

## **ORE 202- Ocean Technology (DP)**

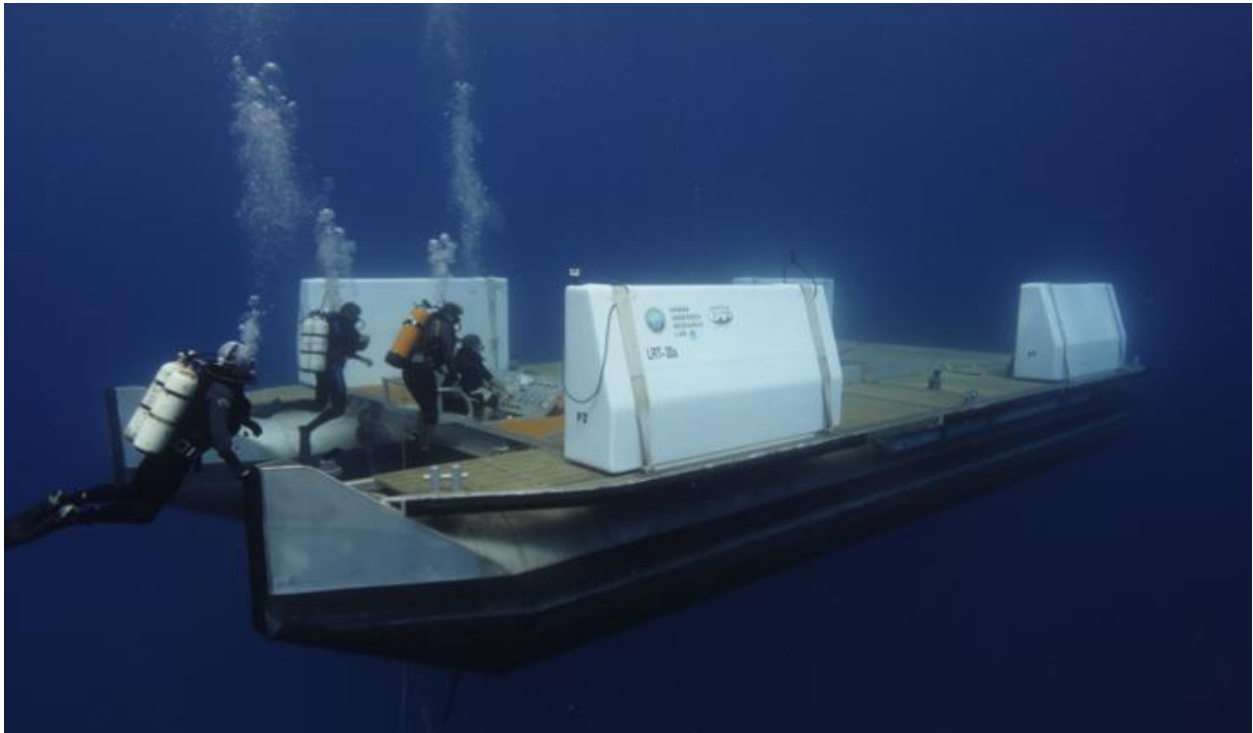
**SPRING 2016**

**Tuesday and Thursday 1:30-2:45 pm**

'Ocean Technology' is a non mathematical, no prerequisites introductory look at new marine technology and ocean engineering. This is basically a futures oriented survey course. Ocean Engineering is one of the few majors at UH where 100% of the graduates relatively easily get a job in the field after graduation. This is in part because new technology is revolutionizing the fields of ocean energy, mineral development, fishing, mariculture, transport, coastal usage and protection, ocean mapping, acoustics, and ocean instrumentation. The ocean covers 71% of the planet. We are rapidly developing the capability of utilizing it in ways never dreamed before. The opportunities and consequences of this 'industrialization' of the oceans are planetary in scope. For example, the implications of climate change overshadow many new developments forcing a growing competition between energy developments, demographic trends and planetary destruction by adverse sea level and climatic events. Understanding the coastal zone and preparing it for these adverse climatic changes top this list. Another example is the current energy revolution underway through hydraulic fracturing (fracking) which is transforming the North American economy (gas is now at the equivalent price of \$15/barrel oil, cryogenic fracking techniques introduced in mid 2014 have doubled production yield, manufacturing is moving back to the U.S., and the Middle East is becoming a less critical fossil fuel source). At the same time fossil fuel driven global warming is devastating the country with fires, floods, droughts, hurricanes etc. We will consider these issues in this newly redesigned course and the role played by marine technology in understanding the ocean and mitigating some of the effects of the changes we will increasingly experience.

