

# BrainY Bunch Journal Club Open House

Coordinators:

**Ben Silver**

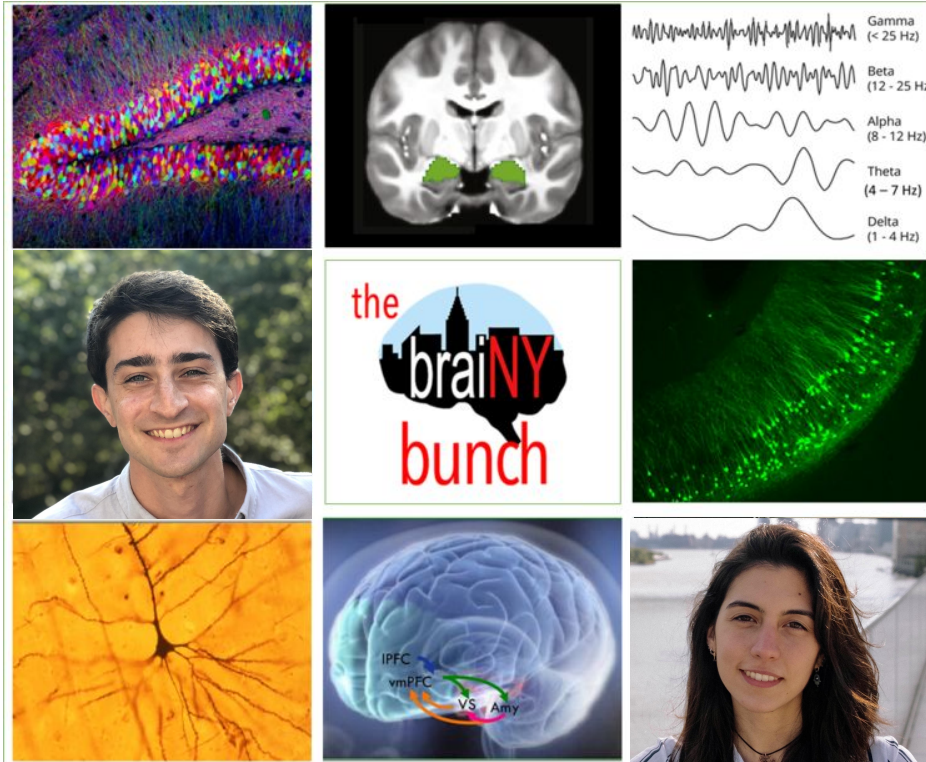
**[bms2202@columbia.edu](mailto:bms2202@columbia.edu)**

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**[correa09@nyu.edu](mailto:correa09@nyu.edu)**



# What is the BrainY Bunch?



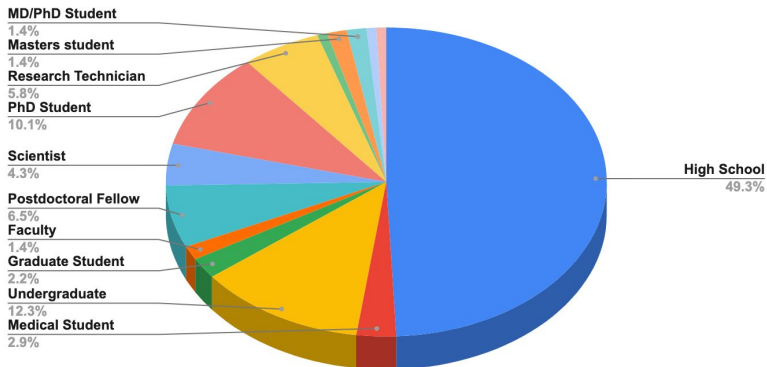
- Mentored journal club for high school and early undergraduate students
- Initiated in August, 2020 during COVID
- 42 student presenters to date!
- Monthly on the first Sunday of each month, 12-1pm EST on Zoom
- Online cache of presentation slides for future student use:  
<https://www.comebebrainy.com/brainy-bunch>

New Organizers: Ben & Ariadna!

