Hannah O’Day

Hometown: Mattapoisett, MA

Undergrad: Boston College
Improving walking for people with Parkinson's disease

I was diagnosed with Parkinson’s
At the age of sixty-five.
I was told — “a pill and exercise”
Would get me out alive.
I was told that my arms weren’t swinging,
And that I had an improper gait.
My body wanted to walk ahead,
— my FEET said, “this can wait.”
...

~Alan Ascher
Freezing of Gait
Freezing of Gait
Freezing of Gait

Ankle Angular Velocity

right ankle  left ankle

Time (s)
Freezing of Gait

Ankle Angular Velocity

right ankle  left ankle

Time (s)
We did some fancy machine learning and patient surveying to optimize the number and placement of sensors… and found that the two we started with were the best.
Deep Brain Stimulation (DBS)
A smart brain pacemaker: Closed-loop DBS

& responds with therapy

Reads data from motion sensors
Our participant walked around the lab most regularly on closed-loop therapy.

“Felt relaxed through the course.”

“[Felt] Pretty good - relaxed. [Felt] less slow, a little faster.”

“Slowness, dexterity, especially jaw tremor. Balance was worse.”
Questions?

“I want to run on the beach more with my daughter and Ozzy our dog.”
~ Kevin