HAND at UCLA

2021-2022 Recap & Banquet!

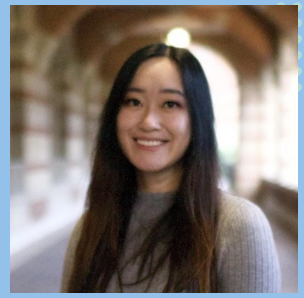
2021-2022 Leadership Team

Tiffany Chen
President

Saumya Tawakley
VP of Operations

Ashley Kim
VP of Outreach

Aarti Jain
VP of Education



Pauline Young
VP of Shadowing

Sravya Sankar
Shadowing Director

Jane Burgan
IT Director

Alex Wu
IT Director

Daniel Hong
IT Director

Nitin Subramanian
Webmaster

2021-2022 Leadership Team

Clara Kennedy
Education Director

Sasha Anand
Education Director

Ellen Tahmasyan
Outreach Director

Max Orr
Marketing &
Recruitment Director

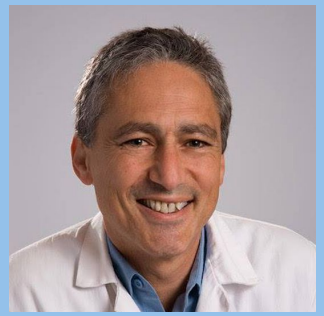
Crystal Zhou
Social Director

Board of Advisors

Dr. Marlius Castillo
Faculty Advisor

Lee Felsenstein
Engineering Advisor

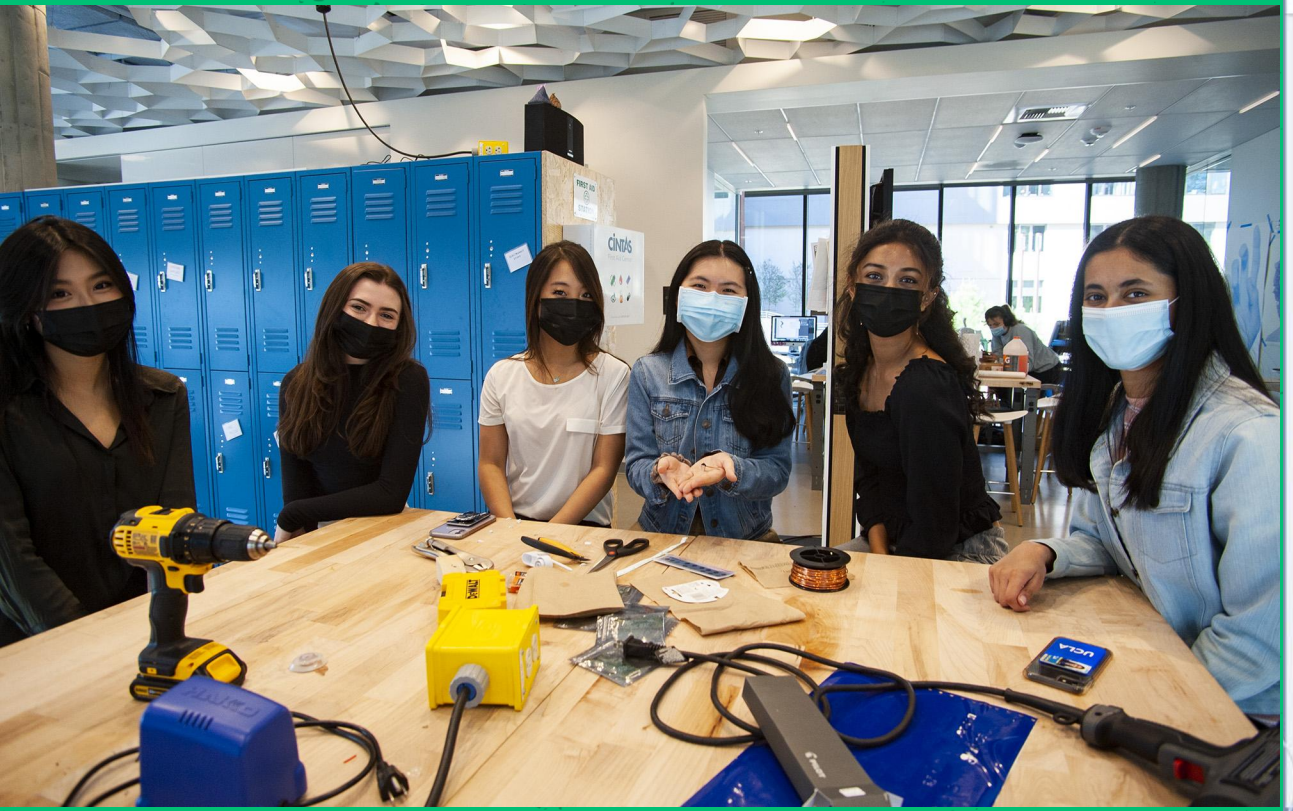
Dr. Jacqueline Chen
Medical Advisor



Dr. Jeff Bronstein
Medical Advisor

Dr. Ana Luisa Trejos
Engineering Advisor

Dr. Martin McKeown
Medical Advisor

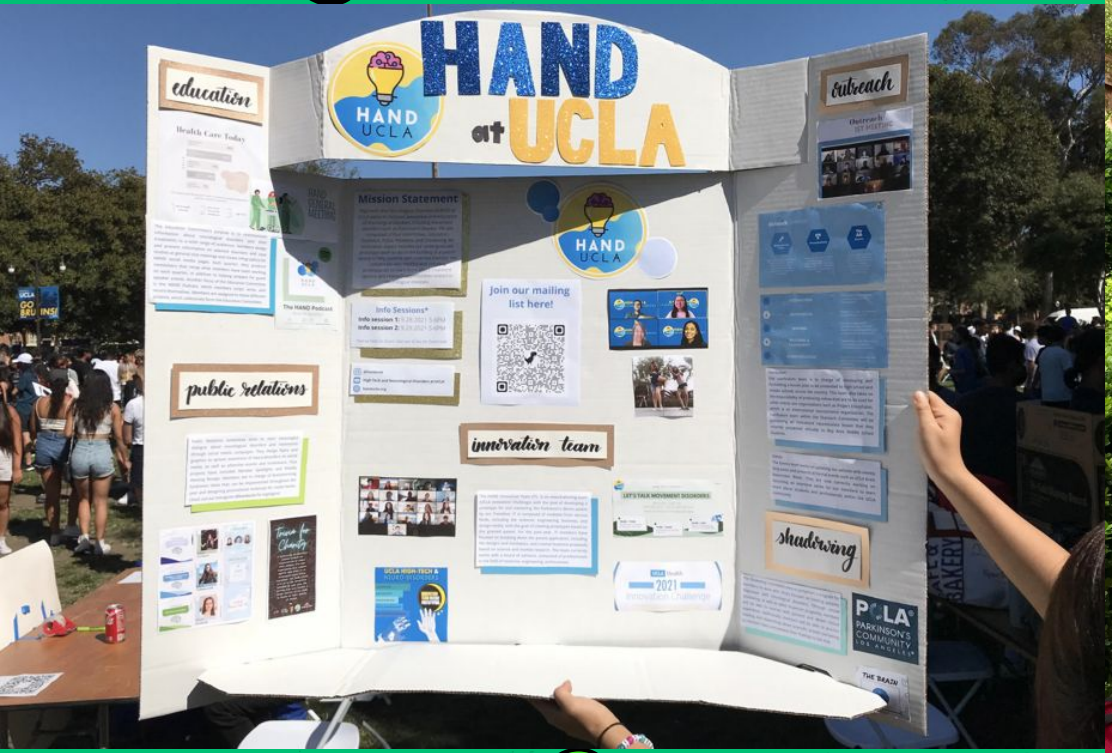


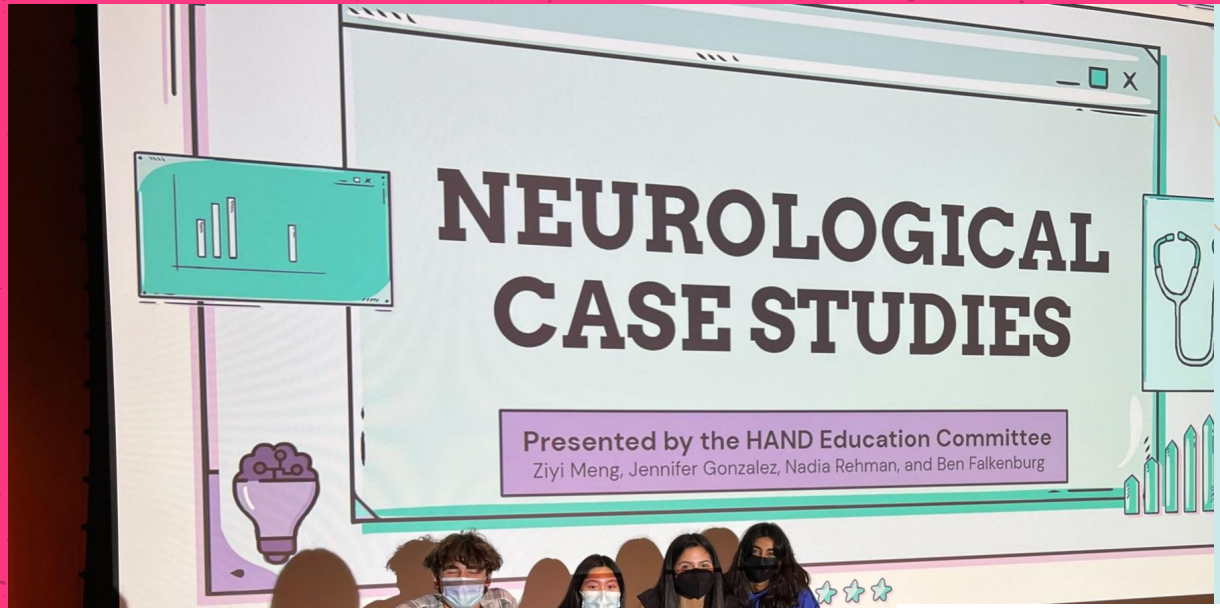
DAILY BRUIN

A CLOSER LOOK, NEWS, SCIENCE & HEALTH

UCLA club lends a hand to address neurological diseases via innovation, awareness

