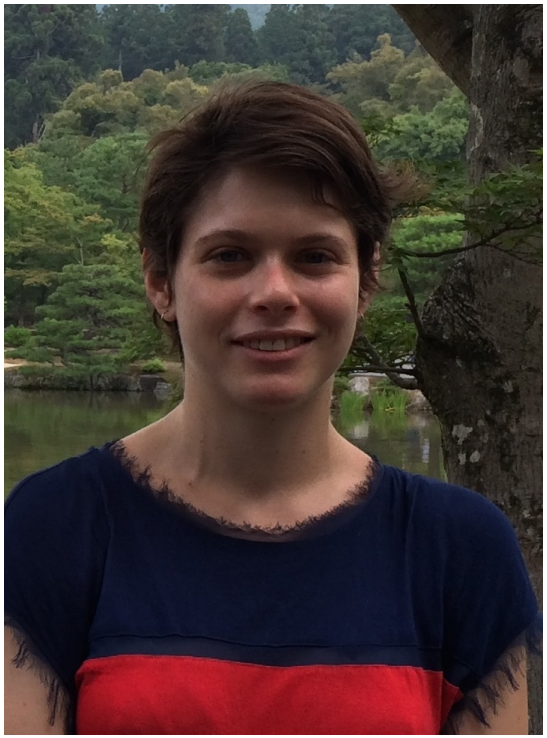
Welcome to 165A Discussion Section

Teaching assistants

Michael

Wenting



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TBA

What are the goals of 165A?

1. Learn fundamentals of cell biology
2. Understand the tools and methods used by modern cell biologists
3. Learn how to implement those methods to answer biological questions
4. Become a fluent and critical reader of primary cell biology literature

What is the purpose of discussion sections?

1. Work through original research papers with the TA's guidance
2. Actively participate in discussion

How can I make the most of discussion sections?

1. Attend every section, be prompt
2. Read papers carefully before attending
3. Actively participate: ask questions, make comments

This is meant to be a discussion, not a lecture

Assignment

1. Read each paper thoughtfully before attending

2. Complete take home-quizzes
   --assigned the week of discussion (on the class website)
   --due at the beginning of the following discussion

Take home quizzes

4-6 questions about the assigned paper that may test:

--Your understanding of basic methods and results
--Logic of experimental design and interpretation
--Significance of findings
--Ability to think critically about findings and design future experiments

Be precise and concise in your answers

Answering in bullet points is acceptable

Be concise!

Typing preferred, but if you write by hand, write neatly

Points off for long, rambling answers

Take home quizzes

4-6 questions about the assigned paper that may test:

--Your understanding of basic methods and results

--Logic of experimental design and interpretation

--Significance of findings

--Ability to think critically about findings and design future experiments

Use your own words!

Your answer should not be a direct quotation from the paper.

Take home quizzes

6 take home quizzes, lowest will be dropped

Total = 20% of your grade

Many questions on the exam will be about the discussion papers, so you really should understand them forward and backwards

Reading papers, where do I start?

Everyone will develop their own approach, but here's a suggestion:

1. Read the paper all the way through to get main points, basic experimental approach--don't worry about details

2. Read it again, make a list of anything you didn't understand: jargon, methods

3. Look up what you didn't understand (more on this in a minute)

4. Read the paper again

5. Analyze at each figure carefully

6. Attend discussion section, armed with questions, observations

7. Read the paper again

Where can I find information to help me figure out things I don't understand in the paper?

1. Methods section of the paper

2. Course material: lectures, text book

3. Internet: dictionaries, wikipedia (with caution), course websites, website of the senior author

4. Go to the journal website; there may be an accompanying video or review article

5. Look up references from the paper, or do your own pubmed search

Anatomy of a journal article

1. Abstract
   Read first: Should clearly state main finding, significance
2. Introduction
   Provides necessary background, last paragraph usually restates approach
3. Results/Figures
   Most important part of paper: go back and forth between figures and text
4. Discussion
   Puts results in context, tries to convey significance
5. Methods
   Not necessary to understand every detail, but useful for reference
6. References
   Useful if you need more information on background
7. Supplemental Data
   Sometimes not important, but often there's something useful. e.g. Movies!

