



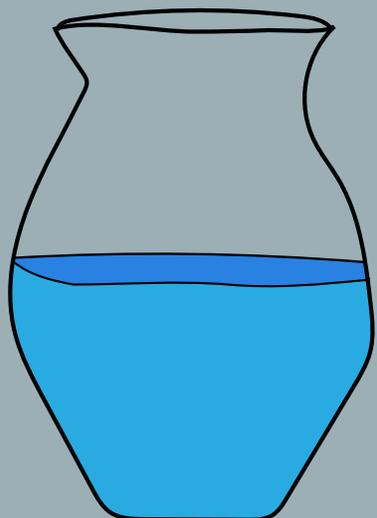
## VASE WEEK 2

Questions from last week

How to dive deeply into a scientific article

Mini-journal club

Finding research articles for yourself



Virtual  
Active  
Science  
Engagement

## “RULES”

- Videos on (if possible) mute when not speaking.
  - Unmuting yourself is a nice way to show that you want to speak.
- Be kind to others and yourselves
- Listen to others (I take notes because it helps me listen / reflect)
- Share your own experiences, not the experiences of others
- Ask questions / be engaged
  - There are NO dumb questions.
- Lessons leave, specifics stay

# INTRODUCTIONS – NEW FOLKS

## New folks:

- Name & pronouns
- School you're at / will be at
- Major or field of interest
  - If you're working on a project this summer, feel free to say a sentence about that!
- Something you want people to know about you
- What you'd like to be better at (personally or professionally)
- A skill you currently have

## “Old” folks:

- Name & pronouns
- School you're at / will be at
- Something you've learned from VASE week I

# HUMAN HELLO!

- I'm going to put you into a breakout room for just a few minutes (2-3) to say hello to another person.
- Let this be a time to just chat with another human about whatever you want
- Research interests, the weather, TV shows, something you saw on a walk, something you've baked/cooked/eaten, whatever!

# QUESTIONS FROM LAST WEEK

Which websites are best for finding papers?

- Google Scholar is pretty exhaustive.
- NCBI/PubMed might be more medically focused.
- Your school's library for all fields

First 3-10 minutes of reading a paper:

- Read the abstract. Look for keywords.
- Skim the intro, look for keywords
- Look at figures, see what sort of data they've collected (if no data = review!)

How can we network?  
– we will have more opportunities for this!

- LinkedIn
- Twitter (@oomollypop)
- Slack Channels
- Online conferences (+ask questions!)

# MORE QUESTIONS

How can we make sure we're reading something peer-reviewed?

Google the journal  
(most journals have a Wikipedia page)

Who are these peers of "peer-review"?

Other scientists,  
professionals in the field,  
postdocs

What is an impact factor?

A flawed metric of how "impactful" a journal is.  
• # citations / # of articles published

What is open-access?

A journal is distributed online without fee or required membership  
• Non-open-access journals can be accessed through your school's library or sci-hub.tw

# TYPES OF PAPERS / WHY

What is a review?

- A review is a collection of scientific literature that seeks to summarize previous findings, put articles in conversation with each other, or answer a new question in the field with only older literature. No new data is acquired.

Why do scientists publish reviews?

- Reviews are a great way to share your new hot takes without needing to do new experiments. Scientists can be invited to write a review to summarize a cluster of new findings. They also serve the scientific community.

What is a meta-analysis?

- A meta-analysis acquires no new data, but takes old data (from multiple sources) and reanalyzes it together. It usually seeks to find a trend or summarize a point.

Why do scientists publish primary literature?

- To share their findings! It is the last part of the scientific method. Science is incremental. I like to think of it like a house made of bricks. Each new paper is a brick.

O'DONNELL *ET AL*, NATURE 2020 : A  
QUICK SKIM

Who authored this paper? Where are they from?

What journal is this?  
What type of paper is this?

What are the **major findings** of this paper?  
• Where did you find them?

Did you think this research was interesting?

What did you find confusing?

