

# Fiona Bell

Postdoctoral Fellow in Computer Science at the University of New Mexico

Research at the intersection of human-computer interaction, material science, and biodesign

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## PROFESSIONAL APPOINTMENTS

2023 - current **Postdoctoral Fellow in Computer Science** at the University of New Mexico (UNM)  
Supervisor: Leah Buechley, Hand and Machine Lab

## EDUCATION

- 2020 - 2023 **PhD in Creative Technology & Design** at the University of Colorado Boulder (CU Boulder)  
Thesis: "Biomaterials for More-Than-Human Futures"  
Advisor: Mirela Alistar, Living Matter Lab  
Committee: Laura Devendorf, Stacey Kuznetsov, Daniel Leithinger, and Katia Canepa Vega
- 2015 - 2019 **BSc in Mechanical Engineering** at Santa Clara University (SCU)  
Thesis: "The Seedling Sanctuary"  
Committee: Hoyun Lee and Jessica Kuczynski
- 2017 **Semester Abroad** at the University of Auckland
- 2014 **Summer Semester** at Carnegie Mellon University

## RESEARCH INTERNSHIPS

- 2023 **Visiting Researcher** at KTH Royal Institute of Technology  
Advisor: Madeline Balaam, Digital Women's Health Group
- 2020 & 2021 **Research and Development Intern** at Accenture Labs  
Advisor: Andreea Danielescu, Future Technologies Group
- 2017 **Mechanical Engineering Intern** at AquaHydrex  
Advisor: Scott Abrahamson

## REFEREED PUBLICATIONS

### JOURNAL ARTICLES

- under review **Fiona Bell**, Nadia Campo Woytuk, Marie Louise Juul Søndergaard, and Mirela Alistar. 2024. Biodegradation as More-Than-Human Unmaking. ACM Transactions on Human-Computer Interaction (TOCHI).
- [J.1] **Fiona Bell**, Ella McQuaid, and Mirela Alistar. 2022. Alganyl: Cooking Sustainable Clothing. *Diseña 20: Design and Somatic Sensibilities*.

### PEER-REVIEWED CONFERENCE PROCEEDINGS

- [C.13] Alyshia N Bustos, Nanibah Chacon, Mia Shaw, **Fiona Bell**, and Leah Buechley. 2024. Ode to Barelhas: Supporting Youth Agency, Cultural Expression, and Community Engagement through an Interactive Mural. Proceedings of the 2024 ACM Designing Interactive Systems Conference (DIS '24). *22% Acceptance Rate*.