Members of the High-tech and Neurological Disorders club stand in front of the UCLA MakerSpace. The student organization started in fall 2020 and works to educate the community about neurological diseases. (Chelsea Westman/Daily Bruin staff)


HAND
at UCLA
HAND UCLA
education
outreach
Mission Statement
Join our mailing list here!
public relations
innovation team
shadowing
2021



HAND AT UCLA

NEW PODCAST

with **I'm Not Dead Yet**
Episode 27:
Peeking into the future

Dr. Michael Jakowec (PhD)

Associate Professor of Research Neurology,
Keck School of Medicine

Research Focuses:

- Molecular mechanisms in neuroplasticity
- Neurotransmitter systems involved in motor behavior
- Animal models of basal ganglia injury

Neurological Disorders: What Are They?

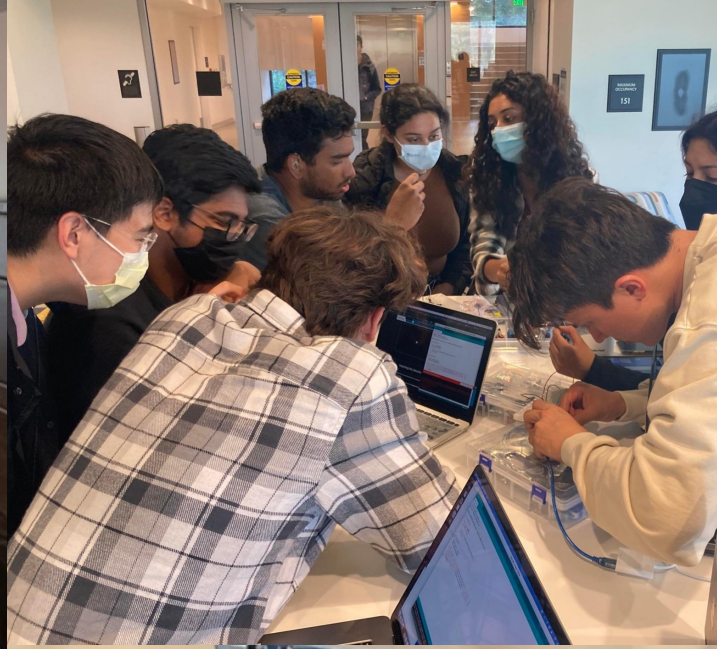
@AIMATUCLA and @HANDUCLA

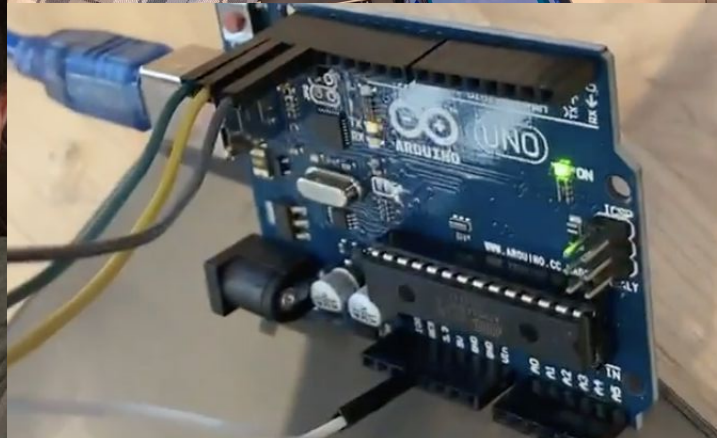
@aimatucla X @handucla

Neurodivergence in College

Resume/CV Workshop

Events Team - Outreach Committee




UNO
ARDUINO
ON

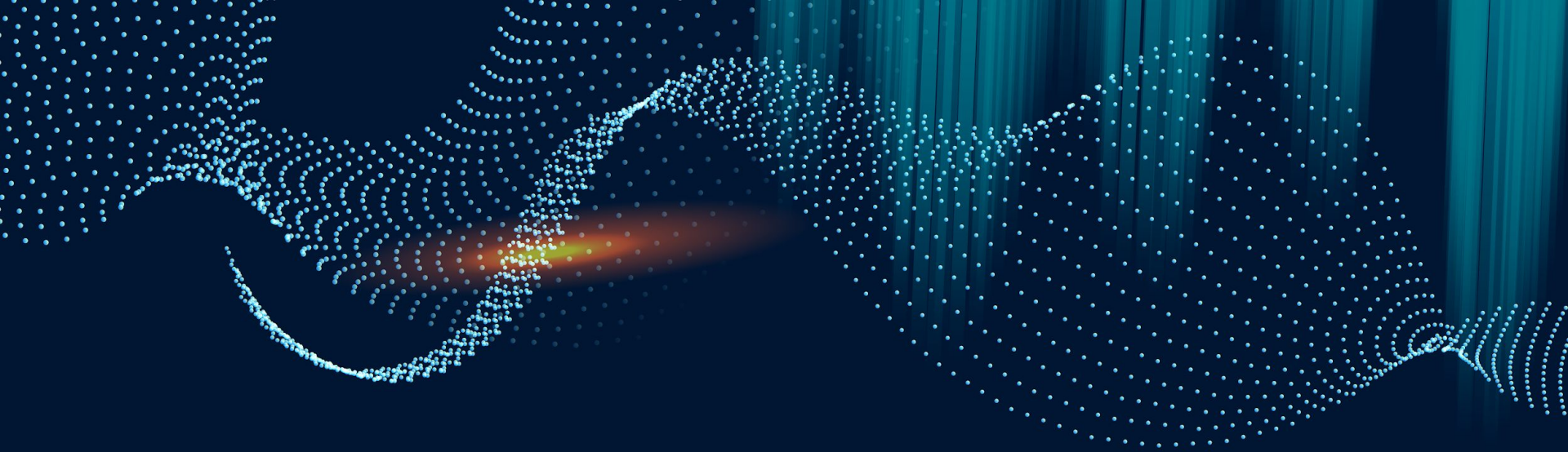
Hello Players, Welcome To

THE FALL 2021 HAND SOCIAL

EDUCATION

SPRING QUARTER RECAP

KAHOOT



01 | PODCASTS

Podcasts

- Recorded, edited, and released podcast episode 9
  - Spoke with Judy and Travis from Parkinson's Community Los Angeles (PCLA) about living with Parkinson's disease

