



PIRE: Bio-inspired Materials and Systems

Inspired by Nature; Shaped by Technology

NEWSLETTER

May 28, 2019

Graduate Student Profile – Sara Roldan Velazquez

Sara was raised in Tegucigalpa, Honduras, where she lived until she was 18 years old. Sara was interested in Materials from an early age. Honduran universities did not offer courses in her interest area, so Sara moved to Florianopolis, Brazil, where she pursued her Bachelor's degree in Materials Engineering. As an undergraduate, Sara became acquainted with bio-inspired materials. She says this introduction "became a subject of amazement on how we could use inspiration from nature to develop better synthetic materials."



Sara pursued a self-funded outreach activity in Honduras over her Christmas holidays in 2018. She worked with school-age children to introduce them to the career possibilities available in science. "My main motivation," she says, "was the lack of science inspiration and encouragement I had during my school years, I think that great scientist can come from



Sara teaching in Honduras

any country the only difference is that it is not encouraged in underdeveloped countries, making it harder for kids to pursue a scientific career." Sara is currently working to develop similar outreach activities that can be implemented by Bio-inspired NCCR and PIRE members in Switzerland and Scotland, or wherever they travel.

Sara has a cosmopolitan outlook, speaking Portuguese and enjoying Brazilian barbeque, skiing in Switzerland, and hiking in Scotland. She enjoys travelling to new countries where she can share in their culture and cuisine.

Bio-inspired Headlines

Bio-inspired PIRE friend and NanoEngineering professor, Dr. Nicole Steinmetz and her team of researchers have discovered a way to effectively deliver pesticide molecules using a biological nanoparticle - a plant virus. Steinmetz and her team suggest that using this nanoparticle as the delivery system can target areas deep within the soil. Their research was published in *Nature Nanotechnology*. For more information, please read the [full story](#).



The skin of Shortfin mako sharks, one of the fastest species of shark, is covered with fine scales like bristles that can prevent the formation of eddies along the shark's body, enhancing its speed. It is now hoped that the research could lead to new materials for use on fixed-wing airplanes and the rotor blades of helicopters, making them more aerodynamic. [More at New Atlas](#)

Dates to Remember . . .

- ASAP** For the Annual Meeting in San Diego – if you have not done so already, let Pam know when you will be arriving and departing so that hotel reservations can be finalized
- June 1** PIRE Research Progress/Proposals Due
Guidelines: 1-2 pages for research progress; 1-2 pages for proposed research (see email message dated April 25)
- August 22-23** Bio-Inspired PIRE Annual Meeting at UC-San Diego