Welcome

Cornell Institute of Fashion and Fiber Innovation is settling into its role, providing a forum for exchange of ideas between faculty and industry, among industry members, and from students to industry. A substantial number of student researchers, both graduate and undergraduate, have been funded by CIFFI to date. We have held both roundtable discussion meetings and research symposia as we search for the right format and venue to foster interaction among members. We have a number of ideas for CIFFI activities and benefits to members which we will be exploring in 2016. Keep reading for more details.

Highlights

Fan Awarded Textile Institute Warner Memorial Medal

The Textile Institute has awarded Dr. Jintu Fan the Warner Memorial Medal, which is one of the most prestigious awards in the field of textiles to recognize outstanding published work in textile science and technology. Dr. Fan will be presented with his medal at the Textile Institute World Conference Awards Dinner in Poland next April.

Department of Defense Manufacturing Innovation Institute Proposal

Cornell University, represented by Professor Juan Hinestroza, has worked with MIT to form a consortium of 26 universities and 70 companies for establishment of a center for Advanced Functional Fabrics of America (AFFOA) in response to the call for a Revolutionary Fibers & Textiles Manufacturing Innovation Institute (RFT-MII) by the Department of Defense. The AFFOA concept paper is one of two finalists for this institute, with a decision expected in December. AFFOA would provide research based leadership for the transformation of traditional fibers, yarns, and fabrics into highly functional integrated systems and products manufactured using 21st century methods. The blending of textiles with semiconductor and cloud technologies will drive a new level of innovation in wearable devices and apparel. You can read more details of the AFFOA proposal at http://www.rle.mit.edu/fabric/ and of the Department of Defense competition at http://manufacturing.gov/rft-mii.html.
**CIFFI Activity**

**CIFFI Roundtable Meetings**
The Fall Roundtable meeting was held in New York City on October 2, 2015 at the Hanes Brands Intimate Apparel Showroom. The meeting provided opportunity for CIFFI updates as well as for discussion of a number of issues, among them:

- Cornell’s roll in developing the proposal for the Institute for Manufacturing Innovation proposal for Advanced Functional Fabrics of America (described above).
- CIFFI’s long term goal of establishing a NYC Center to incubate new fashion and apparel startup enterprises, train future fashion industry leaders, and house international design and product development research collaborations. Cornell faculty offer expertise in materials and processes related to the fashion and fibers industries. With the additional benefits of connections to Cornell Tech and other Cornell programs in Manhattan, as well as global industry connections, CIFFI has potential to offer something new to industry.
- Potential for executive education via Cornell, whether on site in Ithaca, in New York, or on-line. The prospect of joint offerings with other departments at Cornell, as well as executive certifications, will be explored.
- Discussion of the current opportunities and challenges of making all building inhabitants thermally comfortable with the use of technology-enabled clothing, related to research by Jintu Fan, Huiju Park, and Tasha Lewis.

A spring CIFFI Roundtable will be scheduled for New York, with date as yet undetermined.

**Members**

CIFFI is pleased to welcome the following members:

**Alvanon**, New York, NY, Susana Charm, Marketing Manager
Alvanon offers global expertise in apparel product development, design and merchandising, retail and marketing, supply chain, data and analytics, and professional development. They have been very active in development of fit standards and consistency, and are the producer of Alvanon dress forms.

**Lewis Leung**, President, **Prince Edward Road Management Co., Ltd.**, Hong Kong, apparel management and investment consulting firm.

**Wai Mun (Virginia) Moo-Penn**, Director, **Prince Edward Road Management Co., Ltd.**, Hong Kong, apparel management and investment consulting firm.
FSAD Department News

Fiber Society Meeting
The Fall 2016 meeting of the Fiber Society, the premier professional association dedicated to fibers, fiber-based products, and fibrous materials, will be held at Cornell. Meeting organizers are Margaret Frey and Juan Hinestroza. Once the date is determined, the fall CIFFI meeting will be scheduled so that members may attend both events.

Faculty Moves
Margaret Frey has been promoted to the rank of Professor in Fiber Science & Apparel Design, effective July 1, 2015. Professor Frey is a fiber scientist as well as the Associate Dean for Undergraduate Affairs in the College of Human Ecology. Her research focuses on rapidly renewable polymers as engineering materials and on interfacing fiber science and nanotechnology. Dr. Frey has been on the FSAD faculty since 2002.

Dr. Jooyoung Shin will join the Fiber Science & Apparel Design Department as Assistant Professor in Fashion Design effective January 1, 2016. Dr. Shin earned her M.A. in Museum Studies: Costume and Textiles from the Fashion Institute of Technology in 20000 and her Ph.D. in the Department of Clothing and Textiles from the Seoul National University in 2007. Dr. Shin has been a lecturer and is currently a Research Assistant Professor at the Institute of Textiles and Clothing at The Hong Kong Polytechnic University.

Senior Extension Associate Charlotte Coffman has retired after a more than 30 year career in Fiber Science & Apparel Design focused on outreach, particularly protective clothing for pesticide workers, and youth science education.

New Equipment
Female Sweating Mannequin
Wanda, a female sweating thermal mannequin, has joined Walter, the male mannequin. Wanda is not only shaped as a female, but is configured to perspire in areas where women perspire. Dr. Jintu Fan is the lead developer of Wanda, who will be used for tests of clothing thermal insulation and moisture transport “comfort issues.”
Knitting Machine Purchase
The department has also acquired a Shima Seiki flatbed 12 gauge computerized knitting machine capable of knitting shaped pieces, inlay, and flechage patterns. Metallic and monofilament specialty yarns can be inlaid. The machine will be used for both research and teaching purposes. Faculty and staff are learning to use it this semester.

