# DELIVERING AN EFFECTIVE JOURNAL CLUB PRESENTATION

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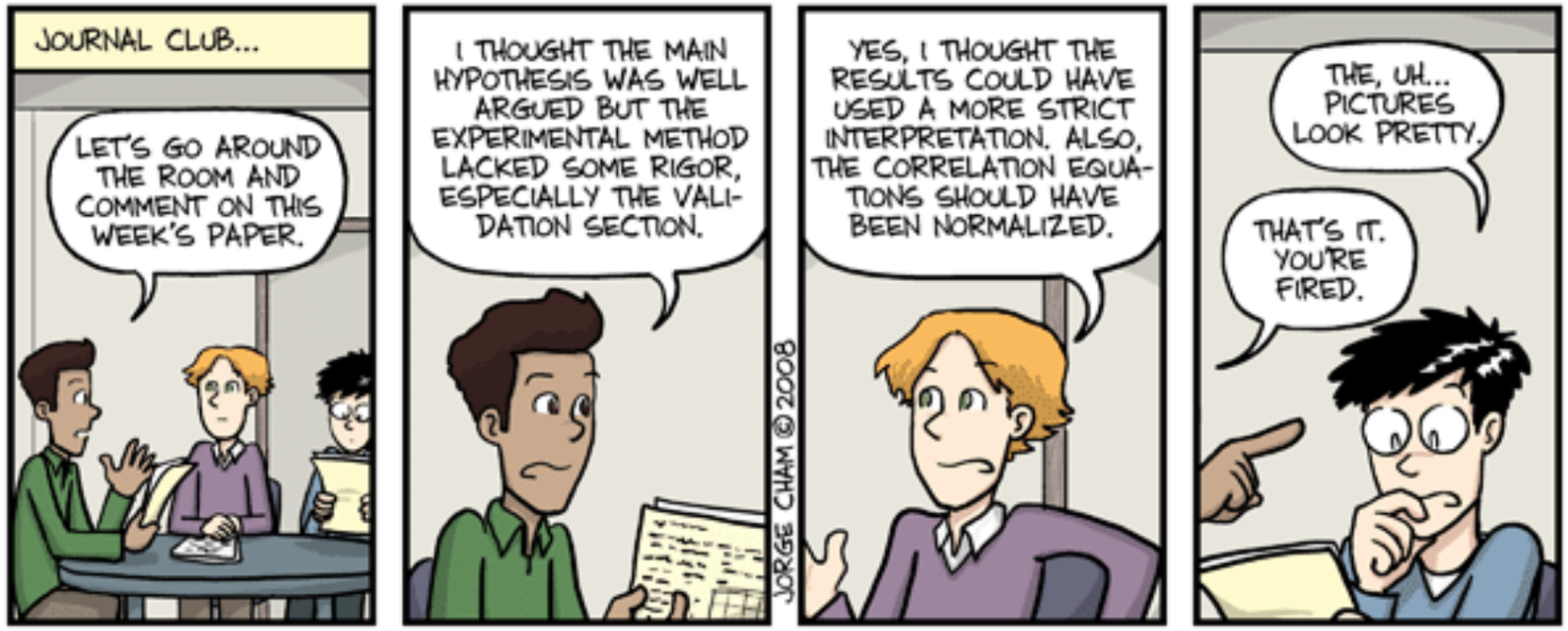


Children's Foundation Research Institute

THE UNIVERSITY OF TENNESSEE HEALTH SCIENCE CENTER

Le Bonheur Children's Hospital

# INTRODUCTIONS

# WHAT IS THE POINT OF JOURNAL CLUB?

- Keep up with scientific literature
- Learn how to critically review scientific papers
- Identify areas of collaboration with fellow Journal Clubbers
- Share knowledge and ideas with scientists both in and out of your field of research
- Learn how to present your ideas and participate in scientific debate

# TALK OUTLINE:

**How to fulfill the two "jobs" of the Journal Club presenter**

1. Selecting the paper(s) to present

2. Presenting the paper to the Journal Club audience

**Presentation basics**

**Audience responsibilities**

# JOB 1: SELECTING A PAPER TO PRESENT

- Select three scientific journal articles suitable for presentation and forward the pdfs to Dr Amali Samarasinghe.
- Dr Samarasinghe will help guide your choice of article

