

# San Marino Tribune

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## A Whale of A Project for Engineering Grad Adela

By Mitch Lehman  
EDITOR OF THE TRIBUNE

Caution – part of this article contains subject matter some readers might deem offensive – if one is averse to whale sputum, that is.

“Actually, it’s not really sputum,” says 2010 San Marino High School graduate and engineering whiz-kid Adela Wee as she explains her current project. “A more accurate term might be ‘exhaled breath condensate.’”

Adela is back in town serving as mentor to the SMHS robotics team’s most recent entry before heading back to Massachusetts and her position as Robotics Program Director at Ocean Alliance, an organization that dedicates its resources to ocean conservation through whale research and education.

Condensed to its simplest form, Wee’s project follows this narrative:

\*One of the least invasive methods to determine the health of a whale is to collect the mist expelled from the mammal’s blowhole when it rises to the surface and exhales.

\*Analysis of the mist is tantamount to a blood test for humans.

\*The current method of collecting samples involves the use of low-impact darts to biopsy whale skin – this is an invasive process with limited efficiency.

Enter genius roboticist such as Wee to muster up a solution for dilemmas of this magnitude and you get what Adela casually refers to as a “SnotBot” – a maneuverable drone carrying a state-of-the-art high-absorption fabric that hovers over the whale, achieving sufficient proximity to collect a sample and automatically fly it back to the ship.

There are still several regulatory hurdles to clear for Wee and Ocean Alliance, but things are certainly mov-

ing in the right direction. She told The Tribune that the drones are relatively quiet, especially in comparison to the ambient noise of the ocean, and present a similar nuisance to a whale as a mosquito to a human.

“We are focusing on non-invasive technologies,” said Wee. “Benign monitoring methods. You not only determine the health of the whales, but you are able to assess the overall health of the ocean.”

Right now, Ocean Alliance is zeroing in on three whale species; The Right, Humpback and Sperm whales. Early testing of the “snotbots” is scheduled for Mexico’s Sea of Cortez and the Valdes Peninsula in Argentina.

“We want to collect our own samples from pods of whales we are familiar with,” Wee said. “Later, we can partner with other companies and organizations. We want to prove that the technologies work before we get ahead of ourselves. The ocean is our source of oxygen, food and supports basically all life on the planet. We are studying whales so that we can contribute to ocean health.”

This past December, Adela graduated from Olin College in Needham, Mass. – a fifteen-year-old institution that specializes in Engineering. Each of the three-hundred fifty students are required to live on campus all four years and are assigned challenging capstone projects before graduation.

Wee – who was president of San Marino’s Titanium Robotics in her junior year, the first president *emeritus* in her senior year, and majored in the subject at Olin – was looking for a small engineering school such as Cooper Union or Harvey Mudd.

Olin’s West Coast Rep., Duncan Murdoch, came to SMHS and convinced Wee



ADELA WEE

that Olin was a unique opportunity and the right school for her.

“I loved it,” she said, of her experience, save the recent spat of cold weather which convinced her to “extend” her visit to Southern California for a couple weeks. “Olin is trying to revitalize how engineering is taught in the 21st Century. They’re changing the way that engineering has been taught with the goal of creating engineers who would solve the right problems.”

Wee is a member of only the 9th graduating class in the school’s history. She mentioned San Marino community members Dr. Jeng Yen, Dr. Kenneth Chan, Scott Barton, Jennifer Chen, Fred Chen, Marla Felber-Kwan, Dora Liang and Bob French among her mentors.

“All of these people have really encouraged me in all of my pursuits and they’ve certainly influenced many of my decisions,” she added.

While at SMHS, Adela also played the trumpet, French horn, mellophone, and received the John Philip Sousa Award for dedication to the music program. She graduated with CSF seal-bearer and Promethean honors, and was assistant drum major her senior year.

Wee’s program – a 501.c.3 – needs investments, and those interested in supporting her mission can reach her via email at [adela.h.wee@gmail.com](mailto:adela.h.wee@gmail.com) or go to [www.whale.org](http://www.whale.org) and search for SnotBot.