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Next Generation Oceanography:
Thousands of Sensors to Millions of People in Real-time

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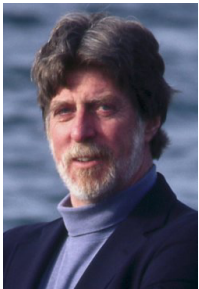
"Entirely new approaches to understanding the complexity, power, and vagaries of this oceanic modulator are arising from the rapid implementation and use of submarine cabled networks that will provide unprecedented electrical power and bandwidth to thousands of increasingly sophisticated robot-sensor systems distributed throughout full-ocean environments."

Oceanographers are benefiting from a host of emergent technologies largely driven by communities external to the world of ocean sciences. Important developments include: robotics, biotechnology, cloud computing, in situ chemical and genomic sensors, digital imaging, nanotechnology, serious gaming, new visualization technologies, computational simulations and data assimilation, seismo-acoustic tomography, and universal access to the Internet. Far more powerful than any one of these emerging technologies will be the convergence of the ensemble. As these rapidly evolving capabilities are integrated into sophisticated, remote, interactive operations, a pervasive human telepresence throughout entire volumes of our, once "inaccessible", global ocean will be realized. Such capabilities will be required to meet the onset of immense environmental and societal challenges in the coming decades that can only be addressed through optimally informed international collaboration with large data sets and multi-institutional collaborative research.

For more information, please go to:
http://www.lehigh.edu/hpcday_keynote