# JOB 1: SELECTING A PAPER TO PRESENT

- Choose "good" papers -
  - Peer reviewed
  - Explores and advances knowledge about an important area
  - Approaches the problem using innovative methods and multiple techniques
  - Mechanistic, not purely descriptive
  - No reviews! Original research only
  - Do not choose an article that has lots of obvious flaws, purely for the fact that it will be easy to criticize
  - Implications for multiple fields

# JOB 1: SELECTING A PAPER TO PRESENT

- Where to find Journal Club articles:
  - From your own reading of the literature, PubMed
  - Colleagues, professors, friends
  - Conference abstract books
  - *Science* Perspectives, *Nature* News and Views, Journal's social media
  - Reliable journals - high impact factor journals, niche journals for your field

# JOB 2: PRESENTING THE PAPER TO JOURNAL CLUB AUDIENCE

- Your job is to tell the story of the paper
- It is critical you understand the paper you are presenting
- Be prepared!

# JOB 2: PRESENTING THE PAPER TO JOURNAL CLUB AUDIENCE

- **Information to include:**
  - Title,  authors and affiliations
  - Outline the story – give sufficient background
  - Explicitly state the aims/major questions of the paper
  - Explain the results, including the methods used
  - State the conclusions of the study and put the results into context of the larger field
  - Comment on the validity of the methods, results and the conclusions

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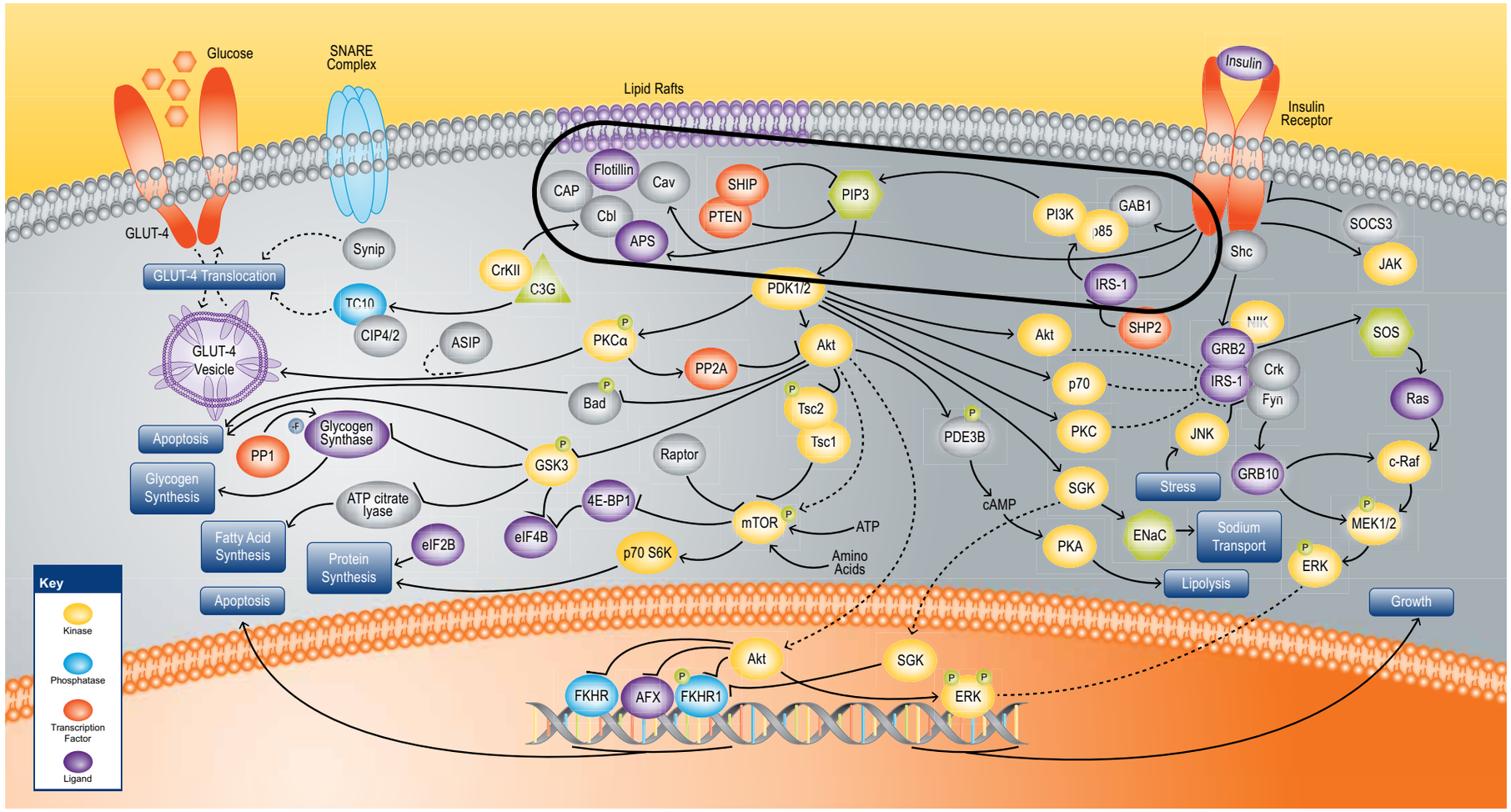
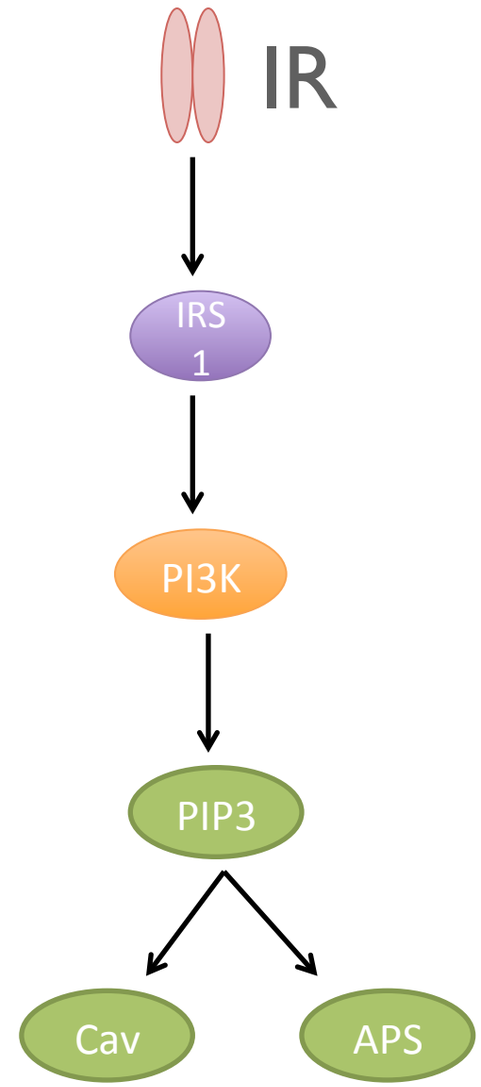
# OUTLINE THE STORY -GIVE SUFFICIENT BACKGROUND

