

Intro to the Lab

Erin Osborne Nishimura

June 28, 2022

Today's talk

- Welcome to the lab
- Staying safe
- Staying organized
- Staying happy
- Lab Finances

Welcome to the lab



The people



Erin Osborne Nishimura, Ph.D.
Assistant Professor



David King, PhD
Research Scientist



Jessica Hill, PhD
Postdoctoral Researcher



Robert Williams
Graduate Student



Lindsay Wickenbach
Graduate Student



Nalysha Torres
Graduate Student

Undergraduate Students

Andrew Moore

David Shepard

Karissa Coleman

Technician/Lab Manager

Now hiring

Collaborators

Hoerndli & Montgomery lab members will
come to use the injection scope



The physical lab space

Our lab

- MRB 227 – the main lab
- 208 – the auxiliary lab
- 212 – the office
- 239 – Erin's office

The building

- BMB office – 1st floor
- Lunch room – 3rd floor
- Autoclave room – 2nd floor
- Conference rooms – 2nd floor

Digital Lab Resources



- Lab webpage
 - onishlab.colostate.edu
 - onishlab.colostate.edu/log-in
 - Pwd: celltype 227
 - How should we use this space?
- Quartzy
 - ordering
- EON-NAS
 - Data, images, sequencing, & backups
- LabArchives
 - Electronic lab notebook
- SUMMIT
 - High performance compute cluster
 - Will move to ALPINE
- RSTOR
 - CSU library data storage
- How can we better use ONE DRIVE?

- Lab meetings
 - Everyone expected to attend
 - Undergrads are flexible
- Standing meetings
 - Schedule with Erin – grads, post-grads, techs
 - Schedule with your mentor – undergrads; with Erin periodically
- IDP – Individual Development Plan
 - annual
- WyCo Meetings
 - monthly on select months
- Symposia
 - Annual Front Range Worm Symposium
 - BMB Retreat
 - RNA Symposium
- Peer-to-Peer learning
- Upcoming travel/conferences

