ANDREW QUITMEYER

DIGITAL ADVENTURER

ABOUT

Andrew is a polymath adventurer interested in discovering new means of exploring and sharing the living world. As a Georgia Tech PhD student, he researches how digital media can be used in the study of animal behavior for exploration and outreach. He develops techniques and tools for expressing ideas in engaging and powerful new ways. His trans-disciplinary, multimedia works have been featured in outlets such as PBS, NPR, The Discovery Channel, Cartoon Network, Make Magazine, and Wired.

Most new technology gives us better ways to focus on ourselves. Instead, I want to connect with the parts of the living world we typically ignore.

CONTENTS

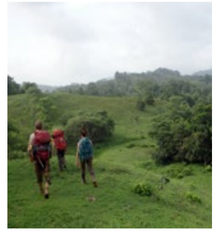
Each project has additional documentation like videos or interactive elements available by searching:
www.quitmeyer.org

THE HIKING HACK

Quitmeyer, Marting, Dixon, Walsh, Tsang 2011

A nine-day mobile computing workshop, hacking and hiking across Panama's Rainforest. Working in-situ, we design new digital-animal interaction devices *for* the jungle *in* the jungle.

Winner: Georgia Tech Wearables Engagement Grant ($5,000) 2014



Hiking with Electronics
We crossed varied terrain on foot carrying all of our physical computing gear.

Situated Hacking
On-site construction provided rapid feedback, and let us evaluate tools for field repair.

Participatory Design Exercises
Biologists and Technologists live with their research organisms. We let the dynamic context of the forest reveal and steer our design and crafting process for digital animal interaction.

Call for Applications
Seeking out adventurers, scientists, engineers, and documentarians, we recruited around the world via word of mouth and digital / physical posters to find the final crew.

SUBWAY

Quitmeyer, Ansari, Nitsche, Anonymous **2011**

Dancing in public is Illegal in Iran.
We smuggled an app into the country. Frame by frame, dozens of participants recreated a freedom dance in Iran.

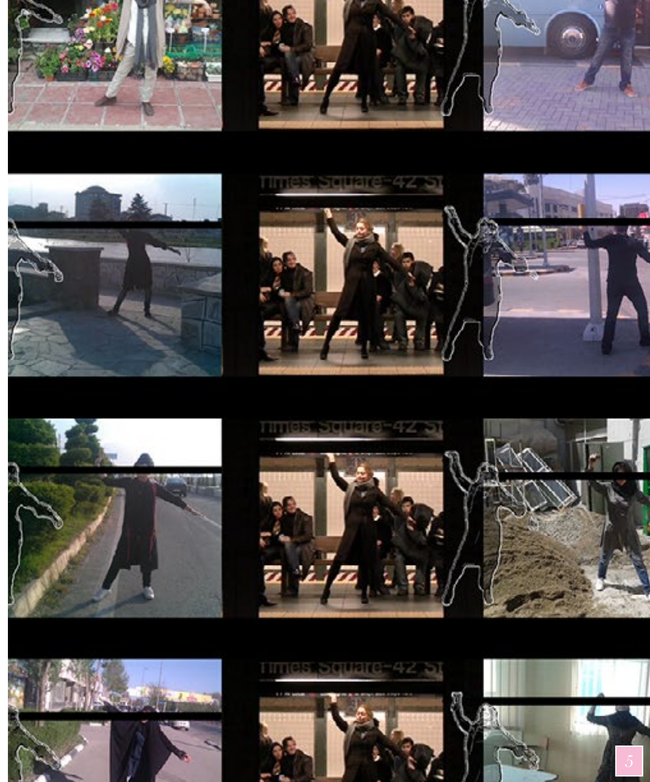
Presented: "Activist Performance and Mediation," ArtsIT (Milan) | Artaud 3 (London) | Eyebeam (NYC) 2012
Paper: "Media in Performance,The Subway Project," IJART 2009

App Development
We built a custom Android App to enable this covert performance.

Secret Meetings
We held workshops with the Iranian volunteers discussing the technology and debating the project's theory.

Sharing a Dance
We utilized redundant methods for sharing the app overseas and retrieving the final dances.

"Dancing"
Dozens of participants reenacted random frames from the original dance. They recreated over 90% of it.



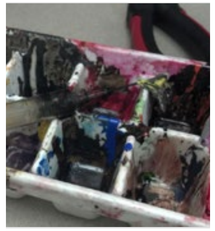
PAINT PULSE

Quitmeyer, Nitsche, Rafinski, Spross **2012**

Paint Pulse builds digital behaviors into traditional water marbling crafts Ebru and Suminagashi. Pulsing electromagnets and ferrous inks enable new material explorations while maintaining the traditional interactions.

