

# Engineering Technology Training at The College Florida Keys: A vision for the future

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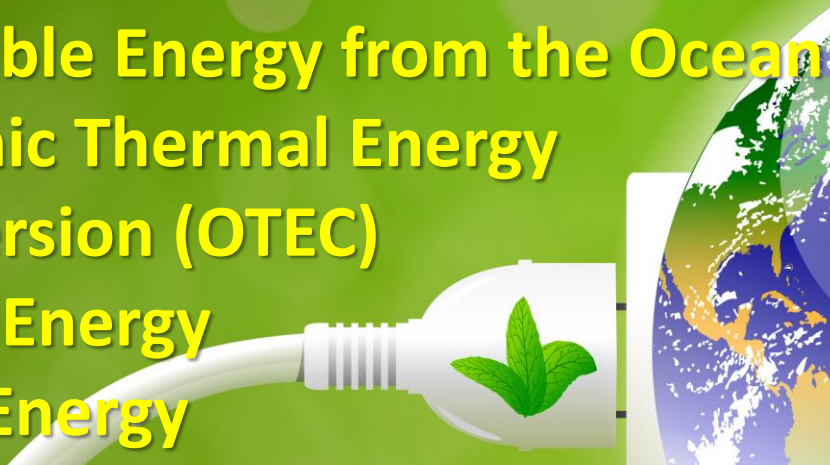
COLLEGE  
OF THE  
FLORIDA KEYS





# Engineering Technology at CFK: Renewable Energy Technician Training

- Solar Power
- Wind Power
- Renewable Energy from the Ocean
  - Oceanic Thermal Energy Conversion (OTEC)
  - Wave Energy
  - Tidal Energy





# Solar


- Key West is the 12<sup>th</sup> sunniest in USA  
(National Climate Data Center, 2004)



## OCCUPATIONAL OUTLOOK HANDBOOK

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## Fastest Growing Occupations

**Fastest growing occupations:** 20 occupations with the highest percent change of employment between 2018-28.*Click on an occupation name to see the full occupational profile.*

OCCUPATION	GROWTH RATE, 2018-28	2018 MEDIAN PAY
<a href="#">Solar photovoltaic installers</a>	63%	\$42,680 per year
<a href="#">Wind turbine service technicians</a>	57%	\$54,370 per year
<a href="#">Home health aides</a>	37%	\$24,200 per year
<a href="#">Personal care aides</a>	36%	\$24,020 per year
<a href="#">Occupational therapy assistants</a>	33%	\$60,220 per year

Source: U.S. Bureau of Labor and Statistics



# Wind Energy

- Key West is the windiest city in Florida (FSU, 2008)
- Wind turbine technician
  - 2<sup>nd</sup> fastest growing job market in the USA
  - Projected growth of 63% over next 10 years
- Combined with a BS in Supervision & Management
  - Make over \$100 K per yr