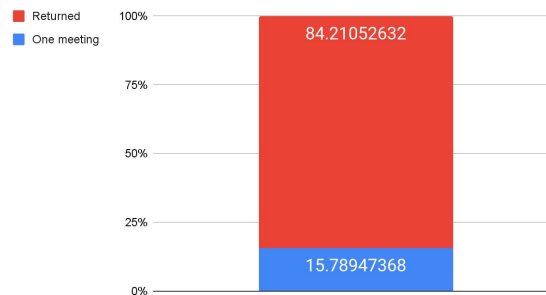
# BraiNY Bunch is for everyone!



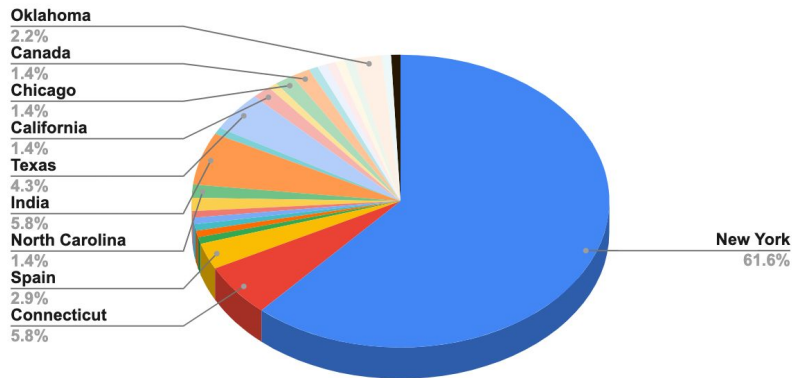
## Academic Stage



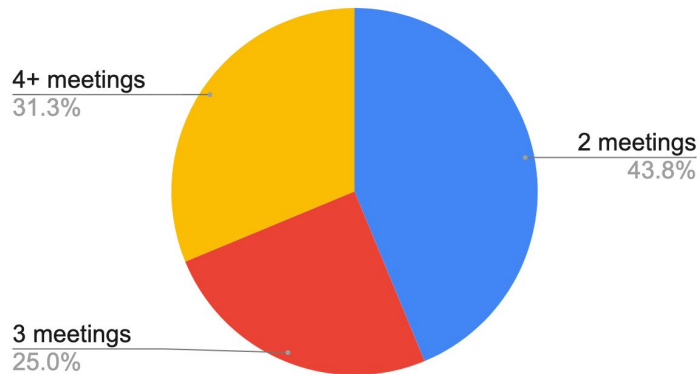
84% of members returned for at least one more meeting