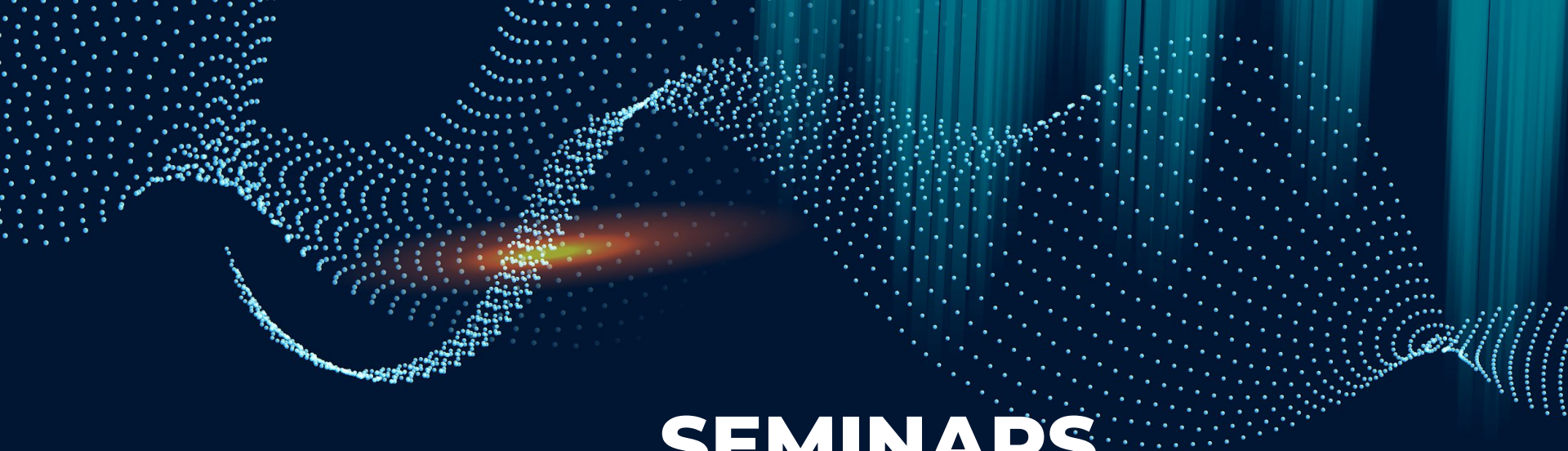
Check it out now if you haven't already!

Podcasts

- Working on the last episode for the year!

Look out for topics such as:

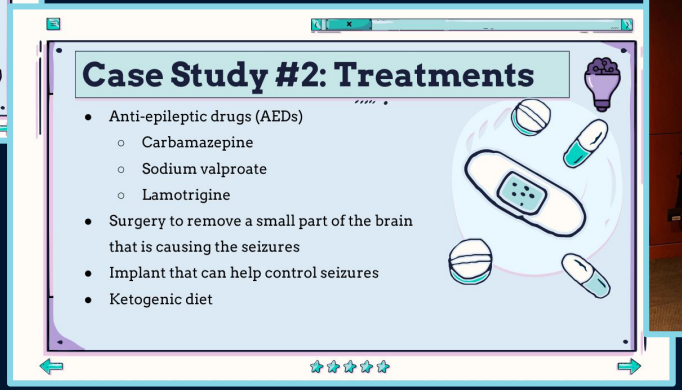
- The brain-gut connection
- The role of the immune system in neurodegenerative diseases
- Brain-machine interfaces
- Potential treatments for Alzheimer's



02 SEMINARS AND RESEARCH

Seminars and Research

- Created an interactive case studies presentation
  - Covered topics such as Multiple Sclerosis, Parkinson's Disease, and Epilepsy!

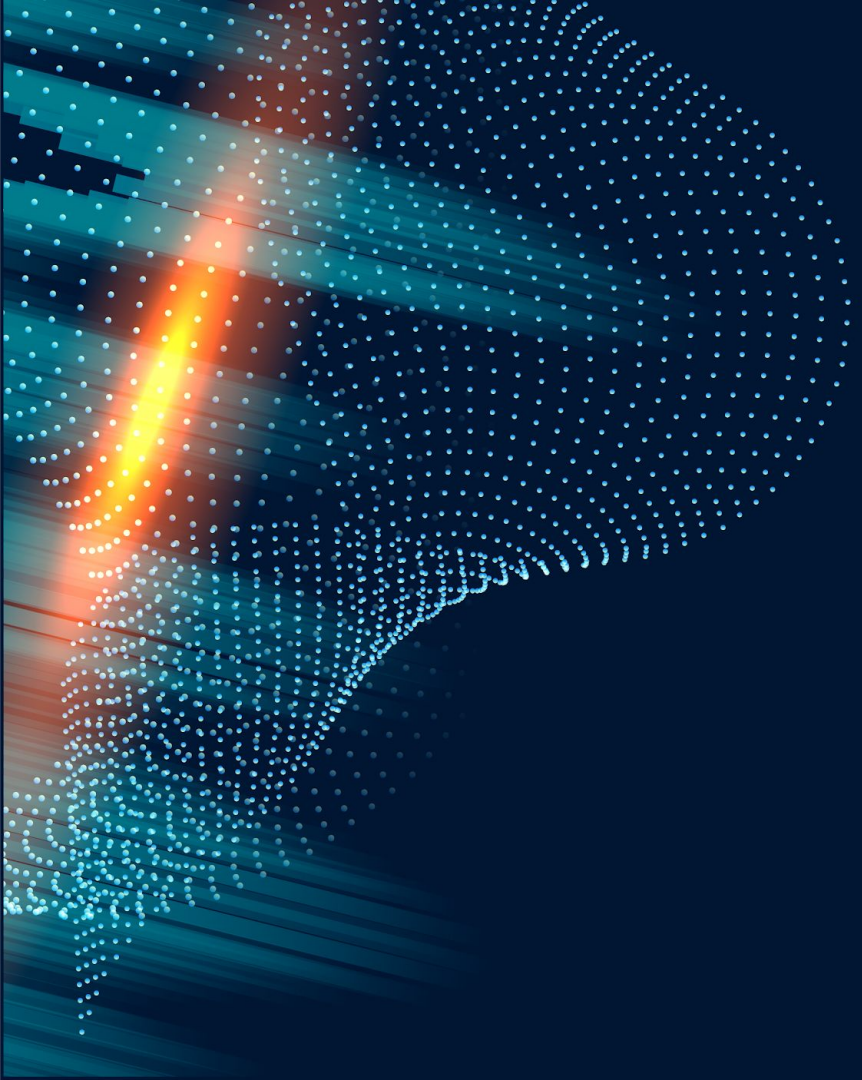


Our lovely S&R presenters!

Seminars and Research

- Working on a newsletter to close out the school year
  - Will feature Education Committee highlights from the past year!

Preview from Last Year's Recap



Other Projects!