- [C.12] **Fiona Bell**, Erin McClure, Camila Friedman-Gerlicz, Ruby Ta, and Leah Buechley. 2024. Designing 3D Printed Ceramics from a Clay with Tunable Shrinkage. Design Research Society 2024: Boston (DRS '24). *Unknown Acceptance Rate*.
- [C.11] Leah Buechley, Jaime Gould, and **Fiona Bell**. 2024. CeraMetal: A New Approach to Low-Cost Metal 3D Printing with Bronze Clay. Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (CHI '24). *26% Acceptance Rate*.
- [C.10] **Fiona Bell**, Erin McClure, Camila Friedman-Gerlicz, Ruby Ta, and Leah Buechley. 2024. Shape-Changing Clay-Dough: Taking a Material-Oriented Approach to 3D Printing. Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (CHI '24). *26% Acceptance Rate*.
- [C.9] Camila Friedman-Gerlicz, Deanna Gelosi, **Fiona Bell**, and Leah Buechley. 2024. WeaveSlicer: Expanding the Range of Printable Geometries in Clay. Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (CHI'24). *26% Acceptance Rate*.
- [C.8] Alyshia N Bustos, Nanibah Chacon, Mia Shaw, **Fiona Bell**, and Leah Buechley. 2024. Interactive Murals: New Opportunities for Collaborative STEAM Learning. Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (CHI '24). *26% Acceptance Rate*.
- [C.7] **Fiona Bell**, Joshua Coffie, and Mirela Alistar. 2024. Bio-Digital Calendar: Attuning to Nonhuman Temporalities for Multispecies Understanding. Proceedings of the Eighteenth International Conference on Tangible, Embedded, and Embodied Interaction (TEI '24). *25% Acceptance Rate. Best Pictorial Sponsored by ACM Europe*. 
- [C.6] **Fiona Bell**, Michelle Ramsahoye, Joshua Coffie, Julia Tung, and Mirela Alistar. 2023. µMe: Exploring the Human Microbiome as an Intimate Material for Living Interfaces. Proceedings of the 2023 ACM Designing Interactive Systems Conference (DIS '23). *25% Acceptance Rate. Best Paper Honorable Mention*. 
- [C.5] **Fiona Bell**, Derrek Chow, Hyelin Choi, and Mirela Alistar. 2023. SCOBY Breastplate: Slowly Growing a Microbial Interface. Proceedings of the Seventeenth International Conference on Tangible, Embedded, and Embodied Interaction (TEI '23). *27% Acceptance Rate. Best Pictorial*. 
- [C.4] **Fiona Bell**, Netta Ofer, and Mirela Alistar. 2022. ReClaym our Compost: Biodegradable Clay for Intimate Making. Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (CHI '22). *24% Acceptance Rate. Best Paper Honorable Mention*. 
- [C.3] **Fiona Bell**, Latifa Al Naimi, Ella McQuaid, and Mirela Alistar. 2022. Designing with Alganyl. Proceedings of the Sixteenth International Conference on Tangible, Embedded, and Embodied Interaction (TEI '22). *29% Acceptance Rate*.
- [C.2] Netta Ofer, **Fiona Bell**, and Mirela Alistar. 2021. Designing Direct Interactions with Bioluminescent Algae. Proceedings of the 2021 ACM Designing Interactive Systems Conference (DIS '21). *25% Acceptance Rate*.
- [C.1] **Fiona Bell**, Alice Hong, Andreea Danielescu, Aditi Maheshwari, Ben Greenspan, Hiroshi Ishii, Laura Devendorf, and Mirela Alistar. 2021. Self-deStaining Textiles: Designing Interactive Systems with Fabric, Stains and Light. Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems (CHI'21). *26% Acceptance Rate*.

#### PEER-REVIEWED WORKSHOP PROPOSALS

- under review Katrin Nora Kober, Georg Regal, Verena Fuchsberger, Martin Murer, Joanna Kowolik, Nathalia Campreguer Franca, Dorothé Smit, **Fiona Bell**, and Tara Capel. 2024. Makers, Crafters, Tinkerers:

How Identities and Biographies Come into Being. Adjunct Proceedings of the 2024 Nordic Human-Computer Interaction Conference (NordiCHI'24).

- [W.5] Katherine Song, **Fiona Bell**, Himani Deshpande, Ilan Mandel, Tiffany Wun, Mirela Alistar, Leah Buechley, Wendy Ju, Jeeun Kim, Samar Sabie, Eric Paulos, and Ron Wakkary. 2024. Sustainable Unmaking: Designing for Biodegradation, Decay, and Disassembly. Extended Abstracts of the 2024 CHI Conference on Human Factors in Computing Systems (CHI '24 EA).
- [W.4] **Fiona Bell**, Shanel Wu, Nadia Campo Woytuk, Eldy Lazaro Vasquez, Mirela Alistar, and Leah Buechley. 2024. Making Biomaterials for Sustainable Tangible Interfaces. Proceedings of the Eighteenth International Conference on Tangible, Embedded, and Embodied Interaction (TEI '24).
- [W.3] Jack Forman, Pat Pataranutaporn, Phillip Gough, Raphael Kim, **Fiona Bell**, Netta Ofer, Jasmine Lu, Angela Vujic, Muqing Bai, Pattie Maes, Hiroshi Ishii, and Misha Sra. 2023. Living Bits and Radical Aminos: A Workshop on Bio-Digital Interfaces for Human-Computer Interaction. Extended Abstracts of the 2023 CHI Conference on Human Factors in Computing Systems (CHI '23 EA).
- [W.2] **Fiona Bell**, Derrek Chow, Eldy Lazaro Vasquez, Laura Devendorf, and Mirela Alistar. 2023. Designing Interactions with Kombucha SCOBY. Proceedings of the Seventeenth International Conference on Tangible, Embedded, and Embodied Interaction (TEI '23).
- [W.1] **Fiona Bell** and Mirela Alistar. 2022. Designing with Alganyl: A Hands-on Exploration of Biodegradable Plastics. Proceedings of the Sixteenth International Conference on Tangible, Embedded, and Embodied Interaction (TEI '22).

