

ERICA CHAPMAN

Industrial Designer and Material Innovator

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SKILLS

Materials & Fabrication

Biomaterials Research (Mycelium, Silk)
Sustainable Design & Circular Systems
3D Printing & Prototyping
Weaving, Knitting, Textile Construction
E-textiles & Wearable Technologies
Material Experimentation & Testing

Technical Tools

Rhino, SolidWorks (CSWA Certified), Keyshot
Arduino, Physical Computing
CLO3D, Adobe Creative Suite
Scanning Electron Microscopy (SEM)

Research & Lab Practice

Experimental Protocol Development
Chemical Handling & Lab Safety
Observation, Documentation, and Analysis

EDUCATION

Rhode Island School of Design

Masters Industrial Design | 2023–2025

Parsons, The New School

M.A. Fashion Studies | 2015–2017

CSU, Los Angeles

Los Angeles, California

B.A. Fashion Merchandising | 2010–2015

EXPERIENCE

Independent Material Researcher (Grant Funded)

Providence, Rhode Island | Sep 2025 - Present

- **Conducting biodegradation analysis:** Investigating the material properties of textile substrates (knitted, woven, and 3D printed) after inoculation with *Pestalotiopsis microspora* (polyurethane-degrading fungi).
- **Microscopic Validation:** Utilizing Scanning Electron Microscopy (SEM) to document structural changes and degradation at the fiber level to validate circular lifecycle potential.
- **Performance Testing:** Analyzing the flexibility, tensile integrity, and residual materiality of bio-digested samples.

Graduate R&D Assistant (Bio-Design) to Professor Peter Yeadon/ Yeadon Space Agency

Providence, Rhode Island | Sep 2023 - May 2025

- Execute advanced biomaterials R&D for bio-enabled living systems, analyzing material behavior and environmental responsiveness to inform design applications.
- Design and conduct iterative experimental protocols, applying rigorous problem-solving to troubleshoot material failures and optimize outcomes.
- Manage high-fidelity data collection and imaging using Scanning Electron Microscopy (SEM) to document experimental findings.

Rhode Island School of Design Museum Textile Conservation Graduate Assistant

Providence, Rhode Island | Sep 2024 - May 2025

- Executed condition assessments, cleaning, and stabilization of artifacts, ensuring preservation protocols during exhibition installation and deinstallation.

MIT Beaver Works Summer Institute

Teacher Assistant- E-Textiles

Cambridge, Massachusetts | June 2024 - Aug 2024

- **Co-taught E-Textiles curriculum:** Partnered with lead instructors to deliver the wearable technology course in collaboration with AFFOA.
- **Mentored student prototyping:** Guided students through hands-on fabrication and design of functional textile-based projects.

Silklab, Tufts University

Designer and Visiting Scientist

Tufts University, Medford, Massachusetts | Jun 2023 - March 2024

- **Experimental Bio-Fabrication:** Designed and constructed custom reed-based scaffolding to guide silkworm spinning behavior, optimizing geometric structures through iterative prototyping to achieve functional textile forms.
- **Material Behavior Analysis:** Investigated the relationship between biological constraints and material output, documenting silk deposition patterns to refine substrate geometries for structural stability.
- **Interdisciplinary Collaboration:** Partnered with biologists to translate observing living systems into predictable design protocols, bridging the gap between organic behavior and product application.

ASICS

Product Development Intern

Boston, Massachusetts | Jun 2023 - Aug 2023

- **Engineered performance apparel:** Led concept development for 'Harmony' heat-technology garments, integrating thermal regulation systems directly into product construction.
- **Validated market fit:** Synthesized user insights and competitor analysis to align technical apparel innovations with commercial viability.
- **Prototyping & Execution:** Demonstrated technical versatility by executing creative concepts and functional prototypes for performance wear.