- How did you come across this article?
- What information does the audience need to understand this study?
- Why is the study important?
- Remember that not everyone is from your field of research
- Avoid jargon
- Be guided by the information in the Introduction

# SIMPLE IS BETTER!

- Redraw if necessary



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# EXPLICITLY STATE THE AIMS/MAJOR QUESTIONS OF THE PAPER

- Fairly self-explanatory
- Usually found in the Introduction of the paper
- Helps to draw back in audience members who may have drifted off
- Gives you a “measuring stick” to assess if the study achieves its stated aims
- It is fine to state findings right at the start of your presentation

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# PRESENTING FIGURES

- Online articles - download directly into Powerpoint.

  For PDF files - Adobe Pro

- When resizing figures – do not stretch

- Slide Title = finding of the figure

- All figures should fill screen and be readable from the back of the room

- Multi-part or complicated figures

  Split up on different slides

  Use animation to “build” complicated slides

# PRESENTING FIGURES

- Always describe the assay or experiment fully
- You do not have to present EVERY figure or table
- For complex studies, simplify results with basic illustration

# PRESENTING TABLES

- Make sure the tables are legible

  Consider re-typing

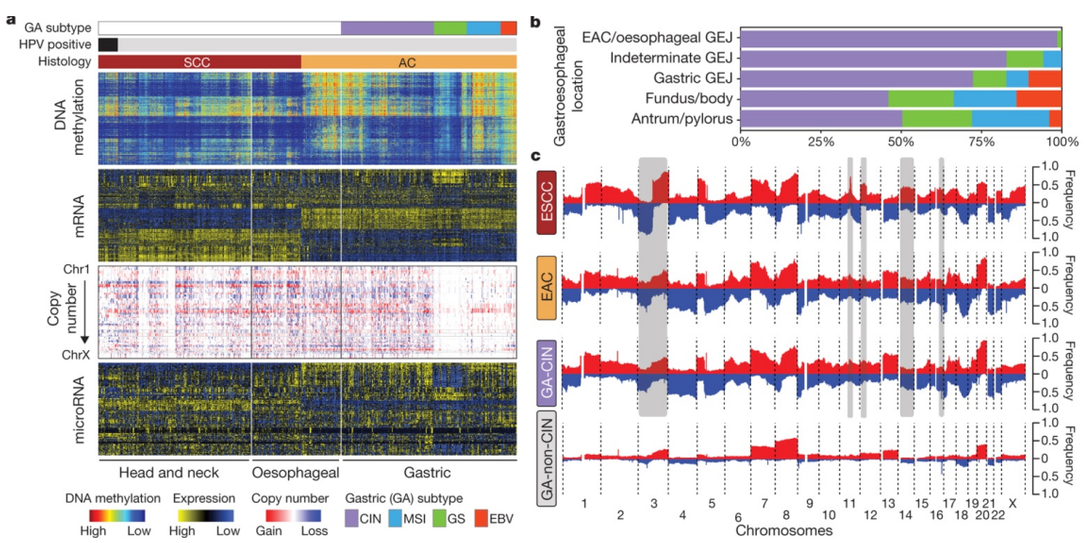
- For very large data tables, re-type only the important information

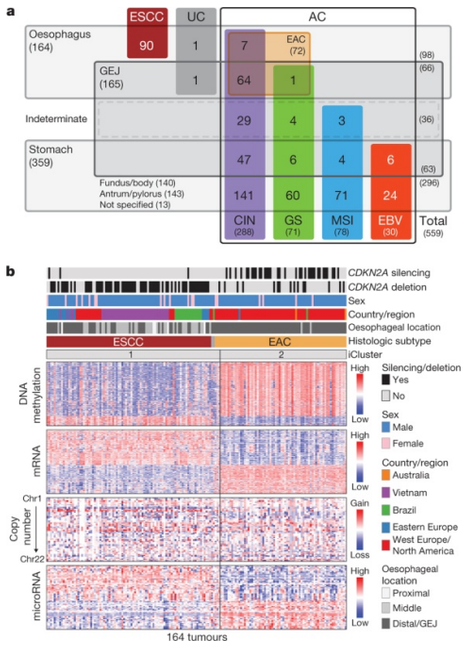
- Simplify where possible

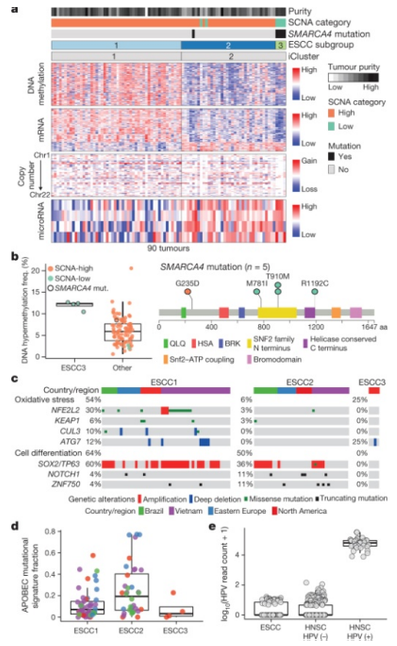
  Round off numbers

  Use colors to show relative increases or decreases

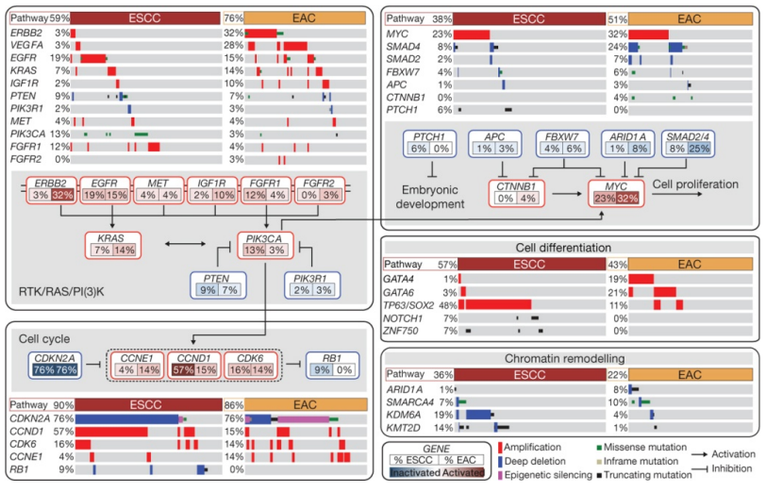
# SUMMARIZE COMPLEX DATA INTO SIMPLE DIAGRAMS

