

FIBER SCIENCE AND APPAREL DESIGN (GRADUATE FIELD)

Program Website (<https://www.human.cornell.edu/fsad/academics/graduate/home/>)

Field Description

The common focus of the field is the study of fibrous materials and their use as apparel, as engineering structures (such as composite materials), in biomedical applications, and in home furnishings. The Field of Fiber Science and Apparel Design is applied and multidisciplinary, with faculty members drawn from the Colleges of Human Ecology and Engineering.

Students are expected to develop strength in their base discipline as well as gain appropriate breadth to support the area of specialization. Active research programs exist in high-performance fibers and fiber-reinforced composites; Green composites; detergency and surface chemistry; perfume treated fabrics; textile materials in biomedical and geotechnical applications; polymers for electronics; liquid-crystal polymers; textile-dye chemistry; crystal morphology of fibers; electrospin of fibers; cellulose; apparel and fashion design, design ethnography; sizing and fit of apparel; functional apparel; cultural and historic studies of clothing and textiles; mass customization and technology; and technology management in the apparel industry.

For M.A. and M.S. degree candidates, the Special Committee consists of at least two Graduate Faculty members. For Ph.D. students, a minimum of four committee members are required: one faculty member representing the major, one for each of the two minor areas, and a fourth member appointed by the Director of Graduate Studies to act for the field. The oral and written Admission to Candidacy examination and the final oral examination are required for the Ph.D. degree. The field does not require a foreign language.

Outstanding facilities for research and study are available in the College of Human Ecology and the College of Engineering. Textile and polymer science laboratories are equipped with modern instrumentation for chemical, physical, and mechanical analysis and with a controlled temperature and humidity room. Apparel design studios are equipped with industrial sewing equipment. Video image-capture and photography equipment is available in a visual analysis lab. The functional apparel lab houses a variety of human-factors testing equipment, including a full-body scanner.

Data and Statistics

- Doctoral Program Statistics (<https://www.human.cornell.edu/hcd/academics/graduate-study/fiber-science-grad-programs/>)

Field Manual

- Manual (<https://www.human.cornell.edu/hcd/academics/graduate-study/fiber-science-grad-programs/>)

Subject and Degrees

Apparel Design

- Apparel Design (M.A.) (Ithaca) (<https://catalog.cornell.edu/programs/apparel-design-ma/>)

- Apparel Design (Ph.D.) (Ithaca) (<https://catalog.cornell.edu/programs/apparel-design-phd/>)

Fiber Science

- Fiber Science (M.S.) (Ithaca) (<https://catalog.cornell.edu/programs/fiber-science-ms/>)
- Fiber Science (Ph.D.) (Ithaca) (<https://catalog.cornell.edu/programs/fiber-science-phd/>)

Human Ecology

- Human Ecology (M.P.S.) (Ithaca) (<https://catalog.cornell.edu/programs/human-ecology-mps/>)

Concentrations by Subject

Apparel Design

- apparel design

Fiber Science

- fiber science
- polymer science
- textile science

Human Ecology

- apparel design
- fiber science

Faculty

Fatma Baytar (<http://www.human.cornell.edu/people/fb38/>)

- **Campus:** Ithaca
- **Concentrations:** *Apparel Design:* apparel design; Human Ecology: apparel design

Judith A. Byfield (<http://history.cornell.edu/judith-byfield/>)

- **Campus:** Ithaca
- **Concentrations:** *Apparel Design:* apparel design; Human Ecology: apparel design
- **Research Interests:** feminist, gender, and sexuality studies

Margaret W Frey (<http://www.human.cornell.edu/people/mfw24/>)

- **Campus:** Ithaca
- **Concentrations:** *Fiber Science:* fiber science; polymer science
- **Research Interests:** fiber formation from renewable resource polymers, particularly cellulose; rheology of polymer solutions; fiber spinning from lyotropic liquid crystalline solutions; solution spinning, melt spinning and electrospinning fibers; relationships between polymer and spinning dope properties and fiber properties

Yasser Gawayed (<http://www.human.cornell.edu/people/mfw24/>)

- **Campus:** Ithaca
- **Concentrations:** *Fiber Science:* fiber science; Human Ecology: fiber science
- **Research Interests:** developing computational models and experimental techniques to further the understanding of the mechanical and thermal behavior of polymer and ceramic matrix composites

Denise Nicole Green (<http://www.human.cornell.edu/people/dng22/>)

- **Campus:** Ithaca
- **Concentrations:** *Apparel Design*: apparel design; Human Ecology: apparel design