Understanding a figure

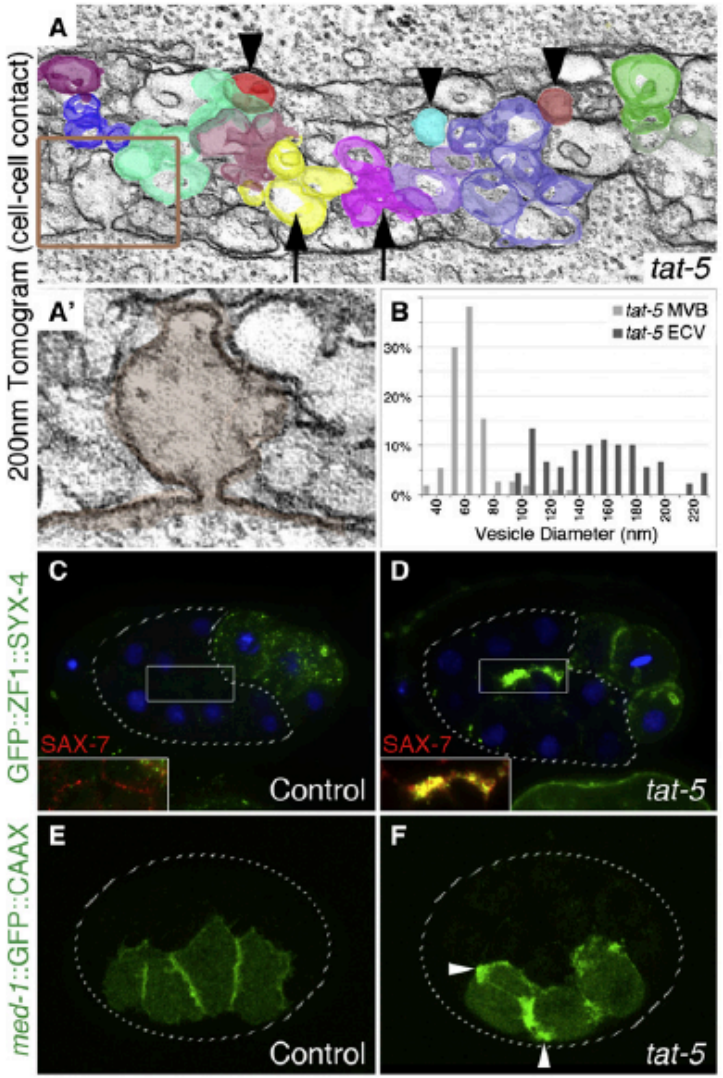


Figure 3. Extracellular Vesicles Are Generated by Budding from the Plasma Membrane

What is the main point of the figure?

Hint: often the title of the figure legend!

Understanding a figure

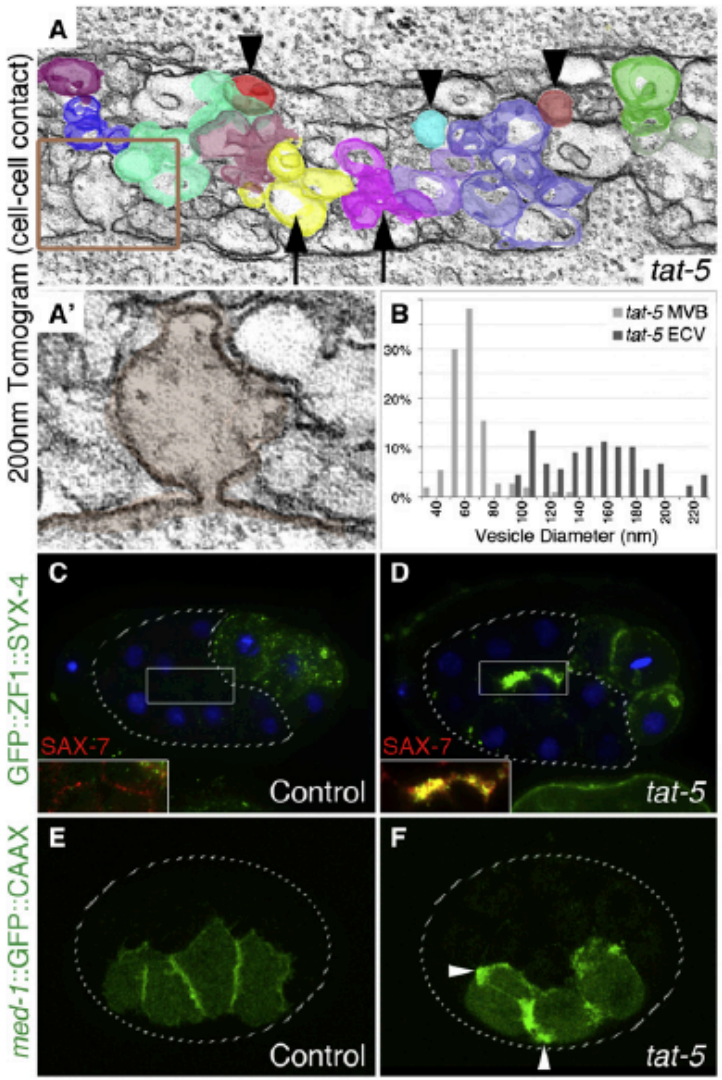


Figure 3. Extracellular Vesicles Are Generated by Budding from the Plasma Membrane

How do the experiments shown in <u>each</u> panel contribute to the main point of the figure?

