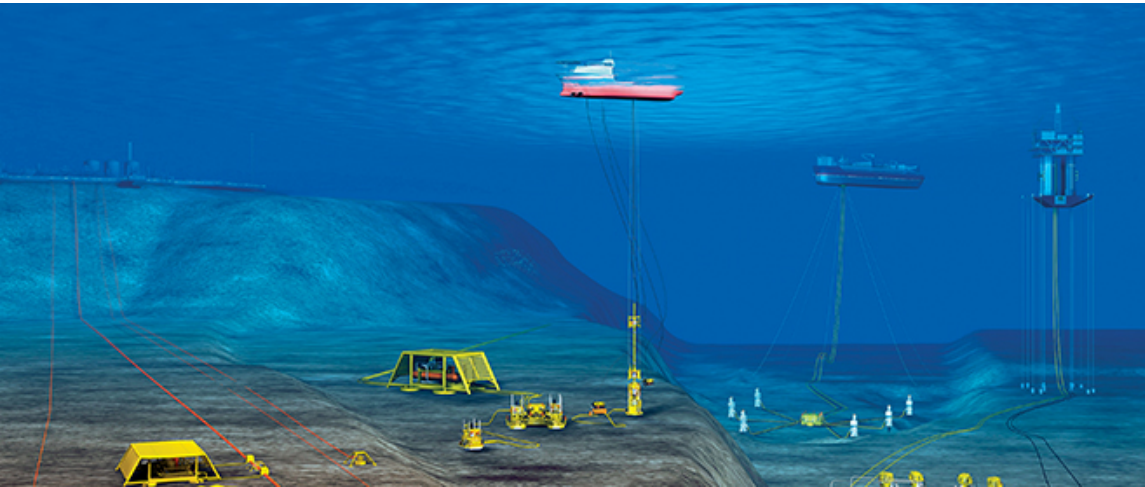


# Why should I major in Ocean Engineering?

Drs. Stefano Brizzolara, Heng Xiao, [Christine Gilbert](#), and Eric Paterson





# What is Ocean Engineering?

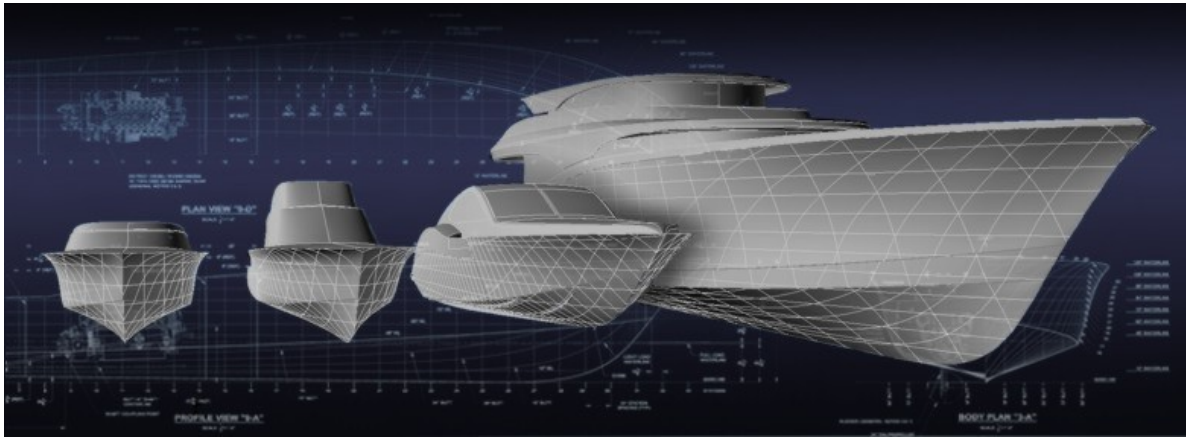
- <https://www.youtube.com/watch?v=Nst-j4mDIkY>
- <https://www.youtube.com/watch?v=sDgeYfSZdL4&feature=share>



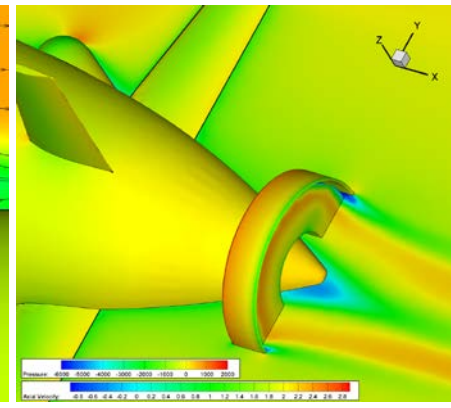
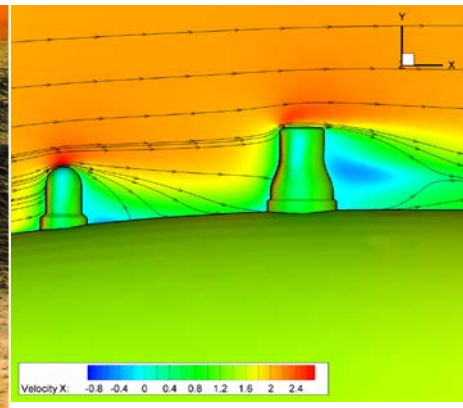