Juan P. Hinestroza (<http://www.human.cornell.edu/people/jh433/>)

- **Campus:** Ithaca
- **Concentrations:** *Human Ecology*: apparel design; Fiber Science: fiber science
- **Research Interests:** textile nanotechnology and smart fibers

Yong L Joo (<http://www.cheme.cornell.edu/faculty-directory/yong-l-joo/>)

- **Campus:** Ithaca
- **Concentrations:** *Fiber Science*: fiber science; polymer science
- **Research Interests:** modeling and simulation of spinning processes; nanofiber formation via electrospinning

Cindy Hsin-Liu Kao (<http://www.human.cornell.edu/people/hk932/>)

- **Campus:** Ithaca
- **Concentrations:** *Apparel Design*: apparel design; Human Ecology: apparel design; Fiber Science: textile science
- **Research Interests:** Intersection of material innovation, human computer interaction, body art

Renata Marques Leitao (<http://www.human.cornell.edu/people/rml273/>)

- **Campus:** Ithaca
- **Concentrations:** *Apparel Design*: apparel design; Human Ecology: apparel design
- **Research Interests:** Communications Design. Her research and teaching focus is on using design to foster social and environmental justice and sustainability, as a means for empowerment and self-determination of Indigenous and marginalized communities.

Van Dyk Lewis (<http://www.human.cornell.edu/people/vdl4/>)

- **Campus:** Ithaca
- **Concentrations:** *Apparel Design*: apparel design
- **Research Interests:** design; fashion; visual ethnography; consumption

Kaja Maria McGowan (<http://arthistory.cornell.edu/kaja-maria-mcgowan/>)

- **Campus:** Ithaca
- **Concentrations:** *Apparel Design*: apparel design
- **Research Interests:** Asian American art; comparative modernities; contemporary art; East Asian art; history of photography; Islamic art; modern art; Native American and indigenous studies; South Asian art; Southeast Asian art; theory and criticism; visual studies

Leeza Meksins (<http://aap.cornell.edu/people/leeza-meksins/>)

- **Campus:** Ithaca
- **Concentrations:** *Apparel Design*: apparel design; Human Ecology: apparel design
- **Research Interests:** Collaborative practice, Installation art, Interdisciplinary art, Painting, Public art, Sculpture, Sustainability, Collage, Mixed media, Fiber art, Textile art, Wearable art, Plastics,

Site-specific installation, Multiples, Gender studies, Queerness, Documentary filmmaking, Curation.

Christopher Kemper Ober (<http://www.mse.cornell.edu/faculty-directory/christopher-k-ober/>)

- **Campus:** Ithaca
- **Concentrations:** *Fiber Science*: fiber science; polymer science
- **Research Interests:** polymer synthesis; macromolecules with unusual optical and mechanical properties; liquid crystal polymers; dispersion polymerization

Heeju Terry Park (<http://www.human.cornell.edu/people/hp347/>)

- **Campus:** Ithaca
- **Concentrations:** *Apparel Design*: apparel design
- **Research Interests:** functional apparel design; smart clothing development; thermal comfort; mobility evaluation of protective clothing; sports wear design

Jaleesa Reed (<http://www.human.cornell.edu/people/jr964/>)

- **Campus:** Ithaca
- **Concentrations:** *Apparel Design*: apparel design; Human Ecology: apparel design
- **Research Interests:** Black American beauty culture; beauty retail spaces; experiential retailing; identity (re)construction through design, place, and material culture, specifically within the context of Filipina/x national dress; critical theory & pedagogy

Robert Shepherd (<http://www.human.cornell.edu/people/lb468/>)

- **Campus:** Ithaca
- **Concentrations:** *Fiber Science*: fiber science
- **Research Interests:** wearable robotics

Larissa Marie Shepherd (<http://www.human.cornell.edu/people/lb468/>)

- **Campus:** Ithaca
- **Concentrations:** *Fiber Science*: fiber science; Human Ecology: fiber science
- **Research Interests:** Nanofibers, fiber formation, Immersion Electrospinning, and its potential applications

Tamer Uyar (<http://www.human.cornell.edu/people/tu46/>)

- **Campus:** Ithaca
- **Concentrations:** *Fiber Science*: fiber science; Human Ecology: fiber science
- **Research Interests:** electrospinning of nanofibers and nanomaterials

Val Kevin Warke (<http://aap.cornell.edu/people/val-k-warke/?department=8>)

- **Campus:** Ithaca
- **Concentrations:** *Apparel Design*: apparel design
- **Research Interests:** architectural design; urban design; design theory; genre theory