Understanding a figure

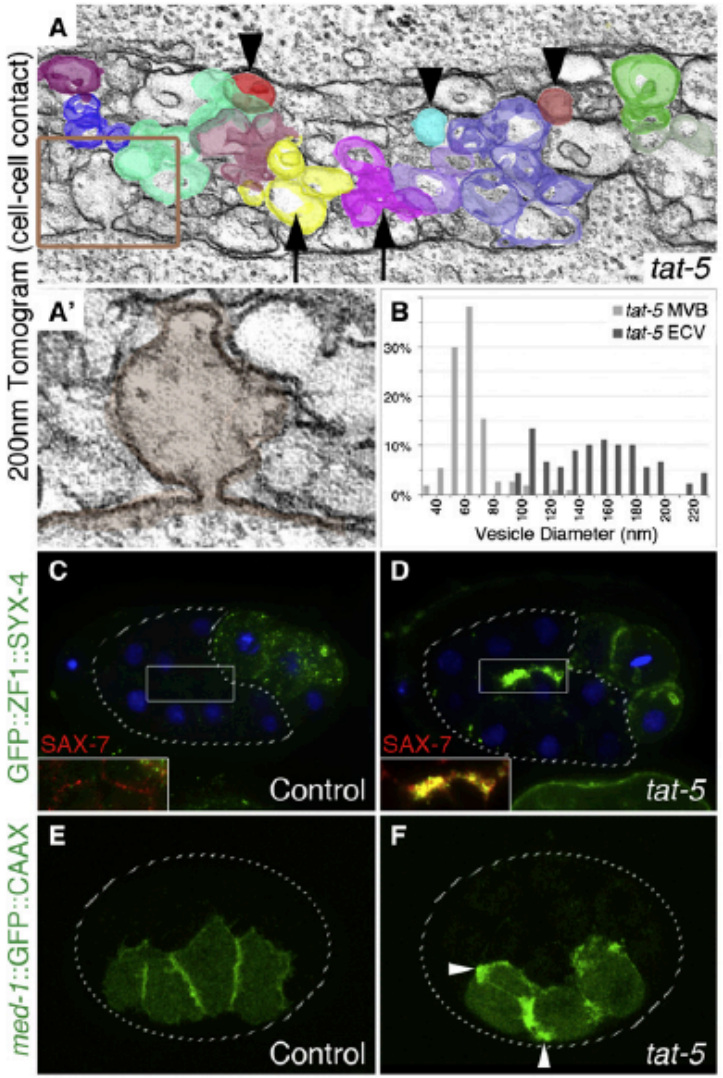


Figure 3. Extracellular Vesicles Are Generated by Budding from the Plasma Membrane

How was each experiment done, how was each figure generated?

What kind of microscopy is this?

Understanding a figure

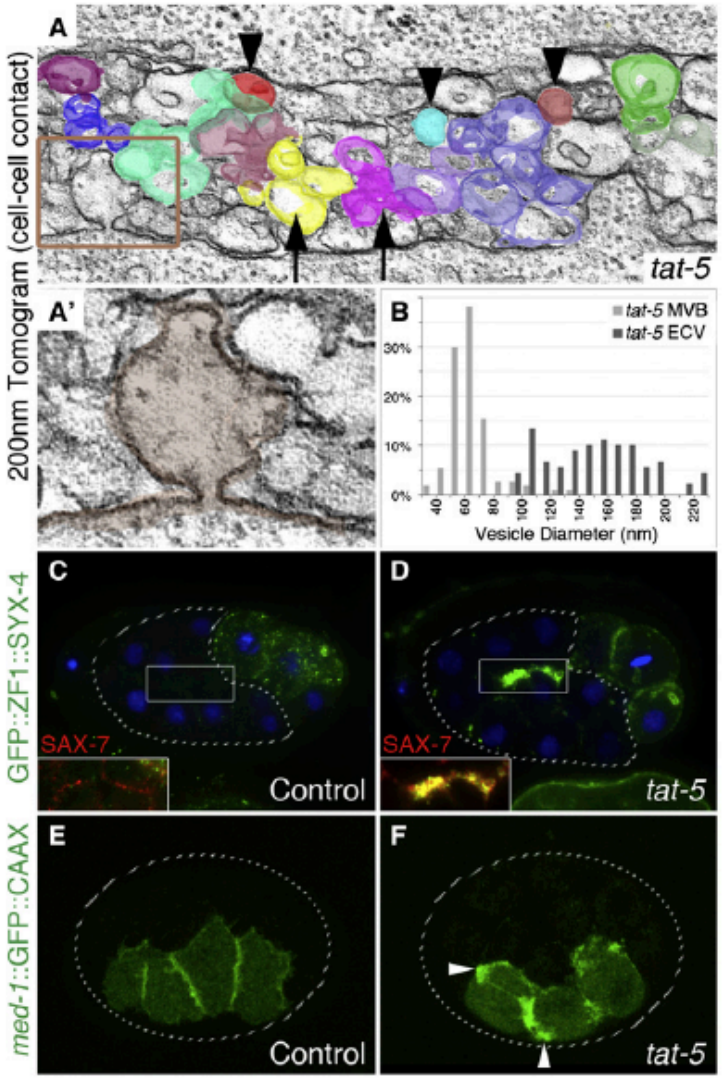


Figure 3. Extracellular Vesicles Are Generated by Budding from the Plasma Membrane

How was each experiment done, how was each figure generated?

What kind of stain was used? e.g.what is the green and blue? antibodies? fluorescent protein?