#### LIGHTLY REVIEWED CONFERENCE ABSTRACTS

- [A.3] **Fiona Bell**, Camila Friedman-Gerlicz, Jamie Gould, Erin McClure, Deanna Gelosi, Alyshia Bustos, Monica Silva-Lovato, Jeff Suina, and Leah Buechley. 2024. Demonstrating New Materials, Software, and Hardware from the Hand and Machine Lab. Extended Abstracts of the 2024 CHI Conference on Human Factors in Computing Systems (CHI '24 EA).
- [A.2] **Fiona Bell**, Netta Ofer, Hyelin Choi, Ella McQuaid, Ethan Frier, and Mirela Alistar. 2022. ★ Biomaterial Playground: Engaging with Bio-based Materiality. Extended Abstracts of the 2022 CHI Conference on Human Factors in Computing Systems (CHI '22 EA). *People's Choice Demo Runner-Up*.
- [A.1] **Fiona Bell**. 2021. The Undyeing Swatch. Proceedings of the Fifteenth International Conference on Tangible, Embedded, and Embodied Interaction (TEI '21). ★ *Student Design Competition Inspiration Award*.

#### PATENTS

- [P.1] Mirela Alistar and **Fiona Bell**. Alganyl. Provisional Patent Application No 63/184,992. applied in August 2023 for a permanent patent in the US

#### AWARDS & HONORS

- 2024 Best Pictorial Sponsored by ACM Europe - top 1% of submissions at TEI [C7]
- 2023 Best Pictorial - top 1% of submissions at TEI [C5]  
Best Paper Honorable Mention - top 5% of submissions at DIS [C6]
- 2022 Best Paper Honorable Mention - top 5% of submissions at CHI [C4]  
People's Choice Demo Runner-Up at CHI [A2]

- 2021 Inspiration Award for Student Design Competition at TEI [A1]  
Outstanding Humanitarian Project at T9 Hackathon
- 2020 Outstanding Educational Project at T9 Hackathon

## GRANTS & FUNDING

- 2024 UNM Postdoc Travel Award | \$1,500
- 2023 SIGCHI Gary Marsden Travel Grant | \$1,500
- 2022 CU Graduate School Dissertation Completion Fellowship | 1 semester stipend, tuition, & fees  
CU Office for Outreach and Engagement, Community Impact Grant | \$5,000
- 2021 Beverly Sears & Cynthia H. Schultz Graduate Student Grant | \$1,000  
Carol B. Lynch Memorial Fellowship | \$2,500  
The Dorothy Martin Endowment Fund for the Women’s Resource Center | \$2,500
- 2020 CU ATLAS Professional Graduate Student Scholarship | \$2,500

## SERVICE

### ACADEMIC SERVICE

- 2025 **Organizing Committee** | Sustainability Co-chair at TEI
- 2024 **Organizing Committee** | Social Media Co-chair at DIS  
**Session Chair** | “Where Can We Order This?” at TEI  
**Program Committee** | Late-Breaking Work at CHI, Pictorials at DIS, Papers at TEI  
**Reviewer** | International Journal of Design, Research Directions: Biotechnology Design, CHI, UIST, DRS, IMX
- 2023 **Session Chair** | “Materials and Fabrication” at DIS  
**Program Committee** | Pictorials at DIS  
**Student Volunteer** | TEI  
**Reviewer** | Human-Computer Interaction Journal, CHI, UIST, TEI, IDC, Ubicomp/ISWC, SCF
- 2022 **Reviewer** | CHI, DIS, and Ubicomp/ISWC
- 2021 **Student Volunteer** | DIS, Ubicomp/ISWC  
**Reviewer** | CHI, DIS, Ubicomp/ISWC