Faculty Fellow Activities

Nano-style sheets may aid health, shield ecosystem
Professor Margaret Frey and graduate student Nidia Trejo applied iron oxide particles to webs of nylon nano-fibers to create membranes that draw toxic substances such as bacteria, viruses, dyes, and toxic chemicals out of water. Most recently, they examined particle adherence to the web under different conditions, as released particles could become hazards themselves.

Halfscale Pattern Draping
Professor Susan Ashdown has devoted considerable effort to encouraging use of half scale dress forms for apparel design. A half scale form is scaled down 50% in all dimensions, providing a more convenient and economical shape for pattern draping than a full sized form. Professor Ashdown and her collaborator Nese Ceginder, of Gazi University in Turkey, developed the Halfscale Forum for Creative Patternmaking, an online, eight-week design colloquium for apparel industry professionals, fashion educators and students intended to foster international discussion of creative patternmaking using half scale dress forms and 3D on-line imaging of patterns designed using them. Currently, Dr. Ashdown is creating custom forms on a 3D printer from 3D body scans as she explores means to facilitate mass customized sizing of apparel: Digitally made half forms offer apparel designers new tools. She is seen here with Jackie Wu, ’17. Dr. Ashdown and students have also designed a method for creating half scale forms using a muslin shell stretched over a cardboard frame and stuffed, which was used to create representative middle school forms for the program described below.
Apparel Design Teaches Science

Professor Susan Ashdown, Senior Extension Associate Charlotte Coffman, Extension Associate Fran Kozen, and Kristen Morris PhD ’15, with Lucy Dunne ‘02, Associate Professor at University of Minnesota, launched [http://styleengineers.org](http://styleengineers.org) as a culmination of a National Science Foundation grant exploring apparel design as a means of attracting middle school girls to engineering and science fields (STEM). The website offers informal science educators curriculum, leader instructions, and supporting visual and video materials developed and tested with girls in camps both on and off campus.

Dye Garden

Denise Green, assistant professor in FSAD, incorporated natural dyeing techniques into her class on color and surface design of textiles last spring. In the process she became interested in growing plants for natural and sustainable dyes. She worked with Cornell Plantations and Human Ecology Facilities to plant an experimental dye garden outside the building this year, which yielded large quantities of marigolds! She plans a permanent and more extensive dye garden between the Human Ecology Building and Martha Van Rensselaer, which will be funded as a result of a Cornell crowd-funding campaign.

Future fabrics dazzle at New York State Fair

Associate Professor Juan Hinestroza and graduate student Lina Sanchez Botero showed fiber science technology to youth at the New York State Fair in September. They demonstrated sound-activated lighted clothing (“Irradiance”, developed by Sanchez Botero and Eric Beaudette ‘16, fiber science, and Neal Reynolds, graduate student in physics). They also explained how nanotechnology can alter the properties of cotton fabrics to conduct electricity or repel bacteria. They were interviewed by 4-H youth reporters [https://www.youtube.com/watch?v=trsLvsb3UeA](https://www.youtube.com/watch?v=trsLvsb3UeA), as well as local television reporters [https://www.youtube.com/watch?v=5enWAiE1YW0](https://www.youtube.com/watch?v=5enWAiE1YW0).
Cornell Costume and Textile Collection

The Cornell Costume and Textile Collection has received a grant through the Cornell University Library and the College of Arts and Sciences to begin migration of the outdated collection database to one compatible with the Cornell Library Digital Collections, making the collection ultimately much more accessible. As a part of this process, many ethnic items such as the 1950’s Adire cloth from Nigeria shown here are to be photographed for inclusion.

Denise Green, Assistant Professor and Curator of the Cornell Costume and Textile Collection, has received a Cornell Council for the Arts faculty grant for a costume exhibition exploring the influence of movie stars from Ithaca’s silent film heyday on early 1920s fashion. The Wharton Film Studios were located in what is now Stewart Park, and star Irene Castle married Ithacan Robert Treman and lived in what is now the Sigma Chi fraternity house for several years. “The Biggest Little (Fashion) City: Silver Screen Style in Ithaca, 1914‐1924” will be on display in the Human Ecology Building in the spring.

Heavy Metal: The Malleability of Fashion, the exhibition currently on display in the showcases near the FSAD offices, is organized by Samantha Stern, ’17, recipient of the Charlotte A. Jirousek Undergraduate Research Fellowship. Samantha examined metal in fashion, whether as fabric, or for embellishment, support, or shape. The exhibit features designs from Paul Poiret and Charles Frederick Worth through Heavy Metal music culture, as well as corsets and bustles.
Student Wins American Association of Textile chemists and Colorists (AATCC) Scholarship

Eleni Toubanos ’16, a Fiber Science major, received a Metro Scholarship from AATCC. She is one of three winners of this scholarship.

Fiber Science & Apparel Design

Alumni News

In fashion, origami turns function into form

FSAD alumni, Lea Freni ’15, designed the “Fibonacci skirt” as part of her clothing line, VOGEL, which debuted at Vancouver Fashion Week, Sept. 28-Oct. 4. Freni partnered with Uyen Nguyen, a physics research associate to create mathematically based designs derived from origami folds and the Fibonacci sequence.