

**How can living plants on clothes artistically address stewardship of the Earth?**



**Gwyneth Long**

**FIG 1**

**How can living plants on clothes artistically address  
stewardship of the Earth?**

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**Professor Stevie Famulari**

**B.S. Horticulture (DAAP) Department of Planning  
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“We are only as strong as  
we are united, as weak as  
we are divided.”

-Albus Dumbeldore



FIG 2

**Related coursework:**

Fall 2023, Plant Pathology and Microbiology, HORT 2020

Professor Brian Moody and Dr. Dan Peterson

Projects include a plant disease fact sheet

Fall 2023, Landscape History to 1900, HORT 3050

Professor Stevie Famulari

Projects include a cemetery design plan

Summer 2023, Herbaceous Ornamentals II, HORT 2033

Professor Jim Hansel

Projects include a plant list database

Spring 2023, Soil Science and Plant Nutrition, HORT 3010

Professor Tania D. Burgos Hernández and Dr. Dan Peterson

Assignments include discussion on soil erosion

Spring 2023, Herbaceous Ornamentals I, HORT 2032

Professor Brian Grubb

Projects include multiple plant lists

Spring 2023, Horticulture Science II, HORT 1011

Professor Jim Hansel

Projects include an exotic plant debate

Spring 2023, Woody Ornamentals II, HORT 2031

Professor Steve Foltz

Projects include a tree identification slideshow

Fall 2022, Sustainable Landscape Design I, HORT 2040

Professor Katie Katy

Projects include a landscape proposal for Loveland High School's "Tiger Trail"

Fall 2022, Native Plants and Communities I, HORT 1030

Professor David Gressley and Dr. Donna McCollum

Projects include 4 plant palettes

Fall 2022, Woody Ornamentals I, HORT 2030

Professor Steve Foltz

Projects include a tree identification slideshow

Fall 2022, Introduction to Horticulture I: Technology, HORT 1011L

Professor Jim Hansel

Projects include a professional organization assignment

Spring 2022, Native Plants and Communities II, HORT 2034

Professor David Gressley and Dr. Donna McCollum

Projects include the forest comparison soils assignment

Spring 2022, Urban Landscape IV: Roofs and Facades, HORT 3044

Professor Virginia Russel

Projects include an original green roof design

**Abstract:**

How can living plants on clothes artistically address stewardship of the earth? Living plants growing on fashion garments is a relatively new innovation. With that being said, a few designers today are working with many different plants, with and without soil. One goal for this project is to expand the accessible information regarding how to grow plants on clothing garments. This project contains Chia, Red Amaranth, Garden Crest, Radish, Cosmos, and Nasturtium plants that grow in soil; small patches of these plants are attached to a wool coat in sections, like a quilt. The use of smaller patches allowed for trial and error of different plants and combinations. The goal of this project was to investigate some of the methods for designing a living fashion, while also finding a way to communicate a message about environmental stewardship. The intention is to encourage observers to enjoy the beauty of plants and feel some connection with nature. Hopefully, this project breaks the boundaries of how we see art, fashion, and nature in a way where viewers find this piece to be different from anything they've seen before. Ideally, this project will be displayed in a public setting, so that it is accessible to a wide range of people.

**Keywords:**

Living fashion, seedlings, horticulture, green fashion, art, sustainability, soil, Chia, Red Amaranth, Garden Crest, Radish, Cosmos, Nasturtium, fabric, ecosystem, germination.

**Problem Statement:**

How can living plants on clothes artistically address stewardship of the earth?

**Project Justification:**

Growing plants on clothes is a moderately new innovation. There are no records of the first person to achieve this successfully, but Paula Ulargui Escalona has become a highly notable living fashion designer due to her collection for the luxury fashion brand Loewe (Chan, Emily). When looking online for information about growing plants on clothes, the information I found was sparse. This project will provide accessible research and trials of living fashions; this will help expand the current information in the subject area, and indirectly, show the feasibility of living fashions.

I decided to do this project because I wanted to combine my love of plants and fashion. I find the current living fashion designs to be innovative, intriguing, and exquisite. Living fashion has a futuristic vibe, possibly because it isn't normalized within our society yet. I wanted to create a project that was tangible because I believed it would be more impactful for viewers. I aspired to use my creativity to design something beautiful while also communicating with the observer of my project.

My living fashion design displays a message about stewardship of the Earth. Although large companies are the biggest instigators of the damage done to the Earth, there are ways that the average citizen can help. Whether this be through recycling or picking up trash, replacing turfgrass with more diverse ecosystems, or using less energy. My project aims to promote conversation and awareness about the environmental crisis affecting the Earth. On a smaller scale, it also invites people to enjoy plants; hopefully connecting people with nature and encouraging them to get their hands in the dirt on their own time.