### INTERNAL SERVICE

- 2022-2023 **Faculty Search Committee** | CU Boulder  
Student Representative for the ATLAS Institute

### OTHER

- 2023-2024 **Judge** | iGEM Global BioArt Competition
- 2022-2023 **Expert Consultant** | Biodesign Challenge
- 2021-2022 **Alumni Board Member** | Biodesign Challenge
- 2021-2023 **ACORN Outreach Program Organizer** | CU Boulder

- 2020-2021 **T9 Hackathon Marketing Coordinator** | CU Boulder
- 2019-2020 **Director of Communications for Astrophysics** | CU Boulder
- 2015-2019 **Society of Women Engineers Board Member** | SCU
- 2016-2017 **Women's Club Ultimate Frisbee Philanthropy Chair** | SCU

## TEACHING EXPERIENCE

### TEACHING ASSISTANT

- Spring 2023 **Design Studio** (ATLS 5440) | CU Boulder, Instructor: Jeffrey Harriman  
Assisted with physical fabrication, provided project critique, and helped lead in-class lectures for a graduate-level, project-based engineering course focused on designing interactive installations.
- Spring 2022 **Design Studio** (ATLS 5440) | CU Boulder, Instructor: Justin Gitlin  
Led in-person lectures for a graduate-level, project-based engineering course taught in a hybrid setting. The course focused on designing interactive installations.
- Fall 2020 **Meaning of Information Technology** (ATLS 2000) | CU Boulder, Instructor: Annie Margaret  
Led in-class discussions, helped develop course curriculum, and graded assignments for an undergraduate-level engineering course focused on the ethics of current technologies.

### GUEST LECTURES

- 2024 **Bio Art and Design** (ARTS 448) | UNM, Instructors: Andrea Polli and Amy Pilling  
"Designing with Sustainable Biomaterials"
- 2023 **Studio Art: Textile Technologies** (ARTS 436/536) | UNM, Instructor: Mary Tsiongas  
"Bio-Textile Intersections"
- Biodesign** (ATLS 4519/5519) | CU Boulder, Instructor: Mirela Alistar  
"Designing with SCOBY"
- 2022 **Biodesign** (ATLS 4519/5519) | CU Boulder, Instructor: Mirela Alistar  
"Designing with Compost"
- Fashioning the Body In Space** (ATLS 4519/5519) | CU Boulder, Instructor: Sasha de Koninck  
"Designing with Bioplastics"
- 2021 **Creative Technologies** (ATLS 5410) | CU Boulder, Instructor: Joel Swanson  
"Designing with Bioplastics"
- Biodesign** (ATLS 4519/5519) | CU Boulder, Instructor: Mirela Alistar  
"Designing with Bioplastics"

### OTHER

- 2023 **Workshop Organizer** | FEMeeting  
"Interactions with Living Leather"
- 2022 **Field Science Camp Instructor** | CU Science Discovery  
"Artistic Naturalists"
- Workshop Organizer** | Horizons K-8 School  
"Bioplastics and Sustainable Fashion"
- Workshop Organizer** | Lafayette Public Library  
"Making Biodegradable Plastics"

2015-2019 **High School Tennis Coach and Basketball Coach** | Dawson School

## MENTORSHIP

### MASTER STUDENT RESEARCH SUPERVISION

Fall 2023 Erin McClure (Computer Science) at UNM

Spring 2023 Joshua Coffie (ATLAS Institute) at CU Boulder

### UNDERGRADUATE STUDENT RESEARCH SUPERVISION

Spring 2024 Lauren Urenda (Biology and Computer Science) at UNM

2022-2023 Julia Tung (ATLAS Institute) at CU Boulder

Spring 2023 Kerstin Nyquist (ATLAS Institute) at CU Boulder

2021-2022 Hyelin Choi (Molecular, Cellular, and Developmental Biology) at CU Boulder

