

## Report on “Finishing Your Fosmid” Adapted for Hybrid Assembly Finishing Projects

Dear Bio 4342 students,

Your written and oral report detailing your efforts to finish your fosmid clone will be due \_\_\_\_\_. The **oral report on \_\_\_\_\_ should be 10 minutes** long and should be done with PowerPoint figures. The written report should be provided in hard copy before your presentation, and should include the same data figures, plus additional figures as needed. (Two copies, one with color figures, are required.) Writing Intensive (Bio 434W) students will need two additional copies, one for your Writing TA and one for your colleague. Copies should also be submitted electronically to \_\_\_\_\_ and should include the finishing checklist.

Your written report will document the process you used to finish your fosmid, and should include the items listed below plus commentary. You may format your written report as you wish; feel free to write in first-person. This is your project! Please start with a brief abstract describing major problems and their resolution in a few sentences (no figures). A brief introduction stating why the dot chromosomes of *Drosophila* are of particular interest would be appropriate (one paragraph). Then start the detailed description of your work with Figure 1, your initial assembly, and proceed with the items listed below.

Since you only have 10 minutes for your oral presentation (and we will need to stay on time!), you will not have time to explain every problem region in your oral report. Start with your initial assembly and end with your final assembly. Show one example if you solved the same sort or problem multiple times, and explain in more detail unusual areas or problems that other students may not have come across. Assuming that you were able to use Autofinish, you should comment on differences between the reads that you called (if any) and the reads called by Autofinish (if any); if no reads were called, say so. After seeing the Autofinish results, did you choose to call any more reads in any areas? Did Autofinish call reads that you thought were unnecessary? If you did not use Autofinish, mention why that decision was made. If you used AutoEdit, compare the AutoEdit results with your own? How many changes did AutoEdit make in the consensus? Did AutoEdit change any consensus sites that you did not?

You should make sure you include the following in your report:

1. Figure showing your initial assembly
2. Description of problem areas in your initial assembly, including either a table or summary statistics.
3. Give a detailed description of how you assessed problem areas in general and show at least one specific example.
4. If you called any reads, give details on how you selected your primers and the results of your efforts. How many PCR primer pairs did you need to try? Include a table of reads called, primers with location, and outcomes.
5. If you found any regions with multiple discrepancies, discuss how you came to the final consensus. Did you need to pull out any reads? How confident are you (based on read lengths, paired ends and repeat composition) that the consensus is correct?

6. Include a final summary of your results. For what fraction of your problem areas did you change the consensus? For what fraction was the consensus correct?
7. Figure showing the final assembly indicating changes, or a table listing changes as appropriate.
8. Description noting other items on the final checklist, particularly any remaining problems.

The following should be helpful in describing problem regions and their resolution:

1. Assembly View with mis-assemblies and/or repeats indicated
2. Figures showing zoomed in view in aligned reads window
3. Figures showing the trace window for any PCR/sequencing reactions

Usually these figures can be created by screen capture of the appropriate Consed window on your Mac. In addition to Screen Capture (apple + shift + 4) there are two applications for this purpose: Grab (in the utilities folder) or Snapz Pro. If you have any problems with capturing images, please ask during class! If you have any further questions about the report, please e-mail and they will be answered in class. Good hunting!