



TECH TRANSFER NET

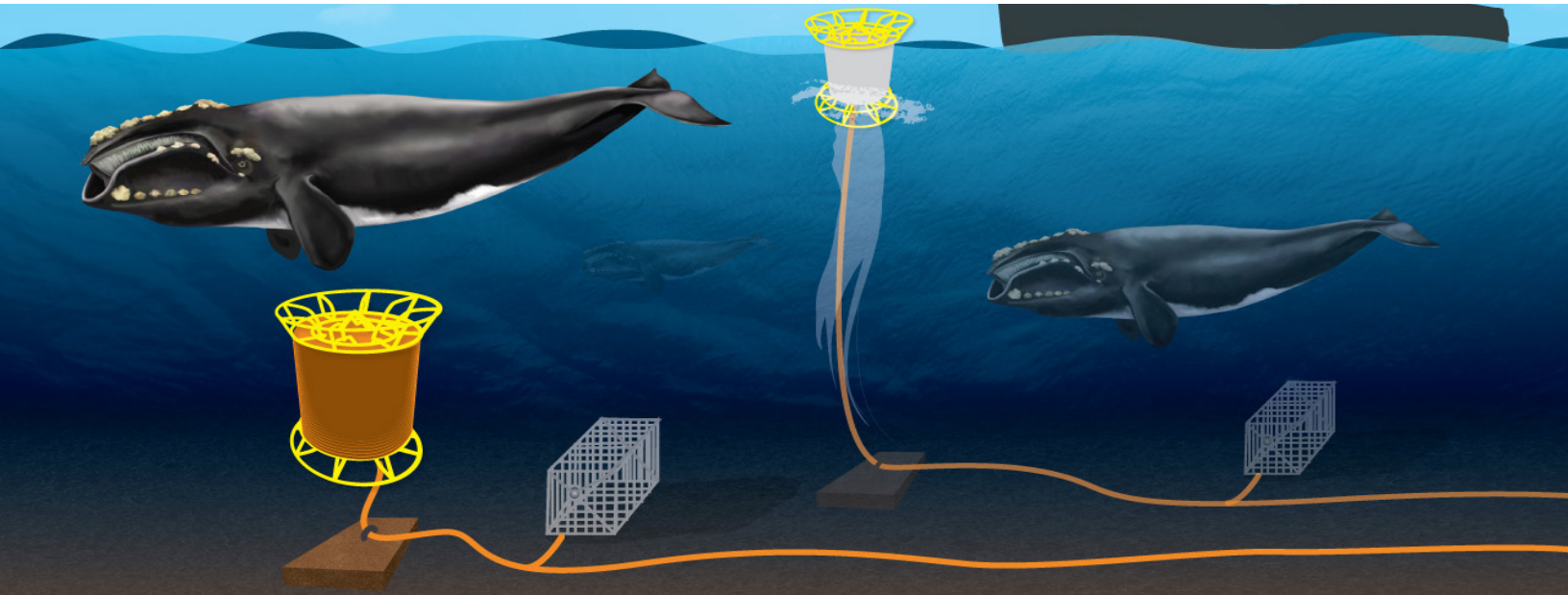


Illustration by Eric Taylor, WHOI Graphic Services

Innovation Month at WHOI

In October, WHOI celebrated its first annual Innovation Month- a month of events celebrating innovation at WHOI. In its inaugural year, events were mainly offered internally to WHOI staff - next year we are hoping to offer more events and programs open to WHOI volunteers, industry etc. Innovation Month kicked off with our longest standing event, the WHOI Pitchathon, now in its third year.

2017 WHOI Pitchathon

Five applicants competed in this year's Pitchathon with presentations vastly improved in style and content over previous years. The event took

place on October 10th at Quissett campus before four volunteer judges. Each pitch consisted of a 10 minute presentation followed by 10-15 minutes of Q&A from the judges.

About the Competitors:

Salient Predictions: A Breakthrough in Precipitation Forecasting - Raymond Schmitt: Pitchathon Funding Requested: \$70,000: Ocean evaporation is the source of most rainfall and research on the global water cycle has revealed that sea surface salinity (SSS) has remarkable utility for forecasting future rainfall on land- three weeks to three months in advance. The method is currently outperforming competitors in an ongoing forecasting contest, successfully forecasting summer rainfall in the US Midwest and winter precipitation in the Southwest. Improved precipitation forecasts have great value for agribusiness, commodity traders, water system managers,

municipalities, the transportation sector etc.

