It’s never too early to help young ocean scientists get to know the ocean. In April 2017, Ocean Networks Canada (ONC) hosted its fifth annual Ocean Science Symposium, an engaging two-day opportunity to inspire the next generation of ocean scientists.

Figure 1. Attendees of the fifth annual Ocean Science Symposium, 28-29 April 2017.

Bringing together over 70 students and teachers (Figure 1) from 16 schools across Vancouver
Island, northern British Columbia, and the Arctic, this educational hands-on experience emphasized the teamwork and collaboration needed to explore and understand the ocean.

University of Victoria scientists and researchers led dynamic presentations and energetic activities that offered symposium attendees an opportunity to experience the complexity of marine systems. Presenters included biologist Andrew Bateman, arctic geographer Laura Eerkes-Medrano, and ONC Director of Observatory Operations Adrian Round (Figure 2), highlighting everything from marine conservation, unique career paths, and community-based research.
The teens recognized how their passion for the ocean can intersect with other disciplines such as biology, physics, and engineering. To highlight the diversity of ocean-related careers, participants had an opportunity to connect with experts such as marine biologist Lauren McWhinnie, ONC’s Sensor Technology Development Officer Tom Dakin, and environmental studies graduate Sara Wickham.

During the two-day event, students and teachers explored ocean science and marine technology through six dynamic sessions:

1. Economic and environmental impacts of land-based and open ocean aquaculture fish farms;
2. Computer science for analyzing ocean data, using automated video analysis;
3. Diversity of seaweed species through art using seaweed presses;
4. Traditional ecological knowledge, critical role in science and environmental/coastal decision making;
5. Creating code to talk with remotely operated vehicles in the deep sea; and
6. The harmful impacts of ocean noise pollution.

The session on creating code was a highlight for both students and teachers, who had not previously known how challenging it would be to code their way around a University of Victoria courtyard (Figure 3). Wandering through a maze-based on ONC’s offshore observatory, participants were asked to take on the roles of scientist, engineer, interpreter, and robotic diver.
The ?scientist? and ?engineer? carefully planned a route and code to efficiently guide ?divers? to sites of interest. The ?interpreter? deciphered the code for the diver who had never seen the course; adventurous divers could even try the course blindfolded! There were definitely a few laughs and mix ups, but everyone enjoyed the exercise. By recreating a real-life challenge, the students were able to think like ocean scientists. ?The most meaningful [session] for me was the engineering part,? commented one teen. ?I really love coding and want to be an engineer in the future.?  

The Symposium leaders introduced the STEM model (science, technology, engineering, and math) and turned it into STEAM? by including art as a means to communicate science. Students and teachers rolled up their sleeves and got their hands wet with live seaweed specimens. After learning how to identify the hundreds of different seaweed species, they turned their colourful arrangements into artistic prints (Figure 4).
Figure 4. Students from Prince Rupert press seaweed to create natural prints.
When ONC’s Sensor Technology Development Officer Tom Dakin gave a presentation about monitoring underwater noise, students and teachers learned about the impact of human-induced noise—such as shipping—on marine mammals. A noisy marine environment can adversely affect whales and seals who communicate and navigate using sound. One student who was moved to reconsider their own behaviour stated, “I cross the border on the Coho ferry all the time and I never knew about how much impact it had on orca populations. As a result, I will think more about this when I’m booking transportation.” Witnessing attitude and behavioural changes is education as its best!

High school students learned about the diversity of ocean science careers, which inspired them to think about their future. Listening to real scientists and engineers talk about their training and work experience helped the youth understand that career paths are not linear. “I really enjoyed hearing about how people got to their careers because I’m worried about never getting to where I want to go,” commented one teen. The facilitators also helped students to realize that there is still a lot we don’t know about the ocean, inspiring them to believe they might be the ones to make new discoveries.
Symposium activities (Figure 5) and concepts were shared with teachers to bring back to their classes, along with an introduction to ONC’s Ocean Sense program which brings real-time ocean data into the classroom and how to access the fire hose of data flowing 24/7 from ONC’s deep sea and coastal observatories via data management system Oceans 2.0. This Symposium would not have been possible without these dedicated teachers who networked and brainstormed ways to bring more ocean science into their classrooms. The educators shared tips and tricks with each other in this great venue for professional development.

Experience the highlights of the symposium through a collection of photographs and tweets: The 5th Annual Ocean Science Symposium Twitter Moment.

Check out more about ONC’s Ocean Sense program or next year’s Ocean Science Symposium.

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