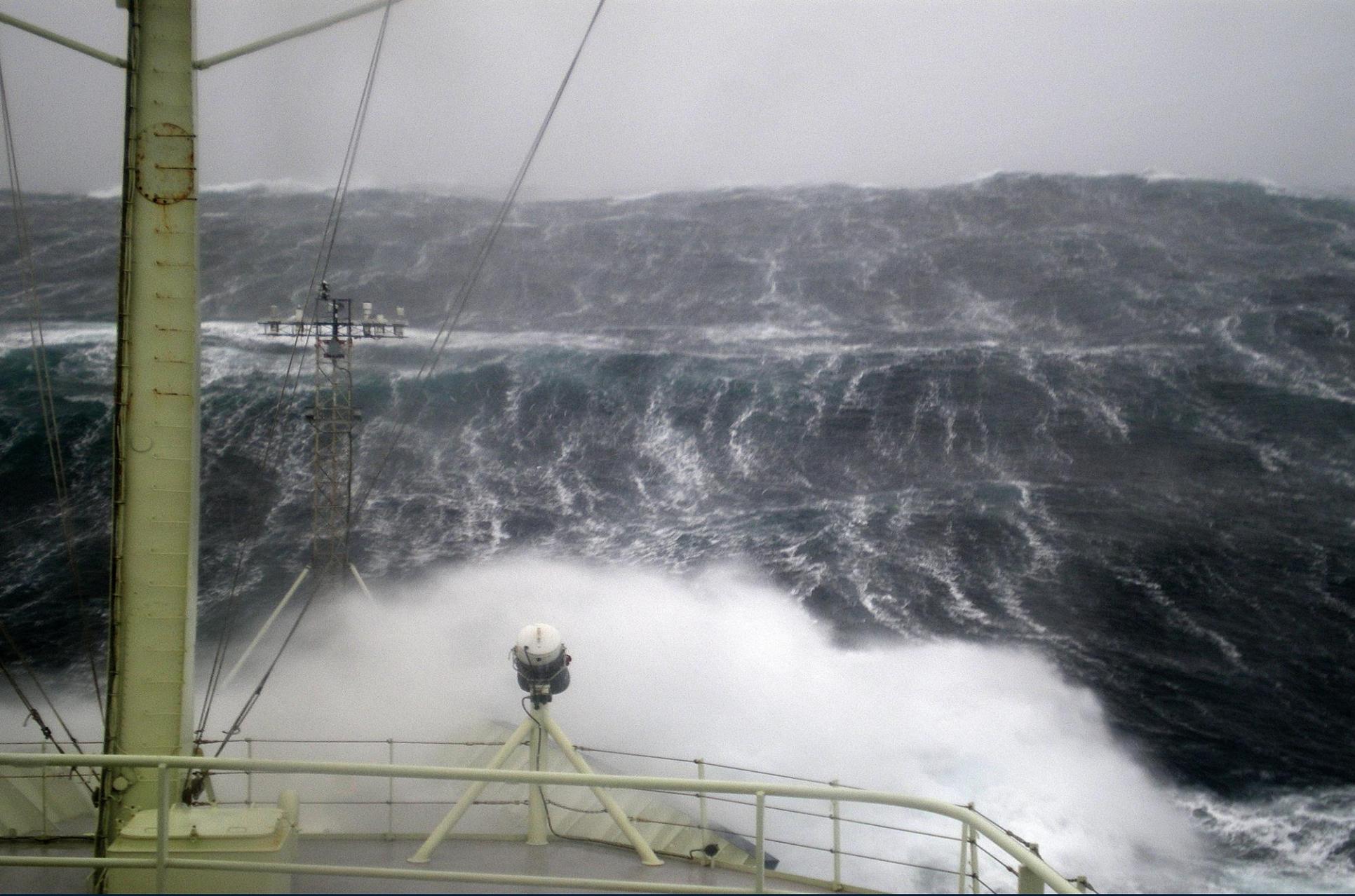


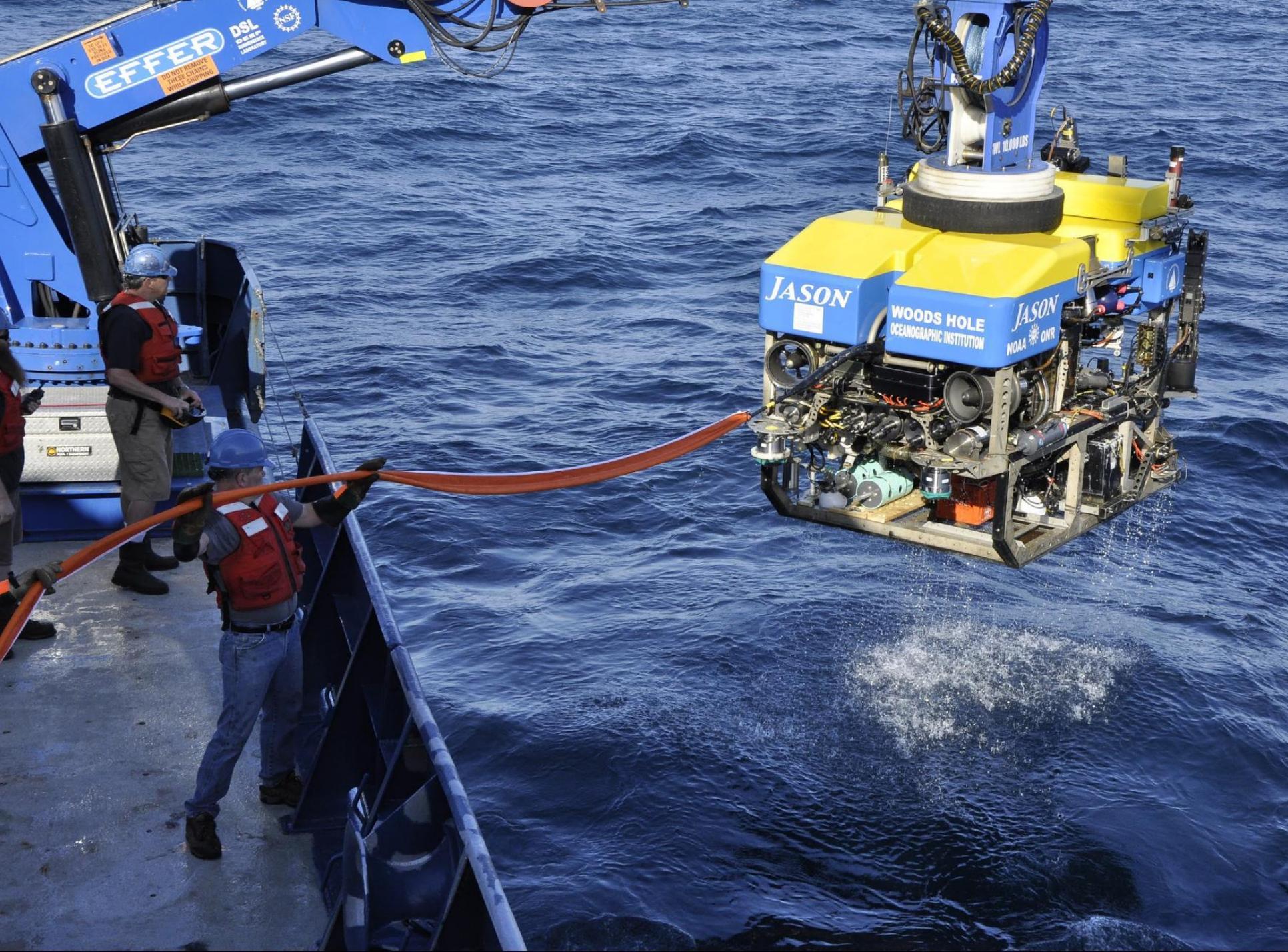


# The Wild, Wild Depths

James Bellingham



Woods Hole Oceanographic INSTITUTION



**EFFER**  
DO NOT REMOVE THESE CHAINS WHILE SHIPPIING

**DSL**  
DO NOT REMOVE THESE CHAINS WHILE SHIPPIING



**JASON**

**WOODS HOLE**  
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**JASON**  
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WT. 10,000 LBS