Spring 2022 Emerson Zamansky (Environmental Design) at CU Boulder

2020-2021 Ella McQuaid (Mechanical Engineering) at CU Boulder

Summer 2020 Malika Rakhmonova (Molecular, Cellular and Developmental Biology) at CU Boulder

Spring 2020 Xiang Lao (ATLAS Institute) at CU Boulder

### PEER ADVISING

2018-2019 Mechanical Engineering Peer Advisor for 50 freshman students at SCU

2017-2019 Society of Women Engineers Peer Advisor for 4 students at SCU

## INVITED TALKS

2024 **Open Hardware Summit** | Montreal, Canada

“Developing Sustainable Biomaterials for 3D Printing”

**Biodesign Challenge** | Host: Veena Vijayakumar

“Developing Sustainable Biomaterials in Academia”

2023 **KTH Royal Institute of Technology** | Host: Kristina Höök

“Designing with Biomaterials”

**MUC’23 Tangible Interaction Workshop Keynote Speaker** | Host: Hannes Waldschütz

“Designing with Sustainable Biomaterials”

**University of New Mexico** | Faculty Lightning Talks, Host: Office of Academic Affairs

“Designing Sustainable Biomaterials for Digital Fabrication”

**City University of New York** | Host: Elizabeth Wissinger

“Biomaterials in Sustainable Fashion”

**Teen Science Cafe Network** | Boulder, Colorado

“Introduction to Biodesign and Biomaterials”

2022 **Cornell University** | Host: Cindy Hsin-Liu Kao

“Reimagining Relationships with Biomaterials”

**Brilliant Labs: Making A Difference Speaker Series** | Host: Alisha Collins

“Designing with Biomaterials”

- Biodesign Challenge** | Host: Daniel Grushkin  
"Pursuing Biodesign in Academia"
- Belmont High School** | Belmont Massachusetts  
"Introduction to Biodesign and Biomaterials"
- 2021 **Biodesign Challenge** | Host: Daniel Grushkin  
"Biodesign in HCI"
- Cambridge Rindge and Latin High School** | Cambridge Massachusetts  
"Introduction to Biodesign and Biomaterials"
- Boulder Experiments in Art and Technology** | Host: Jeffrey Harriman  
"Self-Cleaning Textiles"
- Balfour Senior Living Community** | Host: Shaz Zamore  
"Cooking Up Biodegradable Plastics"

## ART INSTALLATIONS

- 2024 **El Museo Cultural de Santa Fe** | Santa Fe, New Mexico, USA  
"Currents Media Arts Festival"
- Fuller Lodge Art Center** | Los Alamos, New Mexico, USA  
"Into the Realms of Possibility"
- 2023 **UNM School of Architecture and Planning** | Albuquerque, New Mexico, USA  
"Experimental Clay: Exploring 3D Printed Ceramics"

## SELECTED PRESS

- 2023 [CU Boulder student creates clothing from kombucha](#) | 9News  
[Sustainable Prototyping Practices - Spotlight 2: Living Matter Lab](#) | ACM SIGCHI blog  
[Sustainable Prototyping Practices - Spotlight 1: Living Matter Lab](#) | ACM SIGCHI blog  
[Kombucha chic: How one student uses microbes. and time. to grow her own clothes](#) | CU Boulder Today  
[CHI 2023 features works by 19 ATLAS community members](#) | ATLAS
- 2022 [Fiona Bell: Intimacy between designers and materials leads to sustainability](#) | ATLAS  
[Interview: Cooking with mycelium](#) | New Next Network  
[ATLAS@CHI2022](#) | ATLAS
- 2021 [ATLAS students fill in community STEM gaps through new outreach team](#) | ATLAS  
[Eight ATLAS researchers receive Graduate School awards](#) | ATLAS  
[ATLAS@CHI2021](#) | ATLAS  
[ATLAS PhD students take home top Student Design Awards from TEI'21](#) | ATLAS
- 2020 [ATLAS grad student assists Accenture Labs with development of self-cleaning textiles](#) | ATLAS  
[Shapeshifting: The varied applications for bioplastics](#) | ATLAS