

# Getting Smart About Rip Current Education and Data Collecting

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This summer, Stevens Institute of Technology and the New Jersey Sea Grant Consortium (NJS GC) hope to change that by utilizing mobile device technology to collect and distribute up-to-the-minute rip current data and related information.

Under the supervision of Stevens Professor David Klappholz, Class of 2012 Computer Science graduates Christopher Seeley, Ralph Mattiaccio, Ken Bodzak, Will Abeel and Danielle Maginnis have developed a smartphone app for multiple platforms to assist lifeguards with identifying and cataloguing rip current occurrences on their own beaches, while giving them a glimpse at what neighboring communities are experiencing in real time. Developed at the request of NJS GC's Coastal Processes Specialist and Stevens Professor Jon Miller, the app could prove invaluable to both local lifeguards and the National Weather Service (NWS).

The NWS plans to use the collected information to evaluate its own rip current forecasts. The information will also help refine current understanding about when and where rip currents occur and under what conditions they are most prevalent.

The concept is fairly straightforward. A lifeguard with a smartphone in a participating community can travel down the beach and stop when a rip current is identified. Using the app, the lifeguard will enter basic information about the rip current (approximate size, strength, adjacency to a structure, etc), and record its location using the phone's built-in GPS. Lifeguards can also use the app or the web-interface to keep track of rescues via a free-form description field.

An additional web interface enables lifeguards to view all of the reports from the previous 24 hrs in either a list or map form. The map form utilizes Google Maps and displays basic information about the rip current. All of the information is displayed in real-time so that lifeguards know what's happening in adjacent communities. The website is optimized for display on a mobile device so information can be viewed on the same platform on which it's entered.

A demo of some of the capabilities of the system has already proven successful. Currently, the mobile-optimized website allows authenticated users (lifeguards) to enter basic information about the identified rip current. The application then populates a database with the entered

information as well as relevant related data drawn from NOAA databases regarding the waves and tides at the time of the report. All of this happens in real time and is searchable by other lifeguards, the NWS and the research community.

Miller hopes to get the project piloted in one or two shore towns early this summer. A press conference and demonstration is planned for Wednesday June 6 at 10:00 am in Spring Lake, NJ, one of the first New Jersey beach communities to test/use the mobile application. Details to follow.

#### About Stevens Institute of Technology

Founded in 1870, Stevens Institute of Technology, The Innovation University™, lives at the intersection of industry, academics and research. The University's students, faculty and partners leverage their collective real-world experience and culture of innovation, research and entrepreneurship to confront global challenges in engineering, science, systems and technology management.

Based in Hoboken, N.J. and with a location in Washington, D.C., Stevens offers baccalaureate, master's, certificates and doctoral degrees in engineering, the sciences and management, in addition to baccalaureate degrees in business and liberal arts. Stevens has been recognized by both the US Department of Defense and the Department of Homeland Security as a National Center of Excellence in the areas of systems engineering and port security research. The University has a total enrollment of more than 2,400 undergraduate and 3,700 graduate students with more than 450 faculty. Stevens' graduate programs have attracted international participation from China, India, Southeast Asia, Europe and Latin America as well as strategic partnerships with industry leaders, governments and other universities around the world. Additional information may be obtained at <http://www.stevens.edu> and <http://www.stevens.edu/news>.

The New Jersey Sea Grant Consortium is an affiliation of colleges, universities and other groups dedicated to advancing knowledge and stewardship of New Jersey's marine and coastal environment. NJS GC meets its mission through its innovative research, education and outreach programs. For more information about NJS GC, visit [njseagrant.org](http://njseagrant.org)