* We will be using menti.com for some in-class polls. Make sure you have a device on which you can go to [www.menti.com](http://www.menti.com).
* We will be going over this paper “*Mitochondrial hydrogen peroxide positively regulates neuropeptide secretion during diet-induced activation of the oxidative stress response*”. Please make sure you either have a copy of it on your device (available on Canvas) OR you have requested a physical copy from Dr. Matty.

Slide 3: Go to [www.menti.com](http://www.menti.com) and enter the code 4196 3275

1. What are three words you use to describe yourself?
2. What is something you hope to get out of BIMM194?

Slide 4: Class learning objectives

* *Identify* peer-reviewed scientific research articles
* *Summarize* the major points of a research article using a quick skim or keyword approach
* *Begin to evaluate* components of a research article as interesting, applicable and/or justified
* *Visualize* yourself as a scientist

Slide 5: Human hello. Who did you meet? What did you talk about? If you got their email / contact, put it here!

Slide 7: What is a peer-reviewed research article?

|  |  |
| --- | --- |
| Pop Science Article | Peer-reviewed primary literature |

Slide 8: Somewhere in between:

* Perspectives/Commentaries:
* Previews / News&Views:
* Reviews:

Slide 9: Where to find peer-reviewed articles:

Slide 10: How familiar are you with reading scientific literature?

Ensure that you have access to “*Mitochondrial hydrogen peroxide positively regulates neuropeptide secretion during diet-induced activation of the oxidative stress response*”

* Before even beginning, take a moment to find words in the title that you recognize / think of as important.

Slide 11: Jump in for a quick skim

In what order are the main sections of this article?

Slide 12: Find the main points and use keywords: Spend 5 minutes alone and 5 minutes with your group to discuss **your section’s** **takeaways, importance, and unexpected features**.

Group 1: Abstract

Group 2: Figure layout (Figures #1-4)

Group 3: Introduction

Group 4: Results sub-headings

Group 5: Discussion key phrases

Slide 15-17: Ask questions before/while reading:

* What journal is this?
* Who are the authors?
* Is this interesting to me?
* How are the data presented?
* **When/why would someone want to read this paper?**

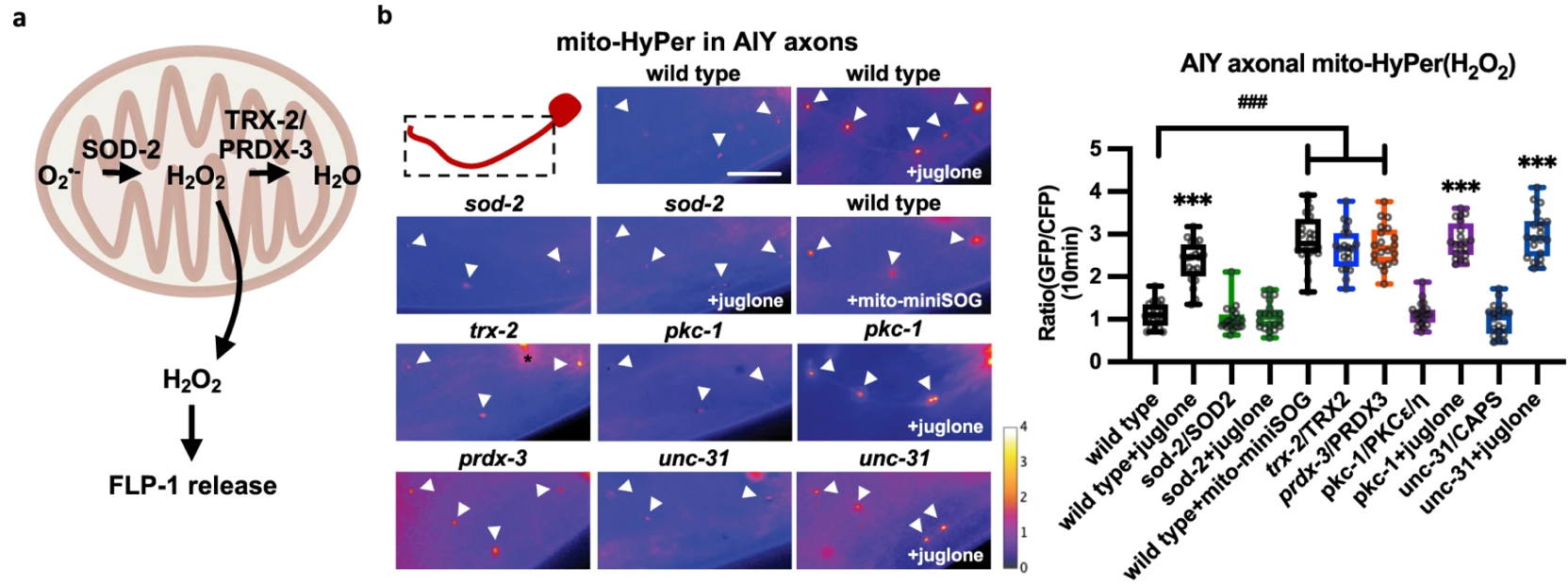
Slide 18: How do you feel now?