# What do Ocean Engineers Study?

## ➤ Hullform & Stability...

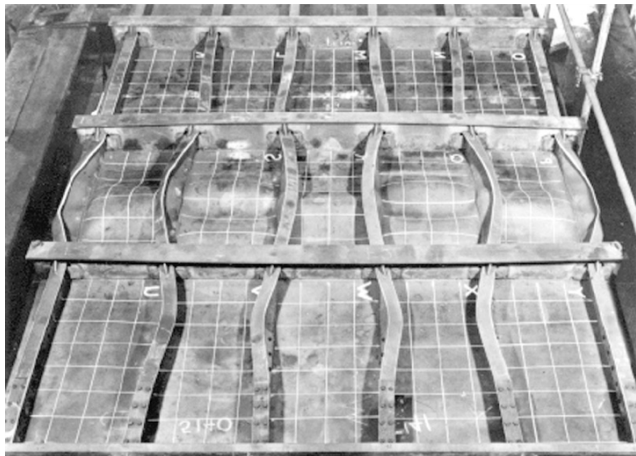


## ➤ Hydrodynamics...

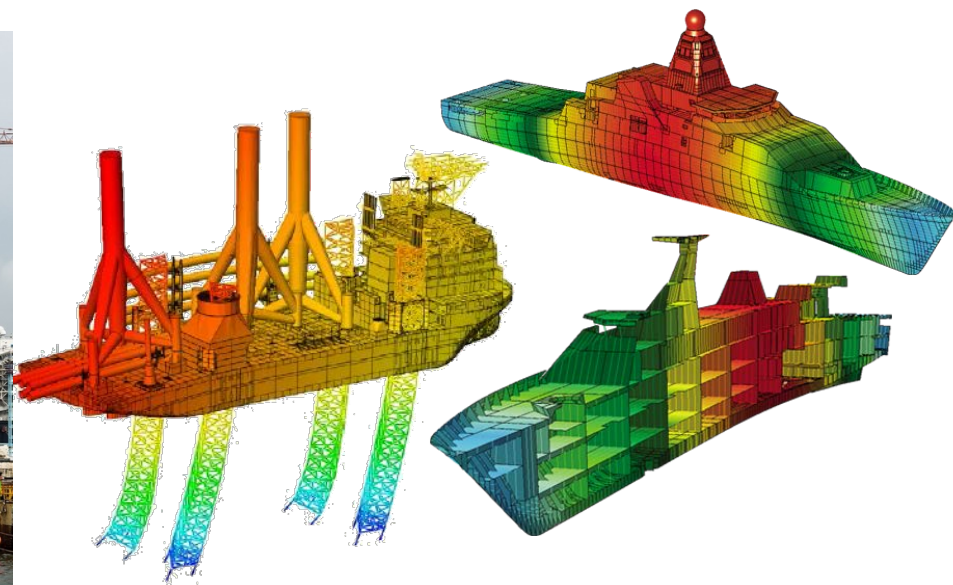
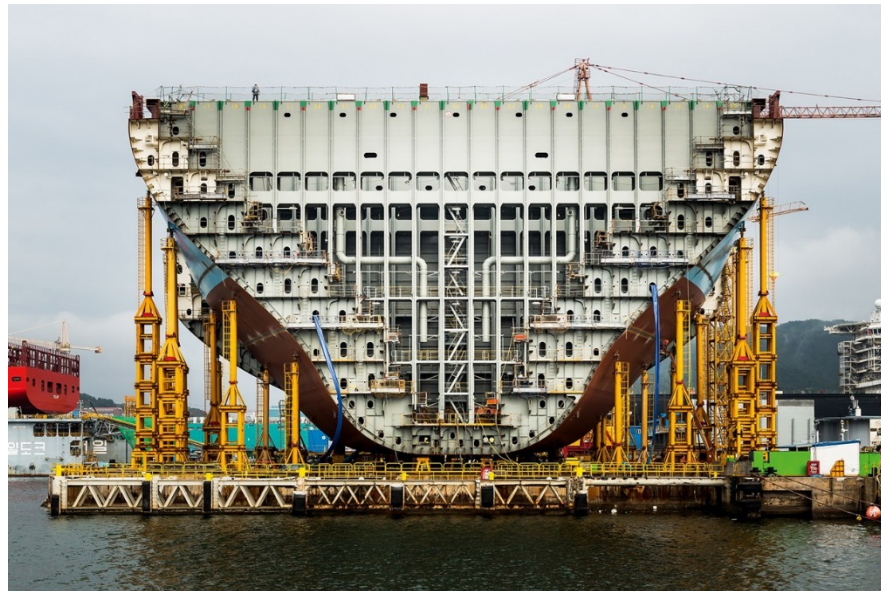




## ➤ Structures...



## What do Ocean Engineers Study?



## ➤ Propulsion...





## ➤ Vehicle Dynamics...



## ➤ Marine Engineering...





# What do Ocean Engineers Study?

or what you are interested in (Undergraduate Research)...