HAND Book

- Collaborative Education Committee Project
- Provides insight into critical neurological terminology
  - Ex. Neurons, Action Potential, Alzheimer's Disease
- Currently scripting sections
  - Stay tuned for the release!

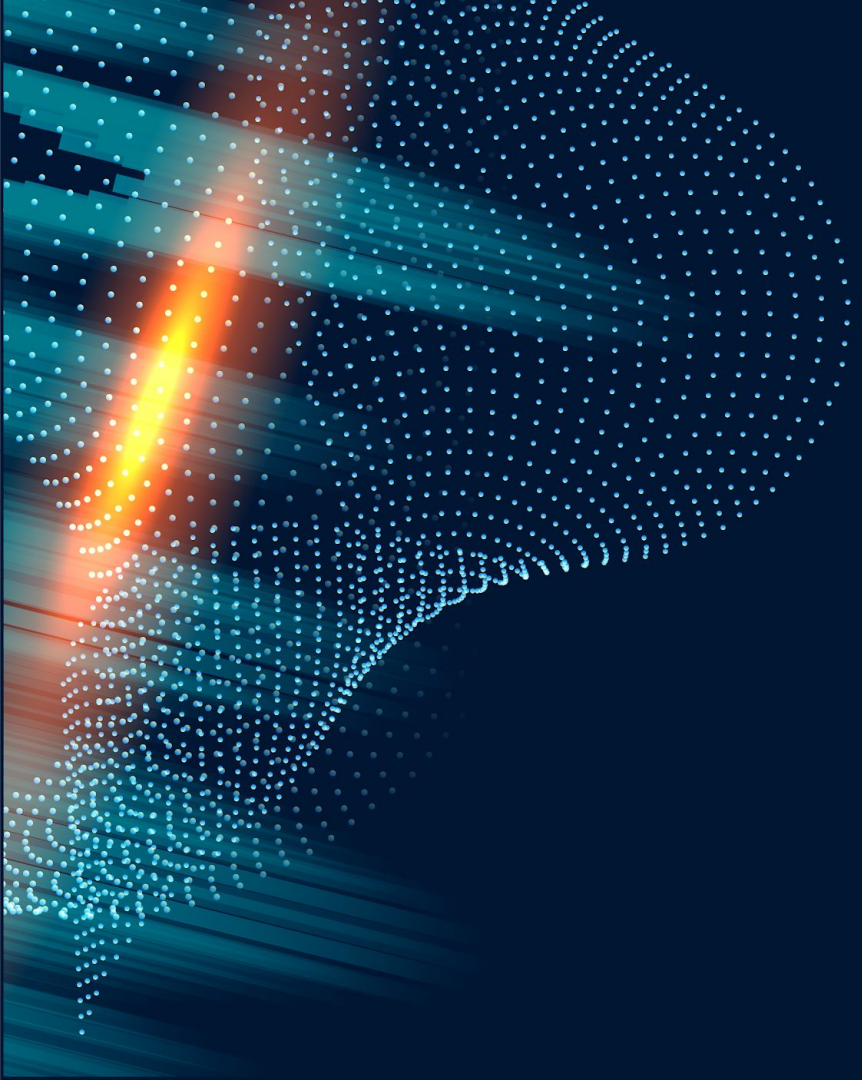
Section 1: Basics of Neuroscience and Neuroanatomy and Imaging Technology:
Section 1 Research Document || Section 1 Written Section

- Vocabulary - done
  - Neuron, Synapse, Action Potential
  - Neurotransmitter
    - Dopamine
    - Serotonin
    - Acetylcholine
    - GABA
    - Glutamate
- Neuroanatomy
  - *Section 2: Neurological/neurodegenerative Disorders*:
    Section 2 Research Document || Section 2 Written Section
  -
    - Overview
    - Biology
    - Onset
    - Symptoms
    - Diagnostic tests
    - Prognosis (timeline, progression of disease)
    - Brief summary of treatments used (mostly covered by section 3)
      - What they are (not the mechanics, how they work)

Section 3: Tech Solutions + Treatment:
Section 3 Research Document || Section 3 Written Section

- Types of Treatments Used (basic overview)
  - Pharmacological treatments, electrode stimulation, rehab
  - Which treatments are used
    - i.e. DBS, tCDS, carbidopa-levodopa, immunomodulators
  - Mechanisms - how it works specifically for the disease
  - Why specific treatments are used

- Dementias
  - Alzheimer's - **Shane**
  - Huntington's - **Shruti**
- Movement Disorders
  - Parkinson's - **Nyari**
  - Essential Tremor - **Francheska**
- Multiple sclerosis - **Rita**



Socials!

THIS QUARTER, EDUCATION HOSTED 2 SOCIALS.

WE HAVE PHOTO RECORDS OF NEITHER.
(but there was a lot of pizza involved)

So here’s a pic of our social from Fall quarter instead!

Outreach Committee 2021-2022 Recap

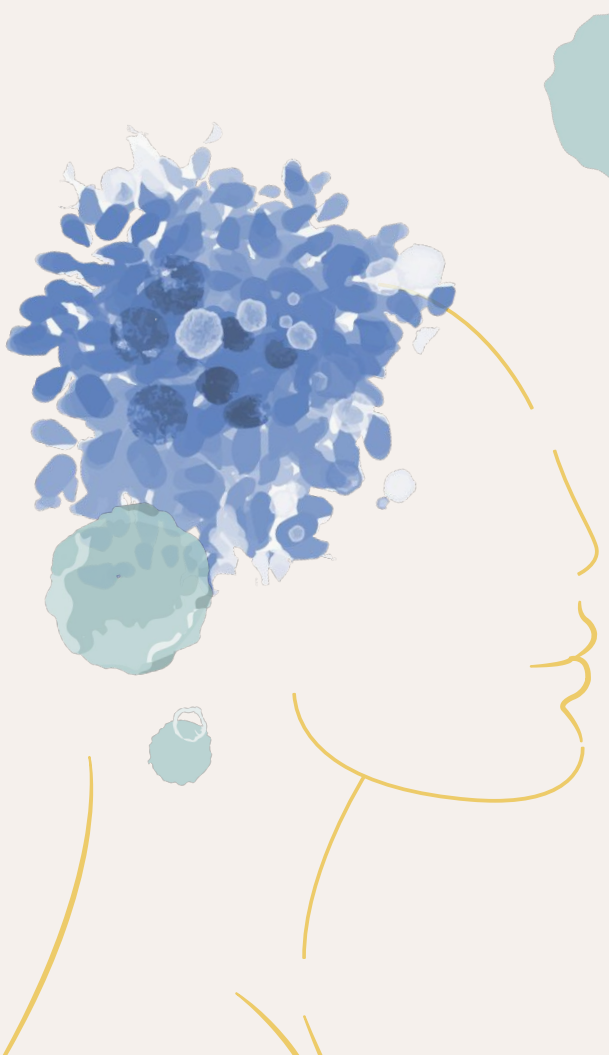
Our Goals

01 Community Outreach

02 Brain Awareness Week

03 Collaborations

04 Increasing Involvement

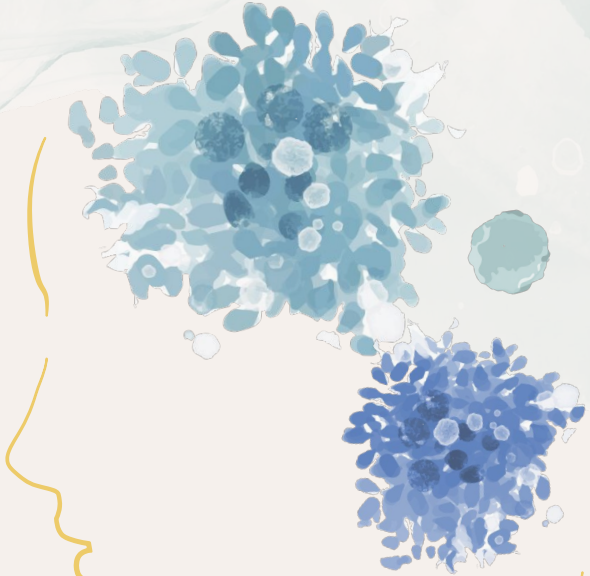


Introduction

This year HAND's Outreach Committee accomplished wonderful feats including numerous collaborations as well as completion of projects to increase awareness within our local and extended community.

