

# Flavia Grey

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## EDUCATION

- Stanford University**, Stanford, CA  
PhD, Civil and Environmental Engineering 2019
- Stanford University**, Stanford, CA  
Master's Degree, Sustainable Design and Construction 2014
- Universidad Panamericana**, Mexico City, Mexico  
Bachelor's Degree, Mechatronics Engineering 2007

## RESEARCH EXPERIENCE

**Stanford University**, *Doctoral Student Researcher at Project Based Learning Lab*, Stanford, CA 2014-present

**Research focus:** Identify critical dynamic interaction metrics between occupants and buildings and quantify their impacts towards harmonizing occupant well-being, productivity, and building sustainability.

- Collected concurrent, correlated occupant psycho-physiological data and building interior environment data using fixed and wearable sensors.
- Built big data visualization tool for Stanford's HANA Immersive Visualization Environment.
- Trained and tested supervised and unsupervised machine learning models to classify occupant well-being states and predict occupant and building state transitions.
- Developed *Space-Mate*, a comprehensive simulation framework and prototype that raises awareness of occupant and building states and informs decision-making toward harmonizing occupant well-being and building sustainable performance.
- Identified indicators based on *Space-Mate* simulation prototype results showing up to 40% increase in occupant well-being, with up to 50% less energy consumption through building-occupant collaboration.
- Published 4 peer-reviewed conference papers and 1 book chapter.
- Submitted 1 patent application, *Pacific Fog: building-embedded fog water harvesting & utilization system* (2015).

## WORK EXPERIENCE

**U.S. Green Building Council**, *Schneider Sustainable Energy Fellow*, Washington, DC 2017

- Planned, organized and hosted two seasons of "Built for Health", a podcast with over 13,000 listeners.

**PMM**, *Chief of Plant Engineering*, Mexico City, Mexico 2008-2013

- Facilitated modification and construction of 3 new offices, 1 chemical laboratory, and 2 storage facilities.
- Planned and coordinated the maintenance of the manufacturing facility's machinery and infrastructure.
- Designed and implemented leadership training program for managers and plant supervisors.
- Oversaw improvement projects related to the plant's processes and infrastructure, including:
  - Implemented mechanical drying process which reduced the drying time from 36 hours to 1 hour.
  - Increased the energy capacity of the plant by 50% by upgrading the substation's power transformer.
  - Redesigned and upgraded stretching machinery increasing their production output by 30%.
  - Designed insulation prototype for extruders' head which reduced their energy consumption by 60%.

## SKILLS

**Programming and Data Science:** Python, MATLAB, HTML, CSS, JavaScript, Java, C, C++, C#, SQL, R

**Data Visualization and Visual Design:** Tableau, D3.js, Figma, Illustrator, Photoshop, Sketch, InVision

**Built Environment Design:** SketchUp, Autodesk Revit/A360/BIM 360, eQuest, EnergyPlus, AGI32

**Augmented, Mixed and Virtual Reality:** Microsoft HoloLens, Acer Mixed Reality, Oculus Rift, HTC Vive

**Languages:** Spanish (Native), English (Fluent), Italian (Intermediate)

## AWARDS & HONORS (Selected)

- Charles H. Leavell Fellowship on Sustainable Built Environment 2017
- Fulbright Scholarship 2013