Channelized Optical System (CHANOS) for Simultaneous, In-situ Measurements of CO₂ Parameters in Aquatic Systems - Zhaohui Aleck Wang: Pitchathon Funding Requested: \$75,000: Carbon dioxide levels in ocean water are directly affected by atmospheric levels- leading to ocean acidification and affecting marine chemistry and ecosystems. Precise and accurate determination of marine carbon dioxide system is essential to understanding the marine carbon cycle and ocean acidification. An accurate measurement is obtained through simultaneous measurement of dissolved inorganic carbon (DIC) and ocean pH.

The self-calibrating CHANOS is configured to provide simultaneous measurements of any two parameters of DIC, pH, and pCO₂, resolving

(Innovation Month/WHOI Pitchathon cont..)

carbonate chemistry in a single system. CHANOS has the fastest measurements for DIC/pCO2 among commercially available sensors.

The Chicken Bot-Pi- Paul Fucile: Pitchathon Funding Requested: \$48,000: In collaboration with the Lemelson Center at MIT a “Raspberry Pi” type circuit board has been developed. The Chicken Bot-Pi answers the need for affordable accessory hardware for students and hobbyists by consolidating several student skill level robotic control and sensing interfaces onto a single intuitive, tested, and economical circuit board. Customers currently need to purchase 3x the cost in materials, construct custom wiring, and write original code to build a circuit board of the same utility.

On-Call Buoy- James Partan and Keenan Ball: Pitchathon Funding Requested: \$45,000: The US lobster fishery has increasing regulations to reduce the number of vertical lines connecting buoys to lobster traps. Endangered whales can entangle in the lines leading to seasonal closures.

The On-Call Buoy was developed as a “whale-safe” fishing method, an alternative to closing areas, securing vertical lines on the seafloor until released on command. This is the first system of this type developed for deep-water use.

More information on this project can be found [HERE](#)

Asymmetric Propulsion- Jeff Kaeli: Pitchathon Funding Requested: \$75,000: An asymmetric propulsion system for automated underwater vehicles (AUVs) that eliminates the need for fins or rudders for navigation. The system employs a single-bladed propeller, the speed of which can varied within a single revolution over sequential revolutions to generate a turning moment. The elimination of fins and rudders and the motors to control them, reduces power requirements for navigation and frees up hold space. The technology enables the development of exceedingly small, high capability AUVs, with hovering capability and steering control at even the lowest of speeds.

This year’s WHOI Pitchathon judges have chosen to award three partial

awards:

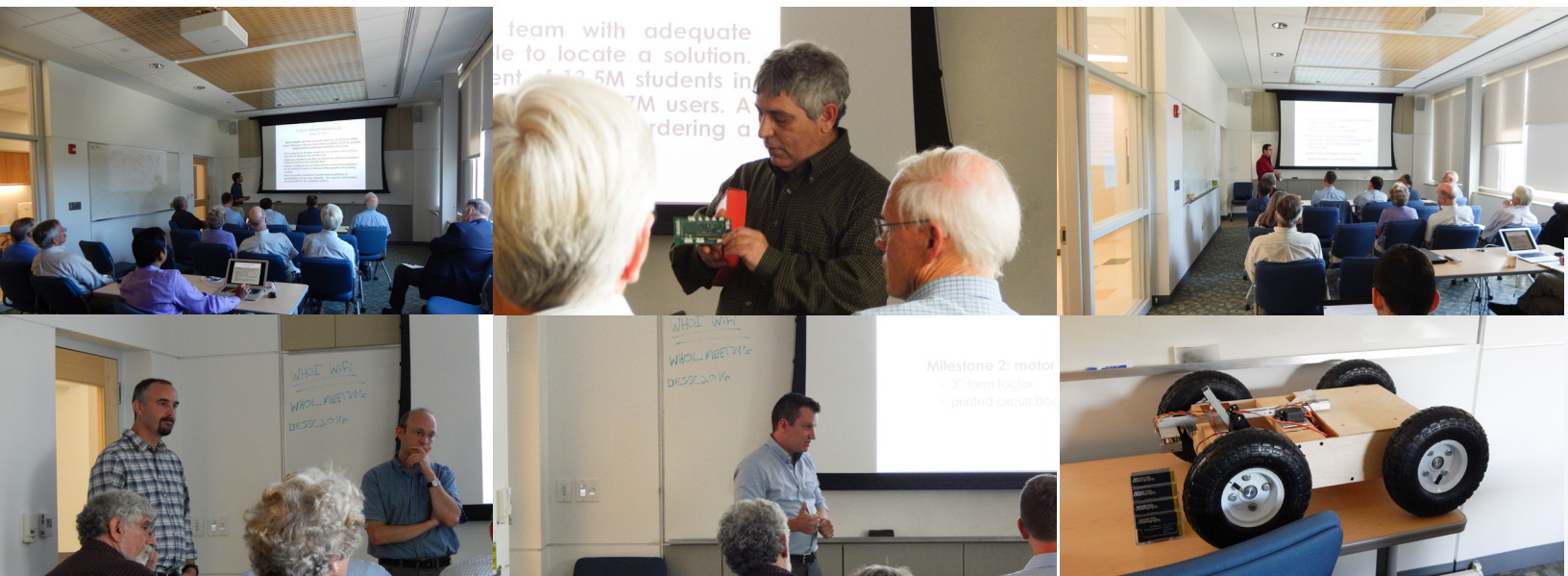
1. Asymmetric Thruster: \$75,000
2. Salient Predictions: \$36,000
3. Chicken Bot Pi: \$18,300

