

Scent Device Visual Wiki (Phase 1, Wearables)

Scent Device Visual Wiki

A project to build web visualization and wiki-contribution system, with a structured database, of emerging scent devices and tools that are well-suited and well-licensed for classroom, maker spaces, and creative explorations.

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As scent information, education and science becomes more applicable and accessible to broader communities, there is an opportunity to enhance STE(A)M education efforts and connect the scent technology innovators, creative perfumery communities with informal educators and experience designers focused on prototyping new kinds of experiences with scent. To date, most of this research exists in universities, and scent technology opportunities are still new to the network of informal science educators. We have an opportunity to provide, organize and publish interesting technology, material science, chemistry and coding projects and we would like to focus on some low-fi interfaces and templates that can help form bridges between communities.

CCS CONCEPTS • Scent Device, Wiki, structured data, Informal science education, Olfaction, Maker, Soft electronics, open-source

Additional Keywords and Phrases: wearables, perfumery, electronics, interfaces, information, database, Airtable, crowd-sourcing

ACM Reference Format:

Chach Sikes. 2021. Scent Device Visual Wiki (Phase 1, Wearables): A project to build web visualization and wiki-contribution system, with a structured database, of emerging scent devices and tools that are well-suited and licensed for classroom, maker-spaces, and creative explorations.

1. INTRODUCTION

As scent information, education and science becomes more applicable and accessible to broader communities, there is an opportunity to enhance STE(A)M education efforts and connect the scent technology innovators, creative perfumery communities with informal educators and experience designers focused on prototyping new kinds of experiences with scent. To date, most of this research exists in universities, and scent technology opportunities are still new to the network of informal science educators. We have an opportunity to provide, organize and publish interesting technology, material science, chemistry and coding projects and we would like to focus on some low-fi interfaces and templates that can help form bridges between communities.

1.1. Phase One — Scent Wearables

This paper defines the basic scope of what we will be do in 2021, with the intention to present progress in 2022. In phase one, we will catalog existing and experimental scent devices and technologies that are wearable and are free, lower-cost, and licensed to recreate by researchers, educators, artists and students (with appropriate attribution.)

Examples of projects we would like to include: projects such as Judith Amores "Essence" olfactive necklace, Magionni,

Obrist et al's "O Widgets", VR prototype compatible paper wearables created by Redbeak Studio, as well as having a place to share potential work with informal science educators for "paper mechatronic" scent interfaces. For example, the work of Sherry Hsi, in Paper Mechatronics: A Case for Craft-based Engineering Education – Concord Consortium. We expect to also find wearable materials (fabrics, textiles, fungus leathers created by bio-hackers, etc) and other low-fi and open-source tech projects.

1.2. More about the submission template

We intend to share our structured database with the Institute for Art and Olfaction's open source scent databases, and line up the data set so that it can be linked to databases for STEAM educators and also references by educators who are interested in soft electronics while also being available to the broader community of scent innovators and perfumers. Our work in structuring database will take into account, and solicit these contributions. We hope that working on this wiki together can help to form more connections and partnerships between these communities.

Our Phase 1 in 2021 work will focus on:

- * Defining a data schema for the devices, publishing contribution criteria and reaching out to contributors to see who would like to be listed in the catalog

- * Building a simple Airtable database to manage crowd-sourced entries

- * Building a simple visual display that will be hosted at devices.aromadiscord.com

- * Wherever possible see if device creators are interested to do virtual workshops for creators and the Aroma Discord scent technology community, and continue to reach out to various inclusion-focused technology groups, teacher training groups, and indie game developer communities.

1.3. Visual Wiki Interface Sketches

Scent Devices

Catalog of technologies
for prototyping
experience design

Wearables

Roomscale

Formulas

Edible

Scent Wearables

Tools and techniques for
adding scent to wearables

Paper

Maker

Commercial

Open-source

[About](#)

Figure 1: Mobile-friendly landing pages for scent device catalog. [Public domain], via Redbeak Studio (<https://redbeakstudio.com>)

Paper Scent Wearables

Fish Mustache

Effective and adorable paper mustache for experiencing Sea Smells.



Creator **Redbeak Studio**

License **Creative Commons 0**

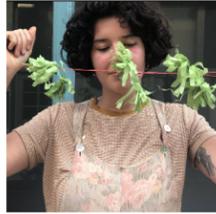
Figure 2: Example of a catalog entry. In this case, a hand-held scent carrying device that can be made from easily available materials. The fringe helps to make scent molecules more mobile, the paper is a well-suited substrate for most aroma-

molecules. The adaptability of paper lends to creativity and active engagement with spatial and experience design. [Public

Paper Scent Wearables

Positional Bracelet

Hand-tracking compatible bracelet made from office supplies for making scent hotspots in VR.



Creator **Redbeak Studio**

License **Creative Commons 0**

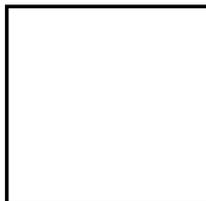
domain], via Redbeak Studio (<https://redbeakstudio.com>)

Figure 3: Example of a catalog entry. This positional bracelet is made from office supplies, and pairs with a JavaScript based Mozilla A-frame web component to add more scent "poofs" and make the scent interface trigger-able in WebXR experiences. [Public domain], via Redbeak Studio (<https://redbeakstudio.com>)

Maker Scent Wearables

Essence

Olfactory necklace design for BlueTooth.



Creator **Judith Amores**

License

Figure 4: Example of a catalog entry. A sketch of how we might reach out to existing scent devices already published, to organize information about the licensing and any requirements for recreating these experiences in educational, prototypes and workshop settings. [Public domain], via Redbeak Studio (<https://redbeakstudio.com>)

3. DATABASE SCHEMA

We will continue to workshop the schema with the broader community. This is our initial schema.

Title

Author

License

Description

Creator(s)

Image

Categories (e.g. Device, Wearable, Electronics, Open-source, Hardware, Paper-based, Room-scale)
Instructions (reference)
Materials
Estimated Cost
Language - of instruction
Curriculum keys (e.g. Chemistry, Engineering, Computer Science, Design, Spatial Design, Architecture)
Website
Creator-verified (e.g. if the device creator has verified this information)

The full database of verified data will be open-sourced and published to Github.

ABOUT US

[Chach](#) is an experienced technologist with a background in science museum exhibit development (Exploratorium), experience design and civic technology. She is an organizer (along with Jas X Flowers) for Aroma Discord & producer of Aroma Discord's speaker series. Based in Los Angeles, she has studied perfumery at the Institute for Art and Olfaction for the last few years and is excited about the potential of communicating with scent and empowering the next generation to contribute to the possibilities of integration tech and scent. Her scent studio is Redbeak Studio, and she currently works as a web engineer with the Covid-19 response team for the State of California's GovOps, Office of Digital Innovation, where she is bringing structured databases to improve government services and information delivery. She co-founded Nerds for Nature, which helped connect hundreds of nature and technology advocates to collaborate in new ways. Her open-source coding experience began in 2007 with the NISENet NSF project, which helped connect emerging nanoscientists and educators.

ACKNOWLEDGMENTS

Thanks to the Aroma Discord community and the Institute for Art and Olfaction for providing a basis for creative exchange, as well as Dr. Sherry Hsi for providing guidance on possibilities for interfacing with the informal science educator resources.

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