**College of the Florida Keys targeted occupations, with associated wages and projected growth in Florida.**

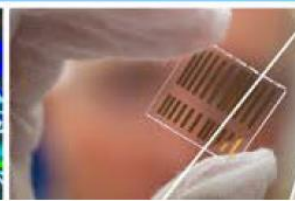
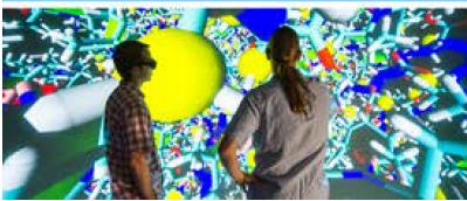
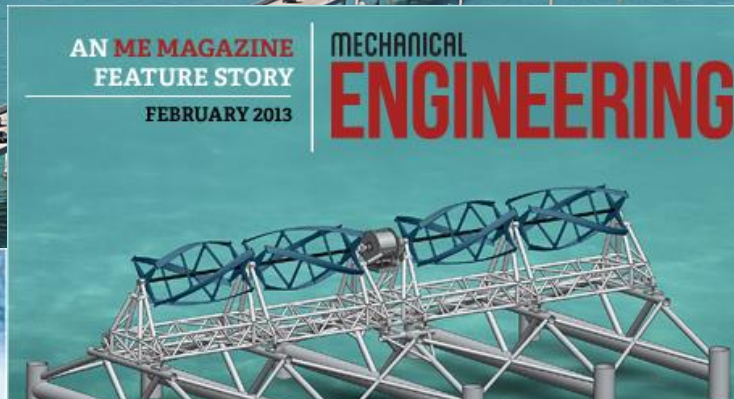
Occupation	Wage(\$/hr)	Salary (yr)	Growth (%) FL
Hydroelectric Plant Technician	\$26.19	\$54,5470	6
Hydroelectric Production Managers	\$43.65	\$90,790	11
Solar Energy Installation Managers	\$29.03	\$60,380	23
Solar Energy Systems Engineers	\$44.56	\$92,680	5
Solar Photovoltaic Installers	\$19.04	\$39,600	25
<del>Wind Energy Engineers</del>	<del>\$44.56</del>	<del>\$92,680</del>	<del>5</del>
Wind Energy Operations Managers	\$49.78	\$103,503	8
Wind Energy Project Managers	\$49.78	\$103,530	8
<del>Wind Turbine Service Technicians</del>	<del>\$24.54</del>	<del>\$51,050</del>	<del>25</del>

Source: [www.economicmodeling.com](http://www.economicmodeling.com)



# Seven Mile Bridge

- Number 27 (NREL, 2016)
- 538 concrete columns on the old bridge
- Has the potential to power all of the Florida Keys