**SCOTTBORN**



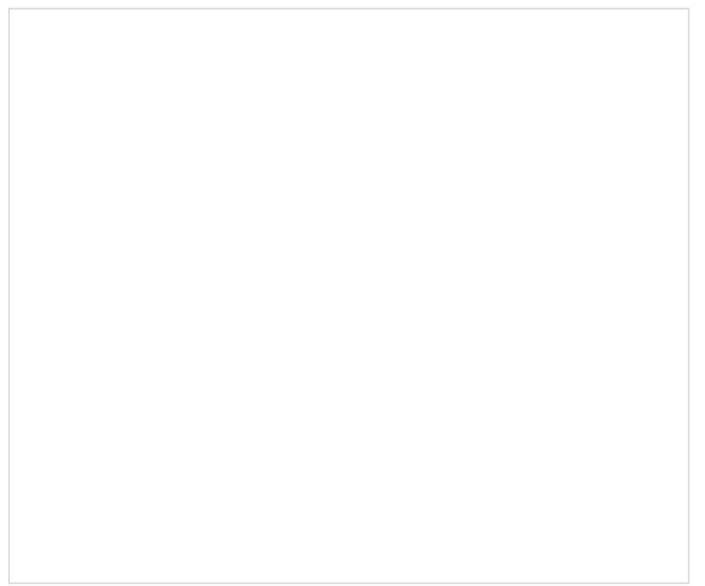
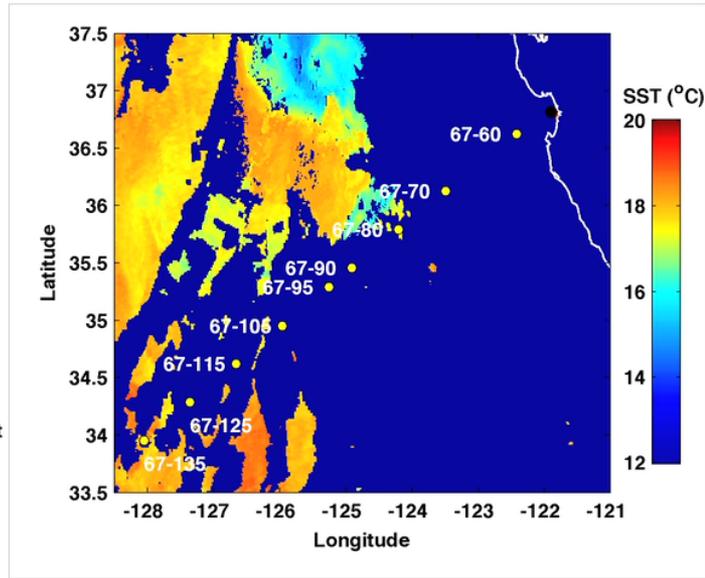
