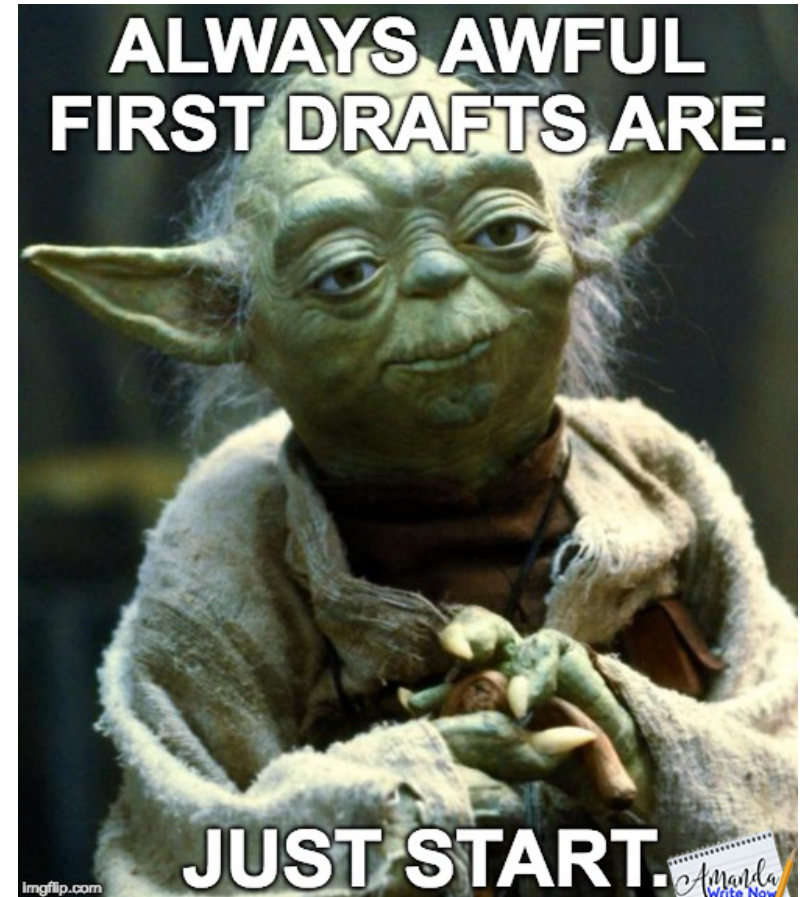


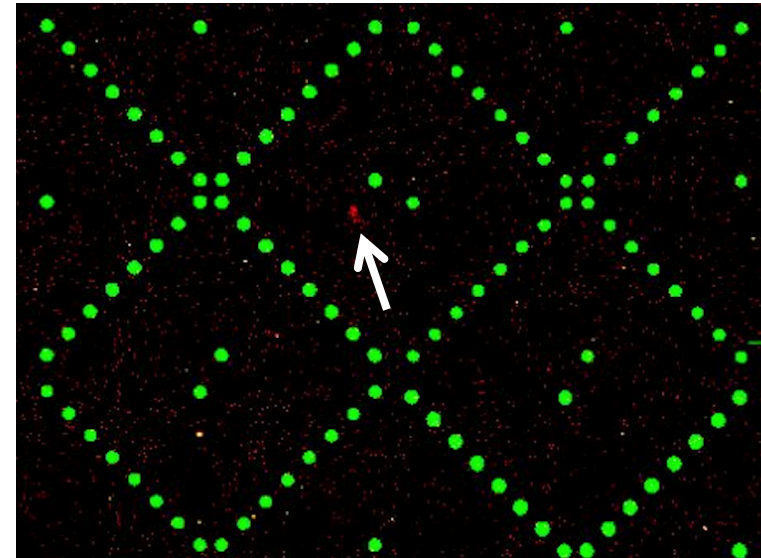
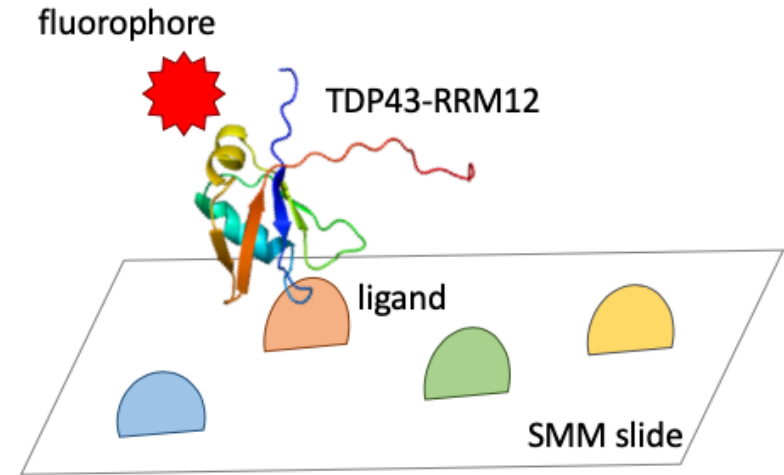
M1D5: Scan SMM slides to identify binders of TDP43