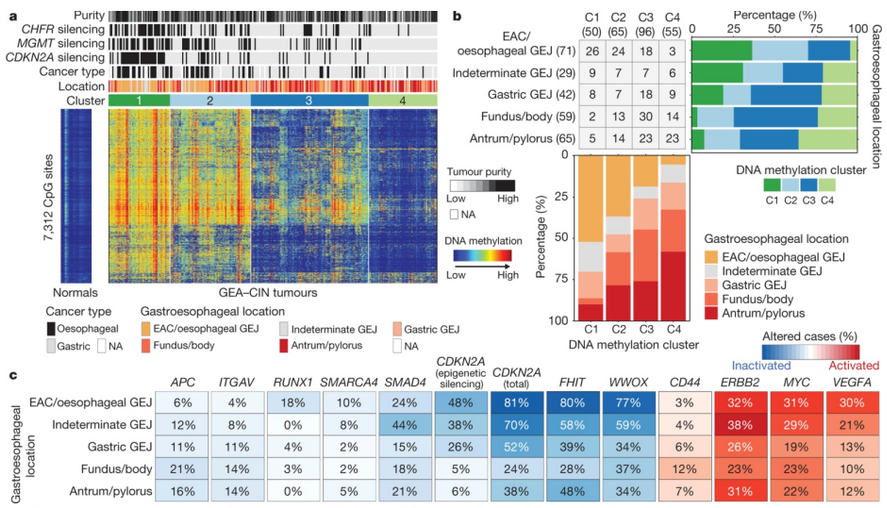



The Cancer Genome Atlas Research Network (2017) **Integrated genomic characterization of oesophageal carcinoma** *Nature (2017)*



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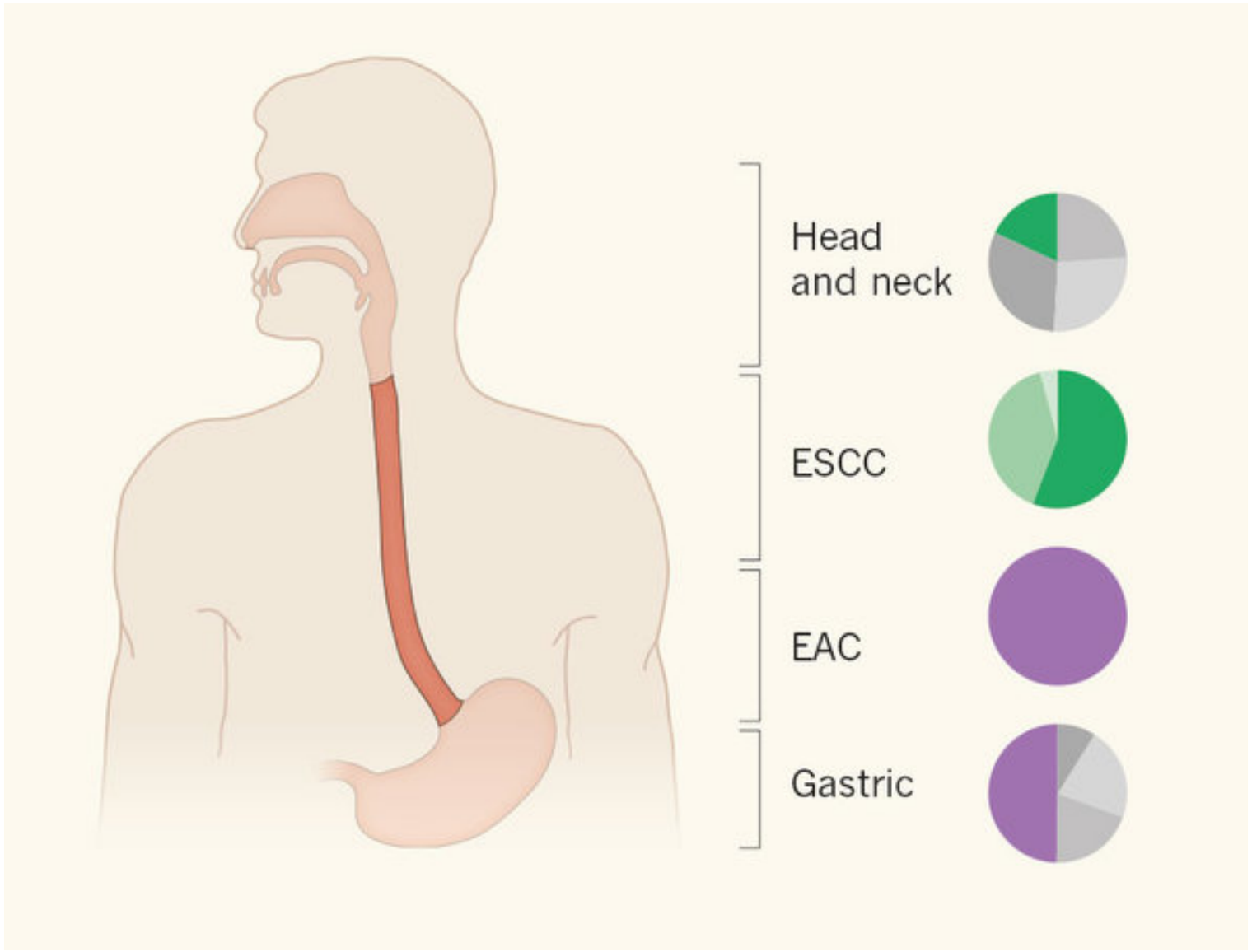


