EPHEMERA

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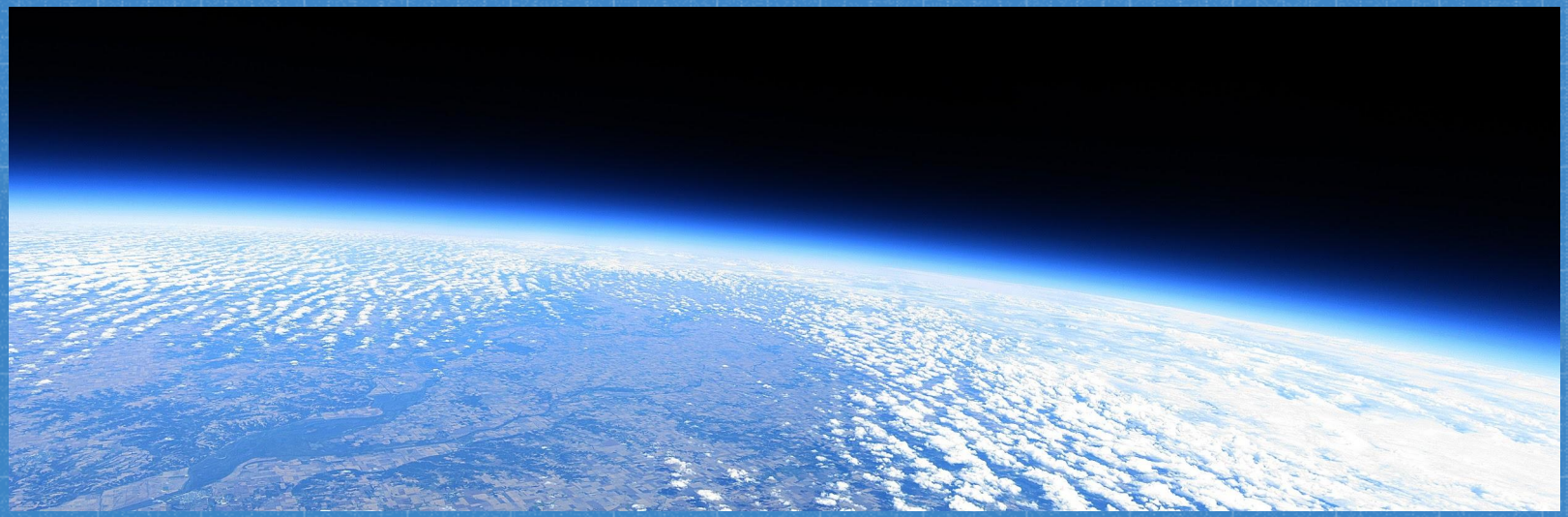
PROJECT
DEVELOPMENT
NYU TISCH ITP 2015

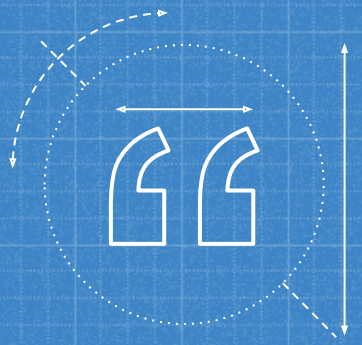
UNDER AN OCEAN OF AIR



We live our lives in this invisible medium; creating a shifting landscape of turbulence with every move we make.

Exploring:

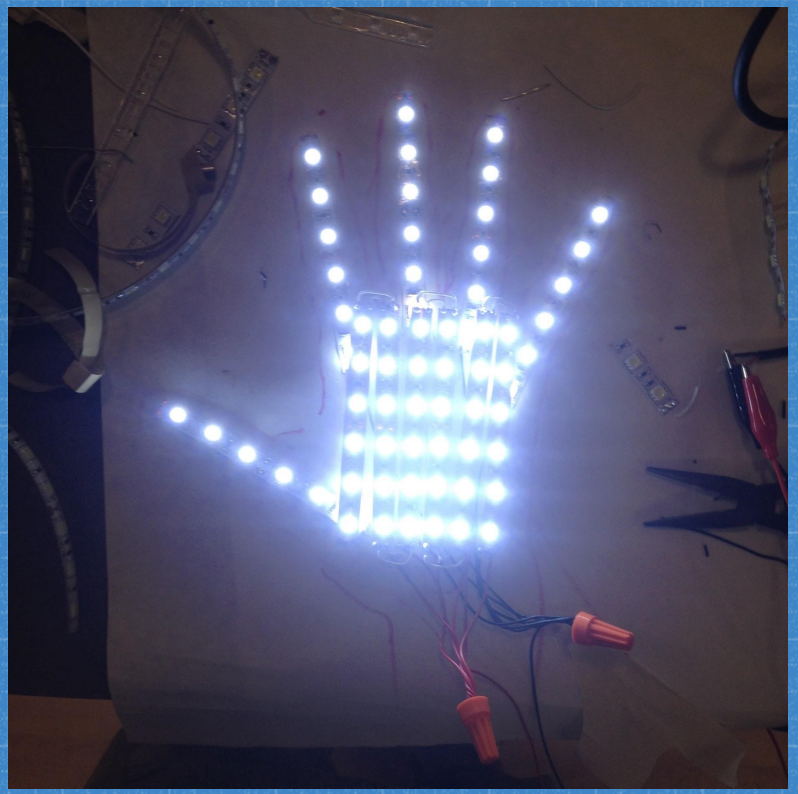
- Turbulence
- Currents
- Waves
- Flow
- Mie Scattering
- Light
- Diffusion
- Impermanence
- Gesture
- Void
- Chaos



How to reveal this beautiful chaos of air currents created by human movement?