1. Prelab discussion
2. Scan slides (demo in Koehler Lab) *Field Trip!*
3. Review paper & Outline
Data summary figures



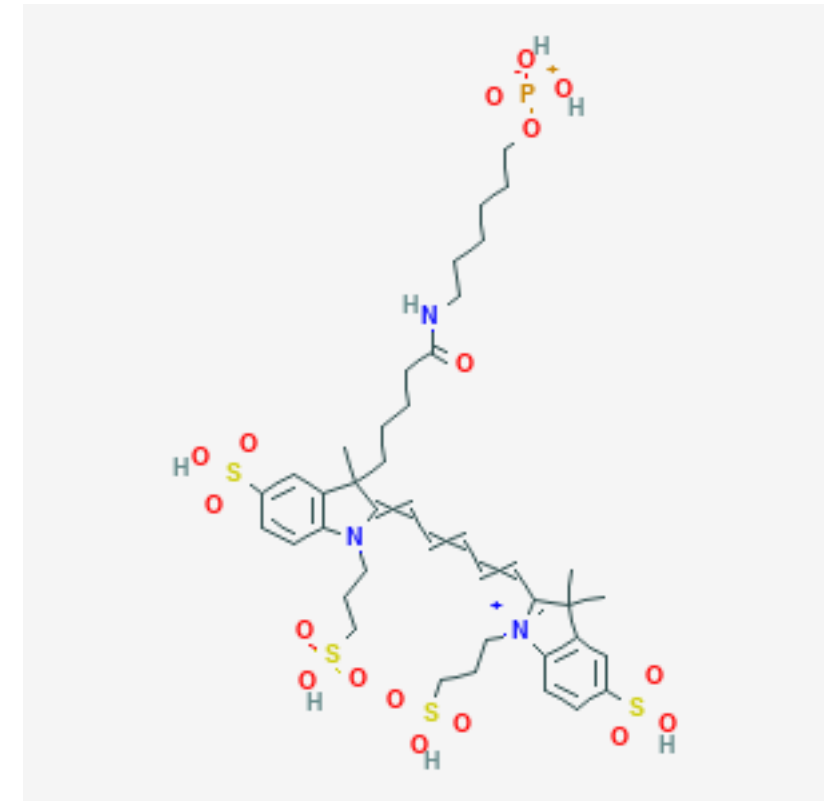
Identifying binders of TDP43-RRM12

- How were SMM slides prepared to promote ligand attachment?
- How does ligand attachment / orientation benefit protein binding?
- What are the controls?
- How are ligand binders identified?



Alexa fluor 647 used to visualize 'hits'

