# Johanna Jianping O'Day

## CONTACT


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## EDUCATION

**Ph.D. in Bioengineering**
Stanford University
GPA: 3.917
2017 - 2023

**M.S. in Bioengineering**
Stanford University
GPA: 3.910
2015 - 2017

**B.S. Biochemistry**
Boston College
GPA: 3.848
2011 - 2015

## DISTINCTIONS & AWARDS

**Best Scientific Poster Award**
International Conference on Ambulatory Monitoring of Physical Activity and Movement
2021

**Centennial Teaching Award**
Stanford University
2018

**d.school Creativity in Research Innovation Fellow**
Stanford University
2017-2018

**Bio-X Bowes Graduate Fellowship**
Stanford University
2016

## Summary


I believe in using human-centered design and bioengineering to improve health. I have developed open-source tools that use wearables to better understand & improve mobility. I am passionate about collaboration, translating science, and science communication.


## Selected Research Experience

**Quanitfying female athlete performance and physiology**
**PIs: Professor Scott Delp, Dr. Jennifer Hicks | 2023 - present**

- Using wearables and statistical learning to understand interaction of performance, activity, and menstrual cycle in female athletes

**Detecting freezing of gait with a patient-preferred set of wearables**
**PIs: Dr. Helen Bronte-Stewart, Professor Scott Delp | 2019- 2021**

- Developed wearable sensor set and machine learning algorithm to detect freezing of gait in people with Parkinson's disease optimized for patient preferences and model performance (*O'Day, Lee, & Seagers et al., 2022*)

**Open-source tools for inertial-measurement-unit-based kinematics**
**PI: Professor Scott Delp | 2018 - 2021**

- Ran experiments + validated open-source tools to estimate human kinematics from IMU data over long durations *(Al-Borno & O'Day et al., 2022; 10-minute oral presentation at International Society of Biomechanics 2021)*

**Closed-loop deep brain stimulation for gait in Parkinson's disease**
**PIs: Dr. Helen Bronte-Stewart, Professor Scott Delp | 2016 - 2021**

- Designed protocols & ran clinical experiments with participants with Parkinson's disease (N = 15+) using wearable sensors and deep brain stimulation.
- Developed and validated a standardized walking course to study freezing of gait in Parkinson's disease and assess therapy (*O'Day et al., PLoS One, 2020*)
- Integrated automatic freezing of gait detection algorithm with closed-loop neurostimulation system *(O'Day et al., IEEE EMBC, 2020)*, tested in Clinical Trial, NIH UH3 NS107709, early results in *Melbourne et al., Brain Stim, 2023*

## Selected Leadership & Teaching Experience

**Scientific Program Manager | Education & Communication**
**Wu Tsai Human Performance Alliance** [2021 - present]

Co-designed and launched 4 new educational programs and fellowships for new life sciences institute at Stanford. Developed and taught undergraduate courses (BIOE190) on research skills and meta-mentored 30+ research projects.

**Teaching Assistant, Stanford University** [2015 - 2020]

- ME331A Advanced Dynamics ['19], ME377 Design Thinking Studio ['18],
- ME281 Biomechanics of Human Movement ['18-'20], Design Workshops ['17-'20]

**Co-host, Co-founder, Biomechanics on our Minds (BOOM)** [2017 - 2023]

Created science podcast featuring interviews with experts in biomechanics who discuss their research, journeys and learnings. **100+ episodes; 100,000+ listens worldwide.** *https://www.biomechanicsonourminds.com/*

**Founder, Parkinson's Story Exchange** [2018 - 2022]

Created initiative to share audio stories from people with Parkinson's disease.

## Skills

- Human Subjects Research & Clinical Trials
- Statistical & Machine Learning
- Python, R, Matlab, HTML
- Biomechanics (inertial measurement units, motion capture, EMG, etc)
- Neurostimulation

## Interests

- Science Communication
- Long distance running
- Rock Climbing
- Scuba Diving
- Hiking