Do you have any additional questions about this research?

# HOW DO YOU FIND OUT WHETHER THE FINDINGS ARE WELL-SUPPORTED?

If it is an older paper, see if it is cited.

- See what those citations say about it.

Look for supported claims: either with citations or their own data.

- Figures hold a lot of power here
- Check to make sure claims from discussion/intro represent the figures
- Check their bibliography for other reputable papers

Check statistics, number of experiments, controls, scale bars.

- This is hard to do when you're unfamiliar with the field
- Usually the more information provided, the more trustworthy it is (watch out for "as described")

Ask a colleague with more experience than you to talk through some of the data.

Check for caveats, but don't focus too much on flaws → a lot of these concerns will be in the supplementary data.

- "Would that temperature shift affect behavior?"
- "Were all test subjects the same sex?"

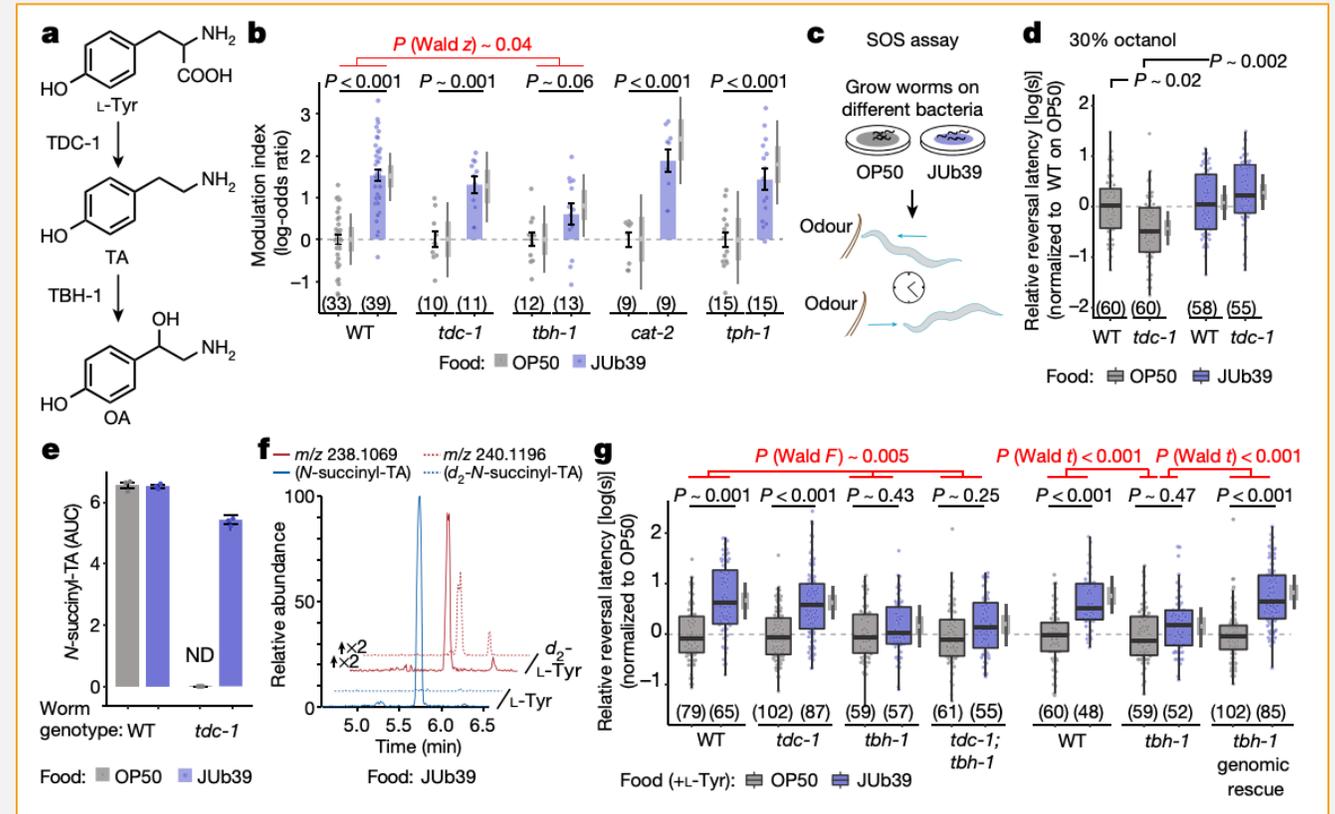
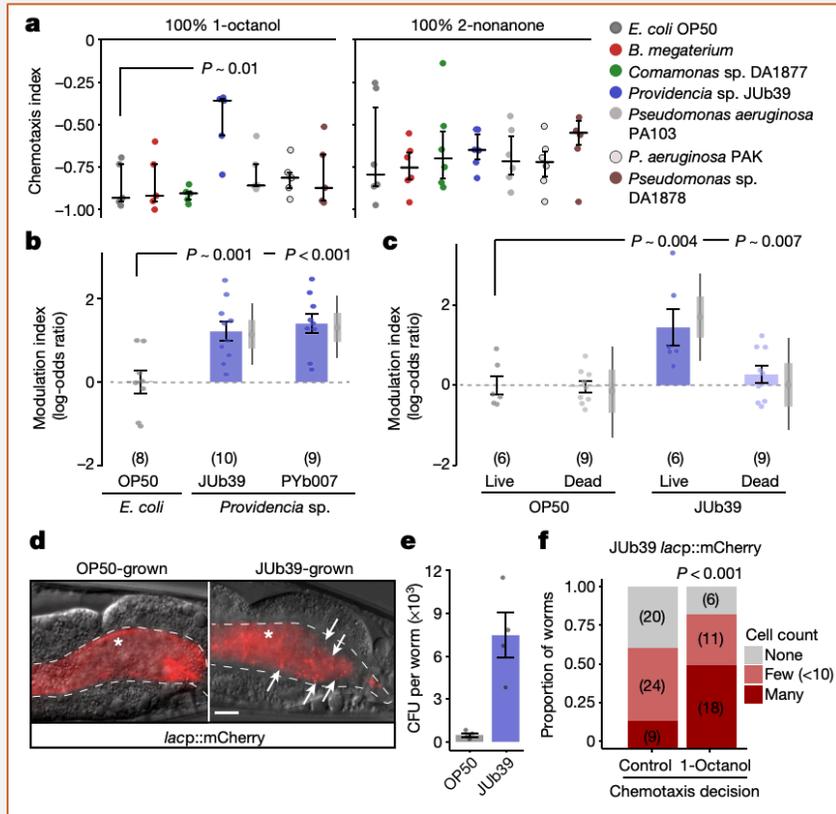
DIGGING DEEPER: “FIGURE” IT OUT  
O’DONNELL *ET AL*, NATURE 2020

