

## WHOI Technology Transfer Case Study

The Ice Tethered Profiler makes it possible to profile the water column under ice everyday for up to a full year. The profilers currently deployed on the Arctic Ice Sheet provide real-time data used in physical oceanographic studies of the Arctic Ocean basin. John Toole worked with McLane Research Laboratories to transfer the technology out of WHOI for broader use in the scientific field. This, in turn, helped make the capability available for all scientists to use, and for field of Physical Oceanography to continue to evolve. For more, see: <http://www.whoi.edu/page.do?pid=20756>

The McLane Sediment Traps obtain time-series samples of settling particles in the ocean water column providing critical data relevant to radionuclide behavior, global carbon cycle investigations, and environmental studies. The traps have provided globally consistent data for over 20 years, and the compiled data has provided a new understanding of carbon sequestration in the oceans over time. The technology was developed at WHOI, commercialized at McLane, and WHOI continues to receive a generous royalty amount based on the sales. For more, see: [http://www.mclanelabs.com/master\\_page/product-type/samplers/sediment-traps](http://www.mclanelabs.com/master_page/product-type/samplers/sediment-traps)

## News

Norm Farr and Jon Ware of AOPE have started a new company called Lumasys Inc., based on a license to WHOI-patented optical modem technology. Partnering with Sonardyne in the UK, Lumasys provides high bandwidth, low power optical modem technology as a critical component in Sonardyne's systems. Through this valuable partnership, Lumasys can reach customers all over the world. Norm and Jon will continue as full time employees at WHOI.

For more information: <http://www.whoi.edu/technologytransfer>

## Commercialization Can Play a Critical Role in Advancing Basic Research

What does technology transfer do for science and engineering? Is it just a ploy for PIs to make money, or for the Institution to become more corporate and industrial? The truth is that technology transfer is one of the most important activities that helps improve science and engineering efforts by providing valuable tools, techniques, and methods back to scientists and engineers who can then leverage them to improve data gathering and quality, improve time and cost efficiency, and above all, help make science and engineering more beneficial for all of us.

You can look back at past examples, even as simple as standardizing units. When Anders Celsius (a Swede) defined a standard unit of temperature, which was shared and accepted by the scientific community, data could be compared more effectively, thus helping the entire scientific field evolve. Ditto the spin out of Google from Stanford (originally based on an algorithm used to search scientific papers) which gave access to search engine technology to society at large, and the rest is not just financial history, but also computing history.

These examples can be leveraged to help shape today's technology transfer activities at WHOI. By licensing the Imaging FlowCytobot to McLane Research Laboratories, Drs. Heidi Sosik and Rob Olson have provided an efficient means for other scientists to automatically identify and quantify specific species in real time, including harmful algal blooms. Heidi and Rob receive licensing royalties in turn, as does WHOI and the Biology Department. Heidi and Rob also have the opportunity to see how their instrument performs in other circumstances and with other species, leading to design iterations and improvements to their own research methods at WHOI. The technology transfer is helping the basic science evolve by providing standardized methods and comparable data sets as well as important feedback to the scientists on performance and new data collecting possibilities.

Another example of WHOI technology transfer includes, of course, the Green Fluorescing Protein license, which made available one of the most impactful discoveries to ever come from WHOI. Providing other scientists with the ability to track the fluorescing protein in their laboratory experiments has changed the way biological and medical research is conducted across labs world-wide.

Technology transfer may connote "technical" or "engineering" know how, but it really should be thought of much more broadly than that. It applies to basic science just as much, if not more, witnessed by the aforementioned examples.