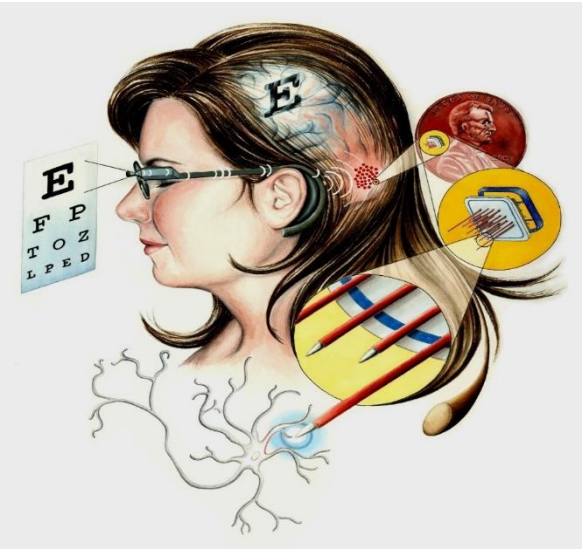


Intra-cortical Visual Prosthesis (ICVP) project

An NIH-sponsored clinical trial involving 4 universities, 1 non-profit & 2 companies

ILLINOIS TECH

MicroProbes for Life Science

Lions Vision Center

UT Dallas

RUSH

Ultra-Low vision Lab:

Gislin Dagnelie

Liancheng Yang

Arathy Kartha

Roksana Sadeghi

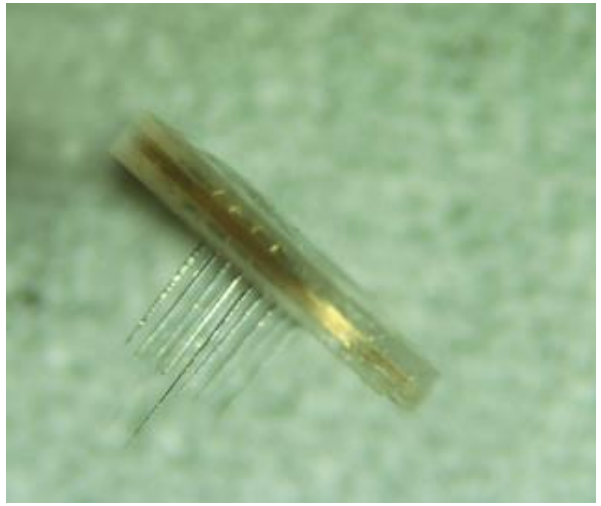
Soo Hyun Lee

The Chicago Lighthouse

Johns Hopkins

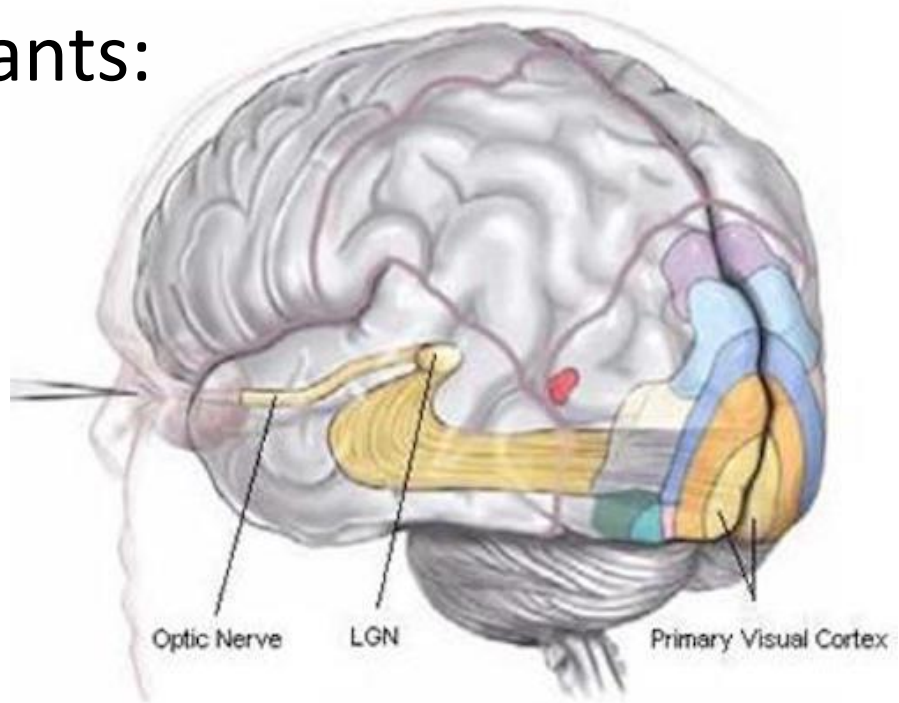
Anatomy of a Wireless Floating Micro Array (WFMA)