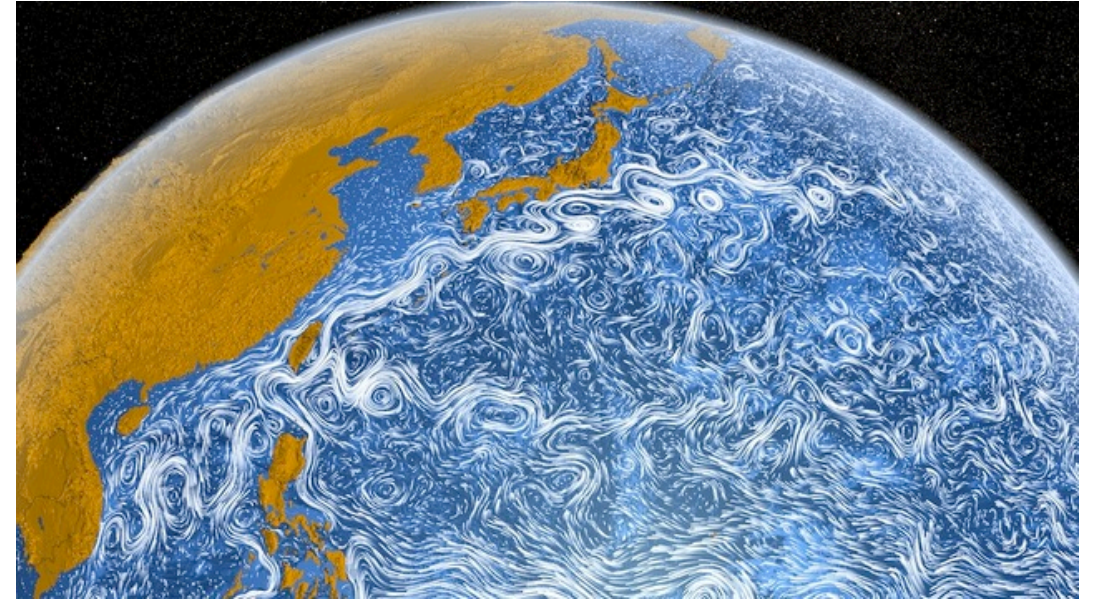
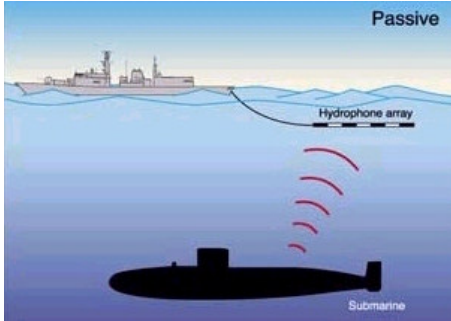
- Many students register for **AOE 4994 UG Research** every semester, including the summers
- Some students are paid as UG Research Assistants
- Great **hands-on** experience with advanced concepts and technology



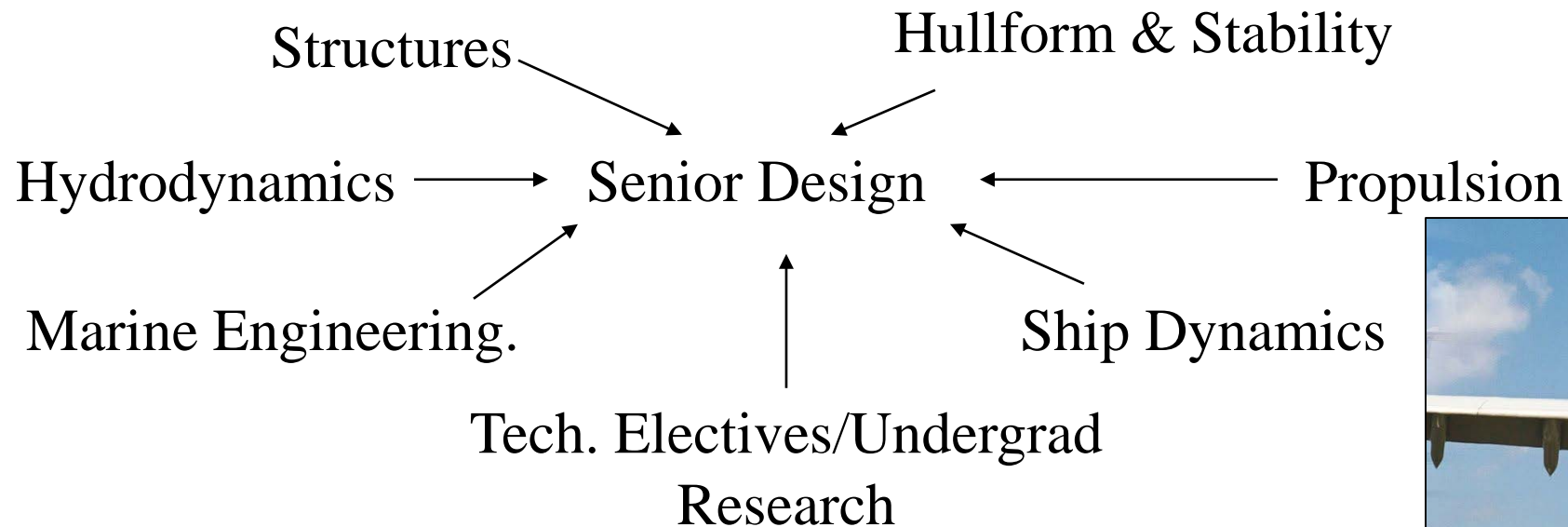


# What do Ocean Engineers Study?

➤ among others...