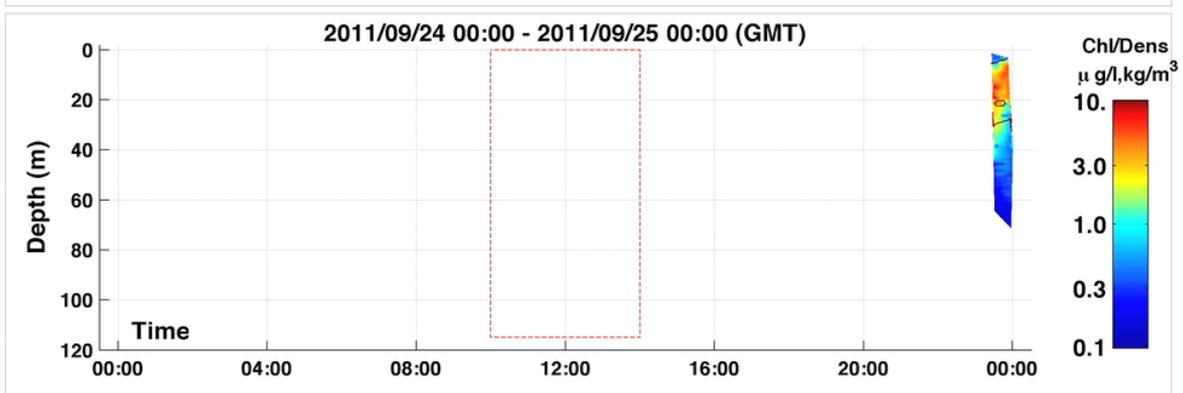
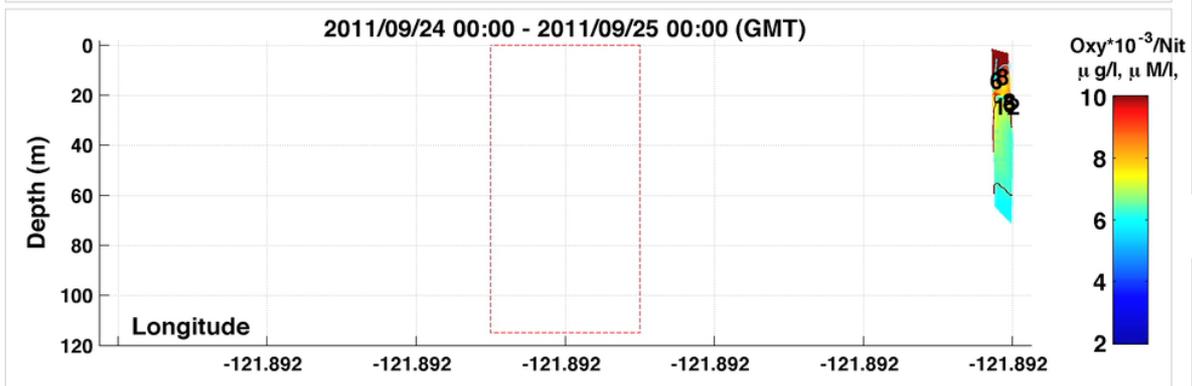
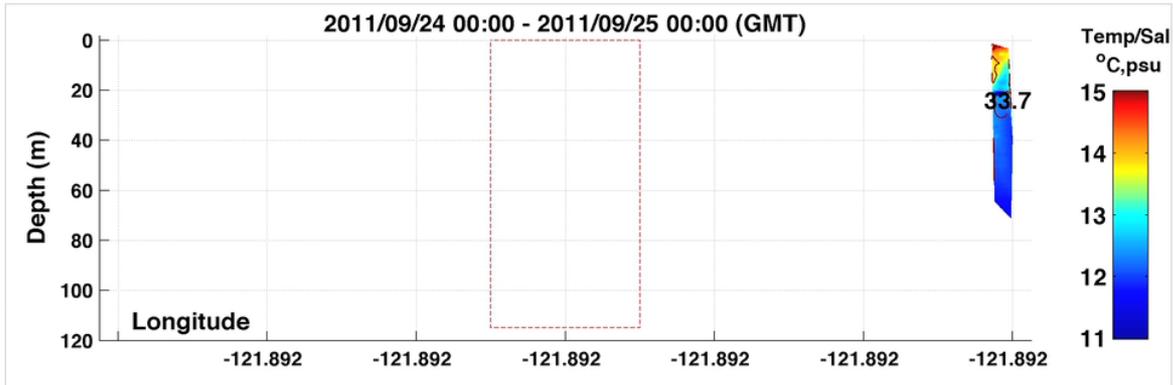


