

Eye on the Web

Alumni-founded company supports eye-tracking research laboratory

WHAT MAKES A GREAT WEBSITE or app, one that looks great and—more important—is easy to use?

The User Experience and Decision Making (UXDM) Research Laboratory seeks answers to that very question. Open since March 2012, thanks to a generous contribution from Dyn, a New Hampshire-based company co-founded and led by Jeremy Hitchcock '04 and Tom Daly '04, the UXDM Lab features state-of-the-art eye-tracking technology that records a person's gaze when using a computer or hand-held device such as a smart phone or tablet.

"We are excited about the new facility and we are grateful for this generous gift from Dyn," says Provost Eric Overström. "This new lab and the work of Professor Djamasbi and her students have far-reaching implications for today's global innovation economy."

Soussan Djamasbi, associate professor of management information systems and director of the UDXM Lab, explains that the eye tracker is a valuable tool in investigating user experience. "It literally allows us to see what the user sees when he or she works with a system," she says.

The eye-tracking system consists of cameras that observe how a person's eyes move about a computer or hand-held screen as he or she uses a website, app, or similar technology. The data from these sessions can be presented as a gaze plot, showing where the user looks, the order in which various elements on a screen are viewed, and where a user's eyes fixate for longer periods of time. The data can also be presented as a heat map, colored spots that show where a user's eyes are fixating the most and least. This data is critical to any organization or endeavor that seeks to communicate



From left, Mark Rice, dean of the School of Business, Dyn executives Tom Daly '04 and Corey Wallenstein, and Soussan Djamasbi, associate professor and director of the lab, officially open the User Experience and Decision Making Research Laboratory at WPI.

key information to individuals and can help inform decisions about how that information is presented.

Fidelity Investments, for example, was interested in learning how people of different generations interact with Web pages. Tom Tullis, vice president of Fidelity's User Insight Group, sponsored an MQP (major qualifying project) that charged a WPI student team with conducting an extensive eye-tracking study that examined possible differences between Gen Y and Baby Boomer preferences in Web page design. A resulting paper co-authored by Djamasbi, Tullis, and Marisa Siegel '08, "Generation Y & Web Design: Usability Testing through Eye Tracking," won the Best Paper award in

the human-computer interaction track at the 14th Americas Conference on Information Systems in Toronto in 2008. The three have co-authored a number of other conference papers and journal articles since then.

Current graduate and undergraduate students are conducting eye-tracking studies focused on the effect of various cognitive factors on user experience, mobile devices, and the use of eye-tracking technology in various industries.

Hitchcock became interested in Djamasbi's eye-tracking research as it related to Dyn. He describes Dyn as a developer of "Internet plumbing," the behind-the-scenes programming that makes e-transactions possible. When Dyn wanted to evaluate the usability of

its website for potential customers, Hitchcock turned to Djamasbi and WPI.

“There aren’t too many places that look at how people use the Web in this way,” Hitchcock says. “And there isn’t a good way to determine if something is effective and usable on the Web.”

In 2011 a student team completed an MQP that specifically investigated the process of requesting services through Dyn’s website. The students used eye-tracking technology to examine ways to make Dyn’s services easier to access, use, and understand, and then provided recommendations to improve the usability of the website and the processes of signing up for services. According to Hitchcock, the data and recommendations provided by the WPI student team have proven very useful to the company.

“When people talk about educational private partnerships, this is a textbook case,” he says. “It was easier and more efficient for us to work with WPI on this research.”

Dyn’s contribution to the UXDM Research Laboratory, which supports a key component of *If...The Campaign to Advance WPI*—enhancing faculty support—was prompted by the success of this project, along with Hitchcock and Daly’s dedication to their alma mater.

Hitchcock incubated Dyn between his freshman and sophomore years at WPI. By his junior year, he worked nearly full-time on the company. Since then, he and Daly have built Dyn into a leader in the Internet infrastructure-as-a-service industry. Hitchcock is currently the company’s chief executive officer, and Daly serves as chief scientist. Both have been recognized for their achievements as innovators and entrepreneurs. They were named 2012 Entrepreneurs of the Year by the New Hampshire High Technology Council, and Hitchcock was named a finalist for the 2012 Ernst & Young Entrepreneur of the Year Award.

Hitchcock credits the positive experiences he had at WPI with influencing the culture he and Daly have fostered at Dyn. “We enjoyed our college experience,” he says, “and wanted our work experience to be equally enjoyable.”

Pratt & Whitney Teams Up with WPI Students to Make a Difference

STUDENTS COME TO WPI TO LEARN how they can make an impact on the world through engineering and science. And once they start, they can’t stop. The WPI Chapter of Engineers Without Borders (EWB), a student-led organization, is a natural extension of the impressive work WPI students pursue in their Interactive Qualifying and Major Qualifying projects. This year the EWB chapter received a generous grant from Pratt & Whitney to support the group’s work in Guachthu’uq, a rural community in the highlands of Central Guatemala, where people have limited access to clean water.

EWB is a national organization, with more than 12,000 students, faculty, and professionals in chapters working throughout the world. Each chapter makes a five-year commitment to a partnering community to design and implement low-cost, small-scale replicable and sustainable engineering solutions to societal problems. WPI’s chapter is designing and implementing a water catchment system that will create a clean water source for families. It estimates the project will directly impact 39 families (207 people) and will have an indirect effect on approximately 25 more families in a neighboring community. The Pratt & Whitney grant will support the students’ future travel to Guatemala to implement their water catchment system design in two pilot homes and to educate the community about the system.

“This trip will be vital to the success of our project because it will allow us to test our design, with the aim of implementing a water catchment system in every home,” says Caryn MacDonald ’14, the chapter’s fundraising chair.

The implementation trip will follow two assessment trips by the group. The students’ efforts are also supported by their mentors, Matthew Gamache ’99 and Patricia Austin of the Massachusetts Department of Conservation and Recreation, and their faculty advisor, Creighton Peet.



Representatives of Pratt & Whitney present a grant to members of the WPI Chapter of Engineers Without Borders.