**User description:**

Ideally, my design would be displayed in a heavily trafficked area of a public park. This is done so that the design can be viewed by anyone near it, free of charge. There will also be a smooth path leading to the design and benches nearby for accessibility purposes. People who may seek out my design would be those who are interested in fashion, sustainability, gardens, or landscape installations. The design is meant to be observed, touched, and photographed. Hopefully, photos of the design can be shared on social media to provoke discourse about stewardship of the Earth. My design is meant to be viewed by people of all ages. I do not think children will be as interested as older age groups, but it can encourage a learning lesson if parents/teachers decide to provide context. It would be great if students could visit the design on a class field trip to learn about the importance of sustainability. The piece will need to be maintained by one or two people. The design I created will not withstand harsh winter temperatures, so it will need to be relocated during colder months. During this time it could be relocated to a public library, school, or museum; the goal is for this project to be accessible to a diverse population.

### Inventory and Analysis:

To create the design, multiple fabric pieces holding together a soil medium were sown onto a wool coat. The fabric swatches were created by cutting a cotton fabric and burlap to the same size (around 4-12 inches on each side). I then sewed the two fabrics together on the edges creating a pocket. This pocket was filled with a seedling and cutting soil mix and seeds were placed before sewing the pocket shut. The seeds I used included Chia, Red Amaranth, Garden Crest, Radish, Cosmos, and Nasturtium.

The swatches were watered daily and kept in full sun conditions for proper germination. After the seeds grew to the desired length, each swatch was separately sown onto the wool coat.

The cotton fabric is used as a backing for the roots and keeps the pocket secure. It also allows me to move the swatches around without having to bother with them being fully sewn on the coat.



FIG 4

The burlap is added to keep the soil within the pocket, while also leaving space for sunlight to seep through to the seeds. The separate swatches were made so that different seed mixtures could be tested. It was helpful to have multiple smaller pockets so that the soil wouldn't sink down to the bottom of the coat. I opted to have soil pockets instead of going soilless for the design due to the extended time that it will be displayed so that the plants chosen can grow continuously with reduced stress.

## Case studies:

### I. Paula Ulargui Escalona

Designer Paula Ulargui Escalona has created living fashion designs for the brand Loewe, including chia and catswort plants in jeans, shoes, and coats (Chan, Emily).



FIG 4



FIG 5

Escalona's website exudes the same creativity as her work; the videography, photo gallery, and aesthetics are truly wondrous. She has collaborated with designer Cristina Pedroche, creating a sustainable outfit to symbolize the importance of protecting and saving water (Barroso, Jesús Delgado). It included a cape made with red amaranth seeds and nasturtium plants grown hydroponically (Barroso, Jesús Delgado). The dress in this design is organic and biodegradable, made of gelatine, agar, glycerine, and water ("CRISTINA PEDROCHE"). My favorite designs she has made are included in her sustainable research project named

*Paula Ulargui x Nature.* ("PAULA ULARGUI X NATURE") When introducing this

project she says, "Taking into account the problematic Anthropocene era (current period where human development and activity is influencing the environment) in which we live, the proposal of the pieces created is to raise awareness of our need to reconnect with nature. A nature from which we are so disconnected that we can't even feel the price of its absence. We live



FIG 6



FIG 7

at a distance from our essence, denying its rhythms and processes within us: garments in which the human body is the support for nature to grow, live and create its life cycle, feeling and putting ourselves at its service” (“PAULA ULARGUI X NATURE”). She has used Air moss to create a woven jacket, as well as mycelium on a vest (“COMMENSALIST NATURE”)(“MUTUALIST NATURE”).



FIG 8&amp;9

Paula Ulargui Escalona’s work is relevant to my design because she has done extensive work growing plants on clothes. Similar to Escalona’s work, I used seedlings and also decided to use Red Amaranth due to its bright reddish-pink color. Escalona’s designs show how the placement of seeds is very crucial to the final product. The photographs she takes of her designs are clean and professional; I wanted to emulate this aesthetic when I took pictures of my design. It was important to understand the meaning behind Escalona’s designs, which helped me to get an idea of how I could use my design to make a statement. Also, Escalona’s use of mycelium influenced me to add mycelium to my design. The biggest difference between my design and Escalona’s is the use of a soil medium.



