

M2D9: Statistical Analysis of Flow Cytometry Data

04/12/16

1. ✓ Paper Discussion in 56-302
2. ✓ Quiz!
3. Pre-lab discussion
4. ✓ Stain irradiated cells
5. Statistical analysis

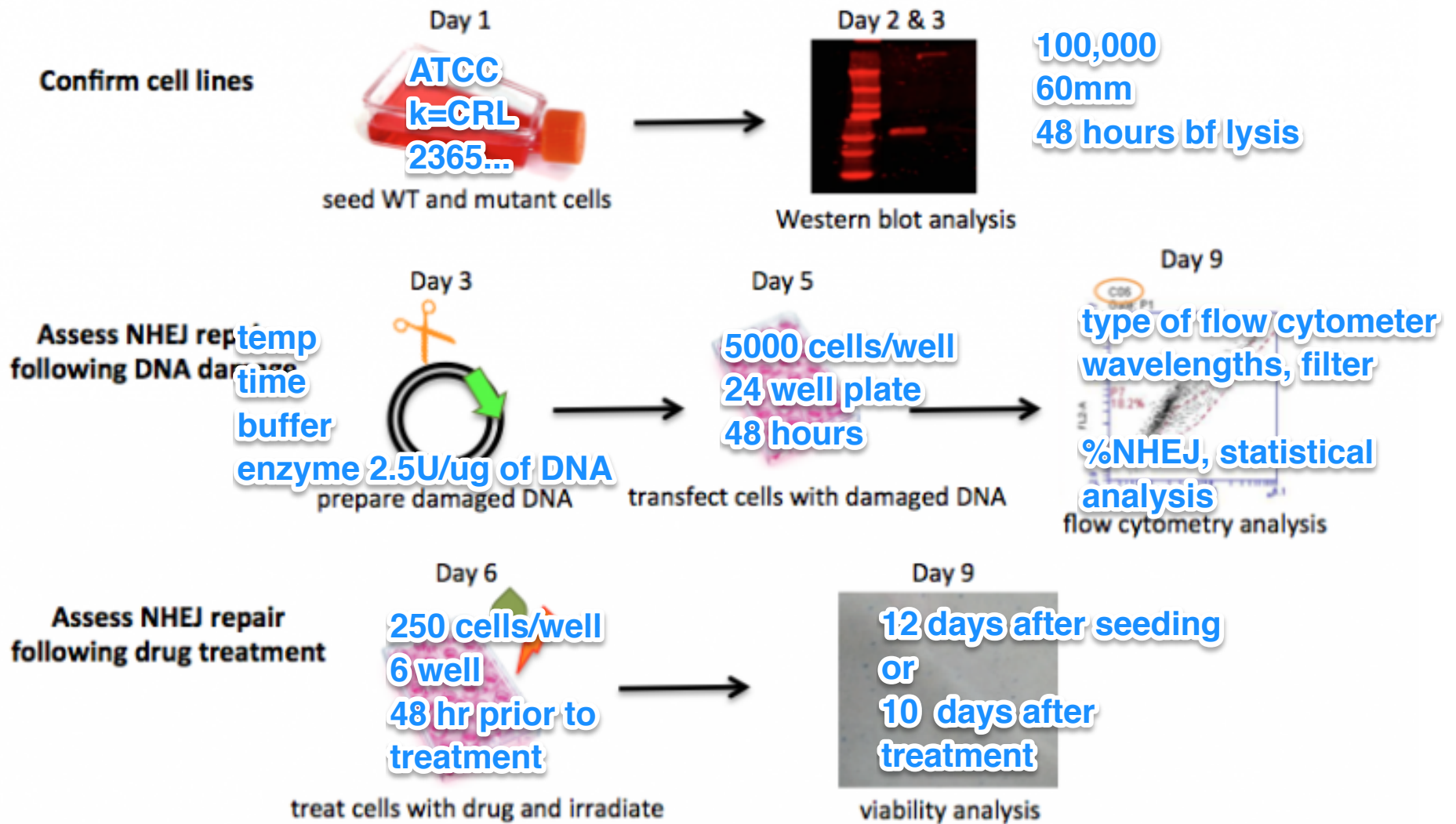
MOD 3 Begins Thursday!!