Featured: "Paint Pulse" Discovery Channel Daily Planet 2013
Winner: Instructables Grand Prize Design Challenge 2013

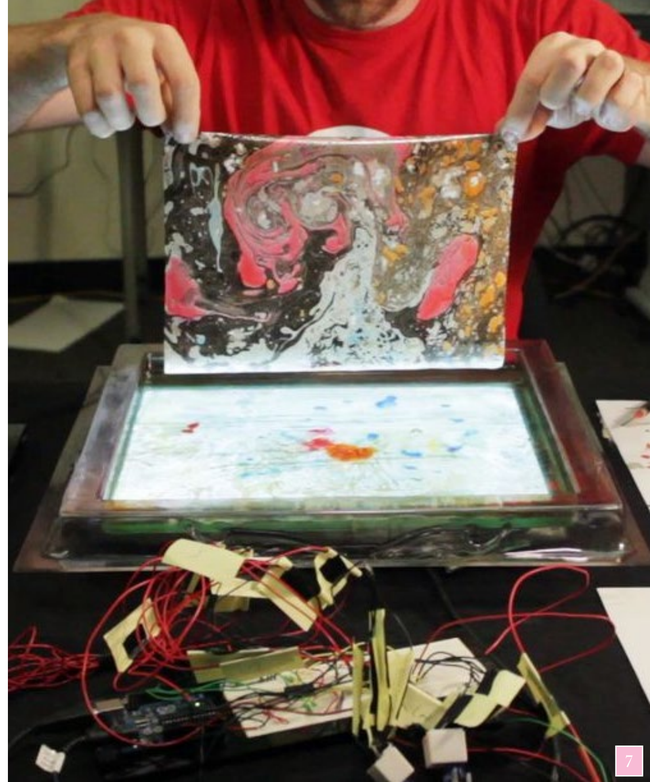
Original Interactions
We did not want to de-skill the craft through automation. The Ebru master's original actions are kept in tact.



Material Experimentation
Original Ebru utilizes special inks and substrate. We had to develop our own techniques that functioned with ferrofluid.

Electromagnetic Tools
We kept the traditional rake tool, and added optional pulsing magnetic behaviors.

Output Format
The derived blend of pigments, let us keep the same output process, saving unique swirls onto paper.



MARK YOUR TERRITORY

Quitmeyer, Nitsche 2011

This critical design project investigates forms of ownership in digital and physical spaces. Incorporating physical methods of territoriality from nature explores new forms of engagement.

Published: Cybernetics - Leonardo Electronic Almanac 2014
Winner: First Place Instructables Pocket Challenge 2011

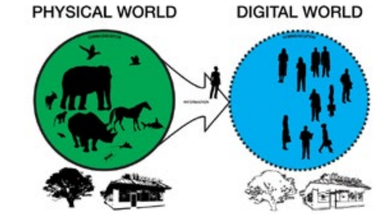
Custom App
We build a special modification to foursquare's location "claiming" API, to physically check in.

Marker Design
Inspired from numerous animal systems, this moisture-sensing, ph-indicating tag reveals a gradient of information and ownership.

Complete System
The phone ties to the sensor via a reliable, waterproof tether.

Hybrid Digital Physical Spaces
Most digital devices seek to simulate selected elements of the physical world in new digital spaces. . In the traditional fousquare application, you are able to claim digital simulacra of real spaces.

With Mark Your Territory, the digital actions feed back into real-world changes. This patched version of these hybrid spaces then also allows non-human participants in digital arenas.

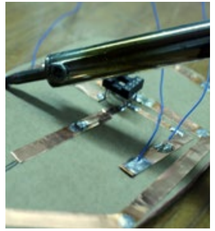


LIVING LIGHTNING

Quitmeyer 2013

Critical Making workshop teaching basic physical computing skills while also exploring the biological system of *Photinus pyralis* and *Pyrophorus noctilucus* lightning beetles.

Presented: MLA Critical Making Symposium 2013



Beyond "Blink"
We took the typical "blink" program (hallmark of any intro to physical computing) for biological exploration.

Making and Discussion
Participants "bought" components for their firefly costume kit, by leading a discussion question about biology and tech.

Promotional Poster
Encouraging scientists to participate came in many forms including custom posters around STRI.

Programming Behaviors
The scientists thought to program different chips as different "players": males, females, predators.

Embodying Wildlife
Participants embodied different roles in firefly ecology. While navigating through utter darkness, they communicated via flashing patterns with each other and real fireflies.