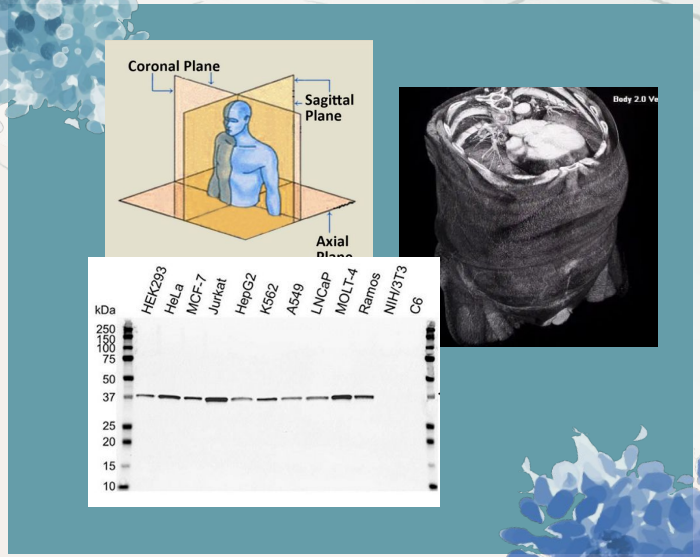
01

Fall Quarter

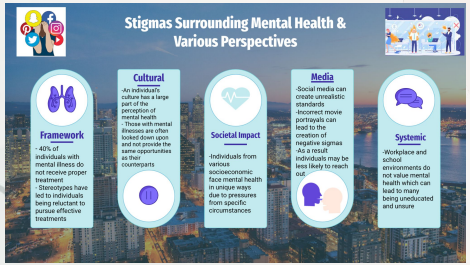


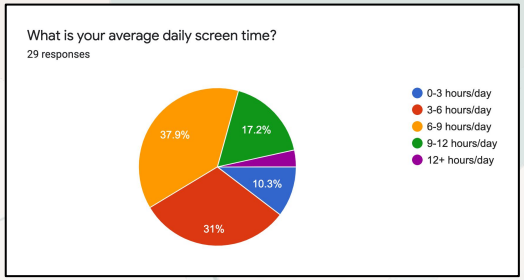
Virtual Lab Tours

- Discussed lab types such as Wet Lab versus Clinical Lab
- Learned about techniques such as Western Blot & Immunostaining
- Western Blot - Identify presence and size of target protein in sample - run gel and mark with primary and secondary antibodies
- Immunostaining - Identify location of protein within cell sample - use antibody conjugated fluorescent tag binds to bind to target protein



Mental Health General Meeting

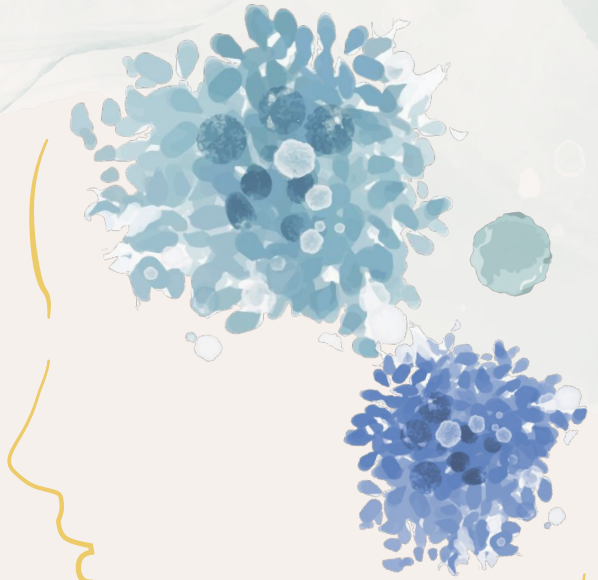




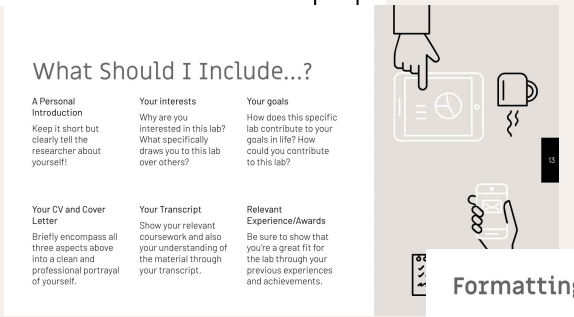
- Discussed Mental Health Stigmas
  - Examined anxiety & Depression
- Conducted a Mental Health Meditation Activity
- Surveyed members to better understand mental health gaps among college students

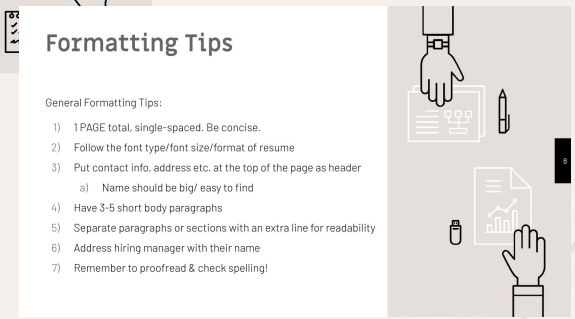
02

Winter Quarter



Resume/CV Workshop



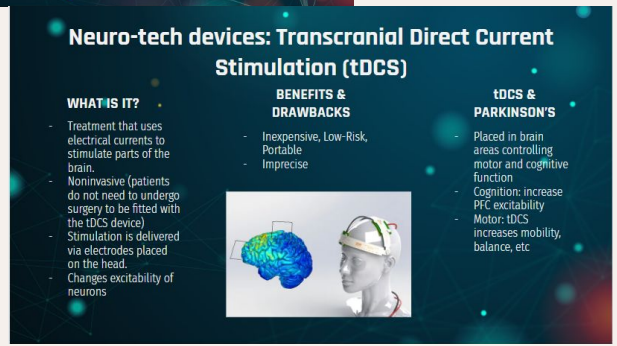


- Educated HAND members about resume and cover letter formatting
- Discussed professional applications

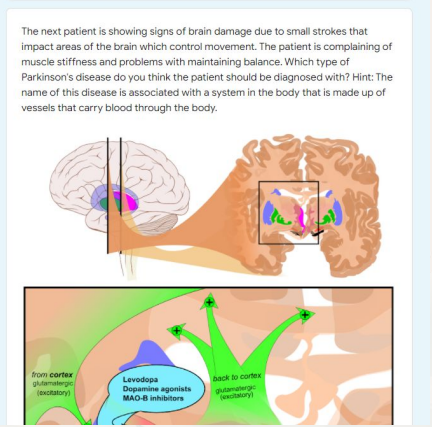
Increasing Community Involvement Presentation

- Provided members with insight on other organizations to join such as
  - Step-Up Tutoring
  - Brain Awareness Week
  - UCLA Alumni Mentor Program
  - Hearts over Hands
  - Mentorship Program at UCLA
  - Virtual Shadowing

City Lab Collaboration



- Presented to middle-school level students about the key aspects of neuro-technologies
- Showcased HAND's iStopShaking Device
- Hosted a virtual escape room to test student's knowledge and boast collaboration