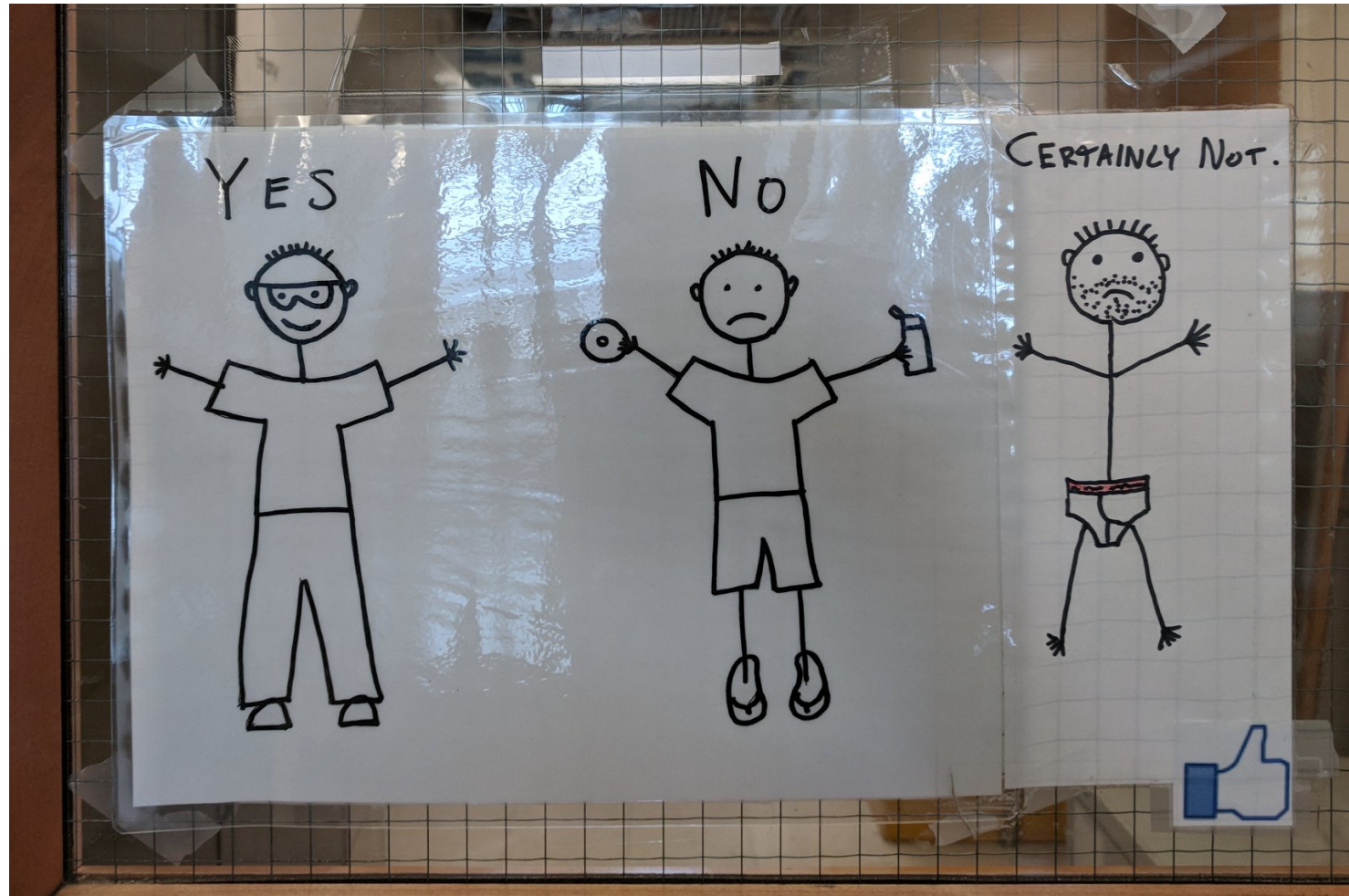
Lab events



Your intro to the lab

- Obtain lab keys
- Obtain card access
- Obtain EON-NAS access
- Obtain Lab Archives account
- Obtain Quartzy account
- Lab listserve
- Lab calendar
- Understand off-campus VPN
- Obtain training in ehs.colostate.edu (Environmental Health & Safety)
- Lab website
- Emergency Contact Info (Located on the NAS)
- Goals and Expectations – please review with your mentor

Staying safe



Safety locations

- Safety notebook – located next to the door of MRB227 (folder)
- First aid kit – located in MRB227A, MRB208 (need to refresh)
- Spill kit – located in MRB208 (need to check if it is still good)
- Obtain goggles & lab coats from Chemistry Stockroom & the Bookstore or order online
- EHS person – Jessica Hill, temporary. (Rob Williams, prev)

Chemicals and hazardous materials

- Receive proper training
- Stay informed
- Use appropriate personal protective equipment (coat, goggles)
- Wear appropriate clothes even in the summer
 - Close-toed shoes
 - Full length pants
 - Long hair tied back
- Use fume hood for hazardous and stinky chemicals
- Label all chemicals properly
 - Full names (ethanol)
- Hazardous chemicals must be in cabinets and secondary containers
- Get certified – log into ehs.colostate.edu and take “Hazardous Waste Training” and other relevant training like “Formaldehyde Training”



Hazardous waste disposal

- Secondary containers
 - All hazardous chemicals must be in secondary containers that can hold their full contents if the primary container fails
- Weekly inspections
 - Jessica performs weekly hazardous waste inspections
- Disposal after 90 days
 - You can collect hazardous waste in a container in the lab for 90 days; After that point, you must request to remove it (talk to Jessica or Robert)
- Chemical solid waste
 - Unless P-list, evaporate small amounts of hazardous residue before disposal
- Other recommendations?



Biological waste

- Worms, *e.coli*, anything alive should be killed before disposal
 - Plates should be autoclaved
 - Cultures should be bleached
 - Pipettes & plasticware should be autoclaved or bleached
- Advice on autoclave indicators
 - Use Tape to indicate temp
 - Use the indicator tags for PA14

Other lab hazards

- Glass
 - Use glass waste bin (cardboard)
- Razors/needles/sharps
 - Keep in styrofoam
 - Avoid using excessive force
 - Throw away in sharps container
- Liquid nitrogen, dry ice
 - Open frozen tubes immediately or risk exploding tubes
- Centrifuges
 - Always balance
- Microscope light sources
 - Don't look directly at the light
- Gel electrophoresis
 - Turn off before disassembly
- UV box
 - Use face shield to protect against "sun" burn
- Gel Red
 - Don't touch it



IT'S IMPORTANT TO KNOW THE INTERNATIONAL WARNING SYMBOL FOR RADIOACTIVE HIGH-VOLTAGE LASER-EMITTING BIOHAZARDS THAT COAT THE FLOOR AND MAKE IT SLIPPERY.