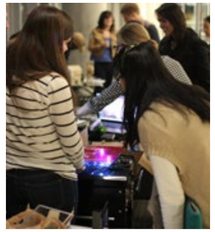
CYBIOTIC INTERACTION COURSE DESIGN

Quitmeyer **2013**

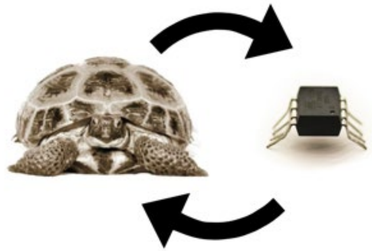
Designed and taught a custom university course on interaction design with non-human living creatures.

Sponsored: Partial support from Sparkfun 2013

Custom Workspaces
We build mobile physical computing stations to modify a traditional web-design course into one for biotic interaction.



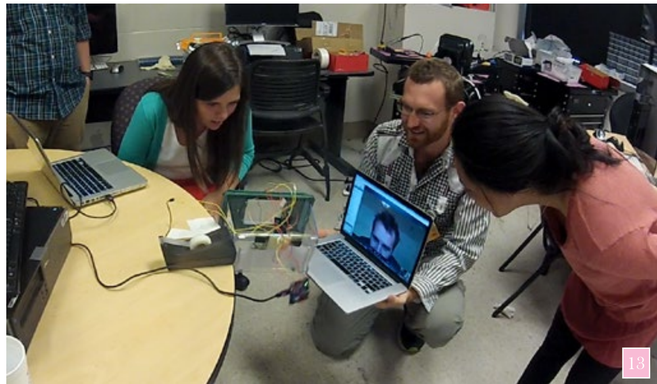
Demo Day
Students demoing live projects with organisms such as the board-game for worms.



Cybiotic Interaction
One design guideline for building interesting non-human interaction devices. In a Cybiotic interaction the computer must take at least one input from a creature and present, in turn, a stimulus it can detect.

Story-boarding animal interactions (above)

Sharing Cricket Device with Biologist (below)



DIGITAL NATURALISM

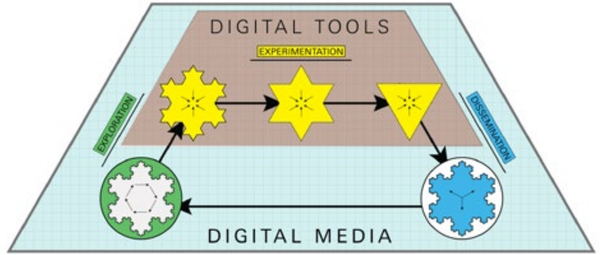
Quitmeyer, Nitsche **2015**

My PhD research project explores digital interaction design with biological field researchers. Digital Naturalism uphold scientists' values and practices while harnesses the affordances of computational media for connecting with wildlife.

Presented: CHI (Tornto), Ubicomp (Zurich)	2013-2014
Award: Georgia Tech Ivan Allen College Fellowship ($35,000)	2014
Funding: Smithsonian Tropical Research Institute Fellow	2013-2014

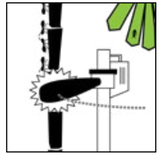
Workshops
Often ethologists must construct their own research tools. Such bio-crafting also promotes critical reflection.

Performances
Interactive events explore new digital or animal behaviors, and share embodied research ideas.



Holistic Cybiotic Interaction
To advance ethological practice and digital media one must design for the entire process of Ethology. Whereas most digital collaborations strictly focus on refining experimentation, Digital Naturalism looks to investigate computation for exploration and dissemination phases.

Evolution of a Digital Tool
Digital Naturalism focuses developing open-ended tools in parallel with scientists' evolving research. The Flick-O-Matic ant-aggravation device was collaboratively build with Peter Marting in 2012 and refined over three years. Marting could hack and repair parts of this instrument as certain factors became necessary for his experimental questions.



COMINGLE {♥}

Press: Fast Company, Business Punk, Huffington Post 2014
Winner: Arse Elektronika Grand Prixx 2014

Open-Source Sexy

Comingle develops open-source sex technology. We target innovations in

- Interaction
- Stimulation
- and DIY (Doing it Yourself)

I founded this company in 2014 as a way to share sexual technology design freely with the world.

By open-sourcing all of our software, designs, and electronics, we hope to open up a creative new space for sex and tech. In an unregulated industry, like sex toys, open designs are also important for safety and accessibility reasons.

The Mod

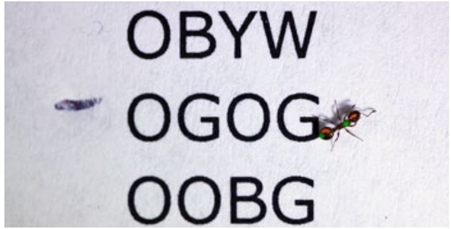
Comingle's flagship product is a fully hackable dildo platform. The first integrated, 100% body-safe silicone, multivibrating, programmable sex toy.

