

2019 Community Engagement Conference

Partnering for a Resilient and Sustainable Future



IGNITE

January 23 and 24, 2019

Learning How to Engage in the Community: Integrating Teaching, Service and Research for the Good of Patients with Parkinson's Disease

- **Presenters: Eugenia Costa-Giomi** – professor, Ohio State School of Music
- **Yune Lee** – assistant professor, Ohio State Neurology Department



THE OHIO STATE UNIVERSITY

Costa-Giomi, Lee & Marcho

Learning how to engage in the community:

**Integrating teaching, service and research
for**

**the good of patients with Parkinson's
Disease**

Parkinson's Disease

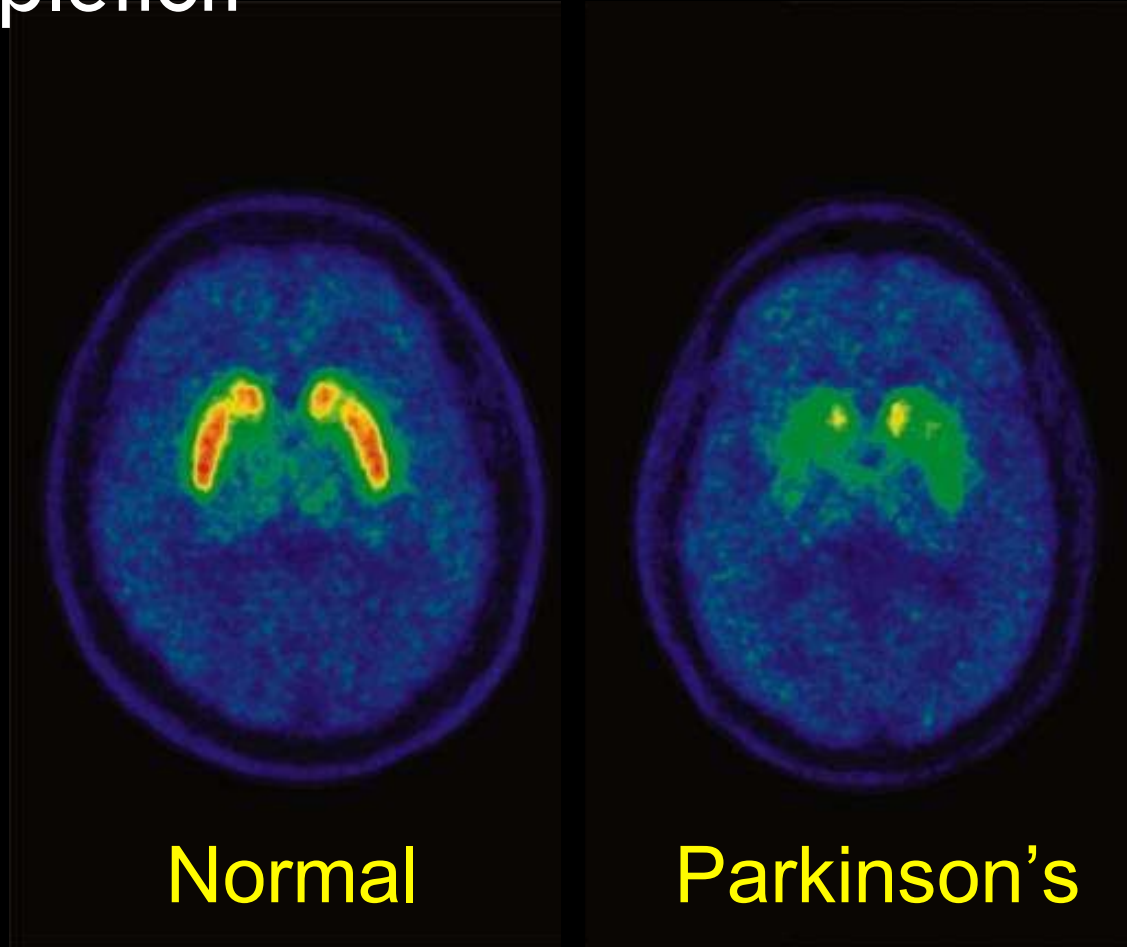
Affects a million
people in the U.S.