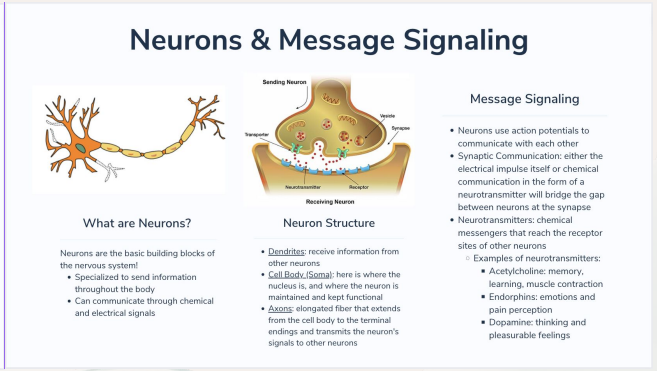


03

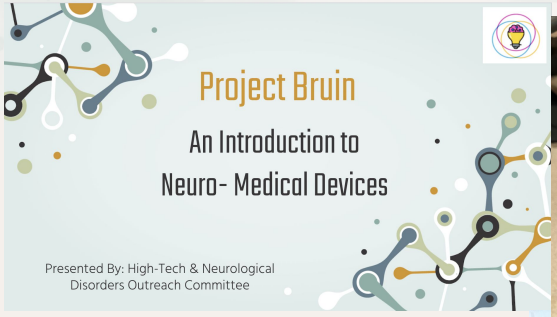
Spring Quarter

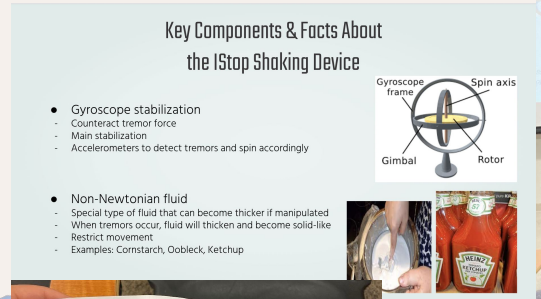
HAND Outreach Curriculum Booklet

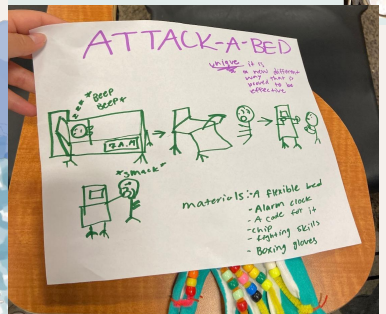
- Members of the Outreach Committee collaborated to create a booklet discussing various Neuroscience topics
- These ranged from types of neuroscience research, mental health, learning, memory, biotechnology professions, and more
- We are currently looking into clinics to distribute our booklet to



Project Bruin

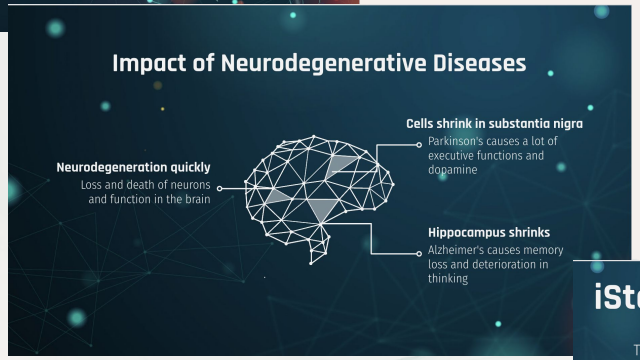


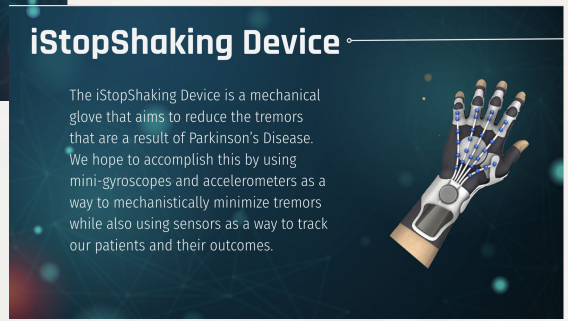




- Presented to students from K-12 about Neuro-medical Devices
- Students created their own model of the iStopShaking Device
- Students also worked in teams for a Shark-Tank activity to pitch a creative product

Interaxon Collab





- Will present to students this coming Saturday about Neurodegenerative Diseases and Neuro-Technology
- Students will get the chance to participate in hands-on activities such as modeling a neuron

Goals For Next Year

More Collabs!

Creating additional community resources

Successful Distribution of Our Outreach Booklet

Teaming up with Local Clinics

THANK YOU!

Cheers to exciting new things to come!

PR/M&R
YEAR RECAP
F21 - S22

PR/M&R's ACCOMPLISHMENT OVERVIEW

01

F21 & S22 Recruitment

Two recruitment cycles led - over 60 new members + new board members!

02

Graphic Design

Countless designs for GM & committee recaps, fundraisers, spotlights, podcasts

03

Fundraising

Organized and led multiple fundraisers

04

HAND x AIM

Expanding our knowledge of neurodivergence

01. RECRUITMENT

- **F21 Cycle**
  - 21 members recruited
- **S22 Cycle**
  - Flyering!
  - 40 members recruited
  - 8 new board members!

NEW PR/M&R DIRECTORS

ISABEL LOZITO
&
ALLISON PENG

02. GRAPHICS


POSTS
SAVED
TAGGED
Take a Sweet Break From Finals!
Neurological Disorders: What Are They?
Neurodivergence in College
Social Stigma and Stereotypes Faced by Neurodivergent People
HAND SOCIAL
UCLA club looks to address neurological diseases via innovation, awareness
HAND SPRING '22 RECRUITMENT
BRAIN AWARENESS WEEK
Brains with Common Misconceptions and Neurological Mental Disorder Awareness
BRAIN AWARENESS WEEK
The Impact of Brain Awareness Week on Our Global Community, and What Members and Viewers Can Do to Make an Impact
BRAIN AWARENESS WEEK
NEW PODCAST COLLABORATION
The HAND Podcast EP. 0
Winter General Meeting 7
HAND at UCLA
Neuroplasticity and Recovery


What is the Temporal Lobe?
Member Spotlight
MAX ORR
Winter General Meeting 6
HAND at UCLA
Presentation by Holly S: My Pre-Med Journey
What is the Occipital Lobe?
Winter General Meeting 5
HAND at UCLA
Presentation from Dr. Bitan
What is the Parietal Lobe?
HAND Valentine Grams
Winter General Meeting 4
HAND at UCLA
Neuro Disorders and Brain Stimulation
What is the Frontal Lobe?
Member Spotlight
ISABEL LOZITO
Winter General Meeting 2
HAND at UCLA
The Bitan Lab

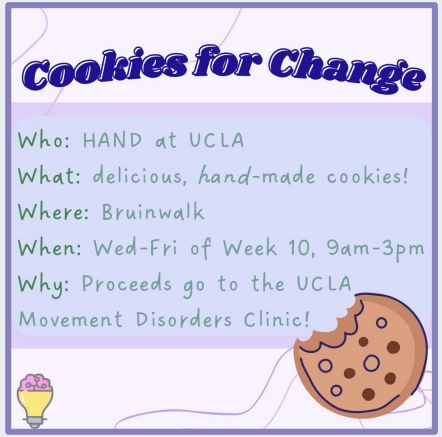

FALL
QUARTER
HAND
UCLA
2021
RECAP
What is Mirroneurons?
HAND SOCIAL
7th Seminar Recap
HAND
FALL GENERAL MEETING 7
What is a Gyral Cell
Cookies for Change
6th Seminar Recap
HAND
FALL GENERAL MEETING 6
Pharmacy Grogo Case Study
Member Spotlight:
Sasha Anand
5th Seminar Recap
HAND
FALL GENERAL MEETING 5