Assessments for Mod2:

- *Journal Club* (10%): ALL DONE!
- *System engineering research article* (25%):
due at **5pm on Monday, April 18th**
- *Blog posts*: (1) post-Journal Club and
(2) post- Mod 2 research article
- *Mod2 notebook*: M2D1 due tonight at 10pm
purpose and summary!

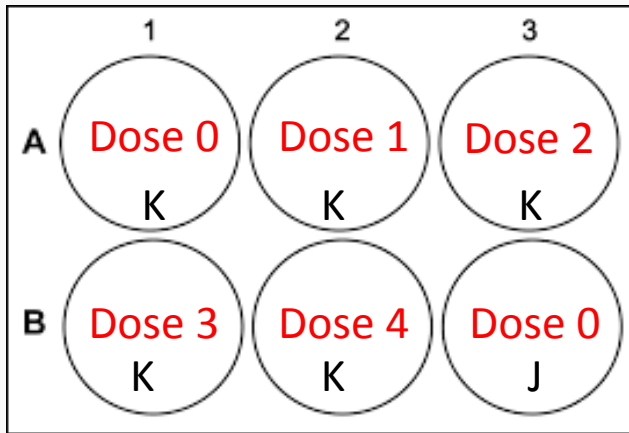
- **Extra office hours in 56-302:**
- **Wednesday 04/13:** 10am-12pm Leslie in 16-429b
- **Thursday 04/14:** 9am-11am Maxine in 16-239
- **Friday 04/15:** 9am-11am Maxine in 16-239; Leslie 3pm-4pm in 16-429b
- **Saturday 04/16:** 2pm-5pm Noreen in 56-302
- **Sunday 04/17:** 10am-12pm Leslie in 56-302; 2pm-5pm Noreen in 56-302

Mod 2 experimental overview: Methods Review

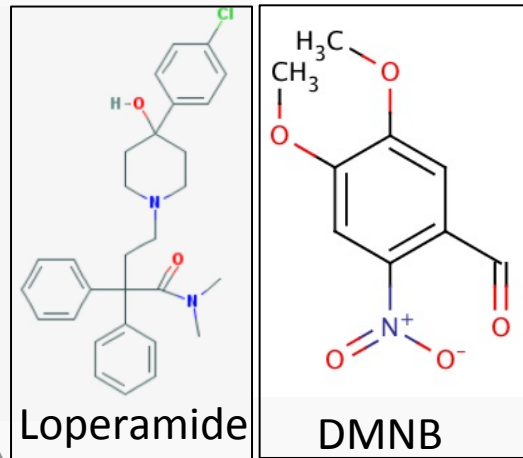


Control Experiment: Did our inhibitor work?

Day 1: Seed MO59J and K cells at low density



Day 3: Dose response of NHEJ inhibitor around IC50 and expose to plate to ionizing radiation



+ 4 Gy of ionizing radiation

Day 12: Count surviving cells via colony formation assay



Calculate surviving fraction:

$$= \frac{(\# \text{ colonies/well}) \text{ of dose 1}}{(\# \text{ colonies/well}) \text{ of dose 0}}$$

only compare 2 variables for statistical analysis!!!

What questions can we ask with our data?