# Offshore Hydrokinetic Power

- The Florida Current is beginning

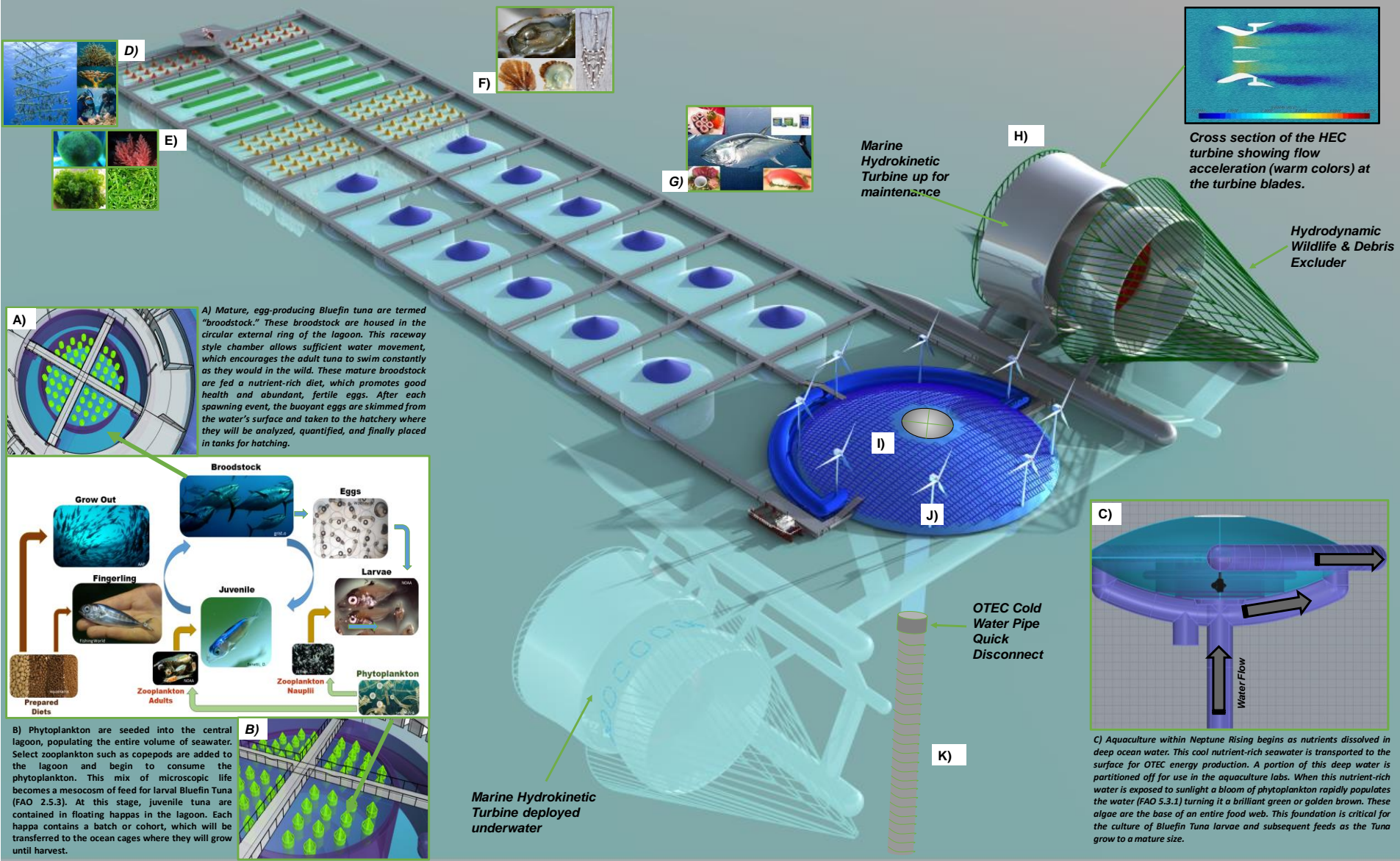




# Neptune Rising: A “moonshot” ecofriendly concept for production of sustainable marine resources powered by marine renewable energy

Team: Cody Moore, Travis Knorr, Madeline Ticer, Jessie Appelhans, Sarah Dunlop, Jaqueline Howell, Jason Heath, Heidi Sequeira, Octavio Franco, and Brian DeSanti