Peyser and Grandis (2017) Cancer genomics: Spot the difference *Nature News and Views*

# METHODS

- Give a brief outline of techniques where necessary
- Remember your audience has a diverse scientific background
- Do not forget statistical analysis

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# STATE THE CONCLUSIONS OF THE STUDY AND PUT THE RESULTS INTO CONTEXT OF THE LARGER FIELD

- Which conclusions are directly drawn from the analysis of the results, and which are more speculative?

- Do all of the conclusions drawn make sense based on the results?

- Has this article supported the generally accepted thinking on this topic or has it refuted it?

- How has this article furthered thinking in the field?

http://evolution.berkeley.edu/evolibrary/teach/journal/journaltips.php

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# CRITIQUE

- Give the authors credit for elegant experiments
    - Before being highly critical, consider the limitations we all work under
    - part of critical analysis is understanding and appreciating good experimental design

# CRITIQUE

- Peer-review generally does a pretty good job of weeding out "bad science" – however they still exist!

- Look for
  - Sensationalist headlines
  - Misinterpreted results
  - conflicts of interest
  - Correlation conflated with causation
  - Speculative language
  - Sample size too small
  - Inappropriate statistical analysis
  - Unrepresentative samples
  - No control or inappropriate control
  - No blind testing
  - "Cherry-picked" results
  - Unreplicated results
  - Has the paper been cited?

Parsons ECM and Wright AJ (2015) The good, the bad and the ugly science: examples from the marine science arena. *Front. Mar. Sci*. 2:33.

# CRITIQUE

- Are all of the results obtained consistent with the hypothesis being tested? Are there any major outliers in the data?

- What sort of evidence would make the authors' case stronger?

- What sort of evidence would argue against the authors?

- What case would a skeptical scientist make against the authors' interpretation of their results?

http://evolution.berkeley.edu/evolibrary/teach/journal/journaltips.php

# QUESTIONS AND DISCUSSION

- Questions from the audience will be directed to the presenter at first – be prepared to field questions
- You are not expected to know everything about the paper

# PRESENTATION BASICS

- arrive to the location at least 15 minutes early to get set up on the computer
- Have your presentation on a flash drive
- A laser pointer will be provided
- Practice your presentation out loud
- Speak in a loud clear voice, do not rush through your slides
- speaker evaluation sheet as guide

# PRESENTATION BASICS

- Keep slides uncluttered with logos and fancy background
- Make sure your text contrasts with the slide background – eg black text on a white background
- Text should be at least 26 pt and san serif
- Bolding, color and spacing can be used for emphasis

# AUDIENCE MEMBERS:
# **READ THE PAPER!!**

- You are expected to participate in the Journal Club discussion

- As you read the paper, ask the same questions that the presenter might

- Please be prepared to exchange ideas in Journal Club

# QUESTIONS?