COVID

- [Colorado State's COVID content](#)
 - covid.colostate.edu
- May 11, 2022 summer updates:
 - Students, faculty and staff who test positive for COVID – even if using a home test – are required to report through the [COVID Reporter](#).
 - Every household is also eligible for several [free tests through a federal program](#).
 - You can get [tested for free at our testing location](#) near the South College Parking Garage. Appointments are not necessary.
- COVID conditions are changing constantly

Allergies

- We have people with known allergies to
 - Various nuts
 - Various other foods
 - Formamide/formaldehyde
 - Probably other things, so be aware

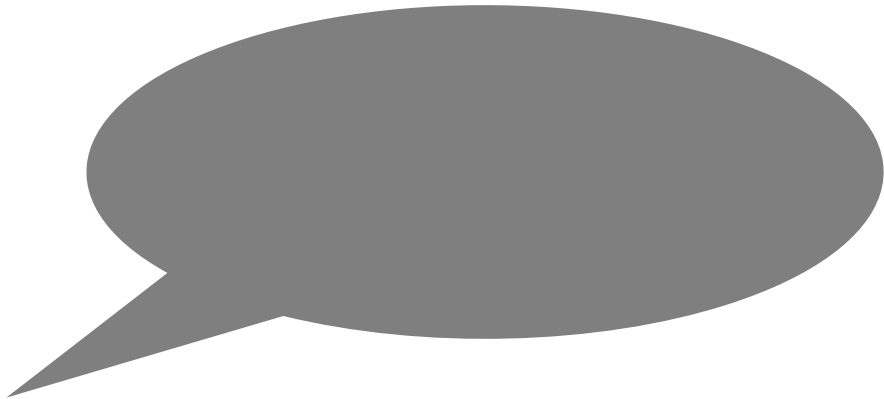


Leaving the lab at the end of the day

- Turn off all lamps, burners, and other flames
 - Turn off all heated stir plates and heated equipment (valap)
 - Turn off all microscope lamps
 - Ensure freezers and refrigerators are properly closed
 - If you are the last person to leave, walk through the lab and check
 - Lock the door
-
- Lab number –
 - Erin's cel/home number – 408-691-6391

New rules proposal?

- Let's discuss ideas for new safety rules and practices



Staying organized

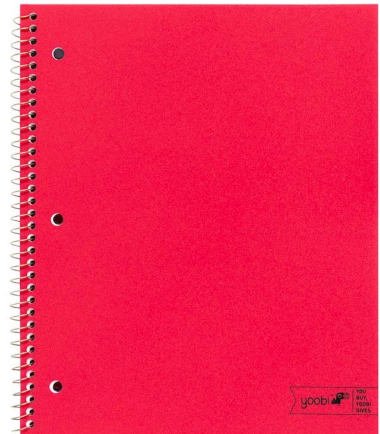
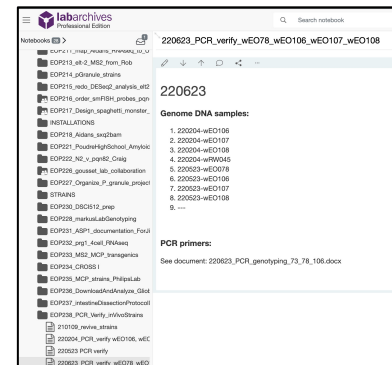


Stay organized in the lab

- Follow protocols
 - “Your protocol must be in your hand” – Kohta Ikegami
 - Make checklists
- Mentally stay focused
- Leave sufficient time to take notes
- Date everything – 220628 - YrMoDa
- Keep numbered personal inventories
 - wEN001 – Erin’s worms
 - pEN001 – Erin’s plasmids
 - oEN001 – Erin’s oligos
- Contribute to lab inventories
- Use Goal Tracking

Lab notebook

- Everyone must have a paper lab notebook
- Most should have a digital Lab notebook through LabArchives
- Periodic lab notebook inspections – why?



