposition on coastal waters</p>
10/13/2014 (Mon. 4:00PM - 5:00PM)	Oct 13 (2)	<p>All slots filled</p> <p>✓ Lee Kump Ocean anoxia</p> <p>✓ Kate Freeman Biomarkers and past oceans</p>
10/20/2014 (Mon. 4:00PM - 5:00PM)	Oct 20 (2)	<p>All slots filled</p> <p>✓ Monica Medina symbiosis</p> <p>✓ QIAN LI The Role of Eddy Momentum Flux on Jets in the Southern Ocean</p>
10/27/2014 (Mon. 4:00PM - 5:00PM)	Oct 27 (2)	<p>Sign Up </p>

11/3/2014 (Mon. 4:00PM - 5:00PM)	Nov 3 (2)	<p>All slots filled</p> <p>✓ Sara Lincoln The sedimentary record of the Deepwater Horizon oil spill</p> <p>✓ Chuck Fisher The deep water coral record of the Deepwater Horizon Oil Spill</p>
11/10/2014 (Mon. 4:00PM - 5:00PM)	Nov 10 (2)	<p>All slots filled</p> <p>✓ Ying Cui Ocean acidification during the end-Permian mass extinction</p> <p>✓ Maria Herrmann Organic carbon budget of U.S. east coast estuaries</p>
11/17/2014 (Mon. 4:00PM - 5:00PM)	Nov 17 (2)	<p>All slots filled</p> <p>✓ Todd LaJeunesse Reef coral acclimatization to climate change</p> <p>✓ Tim White Multidecadal Record of $\delta^{18}O$ coral Variation and the Relationship to Sun Spot Cycles</p>
12/1/2014 (Mon. 4:00PM - 5:00PM)	Dec 1 (2)	<p>All slots filled</p> <p>✓ Klaus Keller Characterizing the uncertainty surrounding sea-level rise projections to inform decisionmaking</p> <p>✓ Daniel Tomaso Seasonal and Interannual Variations in the Dissolved Oxygen Budget of an Urbanized Tidal River: The Upper Delaware Estuary</p>