➤ to produce a complete **DESIGN**.



4 extra classes to  
double major in AE

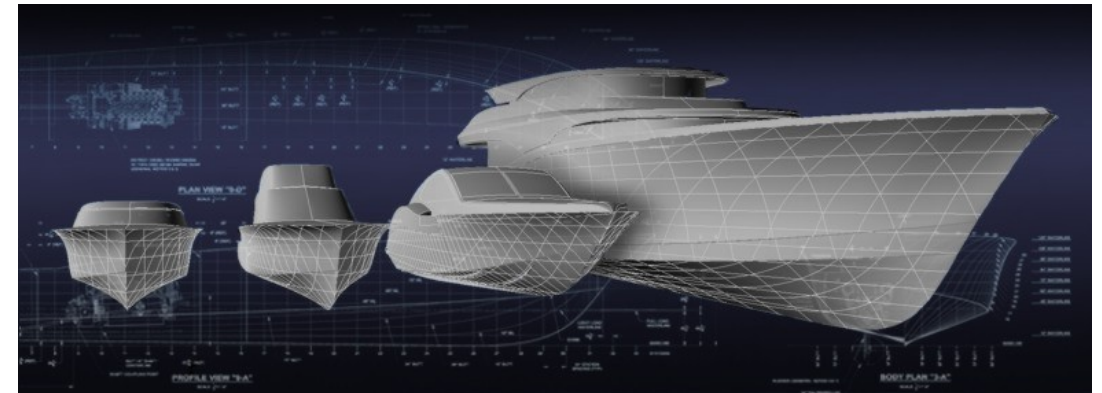




# Many interesting careers at the *intersection* of AEROSPACE & OCEAN ENGINEERING!

## SAILING AND MOTOR YACHTS

Design and operation of high-speed boats that harvest energy from the wind, and fly by generating hydrodynamic lift!





Many interesting careers at the *intersection* of  
AEROSPACE & OCEAN ENGINEERING!

### OFFSHORE WIND ENERGY

Design and operation of  
renewable energy machines  
that operate in the  
atmosphere and ocean