Digital files

- Take the time to keep digital files organized
- Back up
 - “If your data doesn’t exist in triplicate spread across two tectonic plates, your data doesn’t exist” – Software carpentry
 - Work locally AND backup to EON-NAS (RAID5, 30-day versioning)
 - OR work on EON-NAS and backup locally
 - EON-NAS is backed up to RSTOR

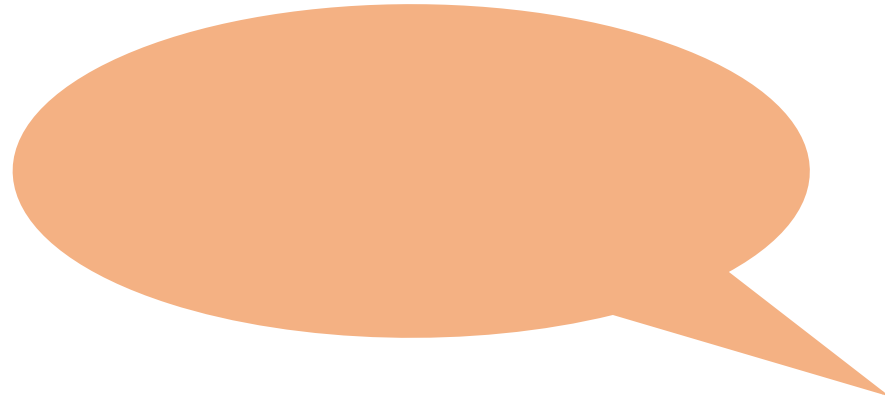
What do you do to stay organized now that you didn’t do when you started?

Staying on track

- Goal oriented research
 - Goal – publication
 - Goal – graduation
 - Goal – funding
 - Goal – job after this one (letter from Erin)
- Are you doing the right tasks on a week-by-week basis?
- Are your lab tasks aligned with your career goals?

What keeps you organized?

- What are your biggest organizational challenges?



Staying happy





PRINCIPLES of COMMUNITY

THE PRINCIPLES OF COMMUNITY SUPPORT THE COLORADO STATE UNIVERSITY MISSION AND VISION OF ACCESS, RESEARCH, TEACHING, SERVICE AND ENGAGEMENT. A COLLABORATIVE AND VIBRANT COMMUNITY IS A FOUNDATION FOR LEARNING, CRITICAL INQUIRY, AND DISCOVERY. THEREFORE, EACH MEMBER OF THE CSU COMMUNITY HAS A RESPONSIBILITY TO UPHOLD THESE PRINCIPLES WHEN ENGAGING WITH ONE ANOTHER AND ACTING ON BEHALF OF THE UNIVERSITY.

INCLUSION

We create and nurture inclusive environments and welcome, value and affirm all members of our community, including their various identities, skills, ideas, talents and contributions.

INTEGRITY

We are accountable for our actions and will act ethically and honestly in all our interactions.

RESPECT

We honor the inherent dignity of all people within an environment where we are committed to freedom of expression, critical discourse, and the advancement of knowledge.

SERVICE

We are responsible, individually and collectively, to give of our time, talents, and resources to promote the well-being of each other and the development of our local, regional, and global communities.

SOCIAL JUSTICE

We have the right to be treated and the responsibility to treat others with fairness and equity, the duty to challenge prejudice, and to uphold the laws, policies and procedures that promote justice in all respects.

