**JAMIE:**  
Poster noots

* Label gel lanes
  + Specify ladder dimensions (largest, smallest) to help denote scale
* Center all sections
* Other poster style
  + Minimal text
  + Speak primarily with diagrams
* Keep audience in mind
  + If many people, keep it simple and concise
  + If few, highly specific audience, it can be more specific
  + Colourblindness
    - Use different intensities of colour
    - Keep it in mind
* Focus on most important/interesting data

Manifesto noots

* Health and time management
* Standards

Health and time management

* Summary
  + Mental and physical heath is important, an array of resources and strategies can be pursued to help manage stress and workload to prevent ‘burning out’ and stay happy
    - The student wellness center is a great resource
    - Time with family and friends
    - Sometimes relaxing involves taking time away from work, don’t stress about this
  + When at work
    - don’t assume you are getting work done. Spend time at work exclusively on work (avoid distraction)
  + When not working
    - Avoid ‘time sinks’ – non-relaxing leisure skills
    - Bring a notepad! – sometimes a relaxed mind can solve a problem that you’ve struggled with for a while
* Notable/interesting
  + Very important to balance work/time off, sometimes you will sacrifice your end-product to maintain mental health (I struggled with this)
* ‘tweetables’
  + “Time taken for family, friends and personal health can help to increase your energy levels and make it easier to focus when you are working. In some cases, one or more of these may require you to take time off from your thesis or to drop it altogether”
  + “Spend your work time working and your relax time relaxing”
* Improvements
  + GETTING ENOUGH SLEEP (important for me)
  + Try to have hobbies and/or personal projects to pursue in time off
  + “Seek relaxing activities that will help you feel fulfilled in other aspects of your life while taking your mind off of work for a while, such as….”

Standards

* Summary
  + You have the potential to be an outstanding student, to attain this always seek suggestions for improvement and train yourself to view criticism as important feedback.
  + Publishing
    - The goal of a research thesis is to publish a paper in a peer-reviewed journal. However, this is not achieved in many cases
    - This can be explained by the Anna Karenina principle of thesis publishing
      * Anna Karenina Principle – “All happy families are alike; each unhappy family is unhappy in its own way.”   
        – Leo Tolstoy, *Anna Karenina*
    - All top scientific studies are alike, with excellence in…
      * 1. Framing
        + Putting the entire study in context
        + Why is it important? Why is it unique?
        + Requires a good understanding of relevant historical and cutting-edge literature
      * 2. Experiment
        + Arguably the most important aspect of a good research thesis
        + Experimental design

Does it properly test the hypothesis?

* + - * + Experimental execution

Hardest part of a thesis

Did you meticulously record and observe data

Requires dedication and constant effort

Extra effort will show

* + - * 3. Data analysis
        + Often most challenging for students
        + The reproducibility and open science standards require ‘hard coded’ data manipulation/analyses
        + **Many helpful tools in the resources section**
      * Writing
        + The importance of good writing is almost always underestimated by students and even many established scientists
        + ‘communication is key’
        + Requires consideration of how/why certain words are chosen
      * Presentation
        + Posters, oral seminars, publications, press release
        + Must cut through the noise of the thousands of other studies being published
        + Must think about target audiences – knowledge, interests, biases
      * Dissemination
        + Important in the modern world to cut through mediocre scientific research
        + Funding agencies looking at metrics rather than publication number
        + Help others find it
    - Final note
      * A good research thesis constantly revisits each step
        + E.g. updating/adding experiments/analyses, changing the questions to modify the frame
* ‘tweetables’
  + Anna Karenina Principle – “All happy families are alike; each unhappy family is unhappy in its own way.”   
    – Leo Tolstoy, *Anna Karenina*
  + “In some ways, a good execution is like a good physical workout, you need to start with a solid, sustained effort, and then push past the fatigue and your desire to ‘just get it done.”
  + “It [the thesis] is like a giant mental puzzle where the pieces are not completely formed and you want to make them fit as tightly as possible”
* Figures
  + Maybe have links to notable papers as examples?
* Surprising/notable
  + The ultimate goal of a research thesis in the Colautti Lab is publication in a top peer-reviewed journal. Every thesis student is given a thesis project that that could lead to one or more publications.
* Problems
  + The relevance of the Anna Karenina principle isn’t specified, seems very out of place
  + REGARDING EXPERIMENT – experimental design: good organization is crazy important
  + Spelling error: **au\_dience** (in presentation section)
  + Talking more about how to get there!!! Tips on where to look/what to do to improve at the end of each section
  + Are there other standards? Only talk about publishing