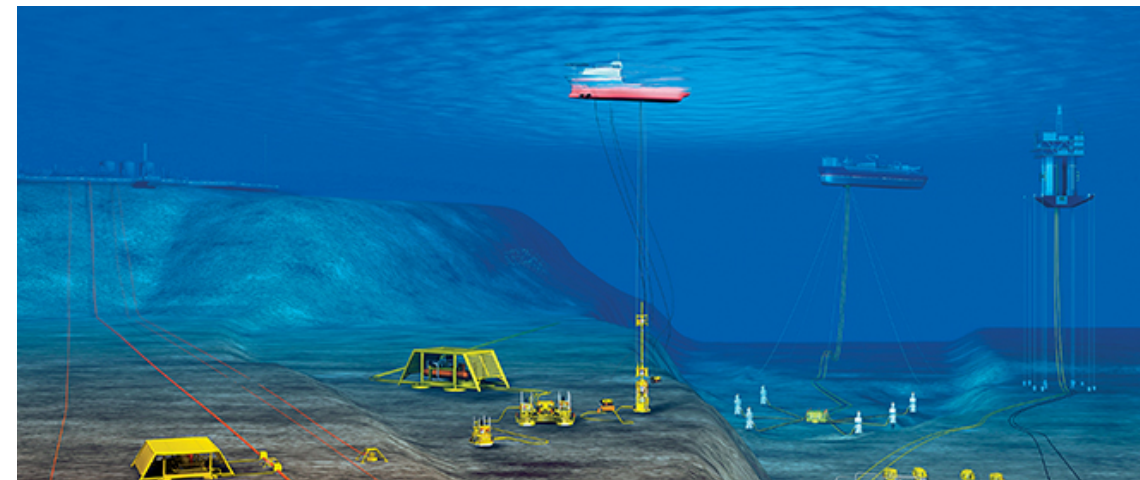
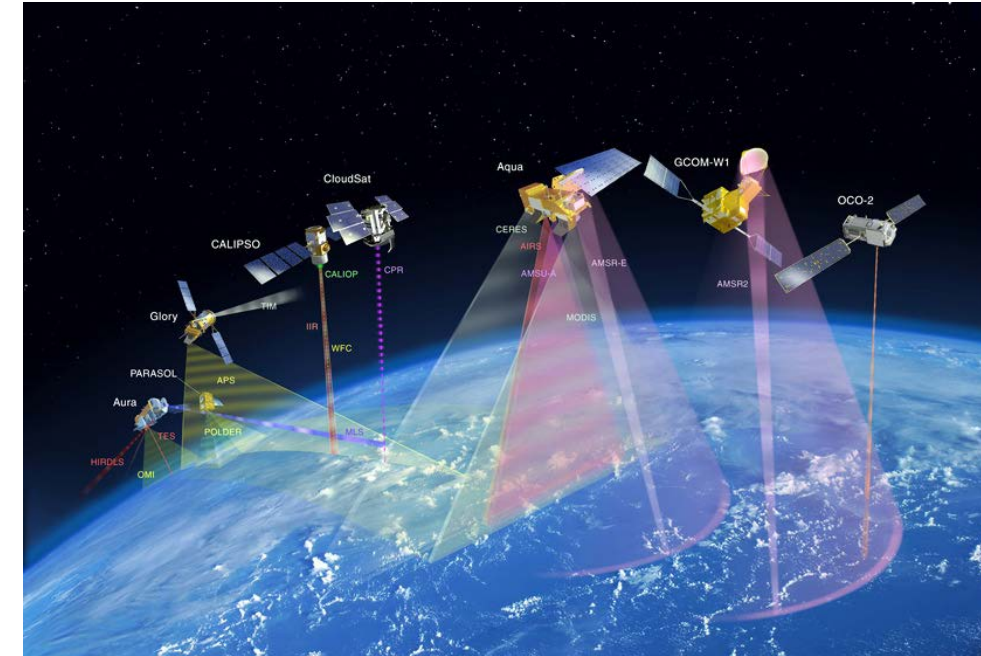
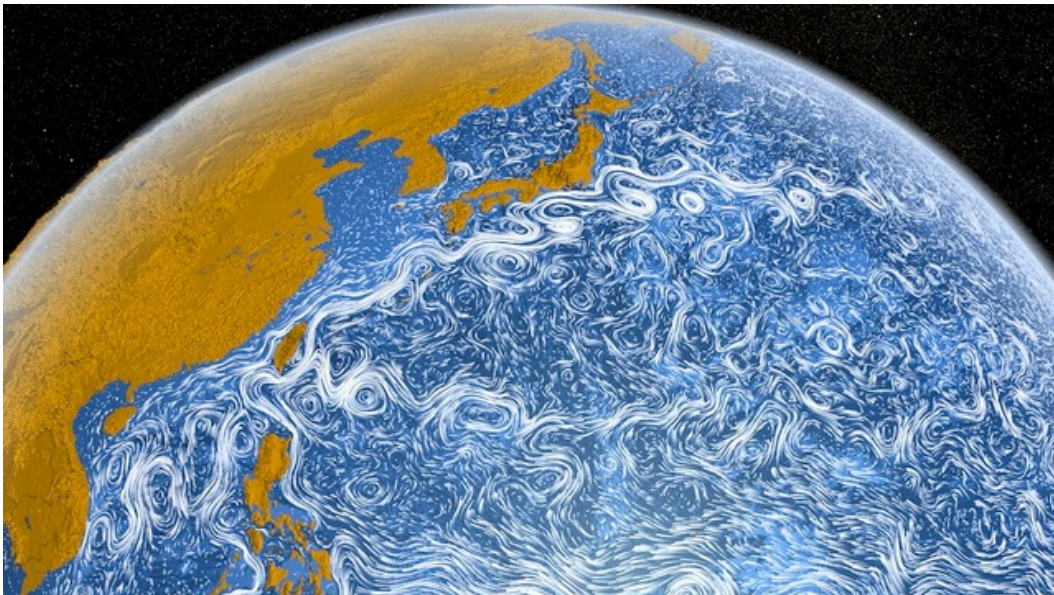




# New, Exciting Developments in OCEAN ENGINEERING!

## OCEAN REMOTE SENSING AND EXPLORATION.

Engineering and science of obtaining information about the ocean from a distance, typically from aircraft or satellites.

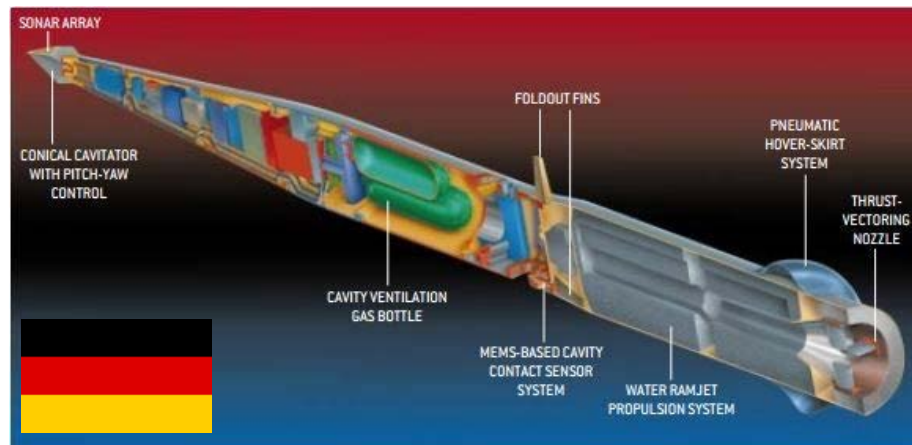
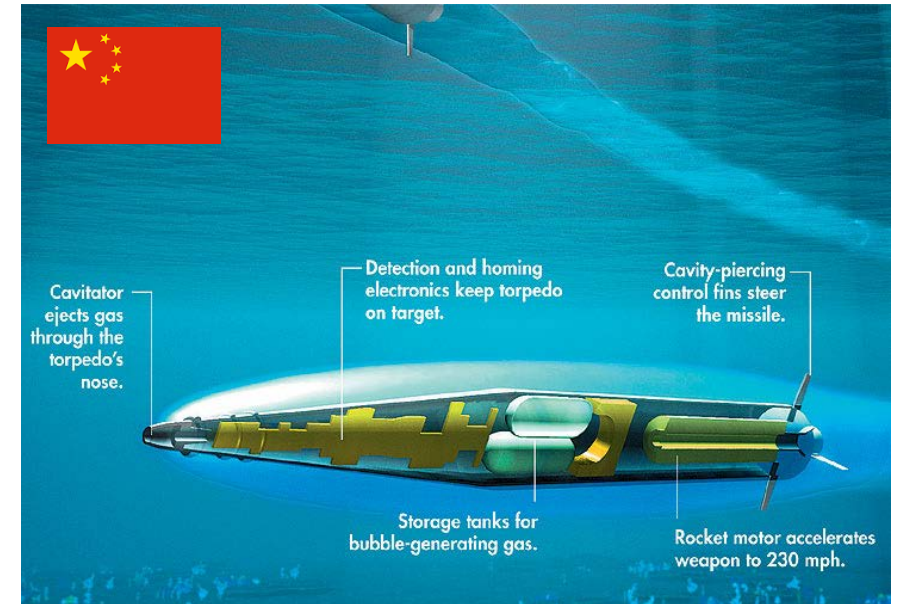