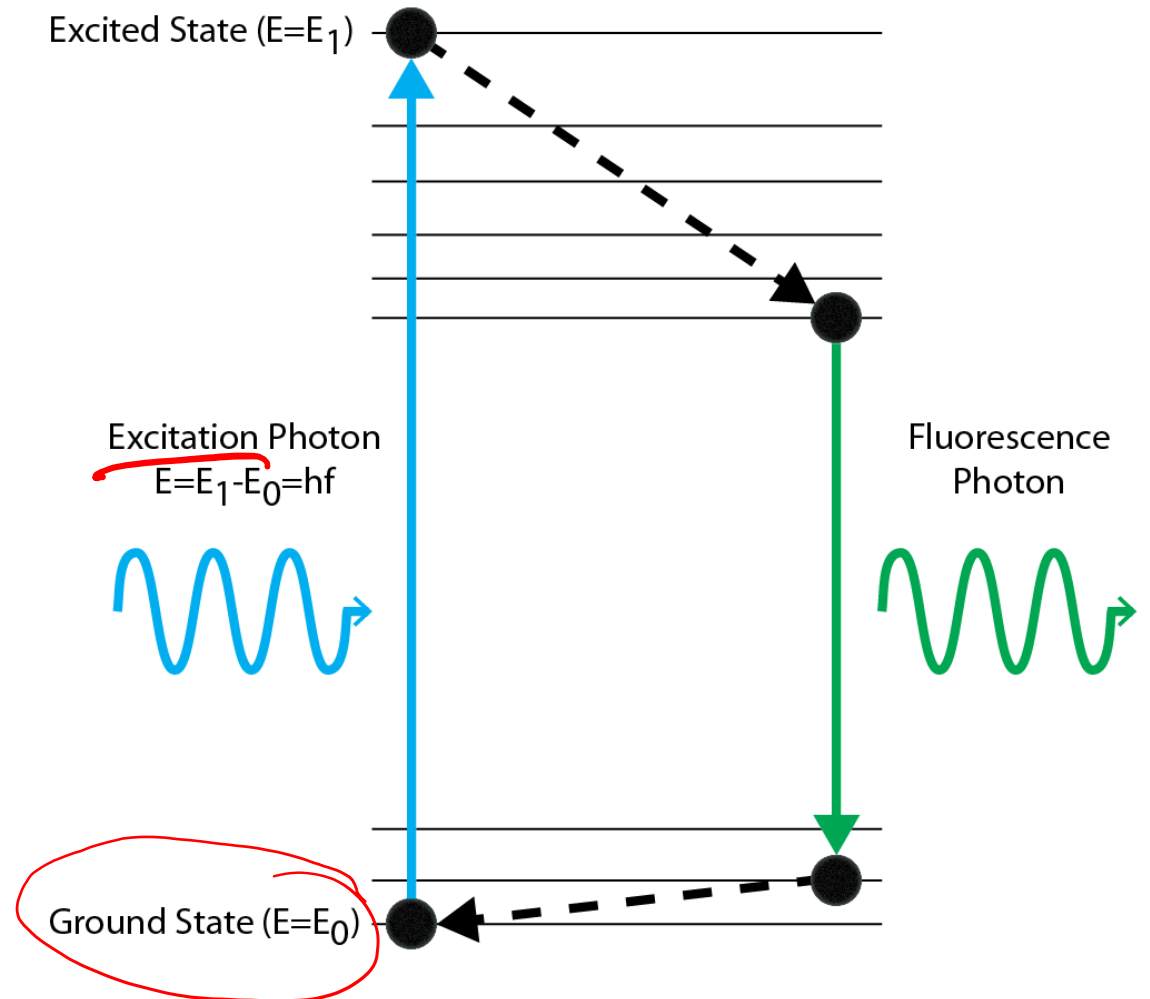
- Associates at high molar ratios without self quenching
 - Enables high sensitivity
- pH-insensitive over a wide molar range
- Has high fluorescence quantum yield and high photostability
 - Allows detection of low-abundance targets
- Remains active after excitation