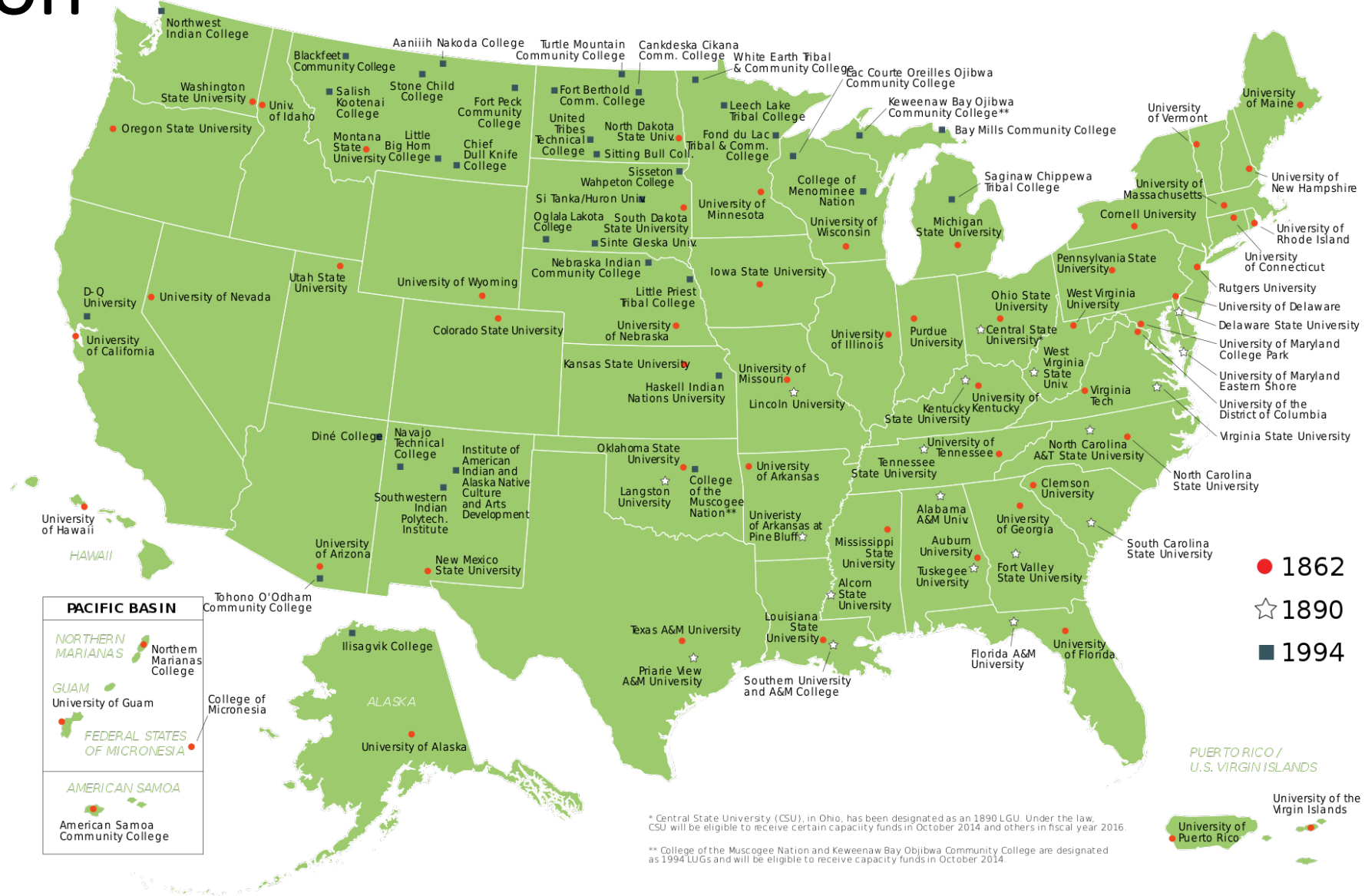


United States
Department of
Agriculture

National Institute
of Food and
Agriculture

NIFA LAND-GRANT COLLEGES AND UNIVERSITIES

Inclusion



* Central State University (CSU), in Ohio, has been designated as an 1890 LGU. Under the law, CSU will be eligible to receive certain capacity funds in October 2014 and others in fiscal year 2016.

** College of the Muscogee Nation and Keweenaw Bay Ojibwa Community College are designated as 1994 LGUs and will be eligible to receive capacity funds in October 2014.

Integrity

- **Definition of Research Misconduct**

- Research misconduct means fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results.

- (a) Fabrication is making up data or results and recording or reporting them.

(b) Falsification is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.

(c) Plagiarism is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit.

(d) Research misconduct does not include honest error or differences of opinion.