- Chip is 1/3 the size, and 1/3 the thickness, of a dime
- “Floats” on the surface of the brain
- 16 needle electrodes penetrate into the visual cortex
- Electrode tips stimulate cells that used to receive signals from the eye
- Up to 20 WFMAs can be implanted



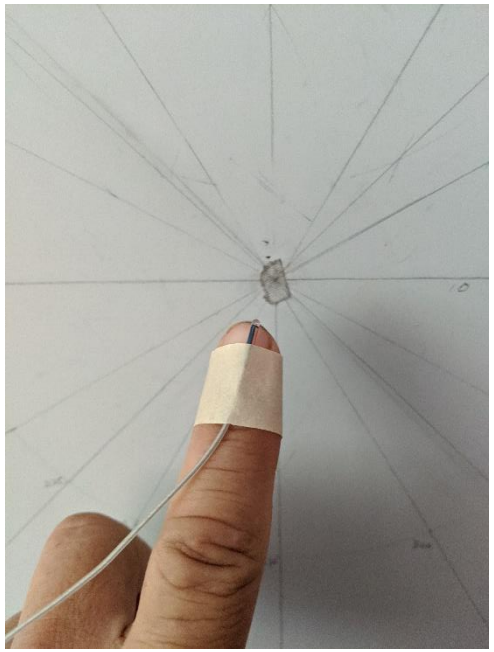
Compared to retinal implants:

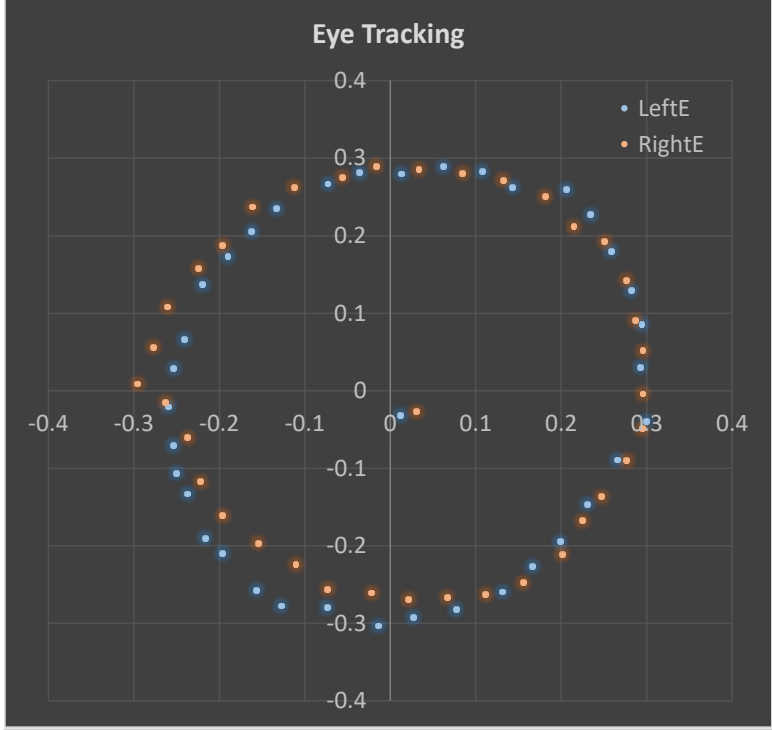
- More people can benefit from cortical implants:
  - Glaucoma
  - Damaged Optic nerve
  - Damaged eye
- Larger area
  - Larger number of electrodes can be implanted