## Geotag



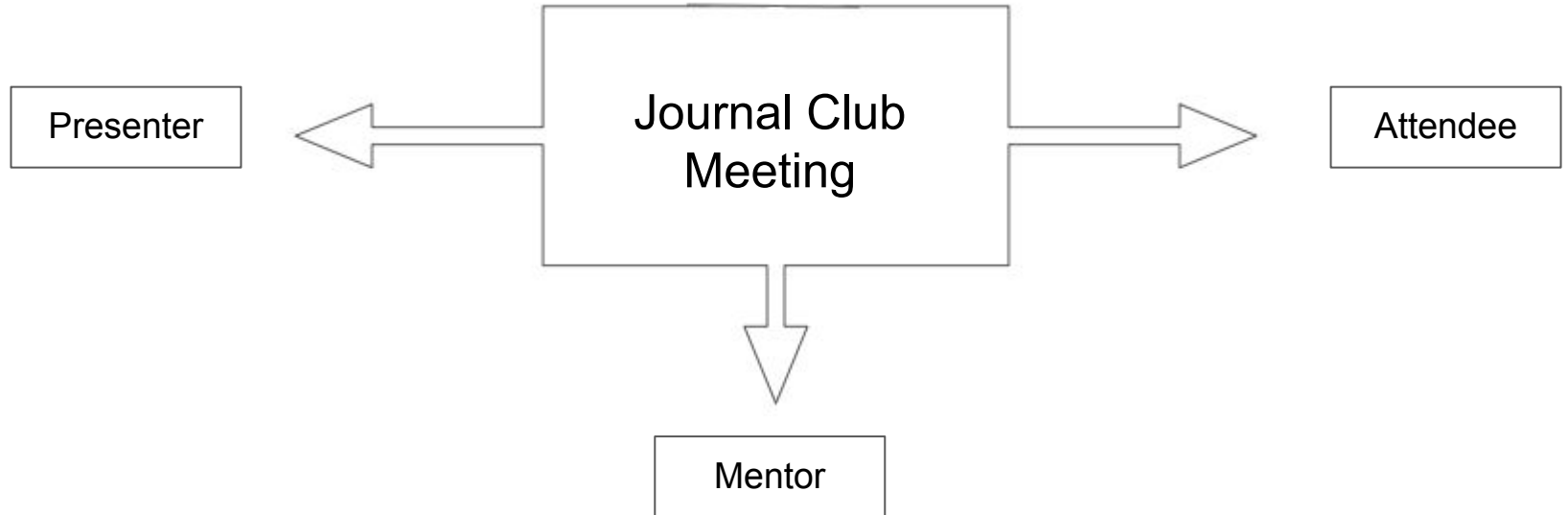
## Recurring Attendance





Thank you to our previous BraiNY Bunch  
mentors, coordinators & presenters!

# What's my role in BrainY Bunch?

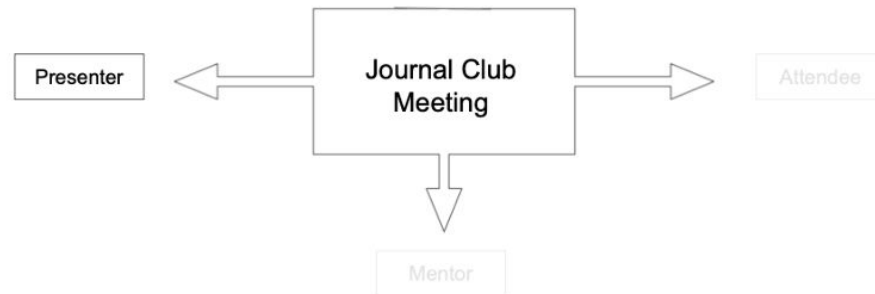


# Presenter

Over the 4-6 weeks leading up to the journal club, Presenters are expected to:

- 1) Work with another student and a mentor to identify a paper to present
- 2) Work with the co-presenter and mentor to craft the journal club presentation
- 3) Give the journal club presentation over Zoom
- 4) Virtually attend a lab meeting (date agreed upon by mentor and presenters)

Presenters are selected on a first-come, first-served basis.

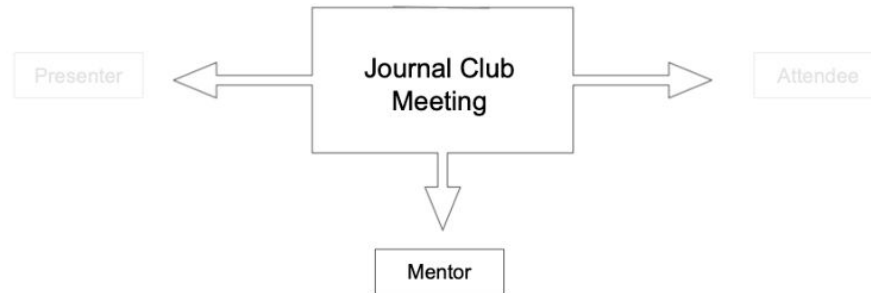


# Mentor

Over the 4-6 weeks leading up to the journal club, Mentors are expected to:

- 1) Work with two students to identify a paper to present
- 2) Work with students on journal club presentation (templates available upon request)
- 3) Attend their students' journal club presentation
- 4) Invite the students to virtually sit-in on a lab meeting (date agreed upon by mentors and mentees)

Mentors are selected on a first-come, first-served basis.