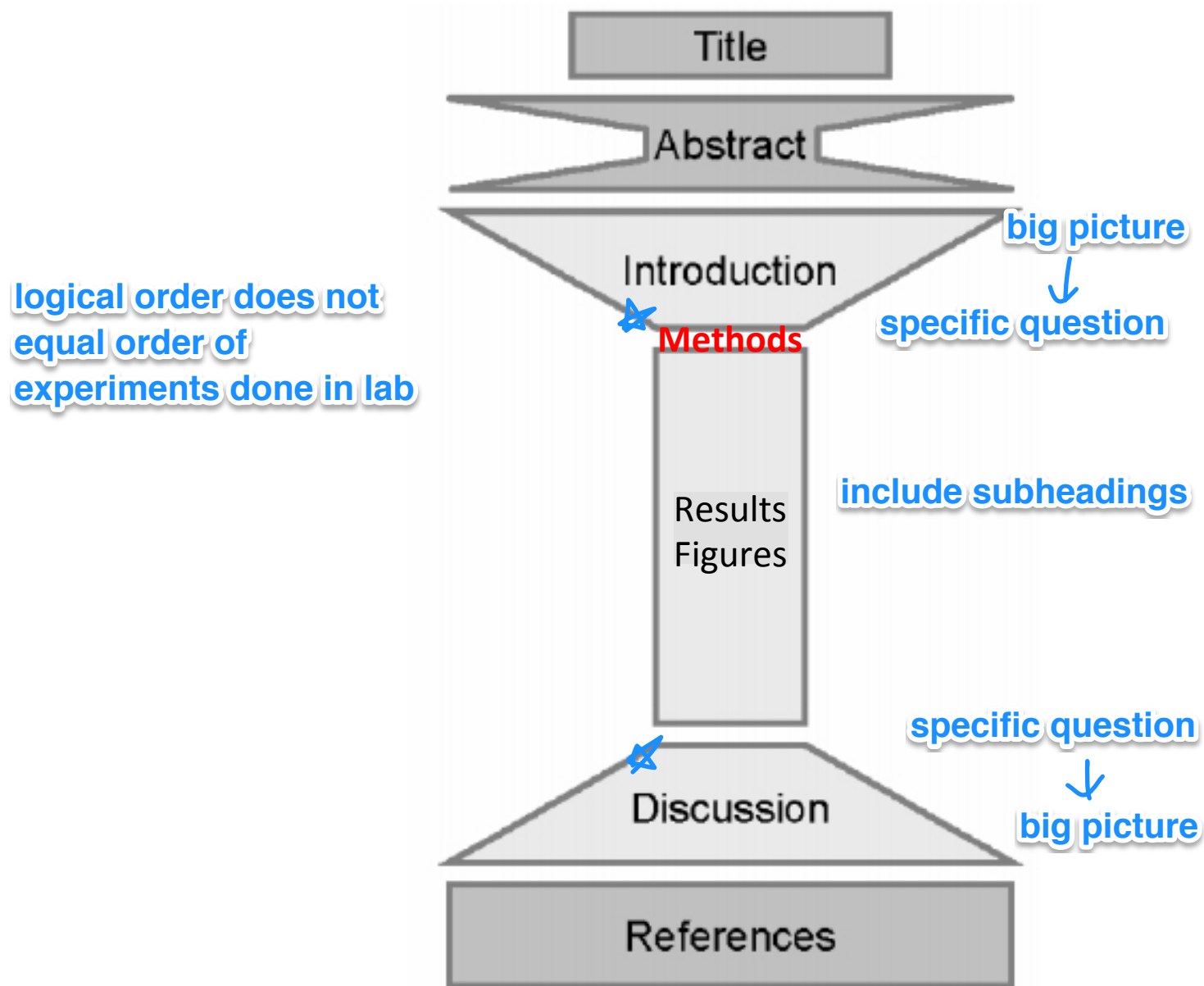
1) Is % NHEJ different w/ different damage types?

2) Does no DNAPK influence % NHEJ in our assay?

3) did the drug have an effect in our assay?

4) Is there a difference b/t J and drug treated?

Review of Manuscript Architecture



Review of Manuscript Architecture

Introduction

- **big picture motivation**
- **gap in the knowledge**
- **background- define terms**
- **hypothesis**
- **preview of results**
- **implications**
- **don't forget citations**

Methods

- **descriptive subtitles**
- **intro sentence to each subsection**
- **concise writing**
- **logical organization**
-

Review of Manuscript Architecture

Figures + Captions

- reasonable size
- descriptive title
- intro sentence in caption
- caption describes image and nothing more

Results

- intro/purpose/motivation
- what you did
- what you found
- summary and transition

Discussion

- reiterate results and implications
- Evidence your results are in line with interpretation
- Caveats
- Put data in context
- Discuss impact and next steps

Today in lab

- Stain irradiated cells
 - Look at cells in TC before bringing them to the main lab
 - Take picture of stained cells on gel doc. station or with phone camera
- Start statistical analysis during staining incubations