# Technical Frontiers in OCEAN ENGINEERING!

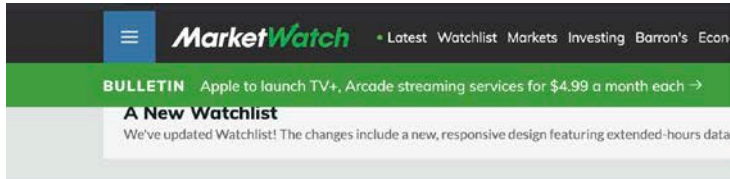
## INTELLIGENCE ANALYST

Evaluation of international technology and threats to national security, example: supercavitating 200+ knot rocket-torpedo





# Salaries and Demand for Ocean Engineers/Naval Architects/Marine Engineers

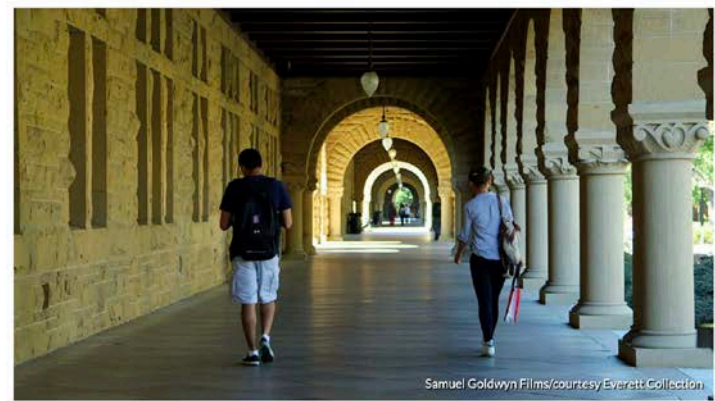


## This is America's No. 1 college major for salary and job availability

By Andrew Keshner  
Published: Aug 28, 2019 9:54 a.m. ET



This new ranking takes account of pay, unemployment rate and the need for advanced degrees



The best majors to go from higher education to ready for hire.

One college major offers smooth sailing above all others for students seeking a secure, well-paying job.

Naval Architecture and Marine Engineering is the most valuable major, according to ranking a ranking of 162 college majors released Monday by personal-finance site Bankrate.com.

Students majoring in the field learn how to design ships and their inner workings, but the study said they'll also learn not to worry about finding a good job.

## Is your degree worth it?

How college degrees stack up

MOST VALUABLE DEGREES	MEDIAN INCOME	UNEMPLOYMENT RATE	HIGHER DEGREE HOLDERS
1. Naval/marine engineering	\$90,000	1.60%	29%
2. Nuclear engineering	\$98,100	1.80%	56%
3. Pharmaceutical sciences	\$100,000	2.20%	58%
4. Genetics	\$85,000	1.20%	76%
5. Electrical engineering	\$99,000	2.70%	46%
LEAST VALUABLE DEGREES			
158. Fine arts	\$37,000	4.80%	24%
159. Literature and linguistics	\$40,000	3.90%	45%
160. Composition and rhetoric	\$37,800	4.40%	29%
161. Visual and performing arts	\$32,000	4.10%	23%
162. Drama and theater arts	\$35,500	5.20%	26%

Source: Bankrate.com

Students in other concentrations might end up earning more money, but the study determined that major charted the best course for strong salaries, low unemployment rates and little need for an advanced degree.