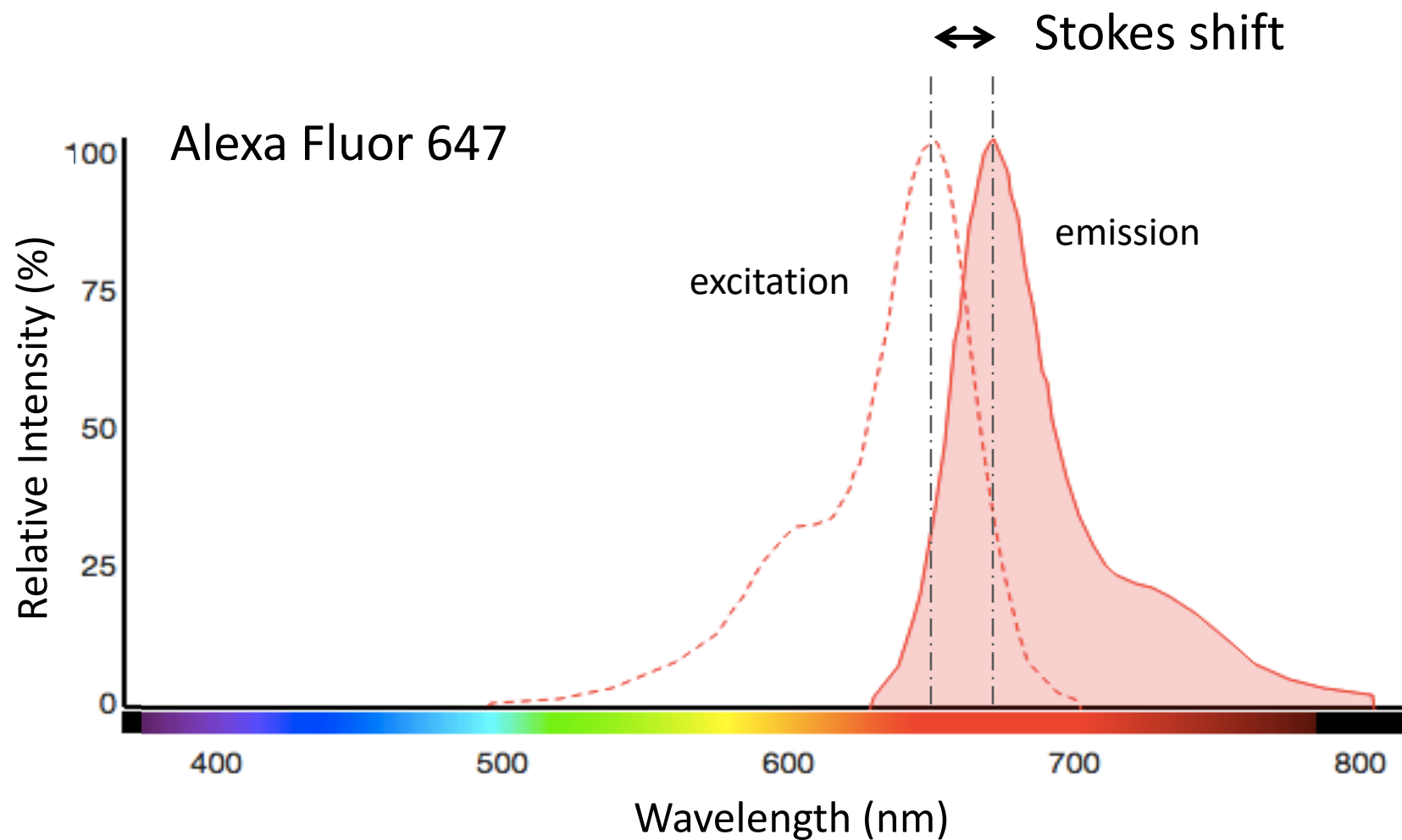
How is fluorescent signal generated?

- Fluorescent molecules absorb light energy at a specific wavelength
- As molecule returns to ground state, photon is emitted
- Emitted photon is:

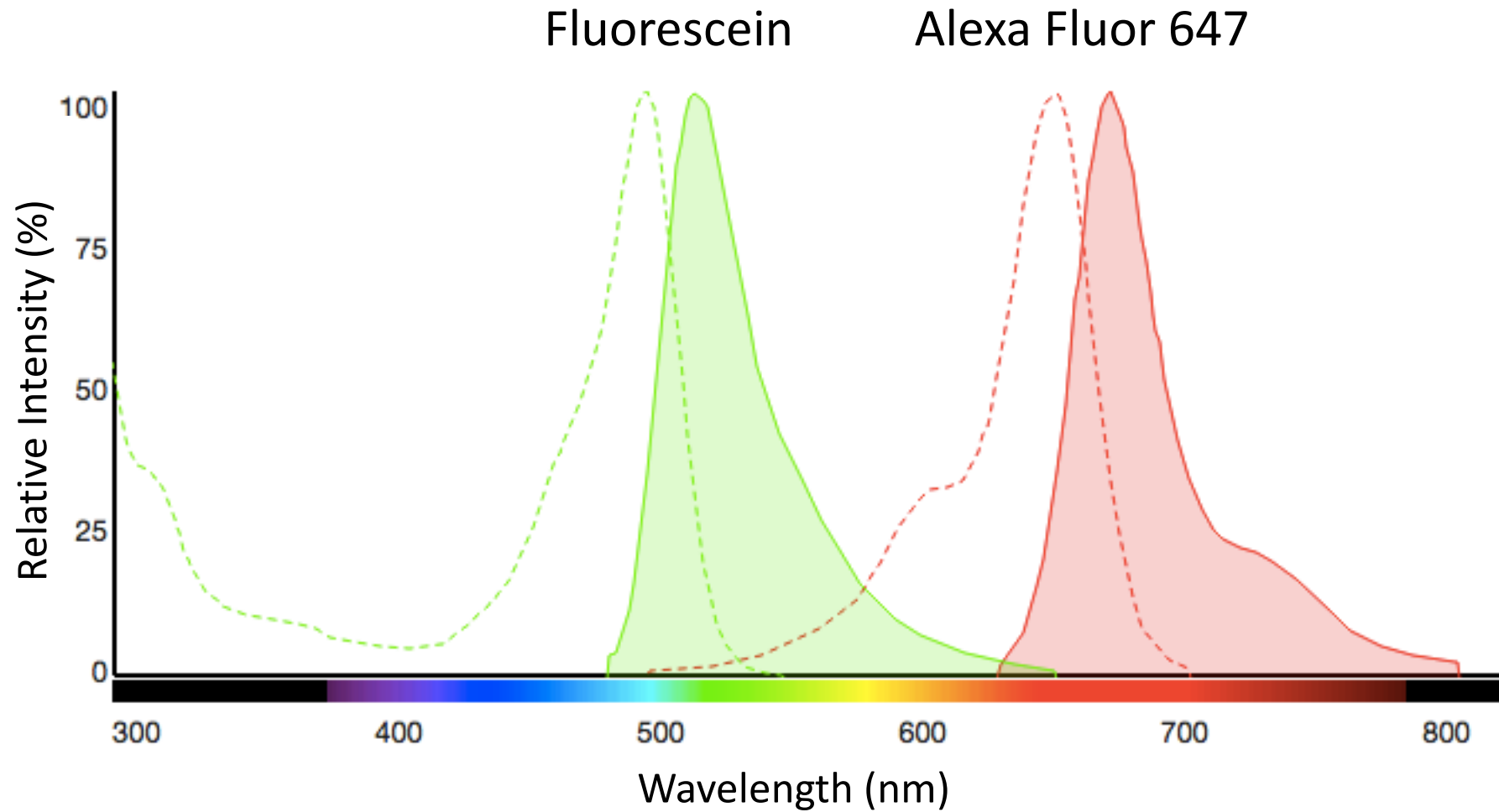
lower ~~lower~~ ~~lower~~ energy and
~~lower~~ *longer* wavelength
than excitation photon



