

Katarina Richter-Lunn

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Education

2021 – 2024

Harvard Graduate School of Design, Cambridge, MA

Doctor of Design Program (D.Des.)

Primary Advisor: Martin Bechthold

Secondary Committee Advisors: Antoine Picon, Holly Samuelson,
and Richard McNally

Dissertation Title –

“Sentient Spaces: Designing Intuitive Spatial Systems through Physiological Feedback to Mitigate the Severity of Anxiety Disorder Symptoms”

2019 – 2021

Harvard Graduate School of Design, Cambridge, MA

Master in Design Studies (M.Des. Tech)

Concentration: Technology

Primary Thesis Advisor: Jose Luis Garcia del Castillo Lopez

Secondary Thesis Advisor: Dr. Nancy Etkoff

Master’s Thesis Title –

“Incognito: Tangible Interpretations of Covert Physiological Signals for Therapeutic Mediation”

2011 – 2016

California Polytechnic, San Luis Obispo, CA

Bachelor of Architecture (B.Arch.)

Minor in Sustainable Environments

Thesis Advisor: Karen Lange

Bachelor of Architecture Thesis Title –

“I.E.T.: Institute of Experimental Therapy”

Academic Appointments

Fall 2022 – Current

Teaching Fellow – Harvard GSD, Cambridge, MA

Responsibilities: Assist with course material preparation. Run review sessions.

Prepare reading, discussion, and tutorial sessions. Offer design critiques. Hold office hours.

Grading of papers, assignments, and final projects. Lecture on topics of physical computing and responsive environments. Prepare and run workshops highlighting computational techniques and research methodologies in architecture and design.

SCI 6338: Introduction to Computational Design (Fall 2022 & Fall 2023)

Primary Instructor: Jose Luis Garcia del Castillo Lopez

ADV 9703: MDes Thesis Open Project: Apparatus for Hacking Perception (Spring 2023)

Primary Instructor: Allen Sayegh

Additional Responsibilities: Advise and mentor 11 students in the development of their final MDes thesis project. Run, and organize mid & final review.

SCI 6126: Materials (Spring 2023)

Primary Instructor: Jonathan Grinham

SCI 6125: Building Simulation (Spring 2023)

Primary Instructor: Ali Malkawi & Holly Samuelson

Fall 2022 – Current

MDes Mediums Research Tutor – Harvard GSD, Cambridge, MA

Responsibilities: Facilitate communication between master's students and domain heads, administration and advisors. Participate in final reviews and seminars. Hold office hours. Present personal work and research. Contribute to student-led design research forum events. Run review sessions and workshops around topics pertaining to the Medium's domain (technology, computation, research methodologies, etc...).

Fall 2023

Co-Chair of 2023 DDes Conference – *Embodied Climates*

Organization Committee: Katarina Richter-Lunn, Maroula Zacharias, & Malcolm Rio

Invited Guests: 10 Speakers, 2 Keynotes, 4 Moderators, 100 +-attendees.

Responsibilities: Organize and lead the one-day in-person and live streamed conference. The event brought together academics and professionals across the discipline to address the theme of "Embodied Climates" which looked to understand climate in its power to affect human health, mental well-being, socio-political conditions, and cultures of ecology through subjective, embodied ways of knowing.

The symposium situated architecture at the core of influencing necessary change by acknowledging the built environment's agency in the way that humans embody, respond, and react to changing climatic conditions.

Summer 2022 & 2023

TeenArch Summer Program Coordinator & Instructor – UCLA AUD, Los Angeles, CA

Program Director: Julia Koerner

Summer 2023 student cohort size: 107 (In Person Students), 25 (Remote Students).

Summer 2022 student cohort size: 78 (In Person Students), 22 (Remote Students).

Responsibilities: Preparation of the TeenArch course syllabus and weekly lectures. Organization and distribution of weekly studio assignments and deliverables. Hold office hours. Teaching foundational architectural techniques for 3D modeling, drawing and software. Managing teaching staff of 10 Instructors, 8 TA's, and 5 program managers.

Fall 2020 – Spring 2023

Teaching Assistant – Harvard GSD, Cambridge, MA

Responsibilities: Assist with course material preparation. Prepare reading, discussion, and tutorial sessions. Offer design critiques. Hold office hours. Prepare a lecture and workshop presenting personal work and walking students through the translation of bio-metric markers to external environments.