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M B A R I



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# Working Together



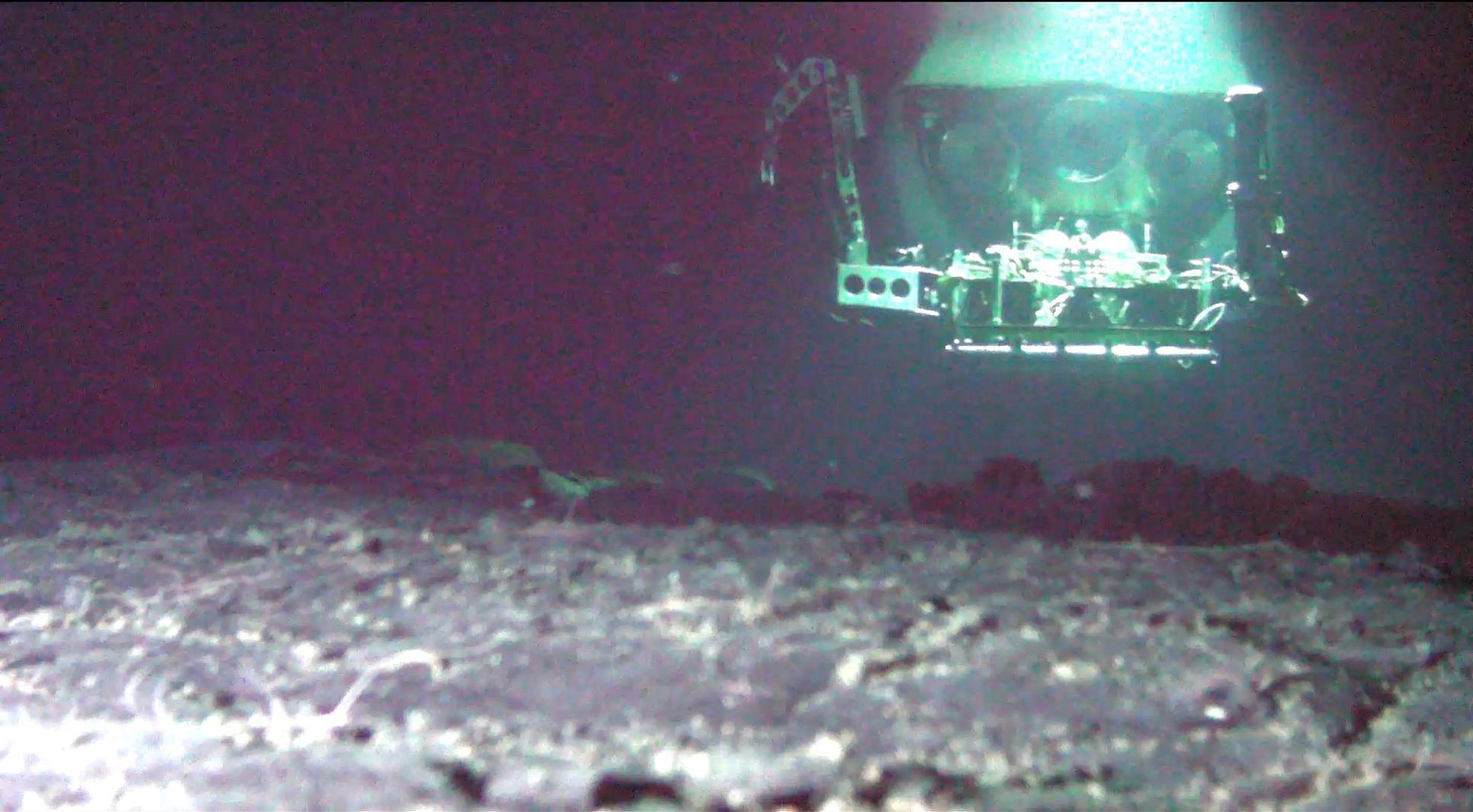
2X



Circles mark the surprising regions in robot's view that with high information content.



The Red circle marks the most surprising spot, and the robot is attracted towards it.



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# Robots for Everyone!! (and by everyone)

ROS.org

[About](#) | [Support](#) | [answers.ros.org](#)

Documentation

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News

ROS (Robot Operating System) provides libraries and tools to help software developers create robot applications. It provides hardware abstraction, device drivers, libraries, visualizers, message-passing, package management, and more. ROS is licensed under an open source, BSD license.

ROS:

## [Install](#)

Install ROS on your machine.

## [Getting Started](#)

[Tutorials](#), technical overview, and links to [getting help](#). Also, check out the [ROScheatsheet.pdf](#)

## [Contribute](#)

How to contribute to the ROS community, such as submitting your own [repository](#). See the [ROS P](#) for what others are doing. There are active [Special Interest Groups](#) where you can find more focused discussions about topics within ROS.

## [Support](#)

What to do if something doesn't work as expected.

## [Mirrors](#)

Mirrors of this wiki.

Software:

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APIs by language and topic.

## [Common Tools](#)

Common tools for developing and debugging ROS software.

## [Search Software](#)

Search the 2000+ libraries available for ROS.





