



WHCI Lab, Wellesley College

As told by Orit Shaer



→ WHCI Lab designed by Packard Design.

PHOTOGRAPH BY LYNNE DAMIANOS

How do you describe your lab to visitors? In the WHCI Lab, we are exploring how novel user interfaces can benefit and enhance creativity, collaborative learning, and discovery, especially in data-intensive areas. Our lab integrates teaching and research in a liberal arts college environment by bringing together science, technology, and art in creative new ways. It is a place where cross-disciplinary teams of researchers and students are designing, building, and evaluating next-generation human-computer interfaces.

The lab is equipped with new HCI technologies, ranging from large multitouch tabletop computers to interactive 3D stereo displays. We also have access to fabrication machines such as a 3D printer and a laser cutter.

The setup of our lab and its look and feel, which resembles the headquarters of a small startup rather than a traditional lab or classroom, are uncommon within a liberal arts college environment.

What is a unique feature of your lab?

Wellesley College is a preeminent liberal arts college for women known for its intellectual rigor and its remarkable track record for the cultivation of women leaders in every arena. It is not surprising then that our lab has a deep commitment to engaging more women in HCI research.

The physical space of the lab helps to foster synergy between teaching and research activities. With introductory and advanced HCI project-based courses taught in the lab, our research feeds directly into our teaching and vice versa.

We are proud of the strong collaborative links our lab has across Wellesley College, working with the Davis Museum, botanical gardens, studio art department, and science faculty. We also collaborate closely with researchers from other universities and with industry partners such as Agilent Technologies and Google.

What is the one feature of your lab you could not do without? The lab was designed to encourage collaboration and creativity. All of the furniture is moveable, so we can change the room's setup on the fly. All surfaces, including



→ Student group work at WHCI.



walls, cabinets, and glass, are writeable, and a grid on the ceiling allows us to easily wire different technologies. The funky lights, fun furniture, and open feel of the lab inspire us to create designs that are not only functional but also aesthetically pleasing.

The heart of the lab is the BEAST, a large-scale interactive tabletop display that can accommodate up to 12 users interacting in parallel. We designed and built the BEAST to explore how large-scale interactive tabletops can augment data-driven, collocated meetings of teams.

How many people are in the lab, and what is the mix of backgrounds and roles? There are about 12 undergraduate student researchers who work in the lab, a research scientist, and a faculty member. People in our lab come from a wide variety of backgrounds, including computer science, media arts and sciences,

physics, biological sciences, art history, psychology, economics, and education. Each year the WHCI lab also houses about 36 students who enroll in HCI and tangible interaction classes.

Describe how people interact in the lab. The glass wall makes our lab and science visible, so people often pop in. It gets a bit busy sometimes, but we enjoy the vibe and buzz around the lab. There is a friendly and informal atmosphere, and people often socialize in and outside the lab. We emphasize collaboration and support each other's work by sharing ideas, as well as technical tricks and tips. We often use the abundant whiteboard space for visual communication, capturing ideas, to-do lists, or simply leaving messages for each other.

Describe a day in the life of your lab. We start the day working on research projects. This involves student researchers programming the zSpace

3D stereo display, experimenting with new forms of haptic feedback, or designing new visualization techniques for biological data. We may run usability studies or analyze data. Around lunchtime we convene for a meeting to discuss our ongoing projects or host a guest speaker. In the early afternoon, students who take courses in the lab start popping in and working in groups on their projects—this semester our HCI students are designing and developing new mobile user interfaces. Toward the late afternoon, the space becomes even livelier, with students coming in to work on group projects. A recent project titled magicBox, which was presented in the TEI Conference Student Design Challenge, consists of cardboard boxes augmented with “magic” using conductive thread and paint, LEDs, and speakers.

What is one feature of your lab you want and do not have? Our renovated lab only recently opened, in October 2013, so it



→ The BEAST, a large-scale interactive tabletop display.

offers possibilities that we have yet to explore. We are currently investigating new visualization techniques for biological data, so we could benefit from a high-resolution interactive data wall.

What is the one thing you see as most important about what you do here?

We have a deep commitment to engage undergraduate women in HCI research. With this goal in mind, the WHCI Lab integrates teaching and research while fostering collaboration, innovation, and hands-on learning. Our research focuses on inventing and understanding next-generation human-computer interaction techniques. We collaborate with other academic institutions, as well as with industry partners, to investigate how novel user interfaces can enhance creativity, collaborative learning, and discovery in data-intensive areas. We like to think that we educate women who will make a difference in the world through the design of user interfaces that enhance the human capacity to create, learn, and discover.

Our lab has a deep commitment to engaging more women in HCI research.

— Orit Shaer, WHCI Lab



→ Experimenting with novel interaction techniques.