SCI 6384: Towards a new Science of Design (Spring 2022 & Spring 2023)

Primary Instructor: Martin Bechthold and Juan Pablo Ugarte

VIS 2314: Responsive Environments (Fall 2020)

Primary Instructor: Allen Sayegh and Stefano Andreani

Fall 2019 – Spring 2023 **Professional Development Assistant - Harvard GSD Career Services**

Responsibilities: Meet one-on-one with students to provide professional support in portfolio, resume, and outreach to current GSD students. Run workshops and presentations around building a better portfolio and preparing for job interviews.

Spring 2023

MDes Mediums Admissions Committee

Fall 2020 – Spring 2021 **Class Representative - Master of Design Technology**

Research Appointments

Jan 2020 – Current

Research Assistant - MaP+S (Material Processes and Systems) Group

Group Director: Martin Bechthold

The MaP+S Group is a research unit that promotes the understanding, development and deployment of innovative materials and technologies for buildings.

Responsibilities: Participates in research involving material perception, the use of VR and AR in multisensory environments, and how programmable materials can be actuated through psychophysiological signals. In charge of designing, applying for IRB, and running a number of research studies involving human participants.

Jan 2020 – Current

Research Assistant - Aizenberg Lab - Wyss Institute for Biologically Inspired Engineering

Research Lead: Jonathan Grinham and Jack Alvarenga

Responsibilities: Working on Cold-SNAP (cold Superhydrophobic Nano-Architected Process) project which studies different specialized coatings for ceramic tiles to decrease permeance and effectively serve as a passive low-cost cooling system in both humid and dry climates.

Summer 2020

Processing Foundation Fellowship

Sponsored through the Community Service Fellowship Program (CSFP), Harvard.

Responsibilities: Working on grant proposal for the foundation. Weekly meetings with members of the foundation. Conducting interviews. Writing and developing a personal project focused on dynamic machine/ human collaborations.

Spring 2020

Robot / Ballet Collaboration - Harvard Art Lab with Dr. Merritt Moore

Research collaboration between astrophysicist and professional ballet dancer

Merritt Moore during her residency at the Harvard Art Lab. Personal responsibilities focused on assisting the work with a UR 10 robot and furthering the robot and human performance through the integration of real time UR control using HTC Vive controllers.

Fall 2019 – Spring 2020 **GH# Grasshopper Plug-in Project**
 Team Lead: Jose Luis Garcia del Castillo Lopez
 Small team of motivated students joined to work towards a C# based plug-in for Grasshopper which would recreate all the existing basic components through simple C# code. This was an educational endeavor to reveal the step-by-step process behind computational design graphics and make it easier to customize.
 Link to full open-source library here: <https://github.com/garciadelcastillo/gh-sharp>

Peer-Reviewed Publications

May 2022 Katarina Richter-Lunn, and Ila Krishna Kumar. 2022. **“Acu.ation: Real Time Acupoint Stimulation to Mediate the Urge to Smoke.”** In CHI Conference on Human Factors in Computing Systems Extended Abstracts, pp. 1-7.

April 2022 Katarina Richter-Lunn. 2022. **“Sentient Spaces: Interpreting Biofeedback into Environmental Systems to Mitigate Severity of Physiological Symptoms in Anxiety Disorders”**. In ConCave Ph.D. Symposium 2022: Divergence in Architectural Research.

November 2021 Katarina Richter-Lunn, Jose L. García del Castillo y López. 2021. **“Affective Prosthesis: Sensorial Interpretations of Covert Physiological Signals for Therapeutic Mediation”**. In ACADIA 2021: Proceedings of the 40th Annual Conference of the Association for Computer Aided Design in Architecture, eds.

September 2020 Katarina Richter-Lunn. 2020. **“Mind and Machine: Interaction, Performance and Mental Expression through Robotics and Computation”**. In ANFA 2020: Sensing Spaces, Perceiving Place. The Academy of Neuroscience and Architecture.