Integrity

- Try to guard against scientific bias
 - Controls
 - Accuracy
 - Replicates
 - Statistics
 - Double blind assays
- Ethics coursework

Respect - Being courteous

- Noise & talking
 - Be mindful of other people's concentration when talking & making noise
 - Please assert your need for quiet before you make a mistake or before you become annoyed
- Headphones & music
 - Headphones are best during business hours; feel free to (thoughtfully) blast it at night or on the weekends; everyone has music veto power
- The lab is pretty full – try to be particularly thoughtful
- Clean up
- Share jobs

RESPECT

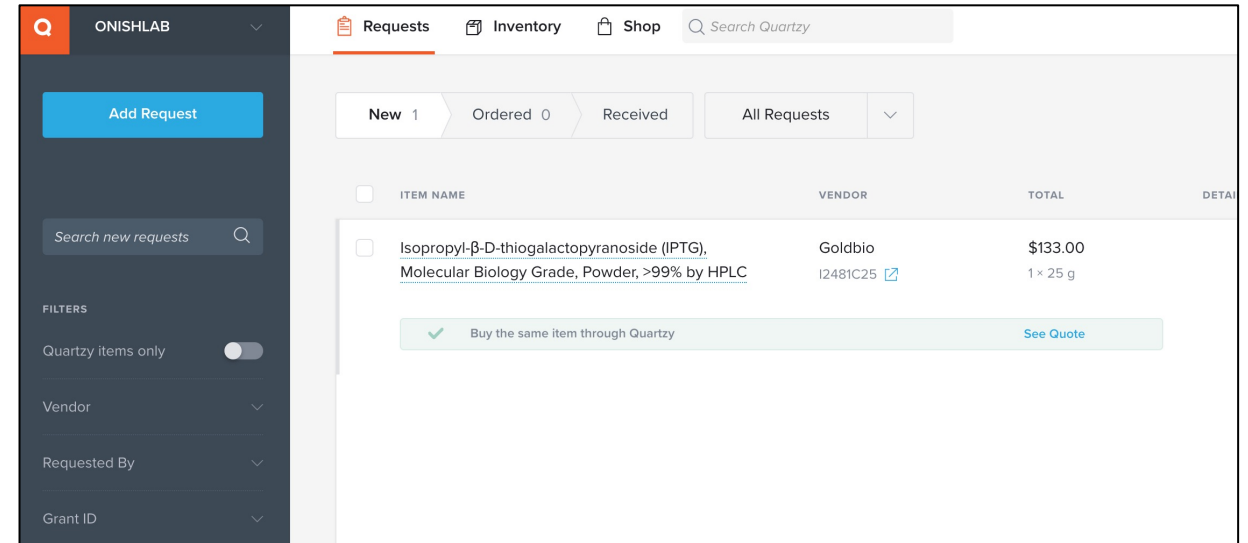
We honor the inherent dignity of all people within an environment where we are committed to freedom of expression, critical discourse, and the advancement of knowledge.

Respect - Being hygienic

- Keep enzymes in coolers
 - Reduce enzyme time out of the freezer
- Avoid contamination
 - Use sterile, clean technique when using stocks and enzymes
 - Make sure you are properly trained in sterile technique
 - Keep your areas clean
 - Understand RNase free techniques & zones
- Keep the microscope areas clear
- No gloves in the hallways
- Wash hands before leaving the lab

Respect - Re-order!

- Don't let things run out.
- Look ahead. Plan ahead
- How to order
 - Tell your mentor
 - Quartzy
 - Teams Request page



Service & Social Justice

- Our lab has a culture of service
 - SACNAS
 - Graduate Student Association
 - Postdoc Association
 - Biochemistry Student Association
 - BMB CommuniTea
 - Individual ways of being nice
- Benefits
 - Lots of great soft skills to learn & opportunities
 - Improvements in people's lives & community culture
- Drawbacks
 - Time
 - Please prioritize and plan
- You are under no obligation to engage in service work as part of being in this lab

SERVICE

We are responsible, individually and collectively, to give of our time, talents, and resources to promote the well-being of each other and the development of our local, regional, and global communities.