<https://www.marketwatch.com/story/this-is-americas-no-1-college-major-for-salary-and-job-availability-2019-08-26>



# Where do Ocean Engineers Work?

Grad school

OE grads typically go to:



BAND, LAVIS & ASSOCIATES



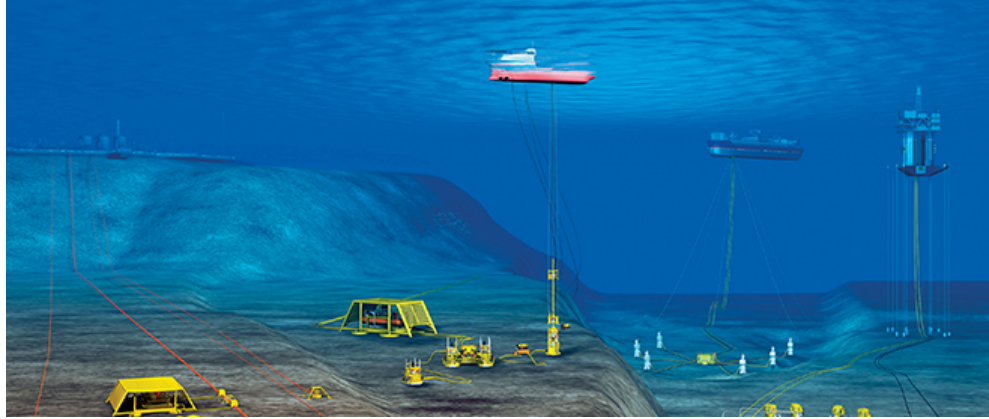
Engineering Firms

Shipyards



# Other Job Opportunities: Oil and Gas

Subsea Factory



Underwater Robotic



FPSO technologies

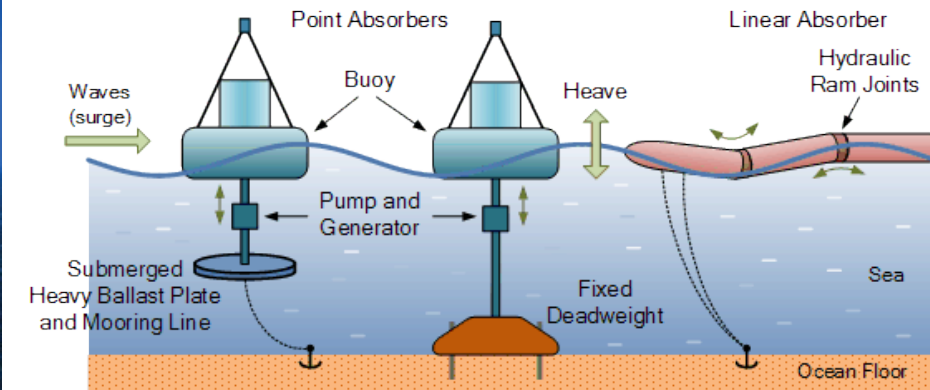
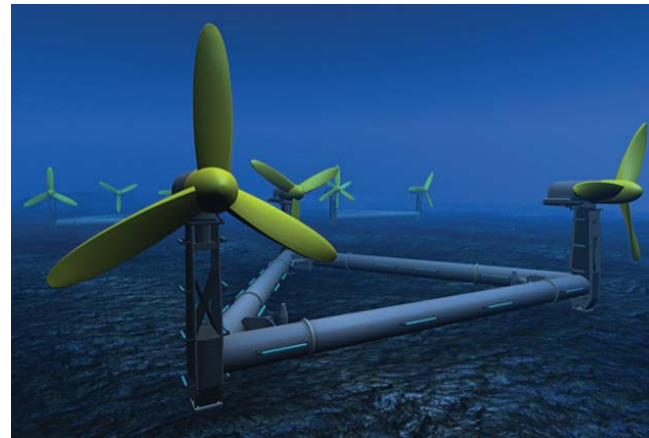
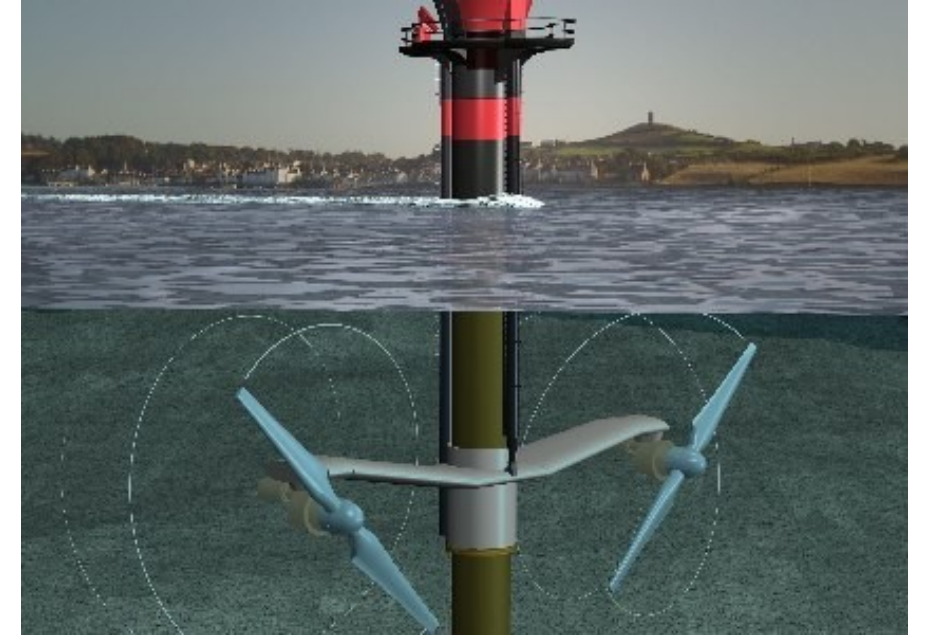