Fluorescent molecules have unique emissions

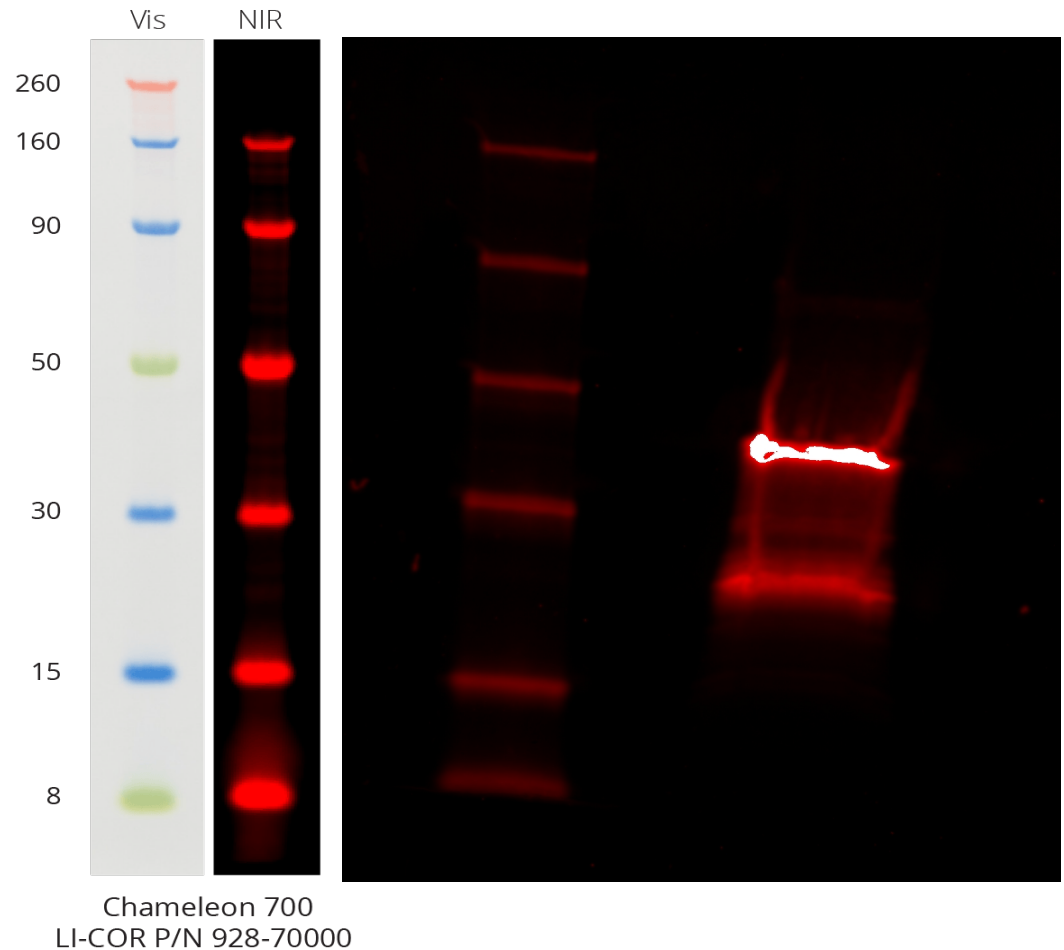


Why do we measure in two channels?



Why else is Alexa Fluor 647 label useful?

- Fluorescent signal not specific to SMM screen, can be used to visualize labeled protein with various imaging tools
- Are you confident you have the correct protein from the SDS-PAGE experiment?



For today...

- Will go in groups to Koehler Laboratory for demonstration
- Work with your partner to outline Data summary figures and future works experiments
- Get a start on the homework due M1D6!

For M1D6...

- Draft overview schematic for Mod1 Data summary
 - Don't forget the TITLE and CAPTION
- Outline of the script for your Mini-presentation

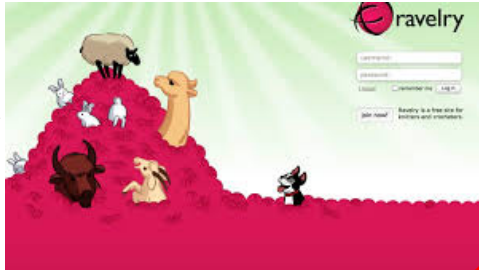
Notes on overview schematics...

How does Becky knit a scarf?

condense or exclude



Buy beautiful yarn



Choose a pattern



Cast on 250 stitches



Knit



Purl

exclude
K & P & K & P

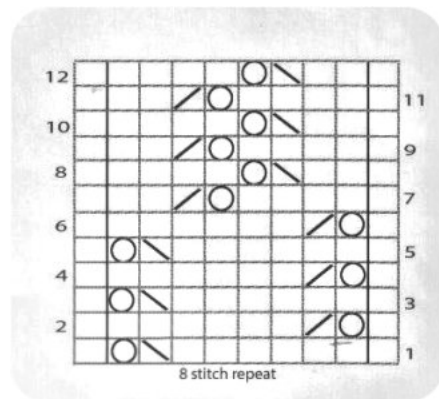
Realize that the size isn't quite right



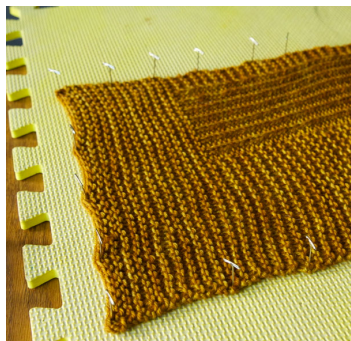
Frog it!