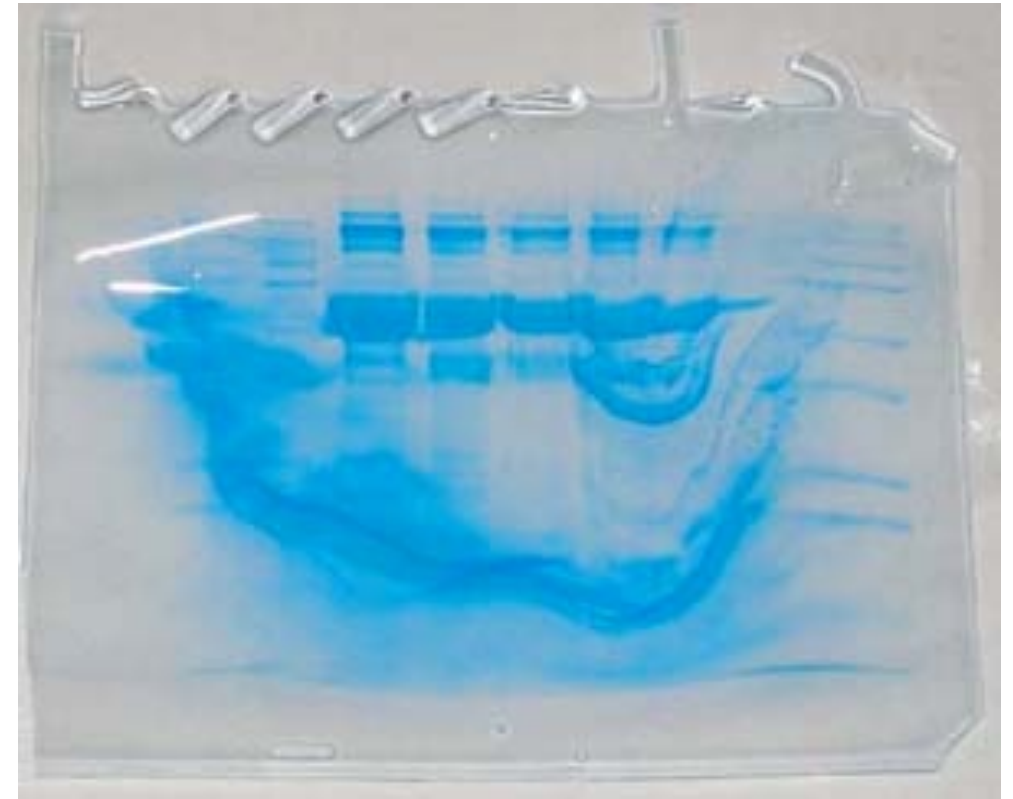
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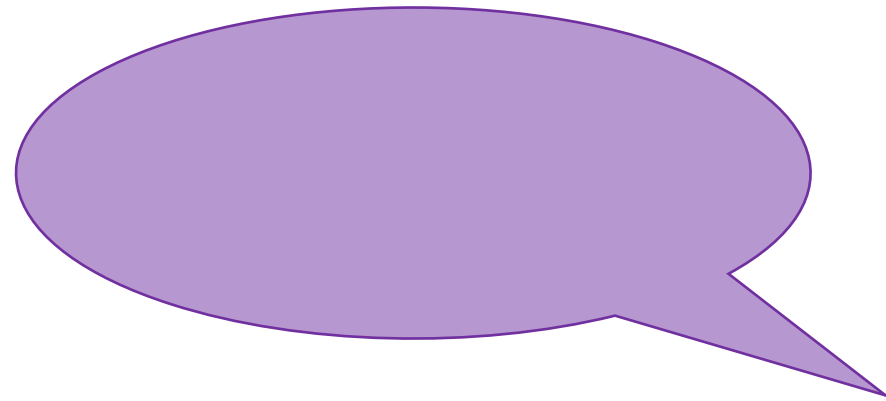
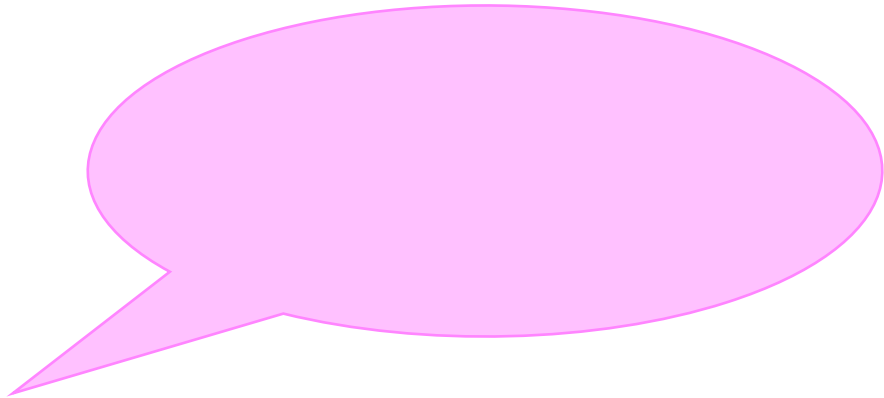
Drama & Mental Health