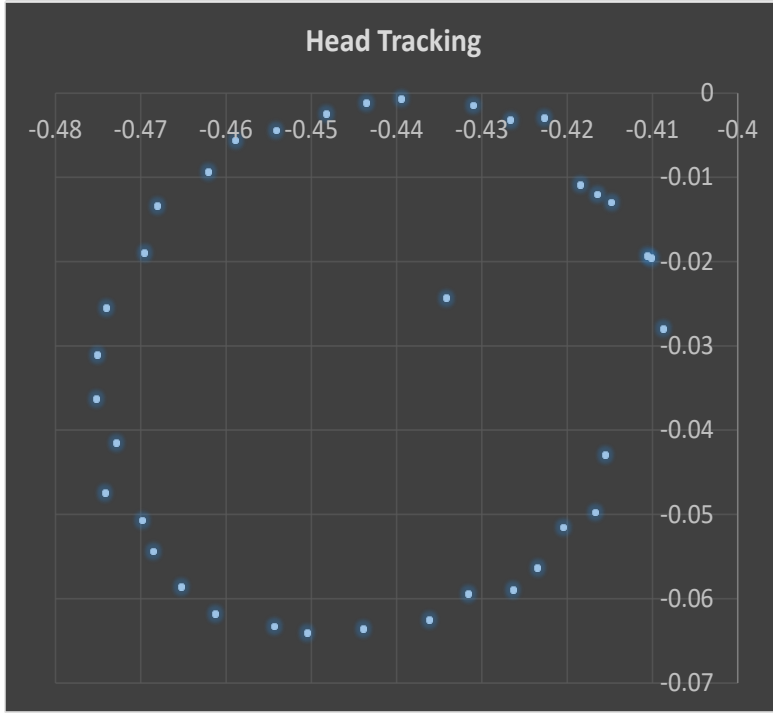


Phosphene Mapping

- We can’t predict where the phosphenes will appear
- Pointing, eye & head tracking help us make a map

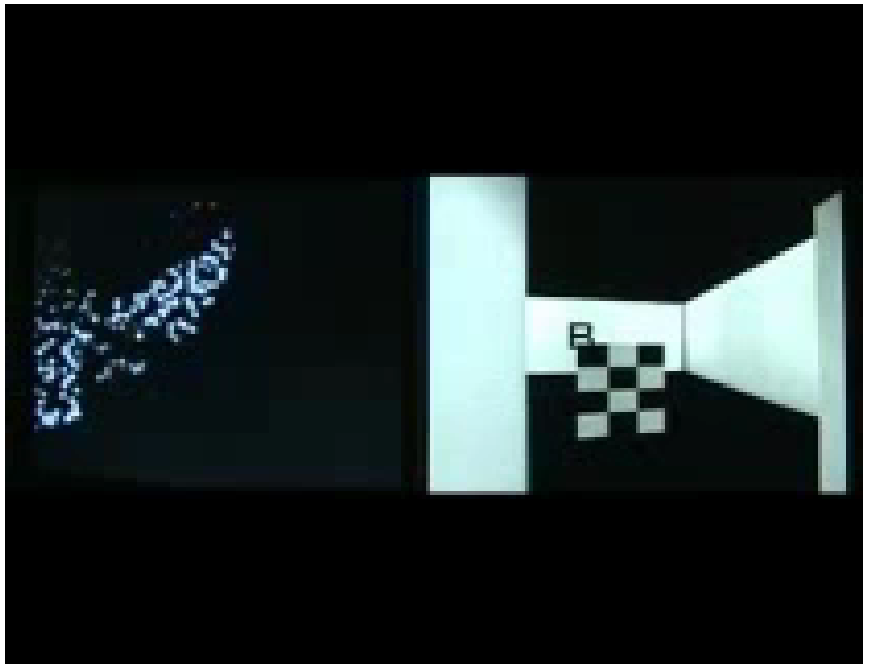






What we think they'll see

- Using the phosphene map to place checkers, or to find your way in a maze



ICVP in action, in a few months?

- The first implantation is planned for February 2021
- Stay tuned!