September 2020 Katarina Richter-Lunn, Dr. Nancy Etkoff. 2020. **“Architectural Subliminal Therapy: The Parallel of Architecture and Traditional Forms of Therapy to Propose New Accessible Treatments for Psychological Disorders”**. ANFA 2020: Sensing Spaces, Perceiving Place. The Academy of Neuroscience and Architecture.

September 2020 Katarina Richter-Lunn, Grace Chee, Trevor Cobb, Irmandy Wicaksono, and Benjamin R. Freedman. 2020. **“Doze: hydrogel-based epidermal platform for personalized scent diffusion”**. In Adjunct Proceedings of the 2020 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2020 ACM International Symposium on Wearable Computers, pp. 17-20.

Conferences

Oct 2022 & 2023 Paul & Daisy Soros Fall Conference, New York, NY - **Fellow**

Oct 2022 Acadia – “Realignments: Toward Critical Computation” – **Paper Presentation**

May 2022 ACM CHI Conference on Human Factors in Computing Systems, New Orleans, LA – **Paper Presentation**

April 2022 ConCave Ph.D. Symposium 2022: Divergence in Architectural Research, Georgia Tech, GA – **Paper Presentation**

- Nov 2021 SIGraDi 2021 Conference – **Panelist**
Panel Discussion: Dialogues between Neuroarchitecture and AI: Towards the Future of Architectural Design.
- Sep 2020 ANFA 2020 – “Sensing Spaces, Perceiving Place” – **2 x Paper Presentations**
- Oct 2014 Acadia – “Design Agency”, USC, Los Angeles, CA – **2nd Place Hackathon Winner**
Project: mickeyTECH. Team: Gilles Retsin, Manuel Jimenez, Knut Brunier, Curime Batliner, Burcin Nalinci, and Emmanuel Osorno.
- 2023, 22, 17, 14 Acadia Conference – **Attendee**

Professional Work

- Oct 2023 – Current **Design Consultant** – Various Clients
- Sep 2019 – Sep 2023 **Spear Design Group - Miriam Spear, Boston, MA - Independent Contractor**
CA overview, weekly site progress, monthly progress reports, survey, documentation, and rendering.
- July 2016 – July 2019 **Gehry Partners - Frank Gehry & Partners, Los Angeles, CA - Project Designer**
Pre-design, SD, DD, CD and CA work on: Building 21 and 27 Facebook Campus, Menlo Park, CA. SD, DD and CD work on: La Maison LVMH, Paris, France and King Street residential towers, Toronto, Canada.
- April 2016 **Snøhetta – Lead: Nicolas Rader, San Francisco, CA - Architectural Intern**
Facade detailing and parametric modeling for a downtown San Francisco residential tower.
- March 2016 **ARUP Facades - Lead: Matt Williams, Los Angeles, CA - Intern**
Detailing facade systems, diagramming project specifications, custom glazing details.
- Jun – Sept 2015 **Tighe Architecture - Patrick Tighe, Los Angeles, CA - Project Designer**
Pre-design, SD and DD for two residential projects in Hollywood Hills, CA, and computational design work for Burbank Interior remodel.
- Jan – June 2015 **FreelandBuck - David Freeland & Brennan Buck, Los Angeles, CA - Intern**
SD, concept development, computational scripting for NY expo, project cost and feasibility, material research, model construction, competition entry.
- Sep – Dec 2014 **IwamotoScott - Lisa Iwamoto & Craig Scott, San Francisco, CA - Project Designer**
SD, concept development, cost and feasibility, parametric modeling, document production, planning and zoning, material research, engineering systems.
- Jun – Sep 2014 **Future Cities Lab, Nataly Gattegno & Jason Kelly Johnson, San Francisco - Intern**
Robotic programming, computational scripting, schematic design, model construction, shop management (laser cutter and CNC mill), installation and assembly.

