The program consists of a common core of coursework and one of four lab strands, described below. Students will be assigned to a strand during the fall semester based on interest.

**Research Lab Strand** Students in this strand will conduct original scientific research on a group of aquatic bacteria that are found in waterways around the world. These bacteria produce a purple pigment, violacein that has remarkable chemical properties. Most practically, the pigment has been shown to kill a fungal pathogen that is decimating global amphibian populations. This strand is ideal for students who have done some scientific research before and are eager to do more. It’s also a great entry point for students who’ve never had the chance to do original hands-on research and would like to try it.

**Community Action Lab Strand** Students in this strand will conduct original research on the prevalence of environmental estrogens/testosterones in local waterways. Such compounds can enter the water system as a result of industrial and agricultural uses, and also as a result of the use of synthetic hormones to modulate human reproductive cycles. These compounds have been shown to have potential negative effects on wildlife and human health. Whether they are found in local water, and if so, at what concentrations, is not currently known. This strand is ideal for students who are interested in conducting original research, and for those interested in how scientific research can inform local communities.

**Science Communication Lab Strand** In this strand, students will translate important scientific discoveries to make them accessible to the public. The focus will be on interpreting, synthesizing, and writing about results from potentially contradictory studies to provide the best information for people to make timely decisions. For example, does hydraulic fracturing (aka fracking) pose risks for human health? Does the widely used herbicide atrazine (produced by Monsanto) cause deformities in wildlife? This strand is a good choice for students who want to embrace the challenge of distilling scientific information for the public in clearly written prose.

**Science Education Lab Strand** In this strand, students will work with Engagement Fellows from the Center for Civic Engagement to lead hands-on science activities with local middle school students. In the lab, students in this strand will engage in research of their own and develop classroom activities for young learners. This strand is ideal for students who are interested in education, and for those who would like to gain experience doing hands-on work within the local community.