I want to take some time for everyone to share one figure panel that they liked the most or wanted to highlight.

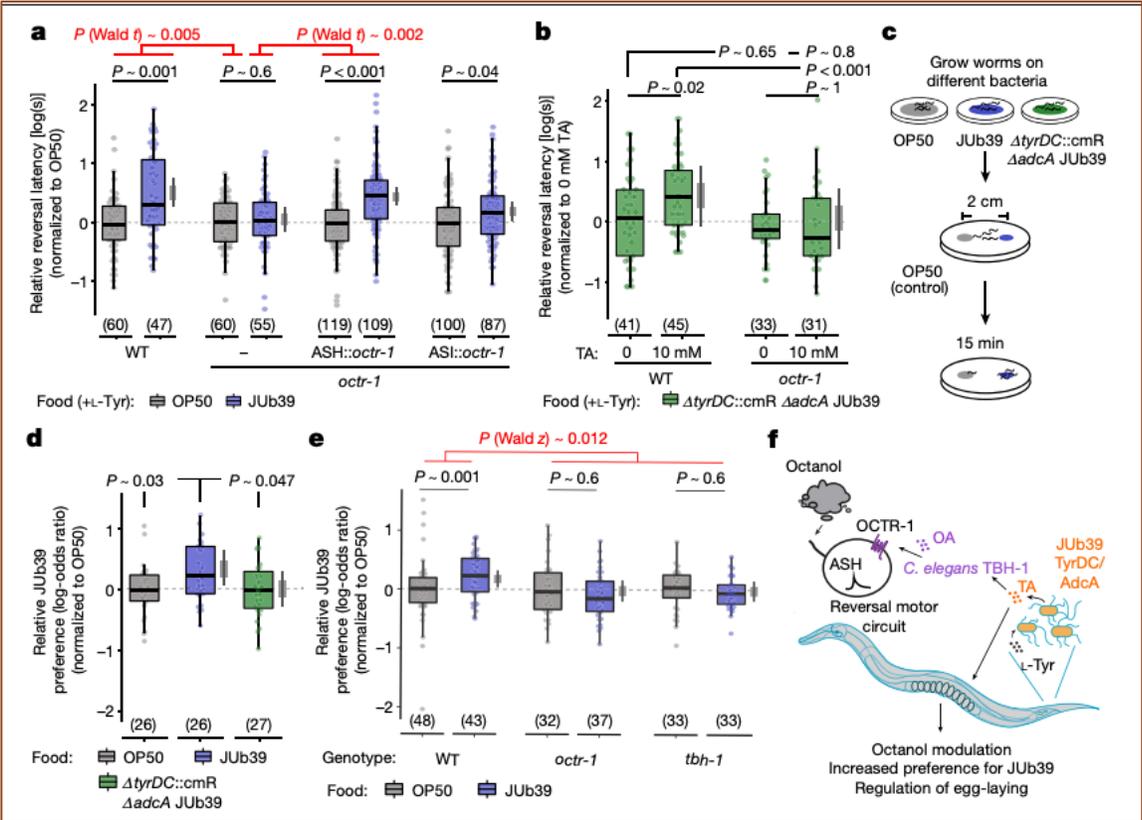
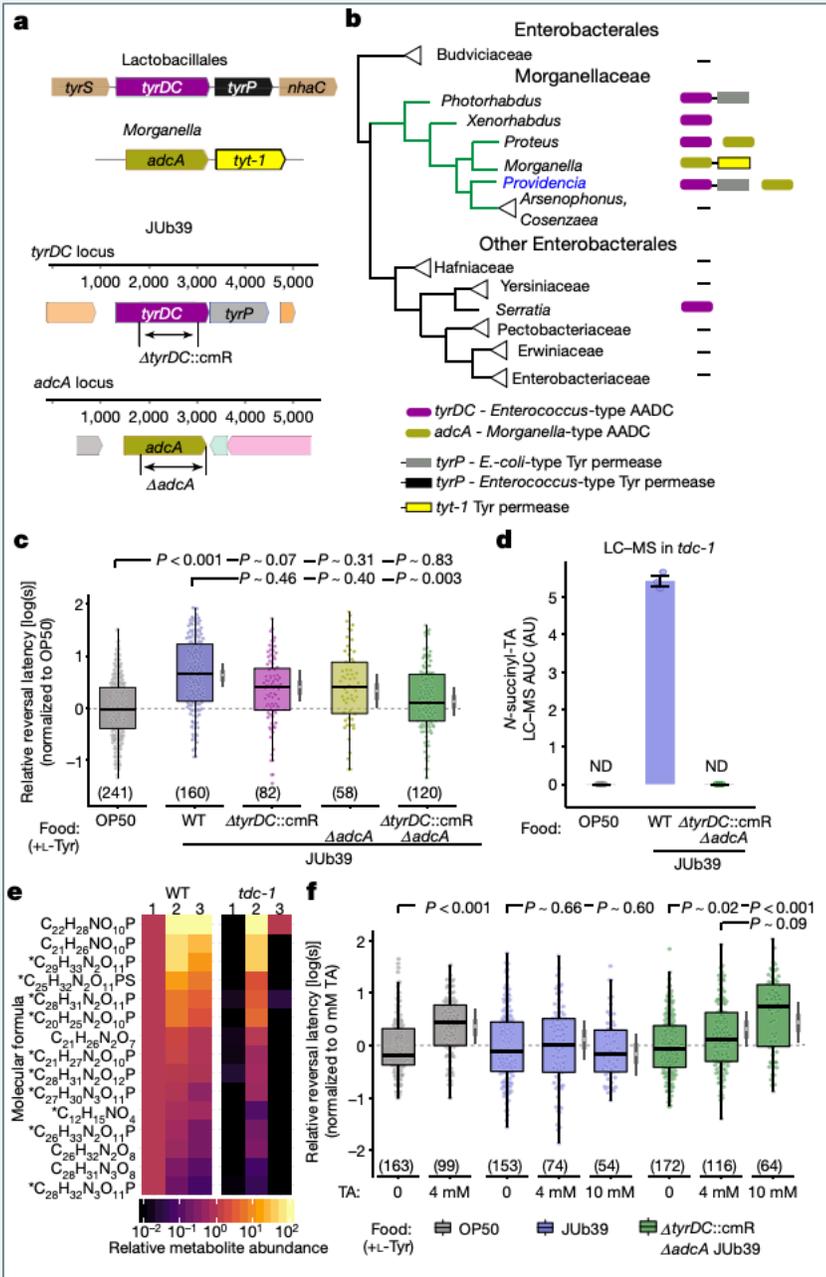
There are 4 figures in this paper and each figure has ~7 panels within it.