Ten million
worldwide are living
with Parkinson's
disease

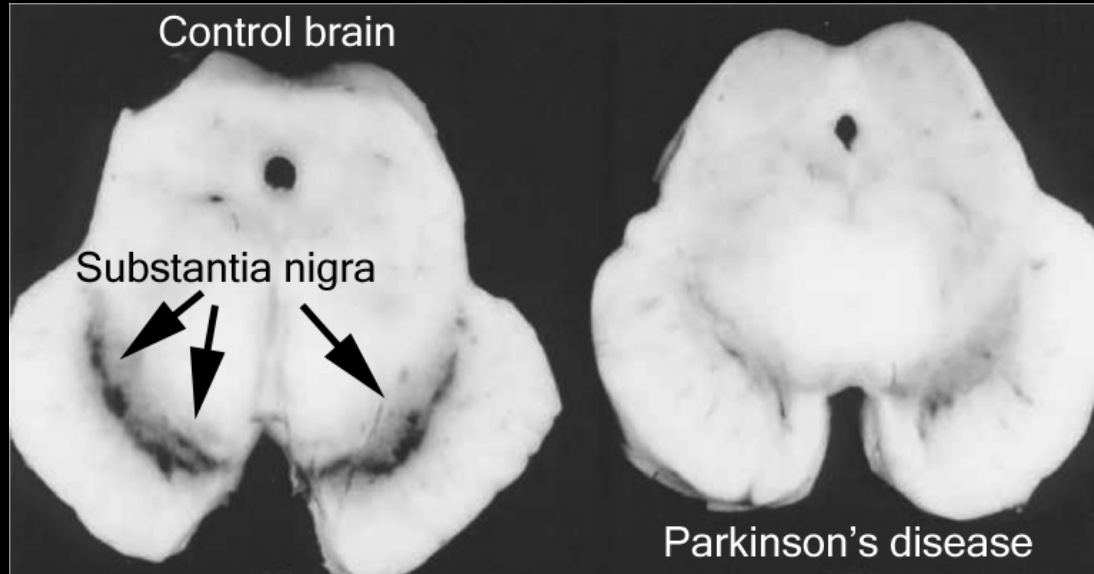
Average cost of
medication: \$2,500
per year

Therapeutic surgery:
\$100,000

Most extreme case of dopamine depletion



Parkinson's disease



Cell death in SN
causes paucity of
dopamine release



Lack of Dopamine Transmission

Cognitive/Emotional Symptoms

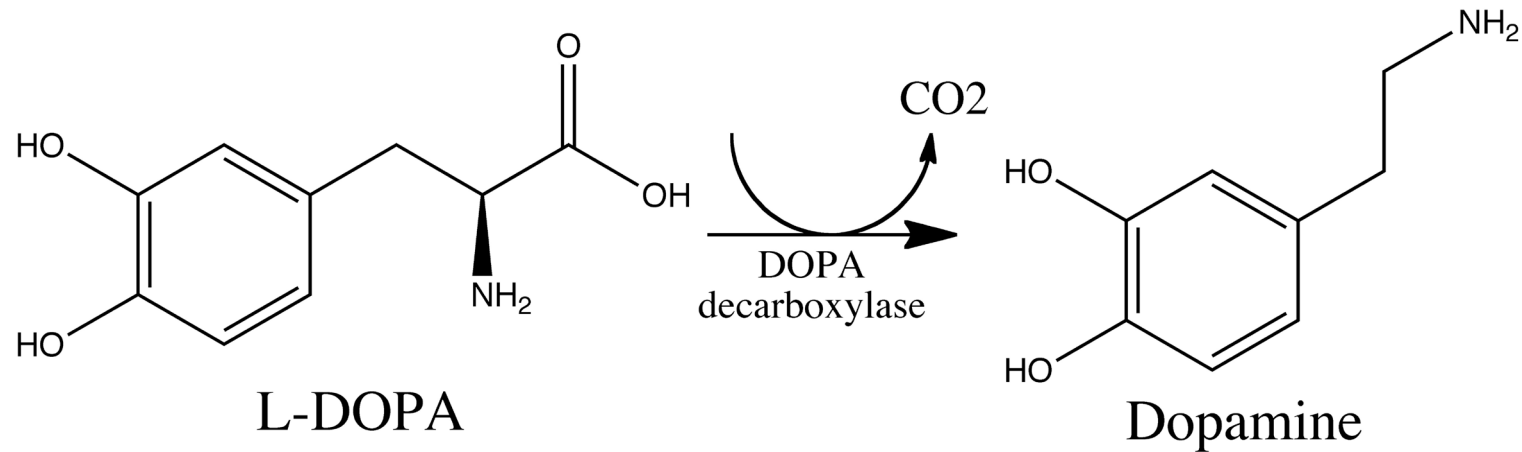
- Anxiety
- Depression
- Fatigue
- Distraction/Disorganization
- Recall

Movement Symptoms

- Slowness of movement (bradykinesia)
- Tremor
- Rigidity
- Balance problems

Parkinson's disease

- Treatment
 - Levo Dopa
 - Dopamine agonists
 - Deep Brain Stimulation (DBS) surgery
 - Rehabilitation (e.g., dance for PD)



Drum- Dance Rehab

Rhythmic
entrainment

Large and small
motor
movements

Working memory
activities

Group therapy

Little or no
musical
experience
required

Enjoyable!