Examples of some of the technology to be discussed:

Below: Submersible Launch, Recovery and Transport Platform designed at UH



**Fig. 4** Offshore diamonds mining vessel (left) and the subsea crawler (right)

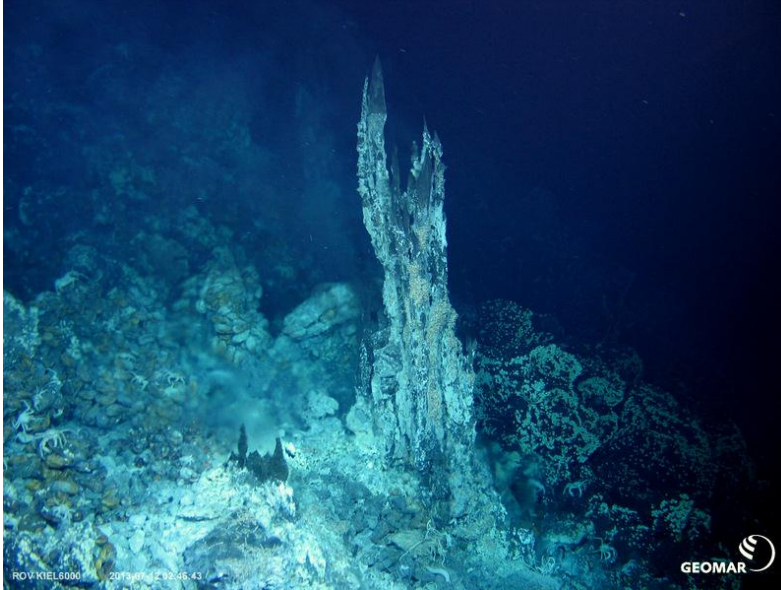


Fig. 2: Active vents and chimneys at the Nifonea field, 1,874 m water depth.  
Photo: ROV Kiel 6000, GEOMAR during cruise SO229.

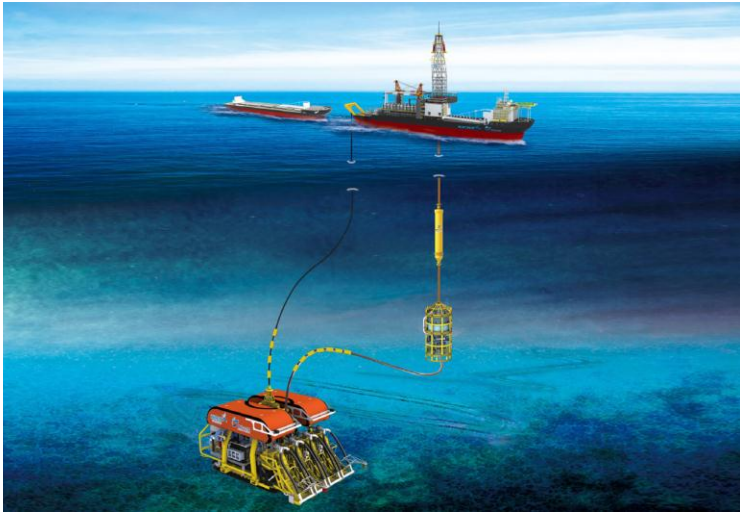


Fig. 1 Concept of buffer station in continuous mining