Dynamics Response of Offshore Structures





# Other Job Opportunities: Renewable Energy

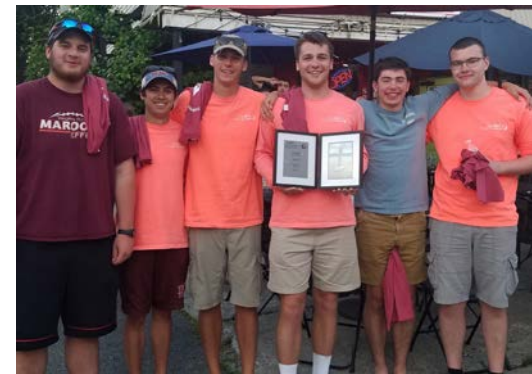




# Design teams – extracurricular

## Virginia Tech

### SailBOT



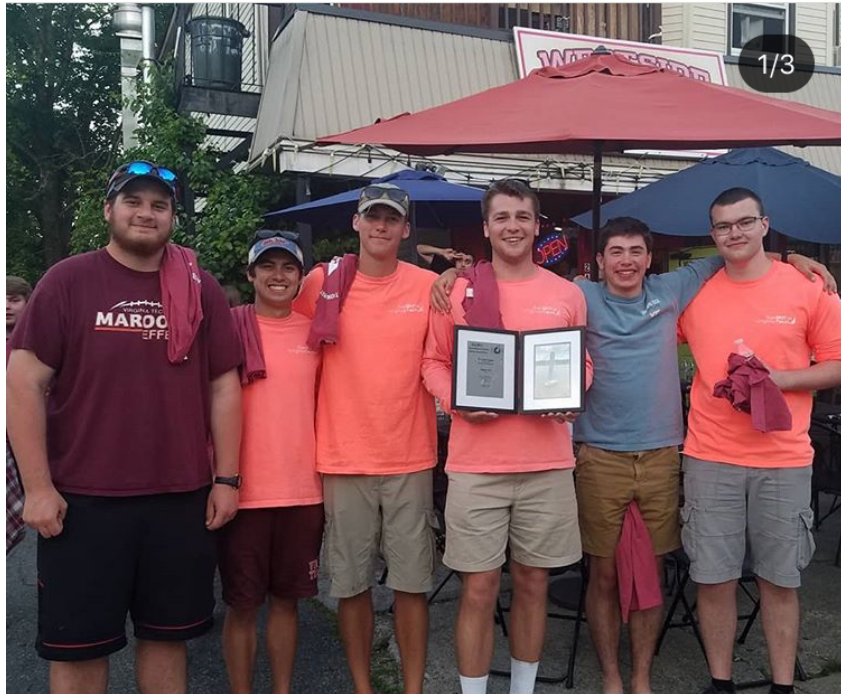


# Need more information?

www.aoe.vt.edu



viriniatchaoe



nt of Defense  
awards

Instagram



Virginia Tech AOE  
@VirginiaTechAOE

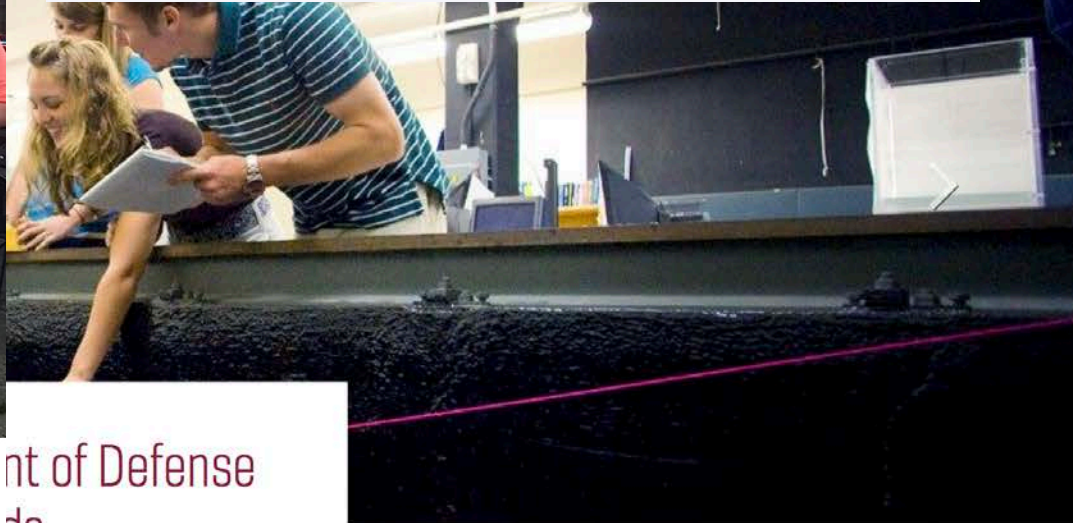
Twitter



The deadline to apply for the AOE Alumni Mentoring Program is today, 9/10! The AOE AMP is an exciting opportunity for students to be paired with an alumni mentor in the industry.

Mentors: [goo.gl/forms/xhx2GFnu...](https://goo.gl/forms/xhx2GFnu...)

Students: [goo.gl/forms/dp4BDBXt...](https://goo.gl/forms/dp4BDBXt...)



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