

ELIZABETH RENDON

BETANCUR

PhD Student in Human Ecology
University of Wisconsin-Madison

RESEARCH INTERESTS

- Human-environment interaction and psychological well-being under Prolonged Required Isolation and Confinement (PRIC)
- Biophilic design interventions targeting PRIC-related behavioral health risks
- Ethical design research grounded in community-led environmental care and well-being
- Living and responsive material systems for cognitive and emotional well-being
- Psychoactive and sensory-modulated environments emphasizing “set and setting” in therapeutic interior design

EDUCATION

PhD in Human Ecology - Design Studies

University of Wisconsin-Madison, 2023-Present

Minor in Biomedical Engineering

coursework completed

MFA in Furniture Design

Savannah College of Art and Design, 2010-2012

BFA in Industrial Design

Universidad de San Buenaventura, 2005-2009

GRANTS & FELLOWSHIPS

USONA Institute scholarship Research Fund, 2026

Mora Himel Lincoln Trust Research Fund, 2026

Jean Alford Meyers Conference Travel, 2025-2026

University of Wisconsin-Madison PhD Scholarship,
2023-2028

Savannah College of Art and Design MFA Scholarship,
2010-2012

RESEARCH EXPERIENCE

Graduate Researcher - University of Wisconsin-Madison

- Investigating biophilic interventions to mitigate behavioral health risks associated with PRIC exposure
- Designed experimental protocols examining human-plant interactions through VOC emissions and haptic stimuli
- Linking sensory environmental variables (olfactory, visual, spatial) to stress modulation and emotional regulation

Independent Biodesign Research

- Development of living and inert mycelium composites for responsive architectural systems
- Integration of alive systems with cognitive and physiological monitoring sensors
- Prototyping adaptive material systems responding to human cognitive and emotional states

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PUBLICATIONS & PRESENTATIONS

- Poster Presentation, NASA Human Research Program (HRP), 2025
Cognitive Outer Space Monitor and Individual Therapeutic Outfit
- Poster Presentation, ACM Tangible Embedded and Embodied Interaction (TEI), 2026
Cognitive Outer Space Monitor and Individual Therapeutic Outfit
- Peer-Reviewed Publication, ACM TEI 2026 - <https://doi.org/10.1145/3731459.3779346>

RESEARCH METHODS & TECHNICAL EXPERTISE

Fabrication & Prototyping

- CNC routing, laser cutting, 3D printing
- Rapid prototyping, mold-making, material experimentation

Electronics, Sensing & Monitoring

- Arduino UNO (beginner-intermediate)
- VOC sensors, humidity and moisture sensing
- Servo motors, Bluetooth-enabled systems
- Sensor integration for cognitive and environmental monitoring

Design & Research Methods

- Experimental design and pilot study development
- Behavioral health-oriented research framing
- Research documentation, qualitative and quantitative analysis
- Biophilic and multi-sensory environment design

TEACHING & ACADEMIC

- Teaching Assistant - 2023-Present
- Faculty, lecturer, instructor - 2016-2023
- Guest critiques, academic workshops, and student mentoring - 2016-Present

LANGUAGES

- Spanish (Native)
- English (Fluent)