Mentors: Dr. Patrick Rice and Mr. Walterschurtenberger





# College of the Florida Keys Tidal Energy Simulation Lab (TESLa)



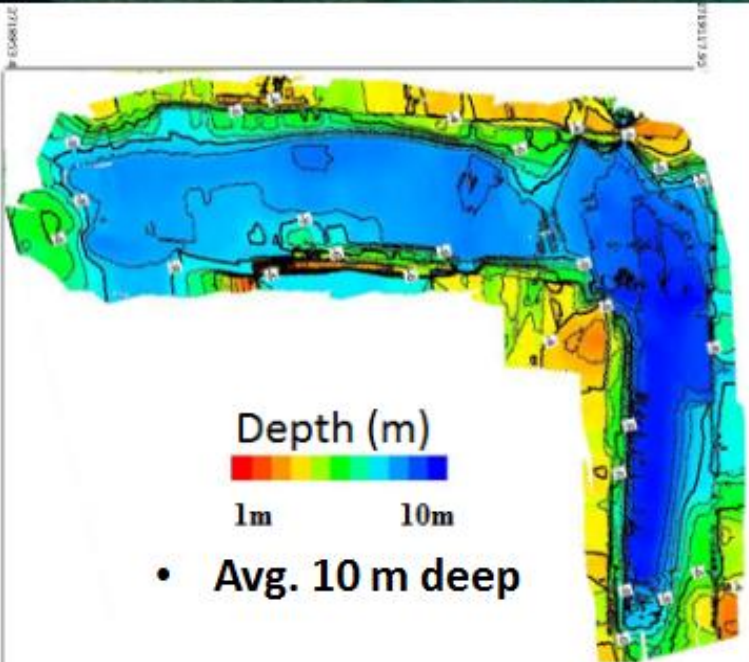


# Tidal Energy Simulation Lab (TESLa)

- 170 m x 115 m

170m

115 m

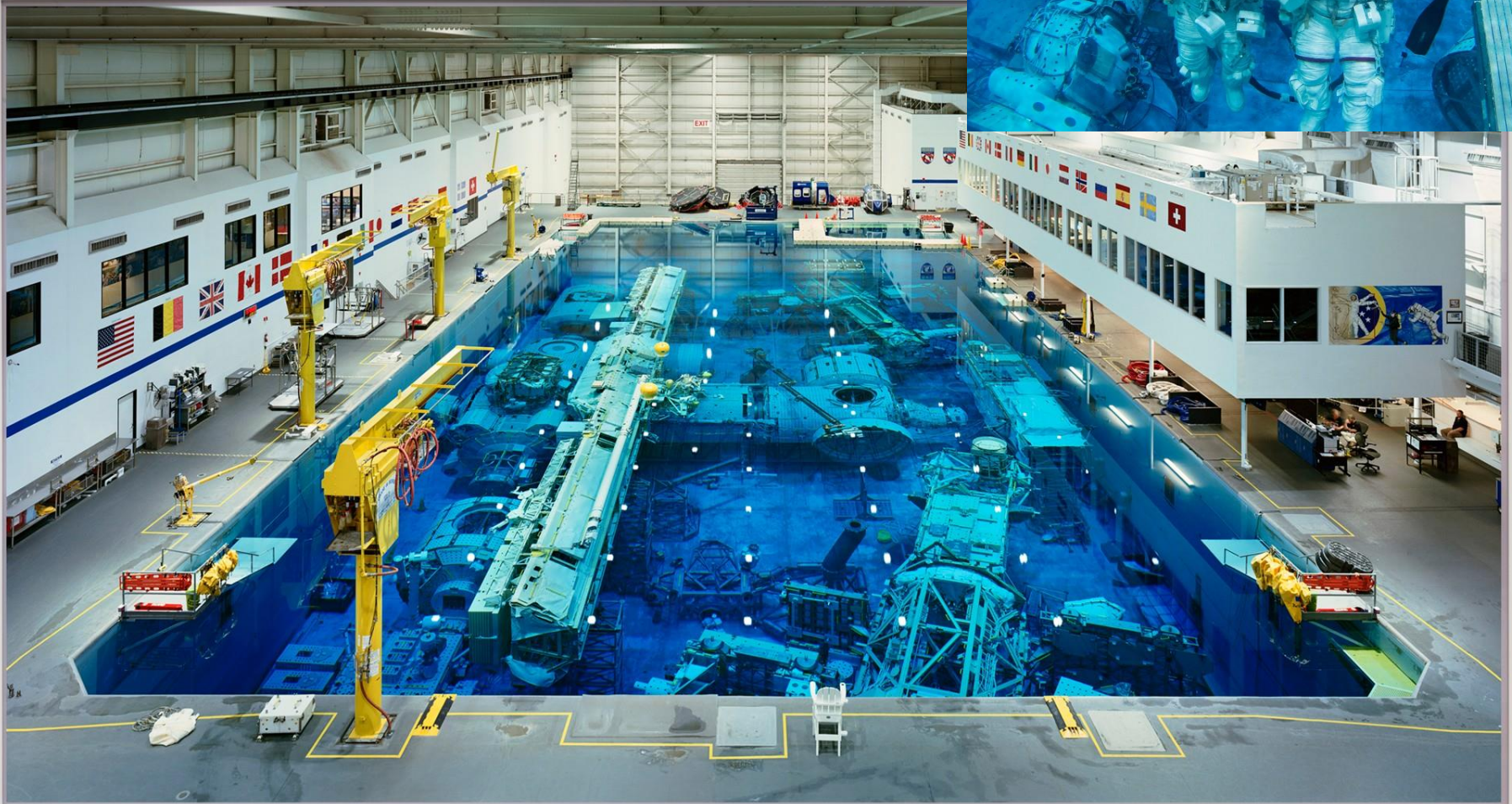


The worlds largest hydrokinetic test tank

- 11.2 million gallons
- NASA Neutral Buoyancy Lab (NBL) = only 6 million gallons