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### Computer Science: Artificial Intelligence - Courses | Coursera

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### What is the best online course to learn AI? - Quora

<https://www.quora.com/What-is-the-best-online-course-to-learn-AI> ▼ Quora ▼

There is this site where there are lists of courses from different online sites with schedules, ... You may take a look at: [Artificial Intelligence | Free Online Courses & MOOCs | Class Central](#). 2.6k Views · [View Upvotes](#) · [Answer requested by](#).

### Take Stanford's 'Introduction to Artificial Intelligence' Course - The ...

[www.theatlantic.com/.../archive/...artificial-intelligence-course/243113/](http://www.theatlantic.com/.../archive/...artificial-intelligence-course/243113/) ▼ The Atlantic ▼

Aug 4, 2011 - That Stanford is now offering its "Introduction to Artificial Intelligence" course online for free to anyone who wants to take it is a new and exciting ...

12/1938

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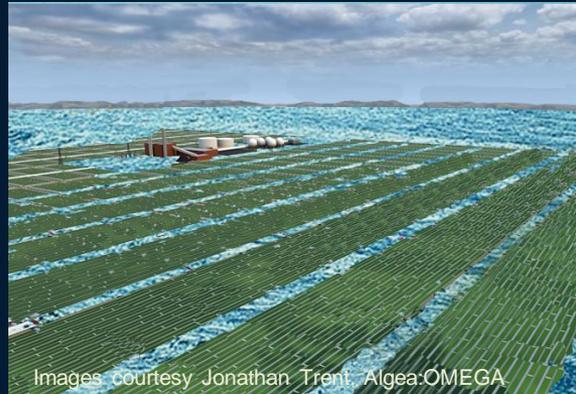
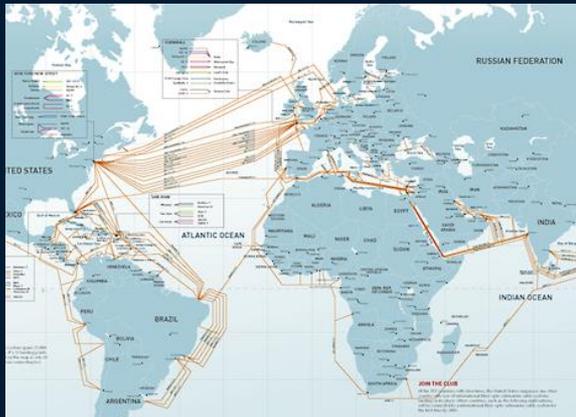


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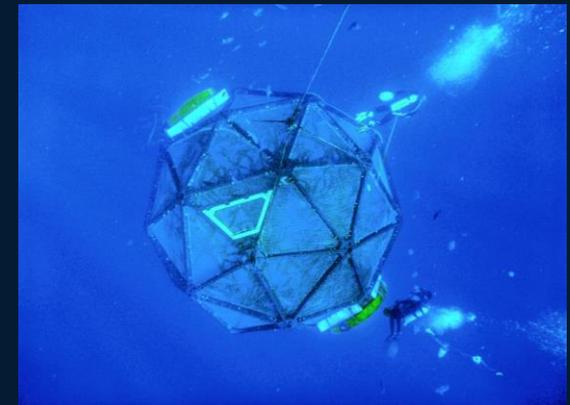
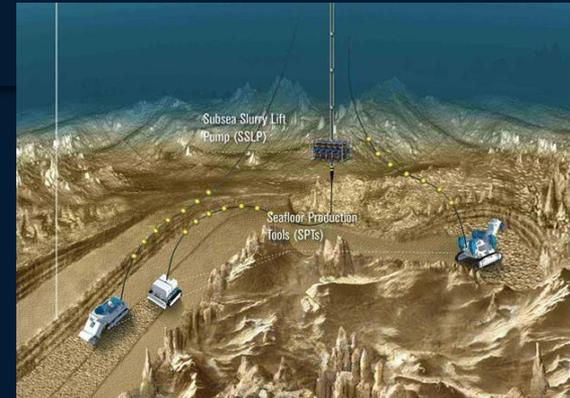


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Source: Lacroix and Pioch, 2011, p.13