DESIGN DOCUMENTARIES

Quitmeyer, Balch, DiSalvo, Marting 2010-2014

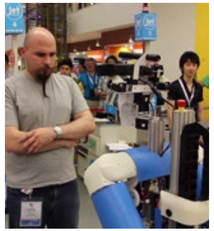
I utilized my background in documentary film-making, to create "design documentaries" (Raijmakers et al) that explore and share interesting systems as part of a design process.

Exhibited: Fernbank, Landesmuseum, and Oakland Museums of Science 2012-2015
Featured: E.O. Wilson's "Life on Earth," NPR, Scientific American, AAAI 2010-2014

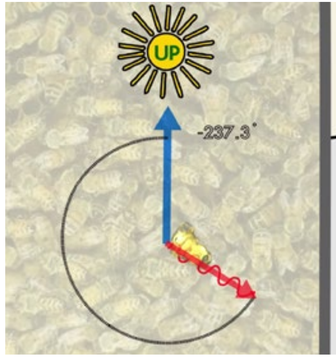


Ant Painting: Unique Identification of Ants
Scientists studying large colonies of ants use a peculiar method of individually marking ants. With a single hair paintbrush that add color codes to ants bodies.

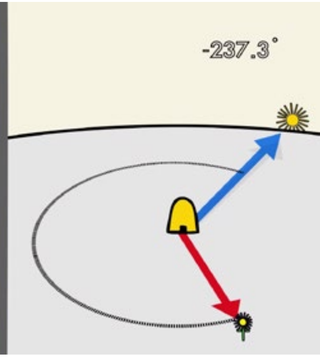
Growbots Documentaries
Shared ideas from urban agriculture design workshops via interviews and animation.



Robocup Documentarian
I was the first official documentarian of the Robocup, an international competition of robot soccer.



The Waggle Dance of the Honeybee (above)
To familiarize myself with the honeybee's language in a bio-tracking lab, I created a short film explaining the research leading to its discovery.



Ant-Plants: Cecropia Azteca Symbiosis (below)
When beginning my PhD research with Peter Marting, we created a short film to explain his target ecosystem of ants and plants.

ASCENT

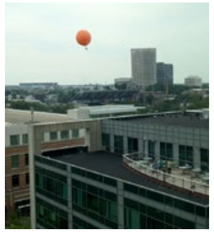
Quitmeyer, Ansari, Nitsche, Anonymous **2011**

Winner of a proposal from Georgia Tech's Graphics, Visualization, and Usability Institute for an art project celebrating innovation. Weather balloons stream live 360 degree panoramas of the city into the building's main elevator.

Winner: GVU20 Proposal Art Grant 2012

Photo courtesy GVU

Elevator Hacking
Working within the confines of a functional elevator presented many design challenges. Accessing power and high-bandwidth data inside a mobile steel box proved difficult but possible.



Ballooneering
Discovering methods for lifting equipment, streaming video, and controlling a massive balloon rig safely within a city-scape taught us approaches for working in large, entangled problem spaces.

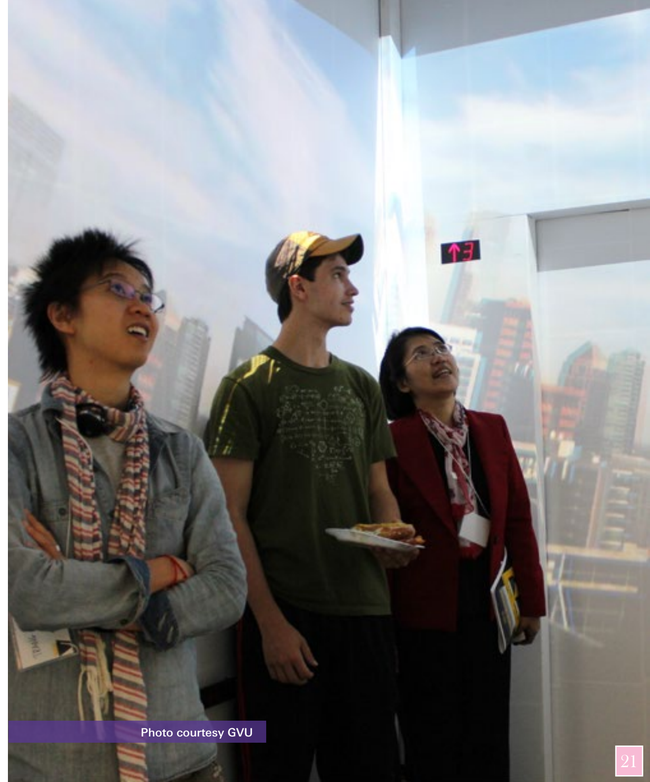


Photo courtesy GVU