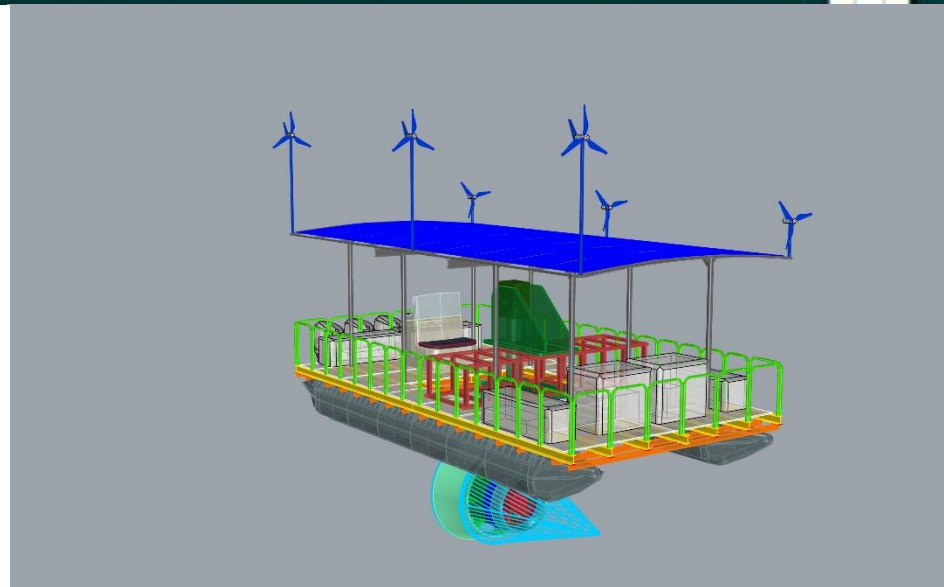
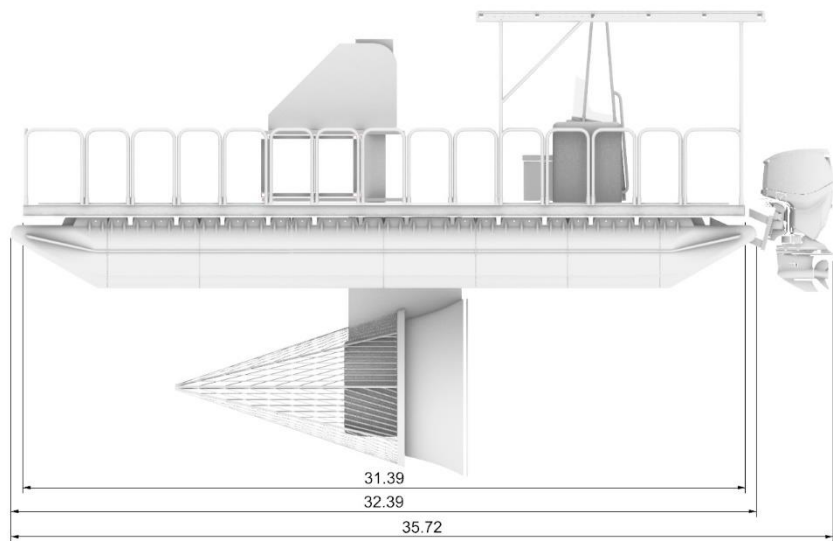


# NASA: Neutral Buoyancy Laboratory





# TESLa Vessel



# Vision for the Future

- Working with others (e.g. City of Key West, Monroe County, Hydrokinetic Energy Corp, etc.)
- CFK becomes a driving force for advancement of renewable energy for the Florida Keys
- The College trains the workforce for the future
- Florida Keys and City of Key West become a global demonstration on how to live sustainably with the environment
- The idea spreads
- Save the world.....simple!





# Questions?