What is a Motor Neuron?
Member Spotlight:
Anna Tong
4th Seminar Recap
HAND
FALL GENERAL MEETING 4
What is a Sensory Neuron?
NEUROSCIENCE OF ADDICTION
3rd Seminar Recap
HAND
FALL GENERAL MEETING 3
What is an Action Potential?
NEW PODCAST
1st & 2nd Seminar Recap
HAND
FALL GENERAL MEETING 1 & 2
What is a Neuron?
HAND
Membership Applications
HAND INFO SESSIONS
HAND@UCLA

03. FUNDRAISING

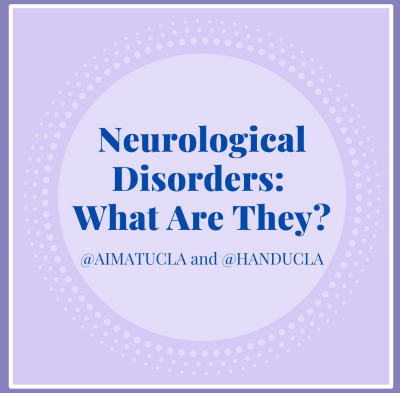
3 total fundraisers

- Cookies for Change
- HAND Valentine Grams
- Pie a HAND member/Cookies
  - This Thursday & Friday (1-5pm)



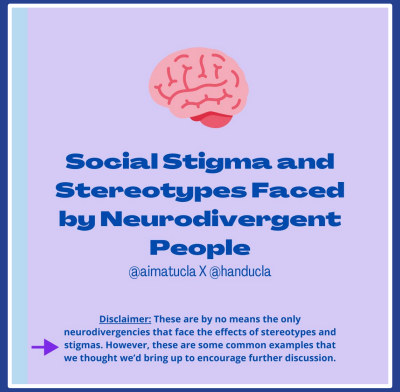
04. HAND x AIM Collaboration

Neurological Disorders: What are They?



Neurodivergence in College

Social Stigmas and Stereotypes




Neurodiversity in Healthcare
WEEK 5 GENERAL MEETING
HAND
X
AIM at UCLA

THANK YOU
PR TEAM

2021-2022 HAND Innovation Team ReCap

Directors: Jane | Daniel | Alex | Max | Anu

Goals!

Data Analysis

- Output data from an accelerometer in 3 directions
  - Isolate each direction, store the data, and have a standard of comparison for future patient-related measurements

Data Output

- Create a custom gyroscope that produces some force in 1 direction

Challenges

Data Analysis

- Setting up a raspberry pi without a desktop monitor & reliable wifi connection
- Becoming familiar with the materials bought from last year

Data Output

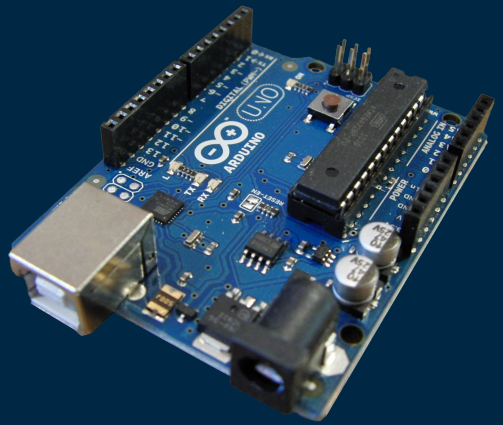
- Brushless motors bought when we needed non-brushless motors
- General supply chain & material problems

Data Analysis Achievements

For raspberrypi:

- Headless set up using hotspot
- Raspberrypi workspace

For arduino:



- Set up a successful arduino-accelerometer connection that measures data & outputs to live-graph
- Set up a github repository for the coding we will be doing
- SSH & write data into SD card for storage
- Familiarized ourselves w/ materials (how accelerometer outputs data, how raspberry pi & arduinos connect, etc)

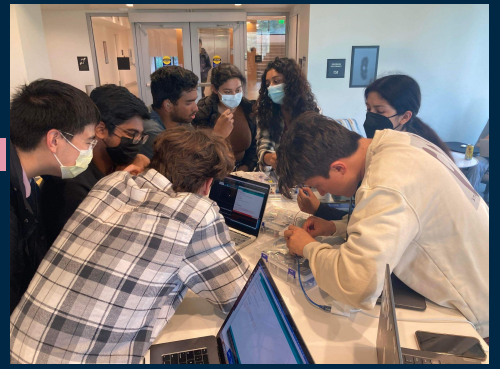
Data Analysis Process

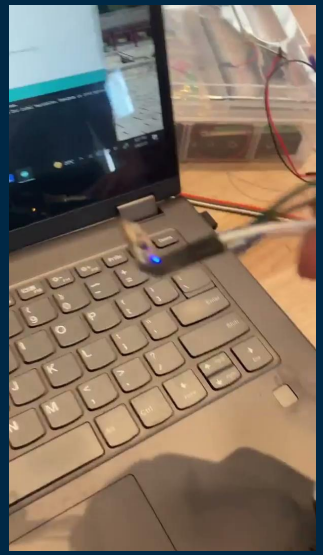
Clear & Open Communication

- Improved communication within directors & team members at the beginning of spring quarter
- Had a conversation with members on expectations
  - Will continue these open discussions at the beginning & end of each quarter to set meeting guidelines and structure

Teamwork & Collaboration

- Working in-person w/ small number of individuals per device → more hands-on for everyone
- Social!

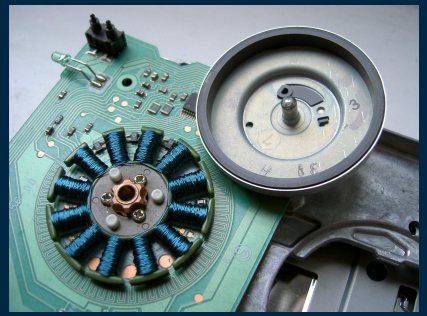




Data Output Achievements

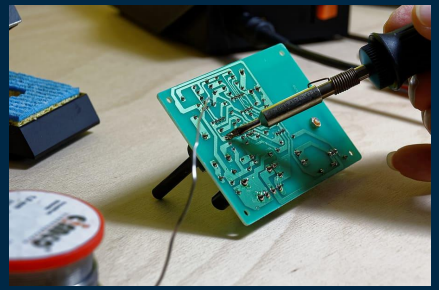
Finalized Brushless Motors

- Finalized the motors that we would utilizing for our gyroscopes



Sourced Supplementary Material

- Ordered motherboards and other hardware needed to run the motors via proprietary software
- Began to work on skills for hardware functionality and design
  - 3D modeling using Fusion 360
  - Soldering skills through the Makerspace



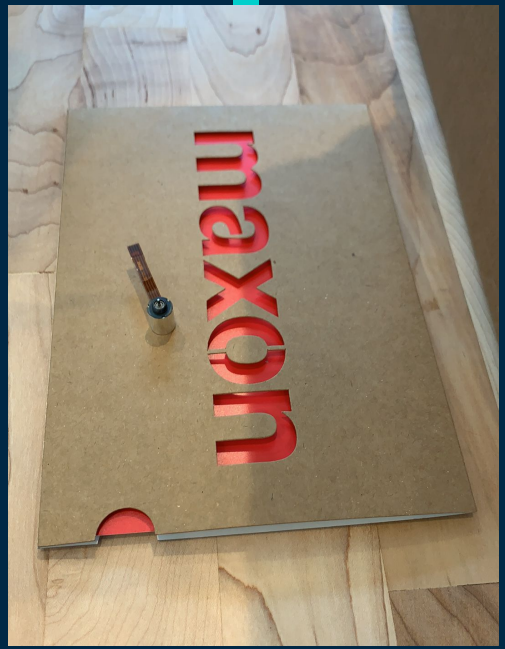
Data Output Process

Trial and Error

- Due to hardware compatibility issues, we had to order and reorder many parts after testing for compatibility
- Many of our initial ideas had to be varied

