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Nature Lab creates biodesign maker space



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Nature Lab creates biodesign maker space

Students will help plan space with natural elements to facilitate environmental design projects

By **ELENA RENKEN**
SCIENCE AND RESEARCH EDITOR
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Tanks of luminescent jellyfish and rippling seaweed line the walls of an open space on the bottom floor of the Rhode Island School of Design's Nature Lab. But a transformation is underway; by the end of 2018, the room will become a “maker space” inviting students to conceptualize and engineer nature-inspired systems to address real-world issues.



ELENA RENKEN / HERALD

“We’re very interested in employing natural technology — looking at how nature works as an ecosystem in a way that human beings don’t,” said Jennifer Bissonnette, biological programs designer at RISD and a leader of the project. “We create so much waste. We’ve created so many environmental problems and social problems because of the way our society functions.”

The **Nature Lab** currently contains tens of thousands of preserved specimens, as well as live animals and tools like electron microscopes, that all serve to connect students with art and science. After its redesign, the maker space will offer Brown and RISD students an area to experiment with biomaterials and design interventions for the urban environment, Bissonnette said. The project will also produce curricula for high school students, which RISD students will implement in local high schools. I’m not totally clear on this sentence? RISD students will implement or suggest to high schools? Just not sure what “try out” means

“Part of our role is to support the campus community by demonstrating the ways in which there are not only historical and cultural influences on art and design, but also biological influences,” said Neal Overstrom, director of the Nature Lab.

Construction began with the installation of a green wall: Leafy plants sprout horizontally from a large panel, dominating the southern wall of the space with countless shades of the hue.

Going forward, students will be intimately involved in the design of the lab as it is brought to life. A wintersession course, in which students create interventions that could become part of the project, will be followed by a spring course focused on producing prototypes specifically for the Nature Lab space.

The design of the space will revolve around the idea of biophilia, or humans’ tendency to connect with nature. Facets of nature that resonate with people, like the fractal branching of trees and patterns of scattered light, are the focus of biophilia, Bissonnette said.

Elements resembling nature will be built into the space as part of the biophilic design, according Kylie King, a RISD graduate student studying material architecture and a research assistant at the Nature Lab. King is collaborating on a lighting installation inspired by kelp bladders. Paper was made by hand from phragmites and knotweed — invasive plant species from Rhode Island — and used to construct pods that will hang from the ceiling.

The space will make use of “symbolic references to patterns found in nature and numerical arrangements that persist in nature,” King said.

A body of research in environmental psychology shows that connecting with nature can improve well-being and facilitate learning, Overstrom said.

Serving as a point of entry for those unfamiliar with STEM fields, the space will provide students with a “hands-on studio experience where they’re gaining understanding of scientific concepts and engineering concepts,” Bissonnette added. “Suddenly, they have agency over some of the issues they see confronting them in their world.”

The project is funded by an EAGER grant from the National Science Foundation, which provides funding for “exploratory work in its early stages on untested, but potentially transformative, research ideas or approaches,” according to the NSF website.

The Nature Lab seeks to renew the connection between humans and nature by revamping this part of its space. “Historically, progress has been measured by the degree to which we often distance ourselves from the natural world,” Overstrom said. “Our hope is that through these kinds of projects, these students will come to believe the exact opposite to be true.”

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