READING ACADEMIC PAPERS
Structure of a Scientific Article

1.) Title
2.) Abstract
   a.) *a concise summary of the paper*
3.) Introduction
   a.) *background information and researches questions/hypothesis*
4.) Methods
   a.) *how experiments were performed*
5.) Results
   a.) *data from the experiments/observations*
6.) Discussion
   a.) *researcher’s interpretation of the data and the implications it has*
Read it, read it again, read it again... again

- 1st pass - to get a general idea of the paper
  - read the title, abstract, and intro
  - read headings and section titles
- 2nd pass - to get a more detailed understanding
  - read results
  - analyze figures
- 3rd pass - to understand the finer details
  - read through the paper in its entirety - tie concepts and ideas together with the researcher’s questions/hypothesis
Analyzing Figures

- determine what is being measured on the axes
- determine the experimental model
- identify controls
- observe the trends and make connections to the researcher’s hypothesis
Example 1

HDF = high fat diet

MCP-1 = inflammation promoting protein

-axes?
-experimental model?
-control?
-trend?
Example 2

- KO = knock out
  - KO for MCP1 in this case
- WT = wild type (normal)

- axes?
- control?
- experimental model?
- trends?
Steps you should take

Surveying the paper
Active reading
Drawing conclusions
Surveying the Paper

- Note the date
  - *Science is always being updated, take each paper with a grain of salt*
- Jot down the outline by looking at the headings of each section, or skim the abstract and conclusion once before reading the whole paper
  - *This will help you keep track of the main point even as the paper gets extremely detailed*
Active Reading (most important part)

- Take it one section at a time, and ask yourself
  - WHAT is the point of this section (results)
  - HOW did they figure this out (techniques)
  - WHY does this matter (implications/ how it fits into the paper overall)

- When discussing anatomy or complex pathways, DRAW IT OUT
- Highlight terms you don’t know, and look them up immediately!
- Note references by techniques or experiments you don’t understand, so you can look up the original paper for more information
  - This is also a good habit for your final paper: note topics or experiments that interest you and make a list of papers that pertain to that subject!
Drawing Conclusions

- How does all this information fit together? How does it fit into our class?
  - Try connecting to other papers you’ve read. If you’re really motivated, you can color-code your papers by subject so you can group them and begin drawing connections between them

- What is the next step?
  - This is the most important part of being a scientist. Where are there gaps in the paper you read? What else do you want to know? Do you trust their experiments? If I gave you a grant to do the next project, what would you do?
Perspectives

- What are the public health implications
- What are the clinical implication
- why should researchers care?
- why should the general public care?
Class Logistics
Grade Breakdown

- 10% Weekly Participation
- 10% Mind Maps
- 15% Medium Blogs
- 35% Research Paper Presentations
- 30% Final Review Essay Paper
- 1% Extra Credit via SONA
Group Conduct

- end of quarter peer evaluation
  - will go towards participation grade
  - each person will provide feedback about everyone in their group
Ghrelin inhibits ghrelin. Ghrelin is secreted after fasting, leading to a decrease in gastric motility. A meal is expected when ghrelin peaks before the next meal.
We are team Potato and this is our Story.

We are a Project Team of 7 at UC San Diego and we aspire to utilize the next 10 weeks as part of COGS 187A to put to test our creativity, curiosity, skills and ability as a team.

Members:
Alex Kim, Annie Chen, Fairy Bui, Jamie Moon, Kathy Hoang, Kenny Nieh, Yashna Bowen

As a group of individuals with diverse backgrounds, experiences and interests, we decided to create Team Potato in order to be able to innovate and design something that reaches out to people and can serve a need in today’s society that is yet to be addressed.
Final Paper and Presentation

- Create a Review Paper on an approved topic of your choice
  - must use other scientific articles as evidence
- Prepare a presentation of your paper on the day of the final

*more info will be provided we get further into the quarter