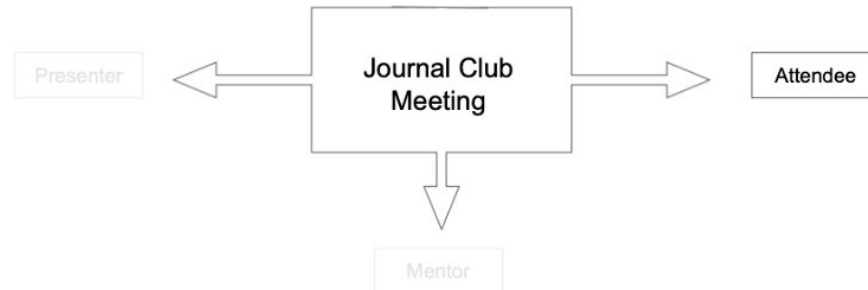


# Attendee

Come to the BrainY Bunch on the day of the presentations ready to learn and participate! :)

We encourage attendees to read the paper in advance and think of questions to ask during the discussion portion of the meeting

Attendees can receive certificates of attendance upon request (contact [comebebrainy.nyc@gmail.com](mailto:comebebrainy.nyc@gmail.com))





# How to find a paper - literature searching on the web

- <https://pubmed.ncbi.nlm.nih.gov/>
- <https://www.sciencedirect.com/>
- <https://scholar.google.com/>
  - Check the Library Links under the Settings toolbar



Google Scholar

Articles  Case law

Search results  
Languages  
Library links  
Account  
Button

Show library access links for (choose up to five libraries):



e.g., *Harvard*

- Open WorldCat - Library Search
- University of California Berkeley - UC-eLinks
- UNIVERSITY OF CALIFORNIA BERKELEY - ProQuest Fulltext
- Columbia University in the City of New York - Columbia e-link >>

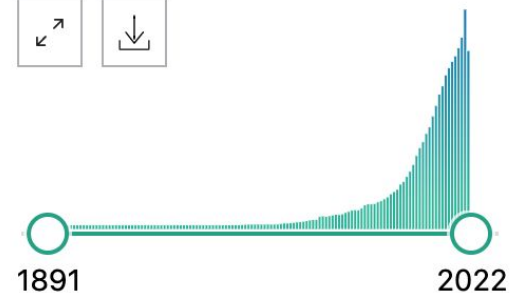
# Refining your search

- Be specific about your topic of interest
- Include the species (ex. humans vs. rodents)
  - You may consider adding age or sex
- Include a year range
- Search by author
- Look at metrics - # of citations, etc.
- Look at the article keywords

