BRUCE and ROSA go to Coney Island:
## Interactive robotic fish join the New York Aquarium (Award #DRL-1200911)
## Principal Investigator: Maurizio Porfiri

Interactive robotic fish for informal science

This project promotes public understanding of and engagement with STEM by developing and implementing technology and formats for interactive exhibitions at the interface of underwater robotics and marine science.
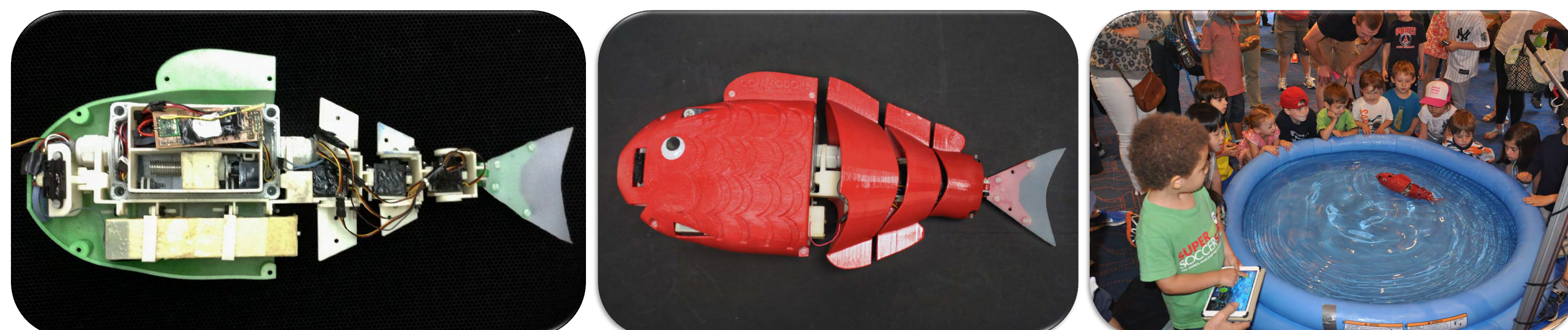
Features of the exhibit

- This program puts kids and adults behind the wheel of robotic fish that can swim alone, school in groups, and compete among each other.
- Visitors are offered three modes of control where they can have full control of the swimming capabilities of the robotic fish, guide the fish to follow iPad-inputted trajectories, or watch as it independently navigates the environment using on-board sensors.
- Nearby posters educate free-choice learners about the engineering involved in the robotic fish and about marine environmental issues.
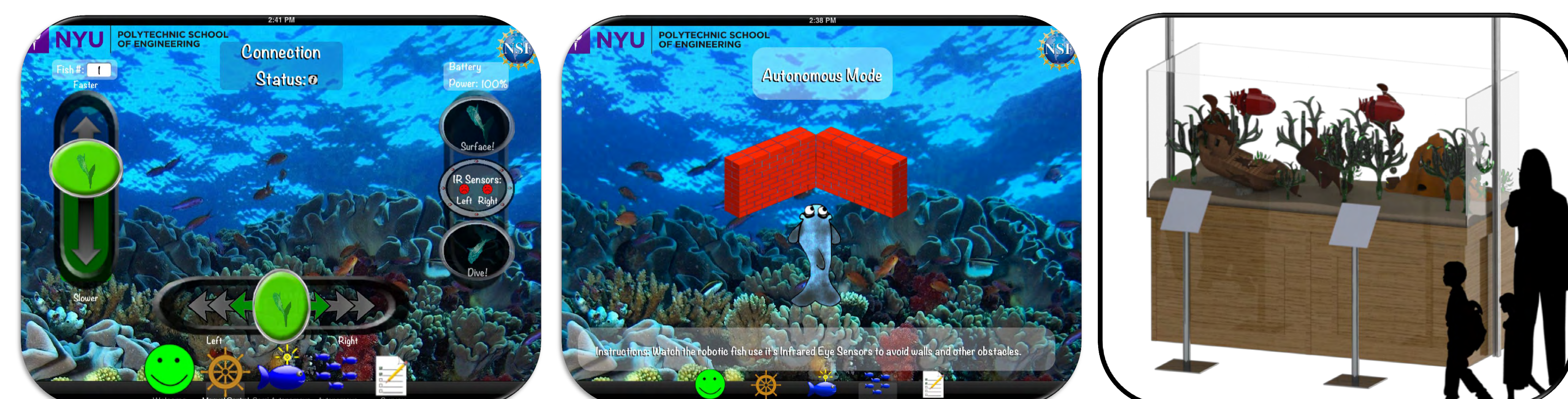
Research Questions

- How can the robotic fish exhibit engender visitor persistence, affording systematic investigation of <u>v</u>isitor interaction with the robotic fish at the exhibit?
- What makes the exhibit effective in increasing learning outcomes related to animal behavior, bio-inspired design, and animal-robot interactions?

Methodology and Evaluation

- Visitors who pilot the fish are surveyed on non-personally identifiable data, user experience, thoughts on environmental issues, and interest in the STEM fields. Field observers take notes on visitor interaction with the exhibit.
- This project has resulted in a shoal of robotic fish with iDevice applications for control, a structure for an interactive robotic fish exhibit, and insight into visitors interest for robotic fish informal learning activity and concern for marine environmental issues.

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