FIG 10

## II. Stevie Famulari

Obviously, I have to mention the work of Stevie Famulari! Her living fashion collection, *Green Line*, displays beautiful landscapes that are transportable (Horton, Robin Plaskoff). “Famulari aims to ‘penetrate boundaries and engage human connections’”, and her designs do just that (Horton, Robin Plaskoff). Her captivating creations aim to provoke conversations and reflection about indoor and outdoor spaces as well as the movability of landscapes (Horton, Robin Plaskoff). Rethinking the concept of what a landscape is to us, what it could be. The intricate detail, texture, and flow of her designs is exquisite. I appreciate the incorporation of



FIG 11

flowers and the different types of grasses; the outline of flowers and lace on the cape prompts me to picture what her design might look like as a backyard garden.

Stevie Famulari’s work allowed me to see different ways the plants in my design could be arranged. It was also interesting to see the difference between Famulari’s designs being fully covered in plants compared to Paula Ulargui Escalona’s garments which had empty spaces of



FIG 12

fabric. Her message about living fashion designs being moveable landscapes gave me food for thought as I arranged the different types of plants. Seeing her integration of different heights of plants helped me decide how I would like the different textures of plants to compare and contrast.

### III. Nicole Dextras

Nicole Dextras is an artist who has created wearable botanical fashions. Her designs are mostly made from cut flowers and leaves. She photographs the designs when they have dried out, “a metaphor for our own aging process” (“The Little Green Dress Projekt.”). Most of her designs are colorful, exhibiting a gorgeous arrangement of flowers and plants; her designs aim to encourage viewers to try sustainable clothes. (“The Little Green Dress Projekt.”).



FIG 13

Dextras’s designs invited me to think about different ways to place plants on my garment in a way where they could resemble clothing from a certain time period. I love the detail put into her designs and the diversity of plants that she uses. Her designs encouraged me to add different non-living elements of plants into my design, whether that be seeds, dried leaves, sticks, cut flowers, or dried fruit. I also found it beneficial to examine how she creates texture on the clothing garments.



FIG 14

### **Historical Context:**

Clothing has been used as a way to protest for many different groups of people. In the 1960s, movements such as the Civil Rights Movement, the Women's Liberation Movement, and the Anti-War Movement used clothing to further their cause (Ziege, Nicole). In the case of the Civil Rights Movement, the Black community often wore suits to marches to convey their dignity and respectability (Donaldson, Tara). Members of The Black Panther Party wore black berets and leather jackets, signifying their power (Donaldson, Tara). "The look tapped into the toughness and counter culture connotation that came with leather, and drew on the beret's history as a component of military uniforms."(Donaldson, Tara). At the Miss America Pageant of 1968, women threw high heels, bras, and undergarments on stage to signify their disgust at the sexualization and objectification of women (Ziege, Nicole). During the Anti-War movement, many protesters would wear black armbands which conveyed their sadness for the loss of life during the Civil Rights Movement and the Vietnam War (Ziege, Nicole). The younger generations in the 1960s also dressed differently from previous generations, some styling longer hair and more casual clothes to challenge the status quo (Ziege, Nicole).

Although the concept of growing plants on clothing is newer, people have been using plants to make clothing for thousands and years. One of the earliest discoveries of plant-made fabric dates back 34,000 years ago and is made of flax (Lavoie, Amy). Ancient civilizations in Egypt, Mesopotamia, and Europe also used flax (Varma, Shelly). Hemp has a long usage history as well, found in ancient Mesopotamia (Varma, Shelly).

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### Images:

FIG 1: “Green fashions coats made of plants and moss and flowers”. DALL-E, version 3, Bing AI image creator, 14 Jan. 2024, <https://www.bing.com/images/create>

FIG 2: SPRING 2024 (Personal Photo)

FIG 3: SPRING 2024 (Personal Photo)

Fig 4: “LOEWE MENSWEAR.” *Paula Ulargui Escalona*, paulaularguiescalona.com/LOEWE-SS23. Accessed 18 Jan. 2024.

FIG 5: “LOEWE MENSWEAR.” *Paula Ulargui Escalona*, paulaularguiescalona.com/LOEWE-SS23. Accessed 18 Jan. 2024.

FIG 6: CRISTINA PEDROCHE.” *Paula Ulargui Escalona*, paulaularguiescalona.com/CRSITINA-PEDROCHE. Accessed 17 Jan. 2024

FIG 7: “SYMBIOTIC NATURE.” *Paula Ulargui Escalona*, <https://paulaularguiescalona.com/NATURALEZA-SIMBIOTICA>. Accessed 17 Jan. 2024.

FIG 8&9: “MUTUALIST NATURE.” *Paula Ulargui Escalona*, <https://paulaularguiescalona.com/NATURALEZA-MUTUALISTA> . Accessed 17 Jan. 2024.

FIG 10: “PAULA ULARGUI X NATURE.” *Paula Ulargui Escalona*,  
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FIG 13: “Maple Flapper Jumper.” *Nicole Dextras*, 8 Dec. 2015,  
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