M2D4: Align sequencing and prepare for Journal Article presentations

- 1. Prelab discussion
 - 1. JA presentation notes

2. Align Sequencing

3. Comm Lab workshop



Overview of Mod 2 experiments:



Modified bases used in sequencing reactions

- DNA polymerase acts at 3' OH of growing DNA strand to create phosphodiester linkage with 5' P of incoming nucleotide
- Dideoxynucleotides lack OH group needed to extend sequence
 - Causes growing DNA strand to terminate



Deoxynucleotide (dNTP)



Dideoxynucleotide (ddNTP)

How is sequence determined using DDNTPs?







For today...

- Align the sequencing results you generated in M2D3
- Comm Lab workshop

For M2D5 (Tuesday 4/9 – AFTER JA presentations)

- Outline the Introduction for your Research Article
 - Use place holders for Here we show...
 - and any other information we don't yet have that you want to include
- Create a **Data Figure** (with title and caption) of sequencing data

Notes for the Journal article presentation

- Review Comm Lab workshop slides and workshop notes
- Complete individually
- Slides due by 12p on your presentation date
- Submit slides to Canvas
 - These slides will be downloaded to a common presentation computer
- Ask questions after peer presentations
- Meet with Noreen to review / discuss your presentation



THE BEST THESIS DEFENSE IS A GOOD THESIS OFFENSE.

What day will you present? (not in this order)

Wednesday April 3

- Lexi
- Rui
- Olivia
- Luc
- Meryl
- Sofia
- Verose
- Sabrina

Friday April 5

- Leena
- Leah
- Kyle
- Hannah
- Naomi
- Anna
- Kristine
- Erin

How will you communicate their science?

Format considerations [edit]

The timing provided here is a guideline for a 10-minute presentation. Your presentation may vary depending on the content.

Section	Minutes	Number of slides	DO	DON'T
Introduction	~2	2-3	 Introduce the key concepts that the audience will need to follow your presentation. Briefly state the overall scope and significance of the study what is the central question and why is it interesting? Try to summarize background material with a model slide rather than lines of text. If text is needed, bring in the details as you speak using PowerPoint animation. 	 Don't assume you are addressing an expert audience. Don't give more information than is absolutely needed to understand the rest of your talk. Don't put too much information on each slide.
Data	~7	4-6	 Present the data in a logical sequence, letting each slide build upon the previous ones. Include a title for each slide. The title should be the conclusion and should be unique to the information on the slide. Make every element of your slide visible to the entire room. This means 20-point font or greater. Interpret each slide thoroughly and carefully. Point out strengths and weaknesses of the data along the way. 	 Don't read your talk. Similarly, do not read lists from slides. Don't put much information on each slide. Each slide should make only one point. Never say, "I know you can't read this, but". Everything on each slide should be legible. Don't be afraid to remind the audience how the data fits into the overall question
Summary	~1	1	 Review each of your main messages. Clearly state what the study contributed to the field.	Don't repeat experimental details.
Question & Answer	?	0	 Answer the question being asked. If you are unclear about the question, ask for clarification. Respect every question and questioner. 	 Don't take too long with one question. If the discussion is involved, suggest meeting after the talk to discuss it more.

How will you report data?

- Consider how to present the main finding / conclusion using the key data from the article
 - Do not have time to show everything- choose a storyline!
- Each data slide should present a single message
 - Do not include all panels for every figure
- With a **10 minute** presentation, slide design in key!
 - Title = take-home message
 - Text is good, but only important details are included
 - The data are the most important part of the slide



Storytelling!

What is a "figure"?

- Which figures best convey the takehome message of the paper
 - Which subpanel is most informative?
- Which figures are best for a visual presentation
- Omit subpanel labels and captions
- Remake axis labels when necessary!
- What figures are you able to understand / explain?

Protein	Accession Number	No. of peptides	Coverage (%)
SC31A	Q3UPL0	166	35.5
INSR	P15208	86	24.3
RPB1	P08775	43	18.3
SUCB2	Q9Z2I8	42	45.0
CLH	Q68FD5	35	20.2
RPB2	Q8CFI7	34	24.7
M	ouse liver n	uclear ext	tract
Protein	Accession Number	No. of peptides	Coverage (%)
INSR	P15208	11	5.1

P08775

5.1

В







RPB1





Figures can be overwhelming!

- What can you do with data like this?
 - Use animation to layer in the information
 - Use boxes / arrows to highlight the information as it is discussed
- Remember to explain all data you show!
 - You are allowed to omit extraneous data as long as it does not change the conclusion of the figure



Not every figure projects well

- What can you do with a low contrast image?
 - Describe each image and the key features in your script
 - Use labels on the images that define what is shown in each
- Avoid stating "this is difficult to see" or "this is better in the paper"





Figures may include layers of data

- When results for controls are shown, be sure to...
 - Describe how the control is a control
 - State what is expected and how is relates to the experimental results
- Conditions and results for individual variables should be addressed



Think about how you are presenting the data

- Slides are for the audience, not for you!
 - Succinct bullets allow over-caffeinated, sleep deprived listeners to follow the key information presented
- Images should be visible to the geriatrics grading you and shown long enough for the listener to see the data (and for you to walk through the results)
- Brief statement on how the data were generated should be included to ensure the listener knows how to interpret what is shown
- At the end of each slide, your listener should know:
 - How was it **done**?
 - What does it mean?
 - Where does it lead?

EXAMPLE SLIDE: Football coaches are the highest paid employees at doctoral-granting universities

- Data represent expression of Y using method A
- Possibly something about the control(s), if applicable
- Important notes about the data and findings that are not already stated in the title
- Transition to next slide...
 (can also be done verbally)



\$1.057.305

EXAMPLE SLIDE: Football coaches are the highest paid employees at doctoral-granting universities

- Data represent expression of Y using method A
- Possibly something about the control(s), if applicable
- Important notes about the data and findings that are not already stated in the title
- Transition to next slide... (can also be done verbally)



\$1.057.305