Forever Green

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Keywords: textile design, digital textile printing, biomimicry

Design Statement

Contextual Review and Concept

This design was originally created as a part of an 8-piece collection funded by a grant through the on-campus biodiversity center. The original inspiration came from looking at thread under a microscope and thinking what amazing textile prints those images would make. I was also inspired by the concept of biomimicry and I was intrigued to explore how technology and nature, two seemingly opposite elements, could interact. Biomimetic research is a rapidly growing field and its true potential in the development of new and sustainable textiles can be realized through interdisciplinary research rooted in a holistic understanding of nature (Eadie & Ghosh, 2011). For this collection, physical samples of flora and fauna native to the state of Wyoming were collected, identified and microscopic images were taken of the samples. Various parts of the flora were used, such as petals, leaves and stems and the fur of the fauna was used for the microscopic images. From there, the microscopic images were edited minimally in Photoshop and used to create digital textile prints. In some cases, the print was repeated over a fabric piece and in others, the original image was engineered to fit the size of the pattern piece. The fabric was printed in-house and used to cut and construct the eight garments. Using new technologies in design can open a wide range of creative possibilities, but also complicates the decision-making process (Campbell & Parsons, 2005). The challenge became to incorporate multiple textile prints into the garments in an aesthetically pleasing way. The physical samples were grouped into types of flora and fauna, considering shape and color. The inspiration of the flora and fauna is not only evident in the prints, but also in the silhouettes of the garments.

Aesthetic Properties, Visual Impact and Cohesion

In this specific design, the silhouette is inspired by the shape and layers of pine and spruce trees. The repeated image on the bodice is created of two images of an aspen tree leaf at 10x magnification that were combined into one image. The muted print on the top of the skirt and collar are of aspen tree bark at 100x magnification with an overlay of solid green in Photoshop. This was done to create cohesion and unity between the images through color. The top and bottom skirt layer prints are of blue spruce needles at 10x and 40x magnification, respectively. The middle skirt layer print is from lodgepole pine needles at 10x magnification. The print inside the center front pleat is combined from multiple images of lodgepole pine needles at various magnifications.

This design has clear unity through color and repetition. Not only is the textile print on the bodice repeated, but there is also repetition of shape. The skirt layers symbolize the layers of needles of pine and spruce trees. That shape is repeated three times down the skirt with different prints and is also evident in the shape of the collar. The overall silhouette of the skirt, created by the center front pleat, is used to mimic the triangular shape of pine and spruce trees. This repetition creates rhythm by moving the eye downward from the collar to the skirt layers. The sheer panels in between the skirt layers help to offset and balance the various prints on the skirt. Symmetrical balance also exists from side to side of the garment on the front and the back. Through repetition of color and shape, rhythm and balance, this design is very unified and provides a strong visual impact.

Process, Technique and Execution

The process of gathering, identifying and photographing the physical samples was a very rigorous process. Samples were gathered from field work and through contacts at the state Game and Fish Department. The samples were identified using online resources such as the Wyoming Wildflower Database and through contacts at the biodiversity center and the Departments of Botany and Plant Sciences. Once the samples were identified, microscopic images were taken. Many images of each sample were taken at various magnifications. Then the best and most interesting images were selected to be edited in Photoshop. In most cases, I tried to stay true to the original color of the image. Mostly images were sharpened, cropped and resized with minimal adjustments to color, saturation and brightness/darkness as needed. In some cases, it was necessary to adjust the color slightly to coordinate colors of multiple prints in a garment. Also, some images were combined into one print to create an aesthetically-pleasing print. This was the case for the print on the bodice of the dress.

Once all the images were edited, the fabric was printed in-house by me. This design utilizes printed cotton sheeting fabric and the sheer panels on the skirt are hand-dyed silk organza. For the bodice, the print was repeated to fit the bodice pattern and the other prints were engineered to fit the size of the pattern print needed. The entire garment was draped and cut from the printed fabric and the dyed silk. The bodice and collar are lined to finish the open edges. Horsehair braid was used in the side seams of the skirt layers to allow them to hold their shape and French seams were used in the side seams of the sheer panels to provide strength and to prevent fraying. The center front skirt panel was pleated in one large pleat, allowing the skirt to open naturally, and creating a triangular shape on the skirt front. The garment closes with a center back invisible zipper.

Design Contribution and Innovation

This garment contributes to both the knowledge base of digital textile printing and biomimicry in design. It introduces new subject matter for digital printing and combines that with the concept of biomimicry. The subject matter, using microscopic images as textile prints, merges nature and technology together. Biomimicry is also shown through the shape and silhouette of the design. Overall, this design introduces a new, unique concept while providing a cohesive, aesthetically-pleasing and well-executed design.

References

Campbell, J.R. & Parsons, J. (2005). Taking Advantage of the Design Potential of Digital Printing Technology for Apparel. *Journal of Textile and Apparel, Technology and Management, (4)*3, 1-10.

Eadie, L. & Ghosh, T.K. (2011). Biomimicry in Textiles: Past, Present and Potential. An Overview. *Journal of the Royal Society Interface.* Retrieved from http://rsif.royalsocietypublishing.org/content/early/2011/02/07/rsif.2010.0487. DOI: 10.1098/rsif.2010.0487.