PubMed.gov

MY NCBI FILTERS 

RESULTS BY YEAR



# How to read a scientific article

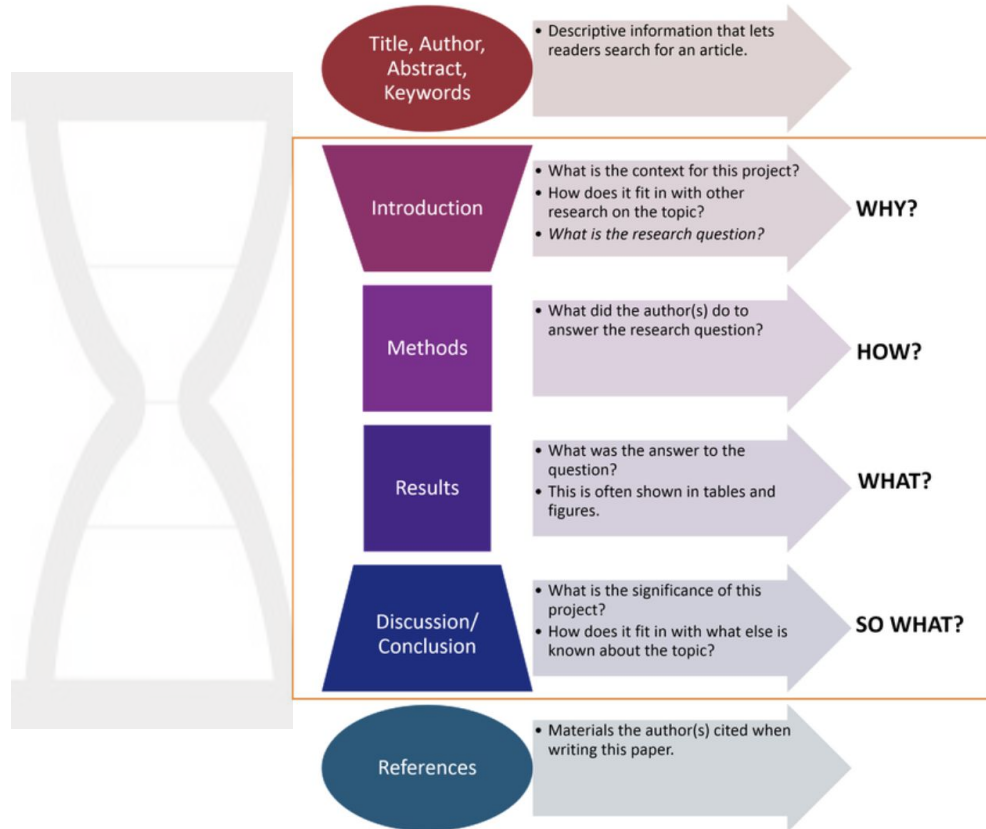
## Passive reading vs **active reading**

- Don't need to follow the order. Skim the article to understand general structure and flip around to find the information you need
- Digest and reflect on what the authors are saying. What are they trying to teach us?
- Generate questions before, during and after the reading
- Take NOTES!

## Useful resources:

- Office of Intramural Training & Education: [30 min video](#)
- [Journal club tips](#)
- [Note taking template](#)

# Hourglass structure of a scientific article



Tip: Take notes while you read!  
Some things to pay attention to and write down include:

- Key words
- General subject
- Specific subject
- Context/Important background
- Hypothesis
- Important methods
- Results
- Summary of key points
- Significance

# Title, journal, author list

- Title: scientific articles have LONG titles. Reading and understanding them can be useful.
- Journal: Get to know the audience. Do a quick search on the journal. The authors wrote the article with their journal audience in mind.
- Author list: Get to know the authors. Have they published on this topic before?



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## Hormones and Behavior

Official Journal of the [Society for Behavioral Neuroendocrinology](#)

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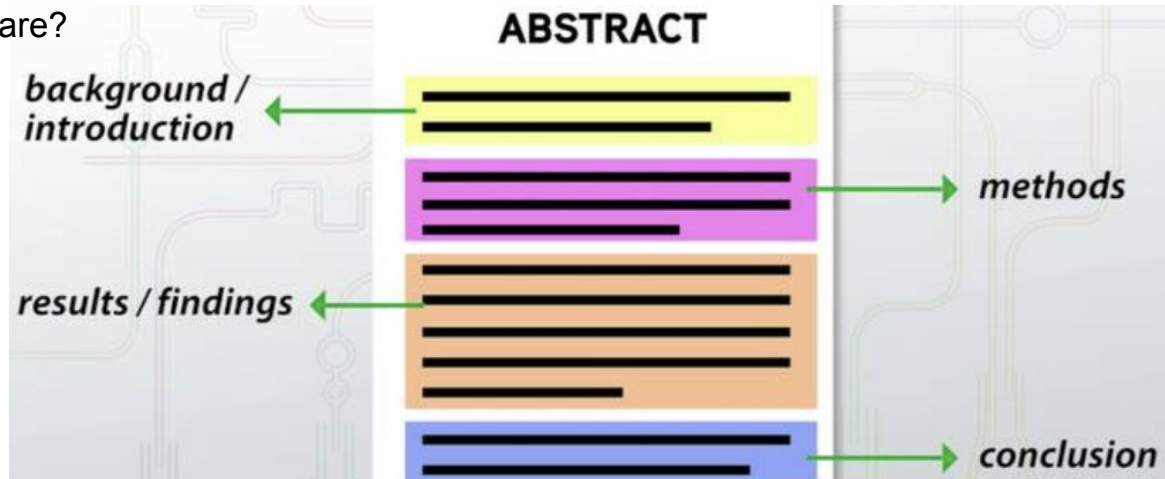