Understanding a figure

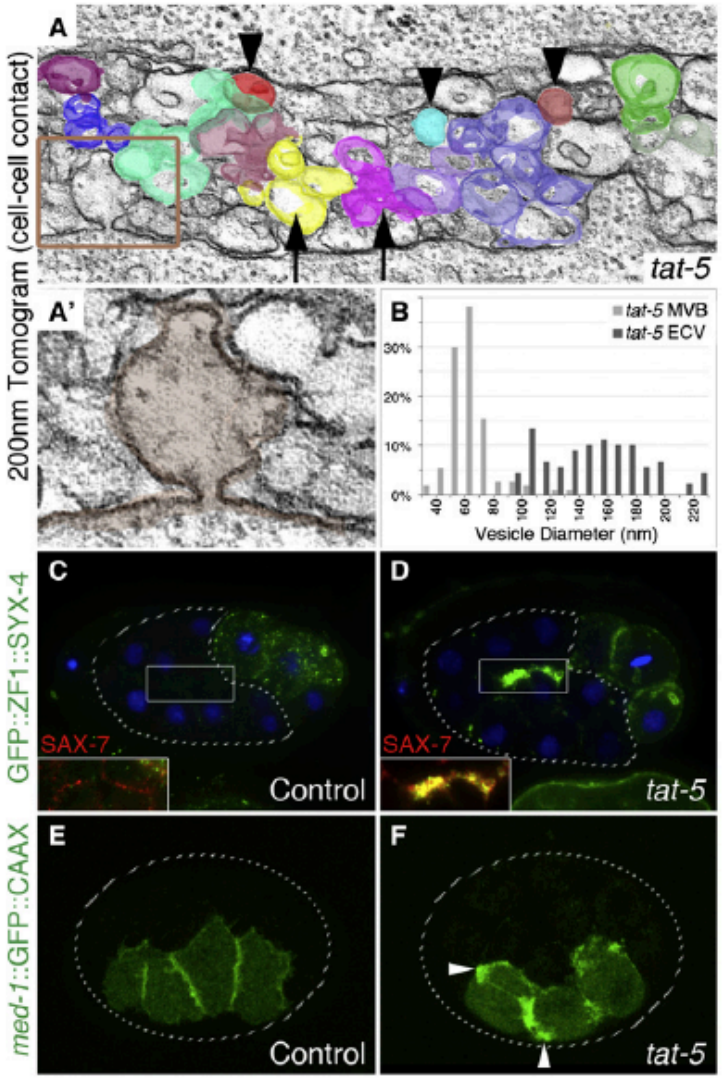


Figure 3. Extracellular Vesicles Are Generated by Budding from the Plasma Membrane

How was each experiment done, how was each figure generated?

What is represented on the X and Y axes?

Understanding a figure

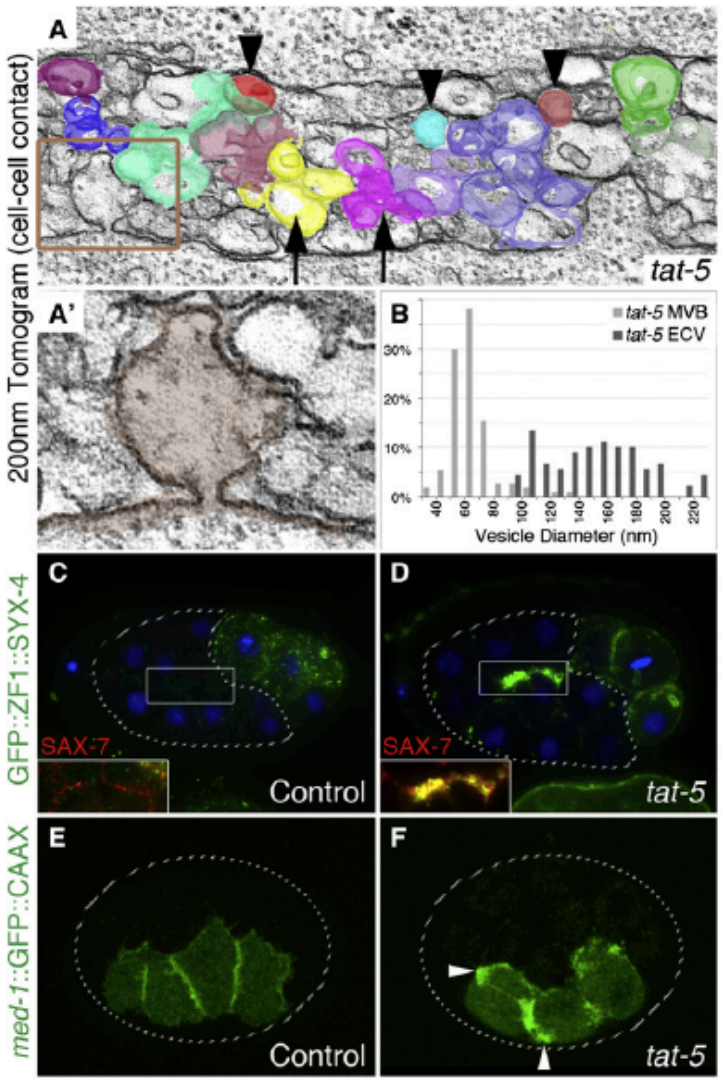


Figure 3. Extracellular Vesicles Are Generated by Budding from the Plasma Membrane

How do the experiments shown in <u>each</u> panel contribute to the main point of the figure?

Which data points represent controls and what was their purpose?