Type into the chat which figure # and letter you’d like to explain.

# WHICH FIGURES/PANELS HELPED YOU UNDERSTAND THE PAPER BEST?



& TAKE NOTE OF HOW DATA IS PRESENTED



# DIGGING DEEPER INTO A PAPER

- Why do we (scientists) read scientific papers?



- What sorts of information can we get from “the literature” (this just means scientific papers)?
  - We will answer this together next week!

# FINDING A PAPER: THINK, PAIR, SHARE

Think for a few minutes: what kind of paper you'd like to discuss in next week's meeting

- maybe google around.



What kind of information do you want to get from it?

- This can change once you skim through the paper you've chosen.
- But have an idea of what you're looking for.



Partner up and discuss how you plan to find your paper

- Breakout rooms (random) for ~3 mins



As a group, share out something you learned from your partner.

~3 minutes, independent

~3 minutes,  
breakout room

FOR NEXT WEEK

Find a paper you want to read.

If you're unsure where to start, email me!



Figure out what sort of information you want to get from it

Methods /  
Experimental  
Detail

Data  
presentation

Basic information  
/ main ideas

In depth analysis  
for your own  
research

To learn about a  
lab's most recent  
research

Something else  
entirely



Come prepared with a few slides to describe your experience with the paper.

Plan on spending <5 minutes on your presentation

## UPCOMING DATES

- Week 3 July 15 : Mini presentations & how to find research labs of interest
- Week 4 July 22 : Guest speaker: Dr. Yusuf Tufail: neuroscientist, consultant, RC plane enthusiast & research lab share-out
- Week 5 July 29 : The how/what/where/when/why of grad school & introduction to myIDP
- Week 6 August 5 : Guest speaker: Dr. Christine Vazquez: virologist, volunteer, avid reader & myIDP share-out
- Week 7 August 12 : TBD
  - Probably guest speaker, based on research lab share-outs
- Week 8 August 19 : TBD
  - Probably guest speaker, based on IDP share-outs

As always, if you have questions, comments, concerns, ideas, pictures of puppies, feel free to email me!

## OTHER QUESTIONS

- What is the process of peer-review?
- How do you get a paper reviewed?
- What is a predatory journal?