* Go to [www.menti.com](http://www.menti.com) and use the code 7113 2835 to answer the question “what aspect of scientific literature are you most unsure/nervous about?”

Slide 19: Figure it out

* How to approach reading figures:
  + Read the title
  + Read the corresponding results section
  + Read additional references to the figure (Command+F to find it throughout)

Slide 20: Figure 4A - B



What is this figure showing?

Slide 21: Read the legend

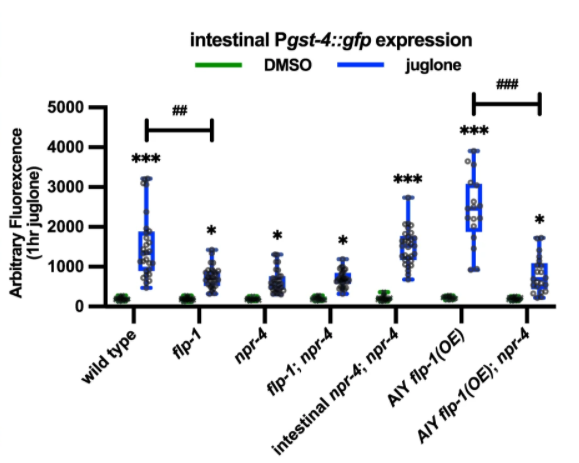
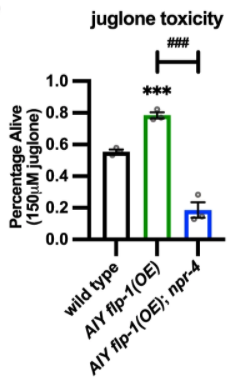
* Acronyms, statistics, color-coding, details of the experimental set-up:
* Figure 4A-B legend:

**a** Schematic representation of the generation of mitochondrial hydrogen peroxide (mtH2O2) by dismutation of superoxide (O2−) by mitochondrial SOD-2/superoxide dismutase, and its consumption by the mitochondrial TRX-2/thioredoxin PRDX-3/peroxiredoxin system, which converts mtH2O2 to H2O. **b** Representative images and quantification of fluorescence in AIY axons of the indicated transgenic animals expressing mitochondrial-targeted HyPer (mito-HyPer) driven by *ttx-3* promoter. Arrowheads indicate mitochondrial fluorescence in AIY axons. The 520 nm/480 nm (GFP/CFP) ratio of HyPer was used to measure mtH2O2 levels. The boxes span the interquartile range, median is marked by the line and whiskers indicate the minimum and the maximum values. *n* = 20 biologically independent samples. \*\*\**P* < 0.001 by Student’s two-tailed *t*-test. ###*P* < 0.001 by one-way ANOVA with Dunnett’s test. Scale bar: 10 μm.

What are the important parts of this legend?

Slide 22: Understand the axes

What are these axes?



Slide 23: Revisit these questions

1. **Understand WHY you’re reading the paper**. What are some reasons you would read a scientific research article?
2. Am I spending too much time on unimportant bits? What would be unimportant?
3. Are there terms tripping me up? What would you google?
4. Is there another article I can read first? Where would you find this?
5. Is there someone I can talk to about this? Who could that be?

Slide 24: Keep asking questions:

Slide 25: Final questions

Please fill out this anonymous feedback form to help me make this presentation better for future students!

<https://forms.gle/iv8DSeHaSBE78bNq9>