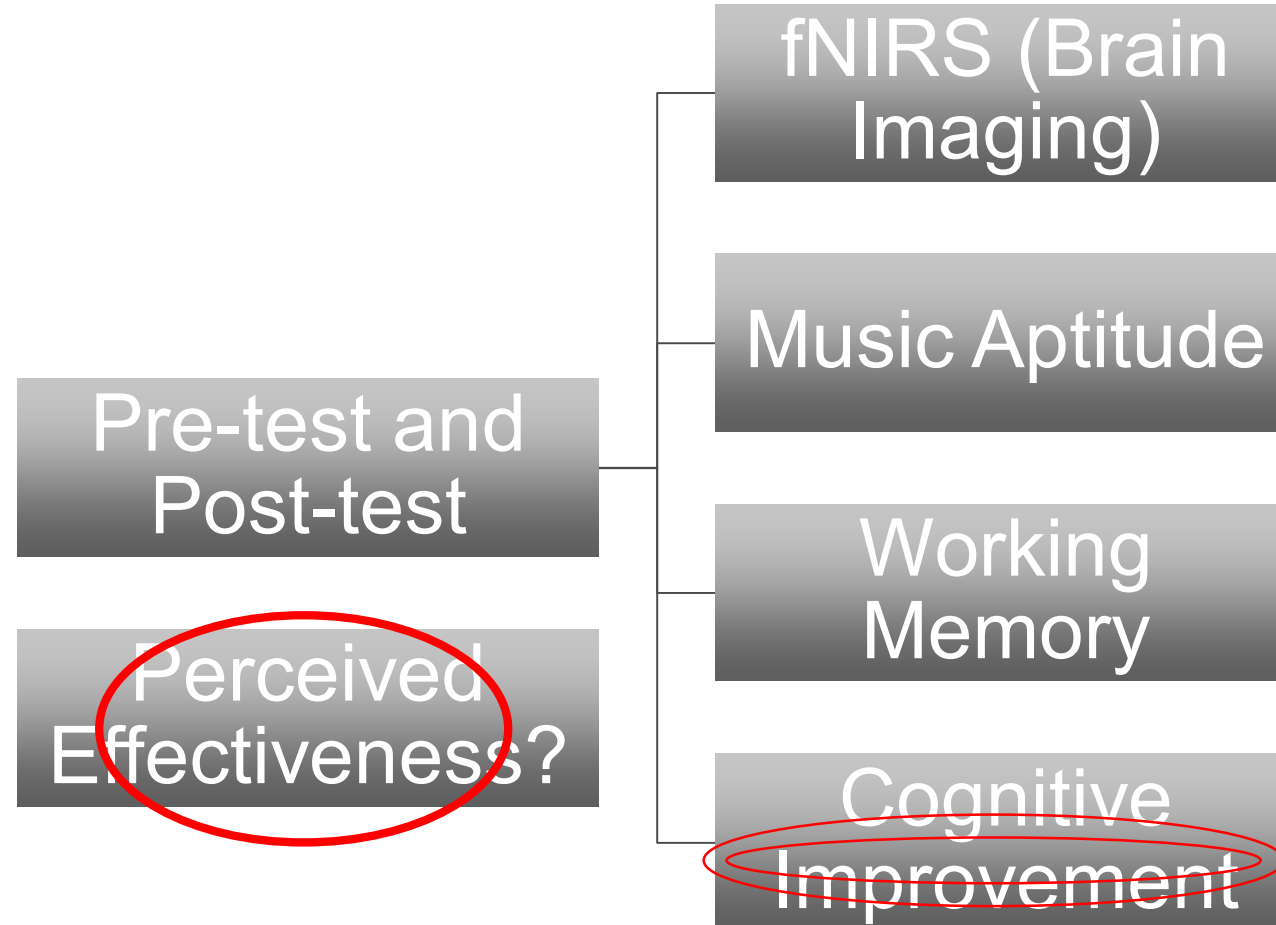
Drumming Dance Rehabilitation (DDR) for PD

RHYTHM-BASED INTERVENTION IN SPEECH & LANGUAGE ABILITIES

- Pretesting:
 - Background questionnaires
 - Behavioral Tasks: cognitive, music, and language-based
 - Brain imaging (fNIRS)
- Drumming Dance Rehabilitation
 - Intensive therapy, 4-weeks long
- Post-Testing
 - Same process as pre-testing
 - Brain data from the pre-test is compared to the post-test data to look for increased neural activity in related speech/language areas.



Measurements



Participants comments

- It slowed me down; it really helped me focus
- I loved the whole program and hope that others get the opportunity to participate. It was so much better than I expected!
- The instructors did a great job.

Challenge & Opportunity

Integrate

- Research
- Training & Teaching
- Service

Problems

- Recruitment
- Individual trajectories of disease
- Design
- Confounding variables
- Sustainability

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Solutions

- Community
- Service

Solutions

- Community
- Service

Thank you!

- Discovery Themes
- OSU School of Music
- Wexner Medical Center
- Teachers and participants