# Enabling Ocean Industries



Images courtesy Jonathan Trent, Algea:OMEGA





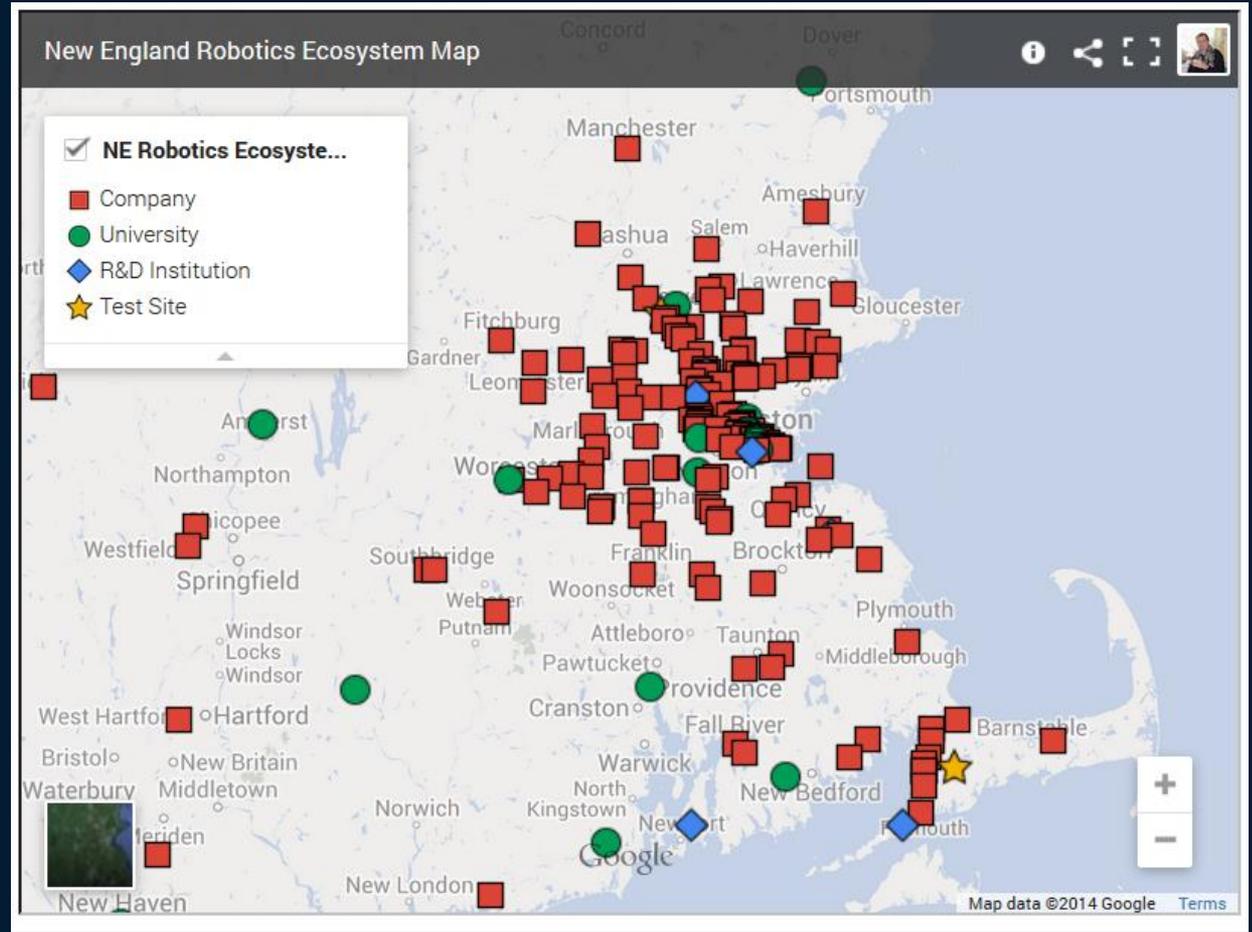


# ***Bottom Line***

- Our adversaries are fielding capacity and technology faster than we are
- **Autonomy is a revolutionary innovation comparable to:**
  - Gunpowder**
  - Steel**
  - Oil**
  - Aviation**
- **Leverage autonomy faster or lose the next war**
- We will provide 10 recommendations to reverse the situation.

# Ecosystem of Robotics Enterprises

Research institutions have spawned a growing network of robotics companies.





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# WHOI Center for Marine Robotics

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831-596-1381