Understanding a figure

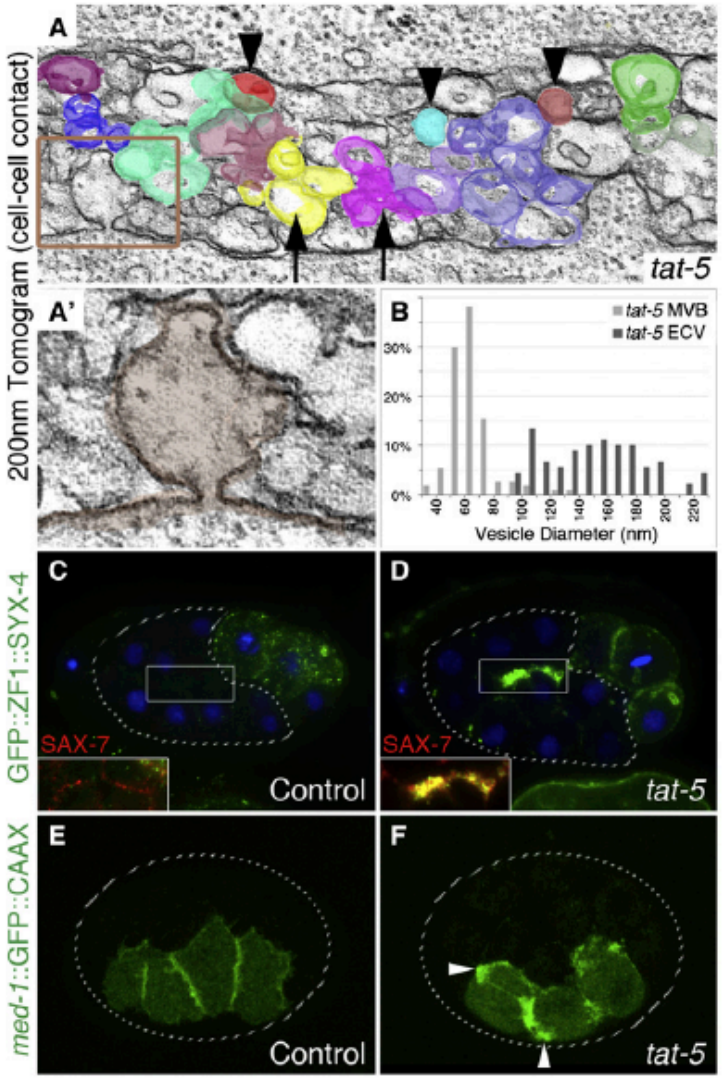


Figure 3. Extracellular Vesicles Are Generated by Budding from the Plasma Membrane

How do the experiments shown in <u>each</u> panel contribute to the main point of the figure?

How convincing were these experiments? What more evidence would you want to see to believe their conclusions?

Finding the articles

PDFs will be posted on the class website, but you should always also find the articles online through the UCLA website

Why? Online you may look at supplemental material (e.g. movies!), can enlarge figures on your own computer

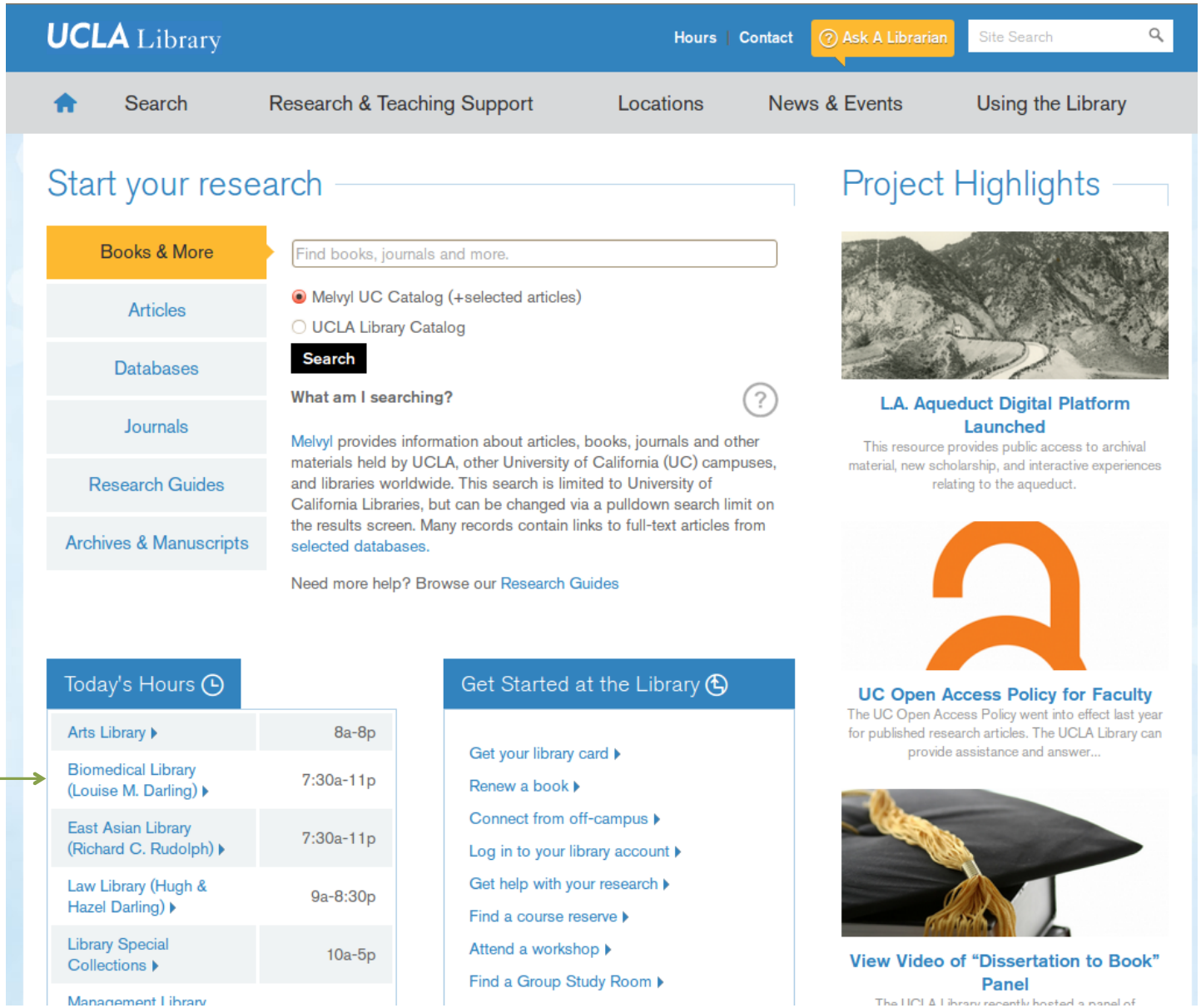
You have free access to all the journals through the UCLA biomed library