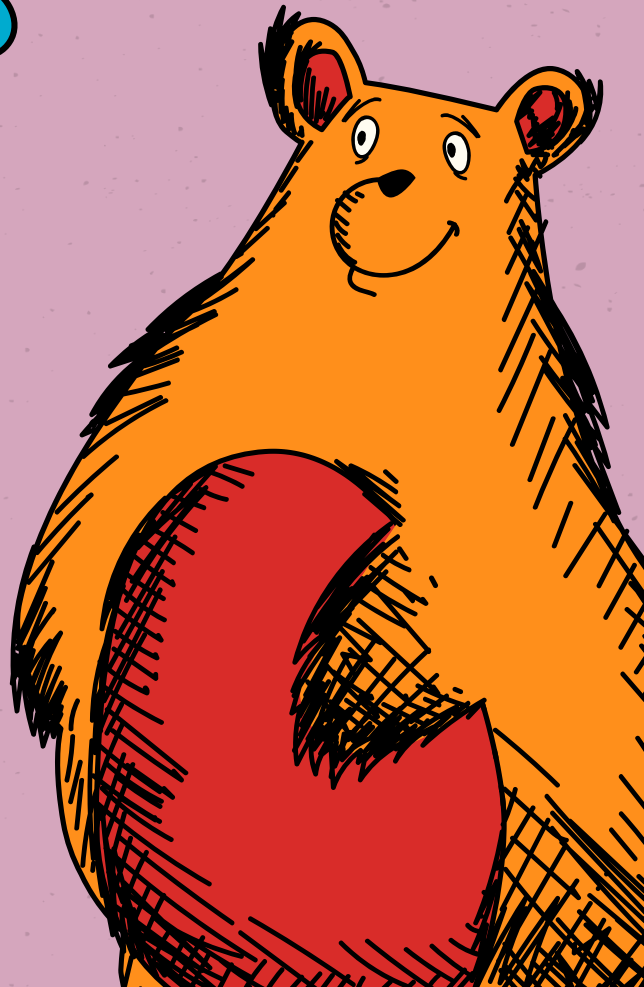
Flexibility and Collaboration

- Due to scheduling constraints of our team, we worked together alongside members and directors to finalize meeting times that work with everyone
- Aiming to have more cross-collaboration between the IT committees



Thank you to our wonderful members for making this all happen! <3

Senior Send-Offs



Aarti Jain

- **Major:** Neuroscience
- **Position:** Education Director, IVP
- **Post-Grad:** Medical School at New York Medical College
- **Favorite HAND Memory:** Socials with the Education Committee!

Jane Burgan

- **Major:** Neuroscience
- **Position:** IT Director
- **Post-Grad:** Medical School at Stony Brook SOM
- **Favorite HAND Memory:** Going to an IT dinner/social and just getting to meet everyone in person after the year of being online

- “I love HAND so much and everyone in it, going to miss everyone:) and can’t wait to see what direction the club makes and what all the members accomplish”

Crystal Zhou

- **Major:** Psychobiology
- **Position:** Social Director
- **Post-Grad:** Medical School
- **Favorite HAND Memory:** Meeting everyone in-person at our first social!

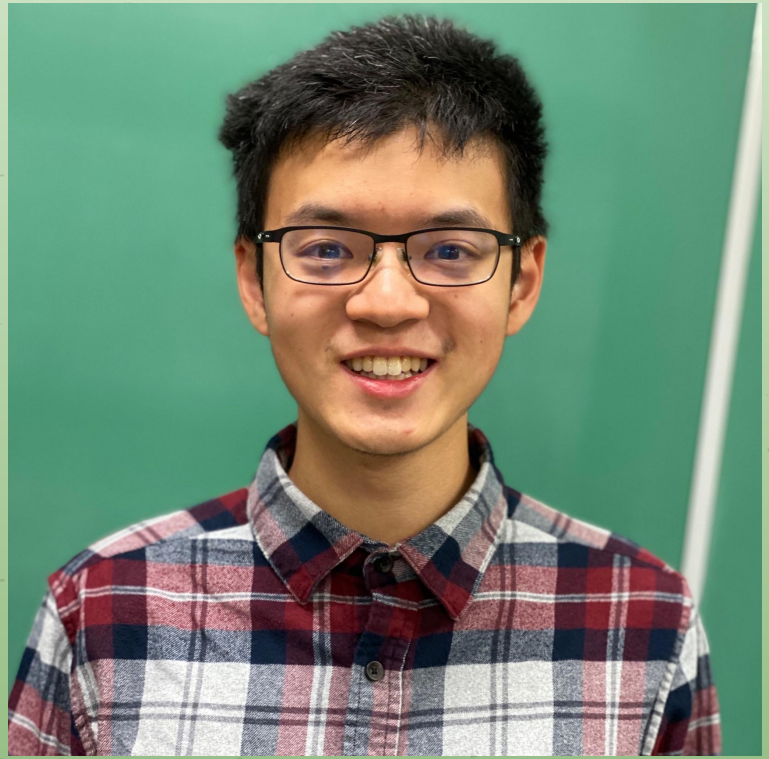
- “Thank you for such a wonderful experience, truly grateful for all the wonderful connections I’ve made here. Wishing the next gen members best of luck - hope to see istopshaking in the market one day soon :)”

Sravya Sankar

- **Major:** Psychobiology
- **Position:** Shadowing Director
- **Post-Grad:** Gap Year + Medical School
- **Favorite HAND Memory:** Presenting to middle and high-school student in the early days of HAND in Outreach Committee! So exciting to see younger students interested in the same things that we are and so engaged in learning!

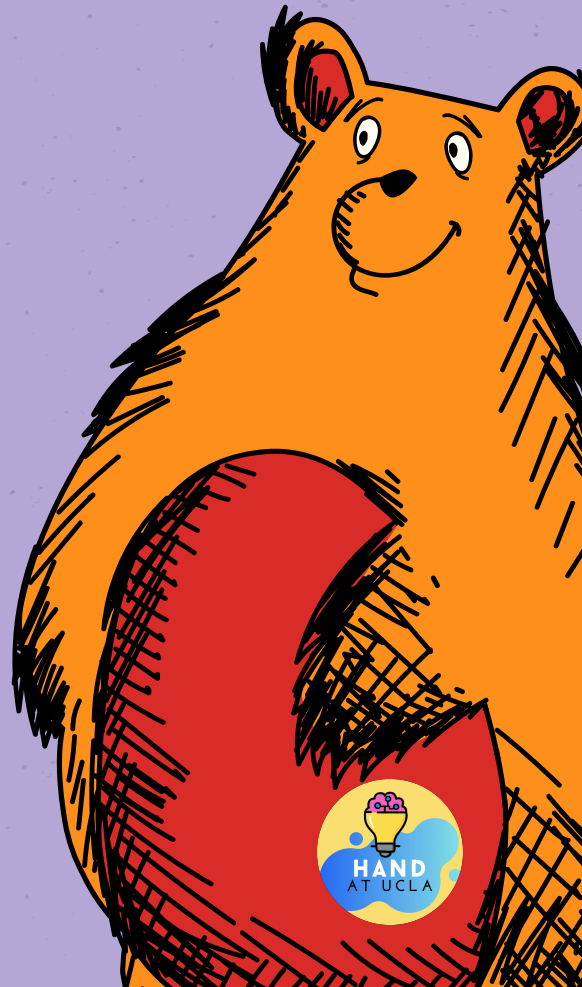
- “Love HAND and all that I’ve been able to experience and people I’ve been able to meet by being part of it! <3”

Loren Chang



- **Major:** MIMG
- **Position:** Education Podcasts Squad
- **Post-Grad:** 2-year post-bacc fellowship at the NIH; Graduate school for immunology or a similar field
- **Favorite HAND Memory:** Zoom meetings for the podcast squad last year were always entertaining. I also liked the socials; I enjoyed being able to interact with fellow club members outside of meetings.


You're off to great places,
Today is your day!
Your mountain is waiting,
So... get on your way!
Dr. Seuss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