First Glove

The first glove used a fleece fabric glove and was wired with over 60 high power LEDs. The glove was very effective at lighting up the vapor but the wiring and layering of LED strips inhibited hand movement somewhat.



Methods of making air turbulence visible

Water Cracker

This device creates a mist of atomized water vapor via a piezo-electric oscillator.

Dry Ice

Frozen carbon dioxide is immersed in water to create a chilled vapor via sublimation.

Smoke Devices

Creates a fog from a distilled water and glycerine mixture via combustion.

Water Atomizer

The device requires 12 volt power supply and a water reservoir. Once turned on it creates a modest volume of water vapor that is heavier than air, and settles into the reservoir.

Wizard Stick

This handheld device runs on six double A batteries and reliably produces a high-quality, lighter-than-air vapor in small amounts.

Dry Ice

Dry ice must be purchased in advance and begins to decay immediately. Immersed in warm water it releases copious amounts of cold vapor that settle into the reservoir. Once the reservoir cools the volume of vapor diminishes.

Smoke Machine

The device requires a 400 watt, 12 Volt power supply. The glycerine and water mixture is held in a reservoir, and pushed to the heater via a solenoid pump. There is a five minute warmup before the device begins to emit a dense, lighter-than-air fog that rises slowly and dissipates gradually.

Smoke Machine

Pros

- Self-Contained
- Thick, copious non-sinking fog
- Reusable

Cons

- Unpleasant to breathe directly
- Heat management

Proof of Concept

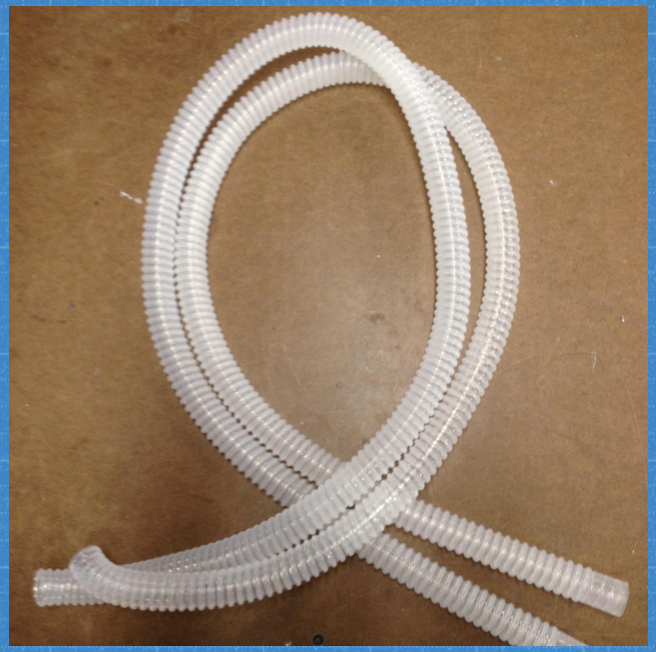
A lot was learned from the first iterations of the device. Heat managment issues, wearability, and flexibility were some of the major issues identified.

Final Gloves

The current iteration was built around a pair of stretchy lycra gloves that fitted closer to the hands. The electrical wiring was simplified, refined, and upgraded to flexible multistrand.

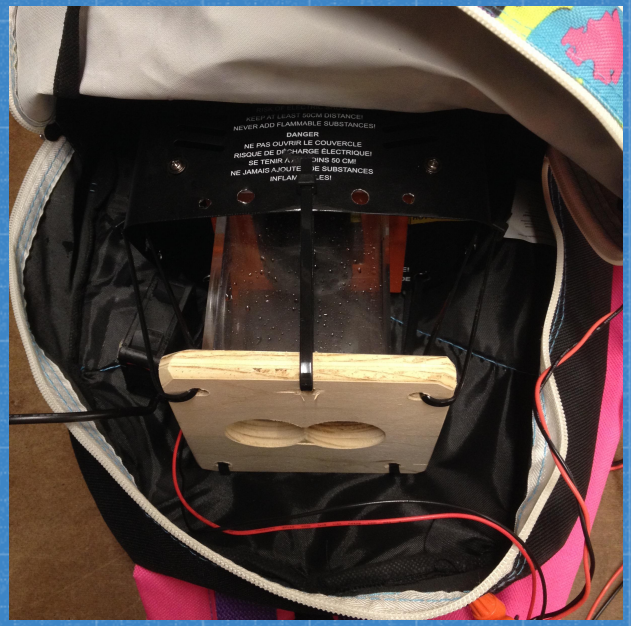
Moving the fog to the hands

The right type of tubing was difficult to identify. It had to be a generous diameter, flexible and kink-proof. These medical grade breathing machine tubes work nearly perfectly.



Wearable Enclosure

The fog machine, fog juice reservoir, wires, fan and hose splitting chamber all fit into a small backpack. For now the device requires an AC outlet.



Ready to Perform

Once the backpack and gloves are put on, the tubes, and wires are strapped to the performer’s arms with adjustable velcro stays.

Thanks!

ANY QUESTIONS?