Finding articles:

Method 1: Go to journal website

Search for authors

Click on Biomedical Library

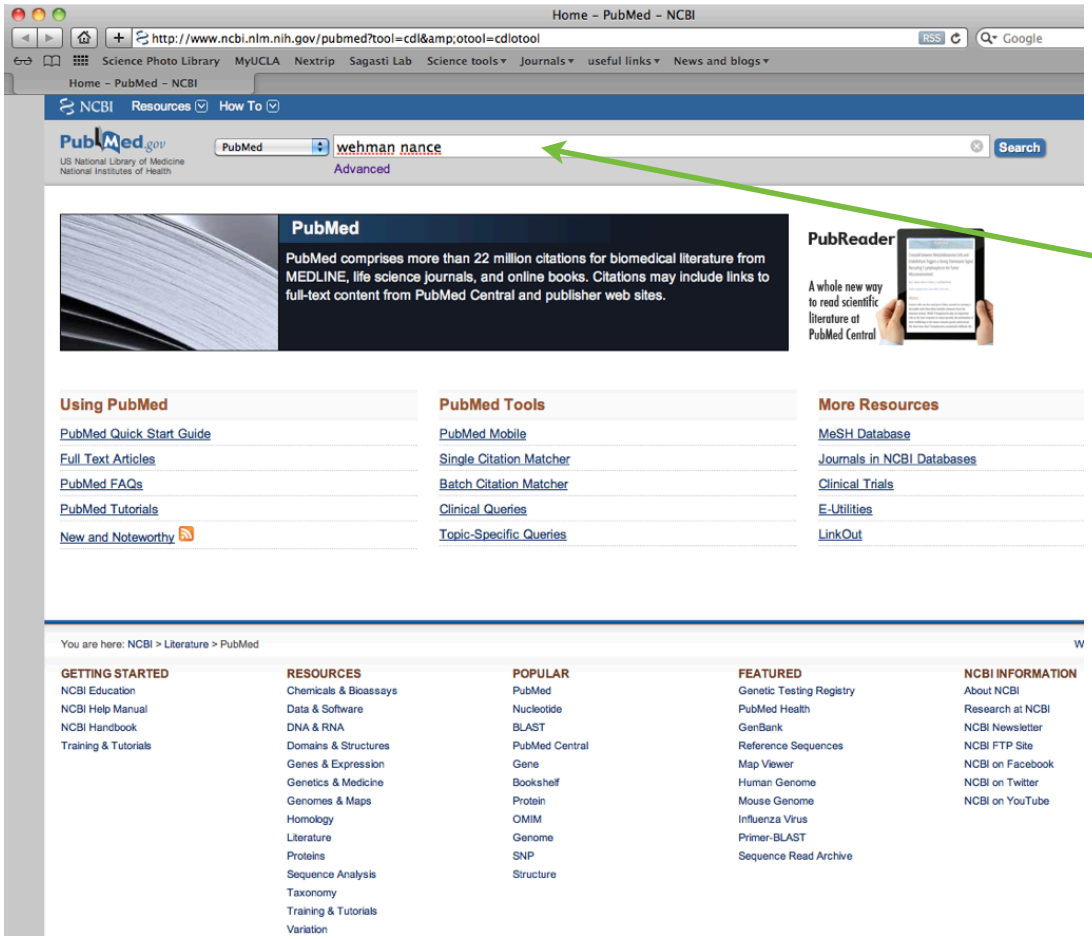


Click on PubMed at UCLA

Finding articles:

Method 2: Go to pubmed

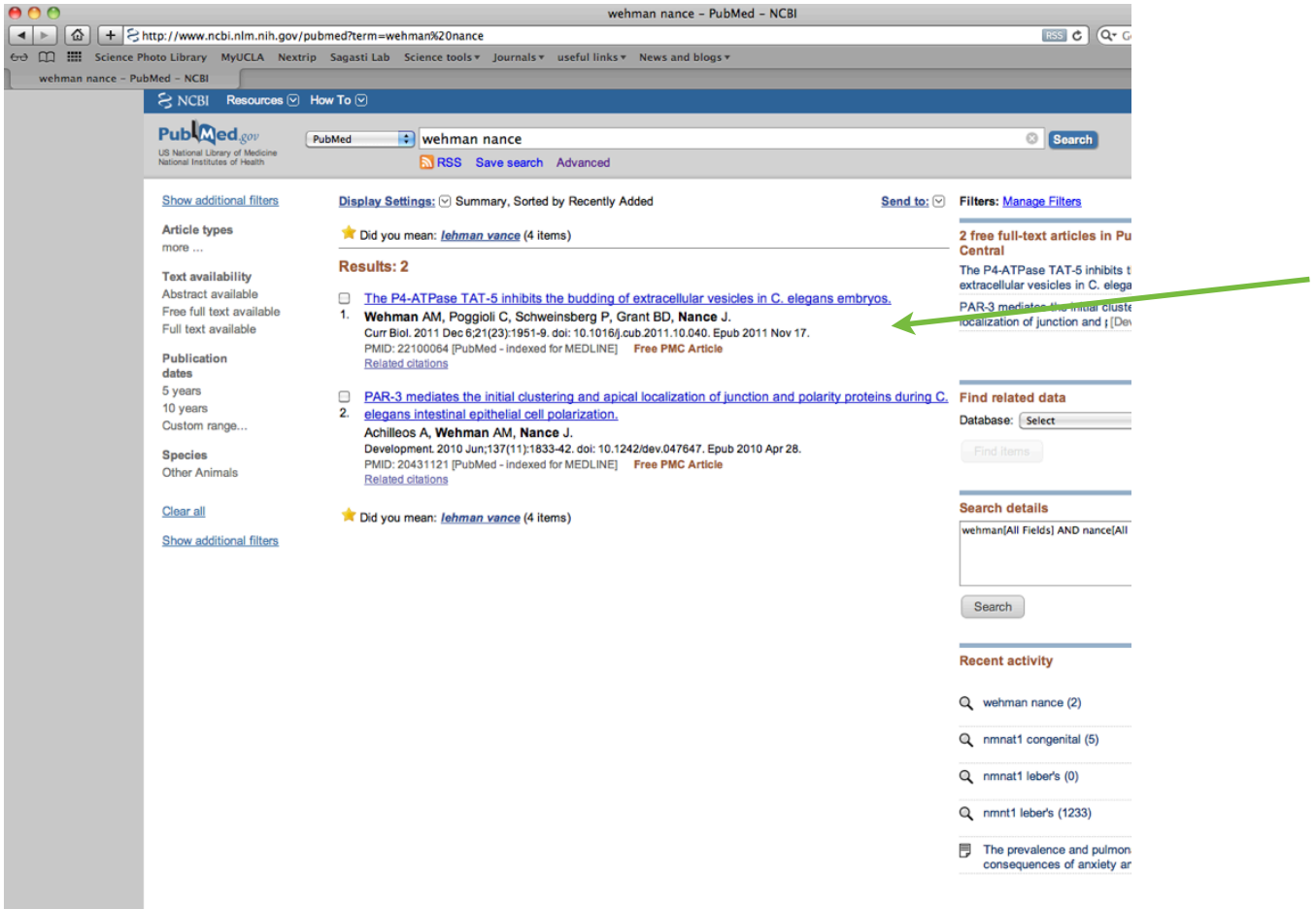
In pubmed, search by author/key words



Finding articles:

Method 2: Go to pubmed

Click on the article you want



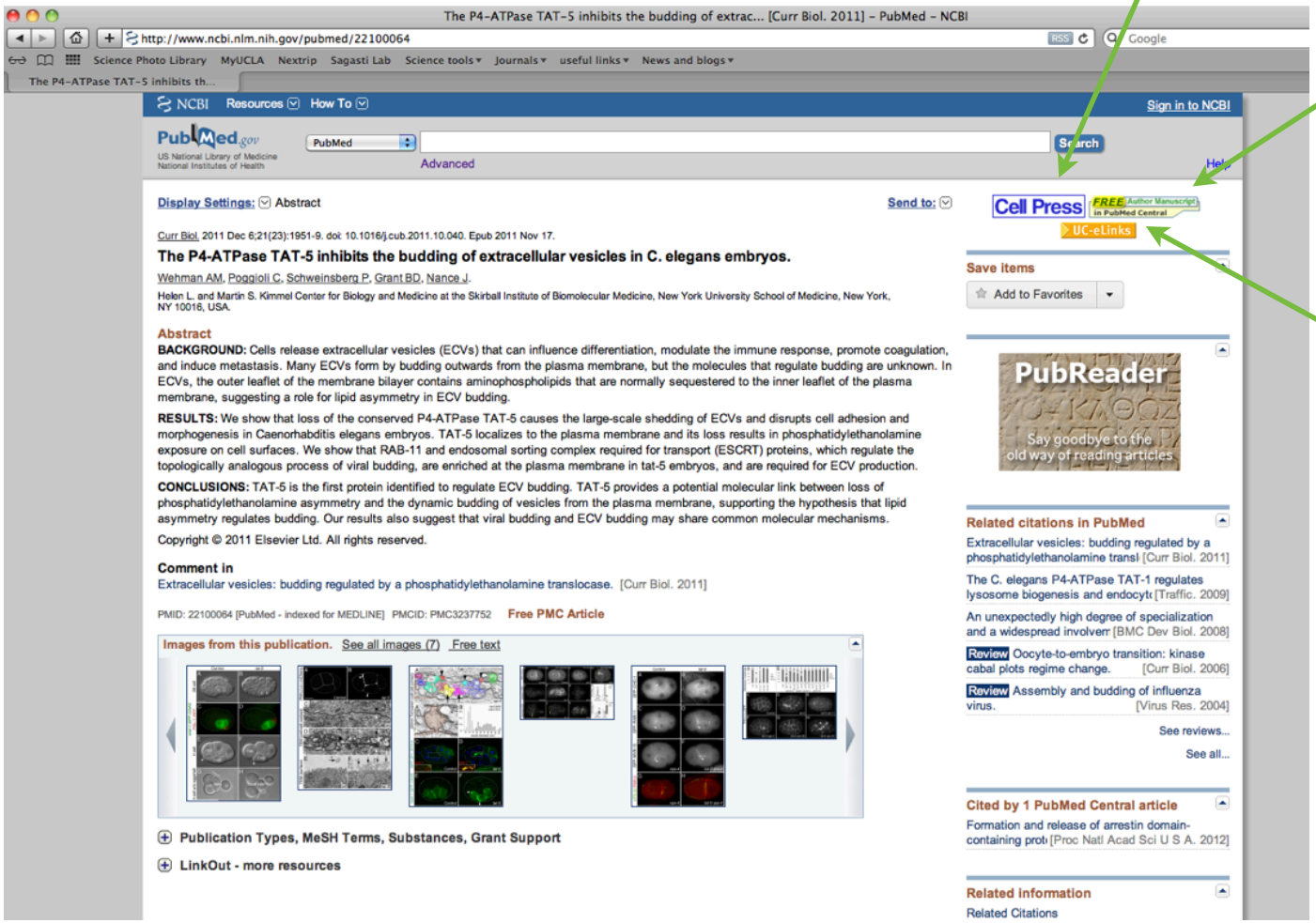
Finding articles:

Method 2: Go to pubmed

journal link usually works

PubMed central version is unedited, unformatted version

UC links always works



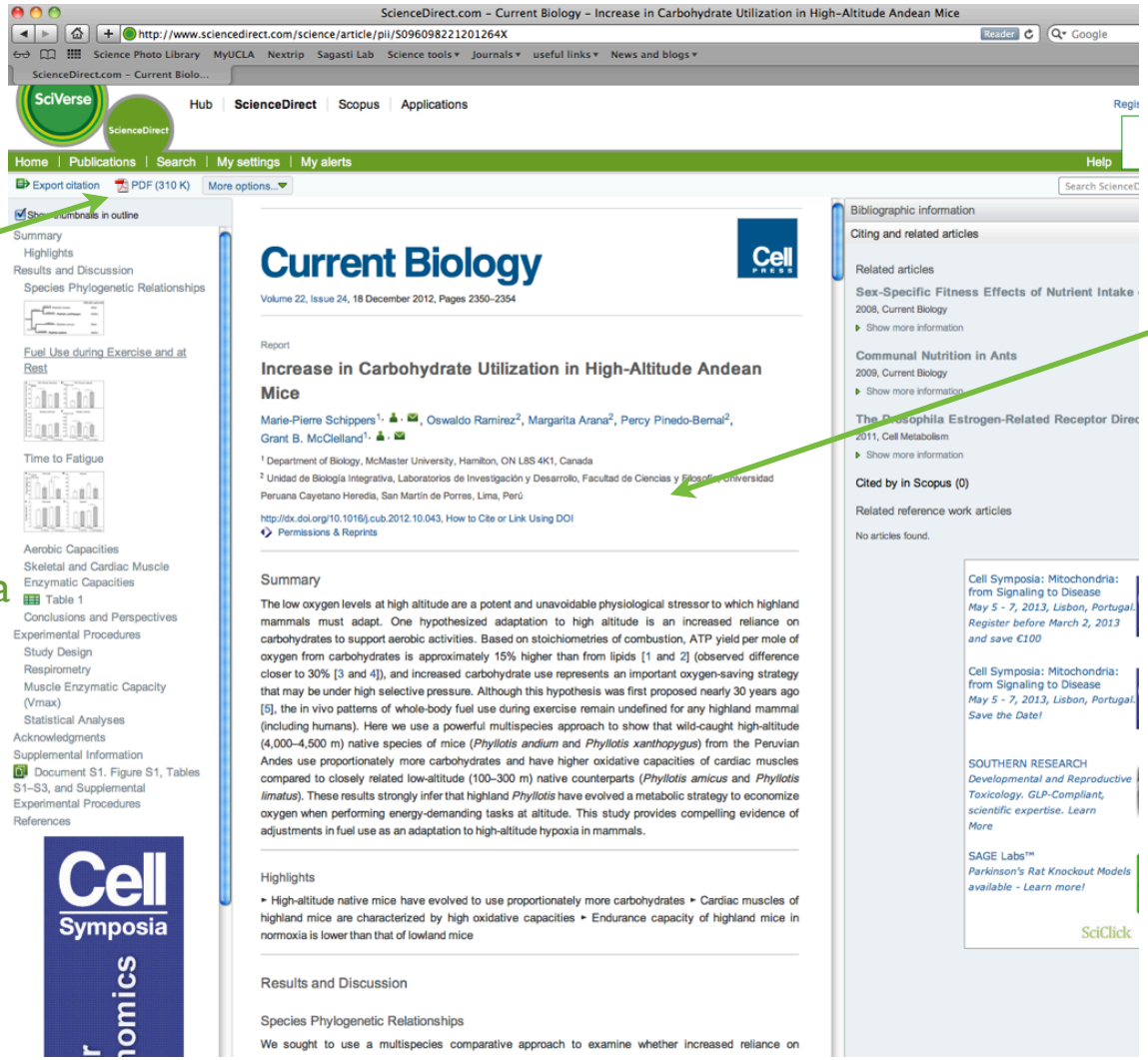
Finding articles:

You found it!

download PDF

check out supplemental data

Scroll through article in html (you can usually enlarge the figures)



See you next week!

(read the article!!!!)