C.M. McCormick, PhD

*Hormones and Behavior* publishes original research articles, reviews, commentaries, perspectives and special issues concerning hormone-brain-behavior relationships, broadly defined. The journal welcomes studies conducted on species ranging from invertebrates to mammals, including studies of humans. Also included is work addressing neuroendocrine-behavior relationships, neuroendocrine and endocrine mechanisms controlling the development or adult expression of behavior as well as studies of the environmental control and evolutionary significance of hormone-brain-behavior relationships. Studies with an emphasis on molecular, neuroanatomical, or non-neural systems are also welcome when relevant to endocrine signaling and behavior.

# Abstract

- Why: Purpose or rationale of the study.
  - What is the general question they are trying to answer?
- How: Methodology.
  - How did they answer the question?
- What: Results.
  - What did they find?
- So what: Conclusion
  - What does it mean? Why do we care?



# Introduction

Two purposes:

- 1) Creating readers' interest in the subject matter
- 2) Providing the reader with enough background information to understand the question.

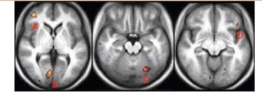


Clara Busse & Ella August, 2020

## Example presentations:

### IMPORTANT TERMS

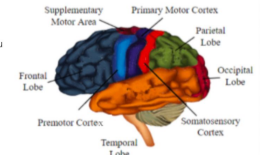
**Voxel-based morphometry (VBM)** is a fully automatic technique for computational analysis differences in local gray matter volume



**Primary motor** provides the most important signal for the production of skilled movements

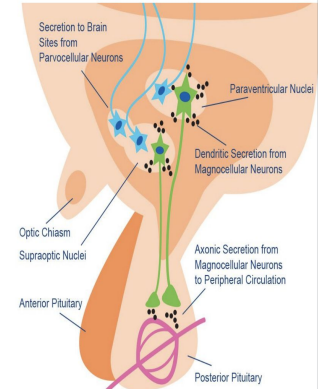
**Somatosensory areas** receives and processes the sensory information from the entire body

**Premotor areas** prepares the body's muscles for the exact movements it will make; helps you control your movements



## Background

- Oxytocin is a neuropeptide implicated in social behaviour and bonding but also has physiological functions
- OT is produced in the hypothalamus (paraventricular and supraoptic nuclei)
- Implicated in psychopathologies such as Autism Spectrum Disorders and Anorexia Nervosa



# Methods

- What experiments were done
  - Will be organized by type of technique used
- How were the experiments done
  - Details on techniques used. Should be enough for someone to replicate the experiment.

## Tip:

- Don't get lost in the details.
- Use the methods to refer back to when you have a specific question about an experiment
  - How was the behavior scored?
  - How old are the subjects / animals?

## Example presentations:

### Post-stimulation Social Behavior Assays

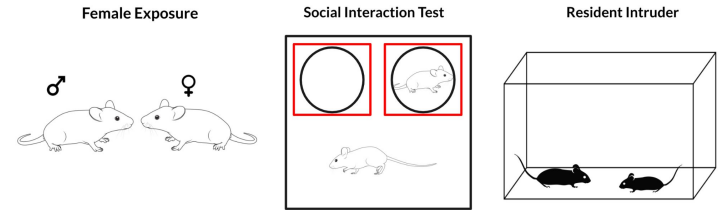
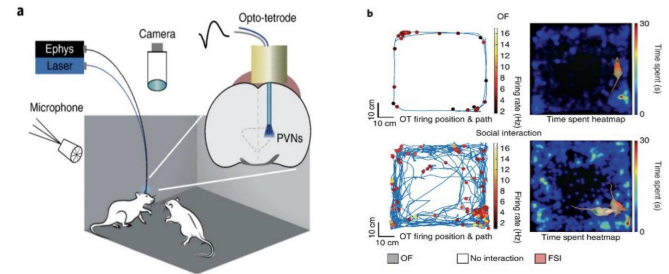