Cast on 400 stitches



Follow the pattern until time to cast off



Block scarf to wear

What should be in the Title and Caption?

Title: State what is shown / represented in the schematic

Caption:

- Explain the flow of information using concise / clear language
- Expand on text shown in figure labels to eliminate excess wordiness / clutter from the figure
- Define all abbreviations / jargon / labels / symbols

Revised example:

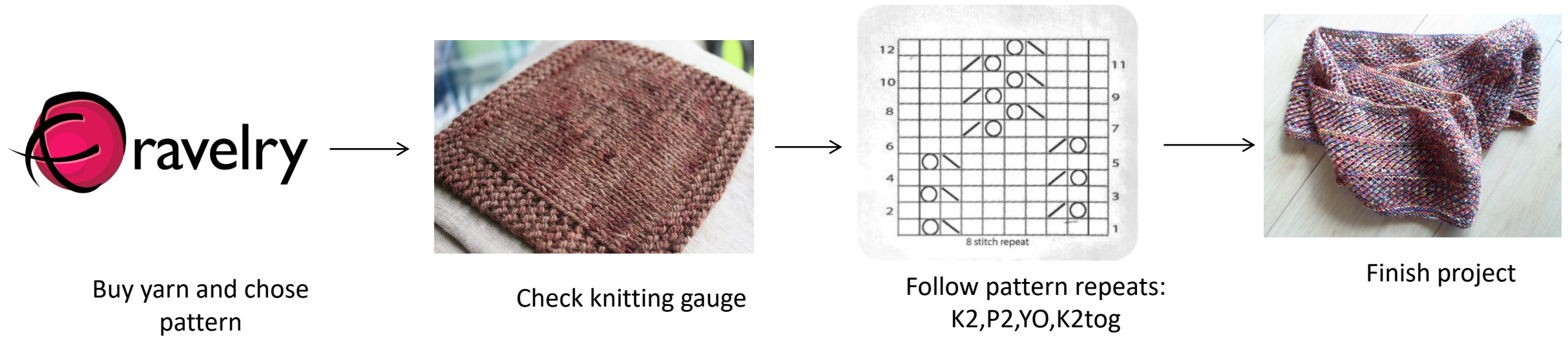


Figure 1: Becky's knitting process. Becky follows a specific protocol to knit a scarf. She chooses her yarn and checks the pattern before following the written pattern to complete the project. K2= knit two, P2= purl 2, YO= yarn over, K2tog= knit two together

Notes on Mini-presentation homework...

- Bullet / outline format
- Follow time and content guidelines:
 - Introduce yourself and your research project
 - Clearly state hypothesis to identify main question
 - Be quantitative when stating results (NOT “this was more/less than...”)
 - For now, use placeholder statements for key findings

Rubric for Mini-presentation

Category	Elements of a strong presentation	Weight
Introduction	<ul style="list-style-type: none">• Introduce yourself and the research• Summarize the background information necessary to understand the research• Provide a clear and concise description of the central question / hypothesis	25%
Methods & Data	<ul style="list-style-type: none">• Provide ONLY the method information necessary to understand the results• Give complete and concise explanations of the results• Relate the results to the central question	25%
Summary & Conclusions	<ul style="list-style-type: none">• Highlight the key finding(s) relevant to the central question / hypothesis	25%
Organization	<ul style="list-style-type: none">• Give a logical, easy-to-follow narrative• Include transition statements	15%
Delivery	<ul style="list-style-type: none">• Show confidence / enthusiasm and speak clearly• Use appropriate language (technical or informal, as appropriate)• Be mindful of the time limit (3 minutes +/- 15 seconds!)	10%