We had a very talented group of Business Advisors & judges volunteer their time to help WHOI Inventors perfect & assess their pitch presentations. We would like to thank all those involved for their time and contribution as well as valuable feedback aimed at improving the program in the future. We would welcome all to join us again for next year’s competition.

Next year we will be looking for additional Business Advisors with the goal of matching every applicant with two Business Advisors. If interested, please [enroll](#) in our Mentors & Champions program and specify interest in the WHOI Pitchathon. Someone from the WHOI OTT team will reach out at the start of next year’s process.

SBIR Educational Seminar

As a part of innovation month,



(Innovation Month/ SBIR Seminar cont..)

WHOI OTT hosted a Small Business Innovation Research program (SBIR) seminar for WHOI PIs interested in learning more about the program. The seminar had a great turnout from WHOI staff. Our distinguished speaker Dr. Robert F. Weiss shared his tools and tricks of the trade in getting an SBIR proposal successfully funded.

Dr. Weiss was the founder and the CEO of Physical Sciences Inc. (PSI) from 1972 to the late 2000s. During that time, PSI became a greater than \$50M innovative research organization and

was one of the top SBIR winners in the country. The SBIR and STTR program helped PSI commercialize numerous technologies and has served as one of the flagship companies for the program. He worked with Jerry Bird of Mass Ventures to initiate the START program. The START program selects Massachusetts SBIR winners who have won Phase 2 programs and grants winners up to \$1M of Massachusetts funding to finance a Phase 3 effort.

Dr. Weiss is now head of Technology Transitions and serves as a strategy consultant for promotion of small business programs.

Inventor Recognition Event:

The Office for Technology Transfer held its 2016 Inventor Recognition Soiree on October 19th. The event celebrates innovation at WHOI with all of the scientists and engineers who participated in the intellectual property process in 2016. It's an opportunity for OTT to recognize WHOI's most prolific inventors as well as a chance for WHOI innovators to mingle and ask questions of OTT staff. Food & drink generously provided by donations to OTT.

A few images from this year's event:



Highlighted Issued Patent:

“Asymmetric Propulsion and Maneuvering System”

Inventors: Tom Austin, Jeffrey Kaeli, Michael Purcell, Ben Allen, Frederic Jaffre, Robin Littlefield

Publication number: US20170015398A1 Allowed: September 19, 2017

An asymmetric propulsion system that actively varies the speed of a single-bladed propeller over the course of its revolution- generating both forward thrust as well as the ability to maneuver. The system offers several advantages over traditional approaches to marine propulsion including lower cost and less complexity leading to fewer failure modes. While multiple propellers are inefficient for maneuvering at higher speeds, and rudders are ineffective at low speeds, asymmetric propulsion offers both thrust and steering at any speed.

Upcoming Events & Opportunities

WHOI OTT will again be looking for Business Advisors for next year's Pitchathon.

If interested, please fill out our [Tech Mentors and Champions form](#) on the website and note specific interest in the WHOI Pitchathon.

WHOI OTT will be releasing its 2017 Annual Report in early 2018



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