Figure 1- FSI and optogenetic stimulation to study OT





# Figures and results

## Results:

- Statements of what was found, using statistical language

## Figures:

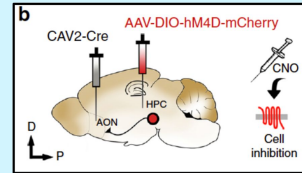
- Graphical representation of results

## Tip:

- Read these two sections side by side.
- Pay attention to the figure legends, titles, axis labels. You'll find a LOT of information in each figure but it's there for a reason.
- Read critically! Do their results make sense? Do they align with the authors' hypotheses?

## Example presentations:

HPC to AON input is required to determine the location of an odor



$$\text{Discrimination Ratio} = \frac{(\text{time})_{\text{novel}} - (\text{time})_{\text{familiar}}}{\text{total time}}$$

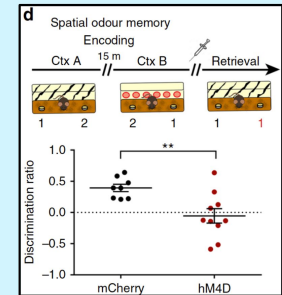


Fig.4- Effect of CNO on parvOT

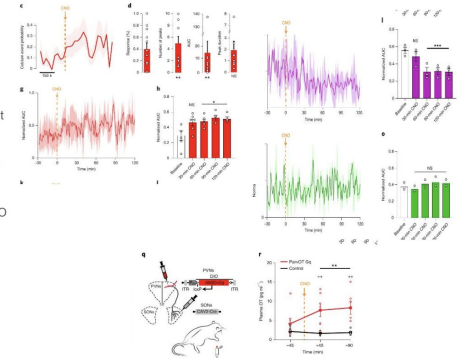
Application of CNO increased amount of calcium transients

OT neurons more reactive after CNO application

OT neurons less responsive with CNO inhibition

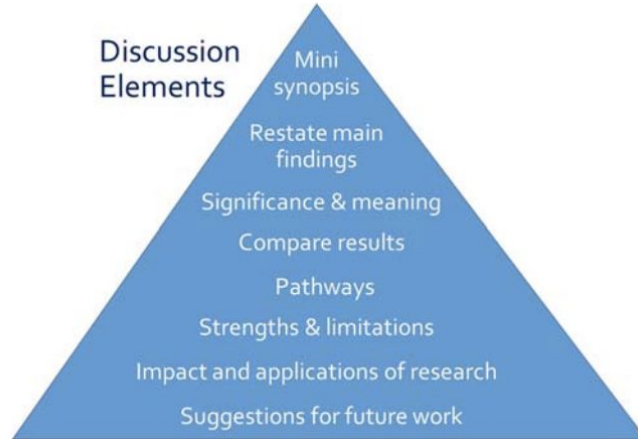
No noticeable change in control animals upon CNO injection

OT levels rose after CNO application in plasma



# Discussion

- Framing of the results. Same stuff, but now it's placed in the context of the broader field
- Usually provides an answer to the question posed in the introduction
- Explains how the results support the conclusion



Clara Busse & Ella August, 2020

## Example presentations:

This study found that sucrose leads to the release of dopamine and opioids that lowers the availability of receptors available in certain areas of the brain

Foods high in sucrose influence brain reward circuitry in ways similar to when addictive drugs are consumed

- ❑ Chronic cocaine use has been found to inhibit Dopamine signaling
- ❑ Dopamine D1 and D2/3 receptor levels are altered by nicotine in pig brain
- ❑ Downregulation of D2/3 receptors in the brains of people with cocaine addiction

# Questions to ask yourself as you read

- Have I taken the time to understand all the terminology? Do I need to understand all the terminology?
- Do I need to go back and read a cited article that would help me understand this work better?
- What specific problem does the research address? Why is it important?
- What are the specific findings? Can I summarize them?
- Are the findings supported by evidence?
- What are additional experiments that could be done to answer any remaining questions?



