

Research Vision

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Current Research

I cultivated my own independent research in what I call “Digital Naturalism.” I investigate new forms of digital interaction design for studying and understanding wild animals. This research involves not only the production of technologies which can enable such interactions, but it also works to find participatory techniques and build theoretical foundations to enable such endeavors.

My PhD focuses on developing and evaluation key design considerations for collaboratively developing digital technology with an ethological focus. To answer these questions, my methodology channels STS motivations through active, participatory design research with a community of scientists. Over the past three years, I have gained access to the Smithsonian’s Tropical Research Institute (STRI) to conduct ethnographic research while also holding “critical making” workshops, and challenging scientists to creative performative and interactive projects. My research involves participation broadly with the community as a whole, as well as deep longitudinal studies with core collaborators. For instance, my “Living Lightning” project took the form of a series of physical computing workshops combined with performative games and biological discussions held in the jungle. I also documented the research of one collaborator, Peter Marting, for over three years as we developed, iterated upon, and evaluated experimental tools such as his “Flick-O-Matic” ant aggression device.

One of the most ambitious projects undertaken in my research was the Hiking Hack (<http://youtu.be/XcDFeVNG5QA>). I organized and led a 9-day backpacking-hackathon through the Panamanian rainforest. With a crew of biologists, technologists, and documentarians we studied, first-hand, the effect of context and digital crafting processes. We also discovered techniques for repairing and creating new types of scientific tools directly in the forest itself.

Future Directions

The novelty of my research made it initially difficult to gain access to certain communities and institutions. My persistent efforts, however, have led to greater acceptance by many different communities of these once-strange ideas, and Digital Naturalism itself has begun to gather momentum.

First, I will be continuing several diverse projects with the collaborators I had been lucky to work with over the years at STRI. The Hiking Hack concept is also being developed into a “world series,” where I will lead more mobile hackathons through the wilderness. On Feb. 13, I leave for the next Hiking Hack for a month in Madagascar. I created and organized this large scale project with Hannah Perner-Wilson and famed entomologist, Brian Fisher to start another phase of my research, “Dissemination Lab” (<http://www.fisherlab.org/dissemination-lab.html>). We will invent, test, and document new tools, techniques, and concepts for sharing field research. Once again, we will work entirely in the wilderness to find answers to truly context-dependent ecological design. Another Hiking Hack has been awarded a substantial grant to focus on wearable devices, and will take place in June to study the Appalachian synchronous fireflies. I look forward to leading more of these projects with my own students.

The opportunities for Digital Naturalism continue growing in this developing design spaces. I think MIT would provide an excellent home base to foster this research.