Recognition & Awards

Fall 2023	IGNITE, the Inaugural GSD Philanthropy Celebration - Student Speaker
Spring 2023	Femmes Designers – Artist Voices. https://femmesdesigners.com/
March 2022	The Paul & Daisy Soros Fellowships for New Americans – Recipient
Fall 2021	Daniel L. Schodek Fellowship for Technology and Sustainability, Harvard – Recipient
Fall 2021	Dean’s Merit Award DDes, Harvard – Recipient
Fall 2021	Jack and Elizabeth Meyer University Scholarship – Harvard – Recipient
Fall 2020 – Spring 2021	I-Lab Fall 2020 Venture Program - Harvard University – Recipient
May 2020	Association for Women in Architecture Foundation Scholarship (AWAF)- Recipient
Fall 2019 – Spring 2021	Dean’s Merit Scholarship, Harvard – Recipient
Fall 2019 – Spring 2021	Design School Grant – Harvard – Recipient
May 2019	Association for Women in Architecture Foundation Scholarship (AWAF) - Honorable Mention
Spring 2016	Thesis Award – Cal Poly, San Luis Obispo, CA – Recipient
Fall 2015 - Spring 2016	“Provocations” Lecture Series, Cal Poly - Cofounder and Organizer
Nov 2015	EvoLo Vmodern Furniture Design Competition - Honorable Mention
Spring 2015	MAD Architects Design Award, Cal Poly – Finalist
Spring 2015	MBH Architects Scholarship, Cal Poly – Recipient
Spring 2014	Don Tanklage & Herbert E. Collins Architecture Scholarships, Cal Poly – Recipient

Talks

Fall 2023	Lecture & Workshop – Harvard Topic: Research Methods for Physical Computing and Data Processing
July 2023	Guest Lecture – UCLA AUD Summer Lecture Series
Spring 2023	Digital Futures Talk - Inside Harvard GSD https://www.youtube.com/watch?v=S3KFOiN9Rk8
Spring 2023	Guest Lecture – McNally Research Group - Harvard Psychology (FAS)
Spring 2023	The Art in STEAM – Podcast Interview https://open.spotify.com/show/2Quh5oYIDdb7XMzbYfKWYq?si=be184bfd06cd4504
Fall 2021 – Fall 2023	Guest Lectures – Harvard Graduate School of Design (GSD) Course: Responsive Environments, Allen Sayegh Course: Introduction to Computational Design, Jose Luis Garcia del Castillo Lopez Course: Towards a new Science of Design, Juan Pablo Ugarte Course: Design, Performance, and Perception of Fake Materials, Martin Bechthold
Fall 2022	Guest Lecture – Northeastern Course: Master’s Research Studio, Instructor: Humbi Song
Fall 2020	Guest Lecture – University of Southern California (USC) Course: Research Seminar, Instructor: Erin Cuevas

Exhibits

October 2023	Femmes Designers – Through Her Lens: Testing boundaries in STEAM Shoreditch Arts Club, London, England, UK https://shoreditchartsclub.com/events/femmes-designers
Spring 2016	“Showroom” Book Show, Cal Poly - Thesis Installation Exhibition
Spring 2014	Third Year Best of Show, Cal Poly - Nominee - Architecture Exhibition
Fall 2013	Vellum Competition People’s Choice Award - Cal Poly - Furniture Exhibition
2012, 13, 14, 15	Vellum Furniture Competition – Furniture Exhibition

Guest Critics

Spring & Fall 2023	Harvard Graduate School of Design (GSD) – Final Thesis Reviews (MDes & MArch)
2020 – 2023	Harvard Graduate School of Design (GSD) – Research Seminars Reviews
2023	Rhode Island School of Design (RISD) – Thesis Research Studio
2023	Northeastern University – Thesis Research Studio
2022 & 2023	University of California, Los Angeles (UCLA) – Summer Program Final Reviews
2022	Tulane University – Studio Review
2021	Texas Tech University (TTU) – Studio Review
2021	Wentworth Institute of Technology – Studio Review
2016 – 2023	California Polytechnic State University, (Cal Poly SLO), LA Metro Program Reviews
2020	University Southern California (USC) – Research Seminar Review

Software

Modeling: Rhino, AutoCAD, Revit, Maya, Sketchup

Programming: Grasshopper & related plug-ins, Java (Processing), JavaScript (P5.js), C# (Grasshopper and Visual Studio), C++, Python, openFrameworks, TouchDesigner.

Rendering/ Graphics: Vray, Maxwell, Felix, Adobe Creative Suite

Digital Fabrication/ Robotics: Arduino, RhinoCam/ CNC, 3D Printing (Ceramics & Thermoplastics), Machina (Universal Robots & ABB's), RobotStudio.

Languages

Fluent: English, French

Secondary: Spanish