**We hope to see you soon!**

**Links:**

**Google form:** <https://bit.ly/brainy-bunch-2022>

**Zoom meeting:**

**Contact us with questions!**

**General BraiNY:** [comebebrainy.nyc@gmail.com](mailto:comebebrainy.nyc@gmail.com)

**Ben:** [bms2202@columbia.edu](mailto:bms2202@columbia.edu)

**Ariadna:** [correa09@nyu.edu](mailto:correa09@nyu.edu)

**Open House October 9th, 2022  
12-1PM EST**



BraiNY Bunch Presents:

# STUDENT LED JOURNAL CLUB

FIRST SUNDAY\*\* OF EACH MONTH 12PM-1PM EST ON  
ZOOM

Upcoming dates:

November 6th, 2022

December 4th, 2022

**January 8th, 2023 \*\* (2nd Sunday)**

February 5th, 2023

March 5th, 2023

April 2nd, 2023

May 7th, 2023

June 4th, 2023

**July 9th, 2023 \*\* (2nd Sunday)**

August 6th, 2023



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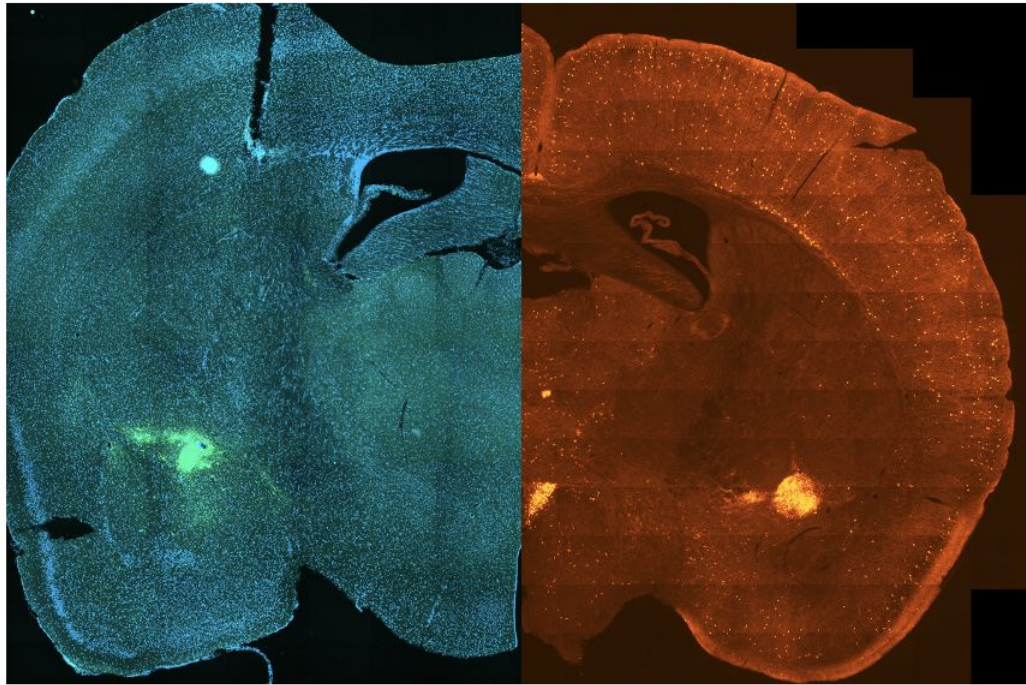


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Interested in joining us? Sign up here:

<https://bit.ly/brainy-bunch-2022>



Questions?