Sometimes we aren't happy in the lab

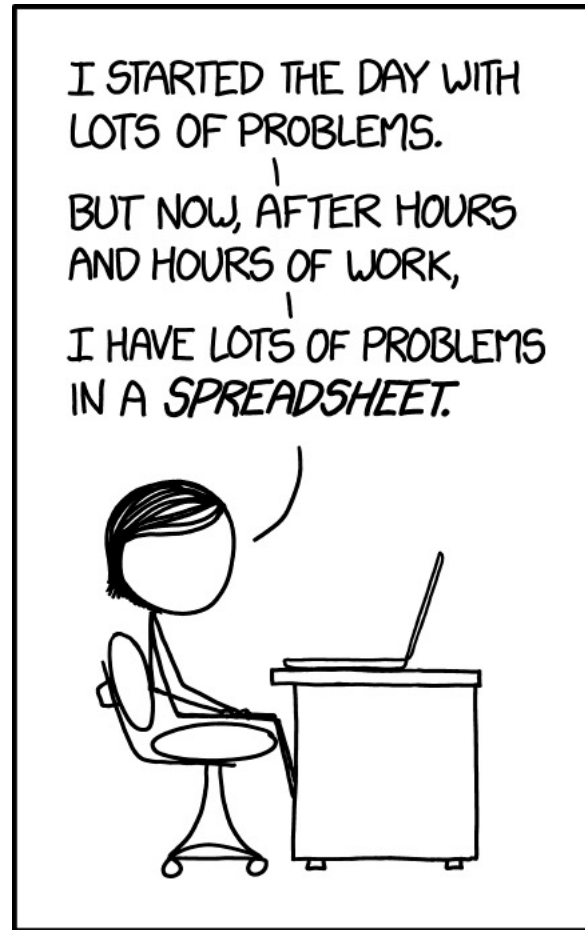
- Science is hard
- Burnout is real
- Communication is key
- Help is available
 - <https://health.colostate.edu/mental-emotional-health/>



What can we do to maintain some modicum of day-to-day self persistence so we're not all totally melting down at the boring dystopian future we're living through?



Being successful



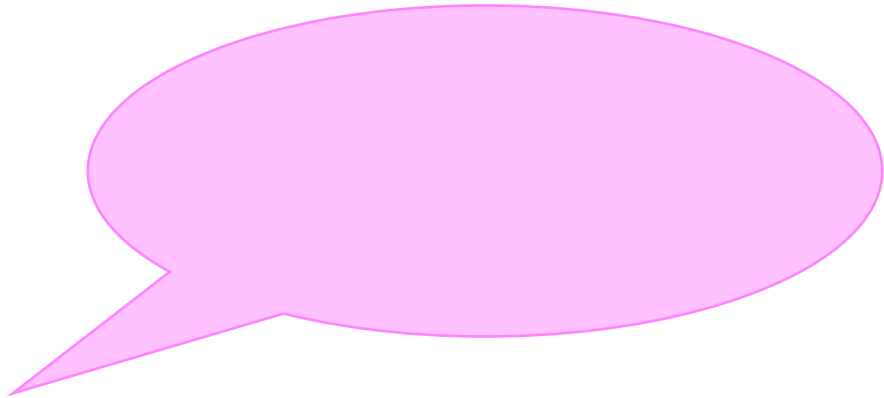
What does lab success look like to you?

- Scientific discovery
- Degree
- Products
 - NIH: Publications, websites, technologies, techniques, inventions, patents, licenses, datasets, educational aids, physical collections, software, new business
- Funding
- Opportunity
- Tenure

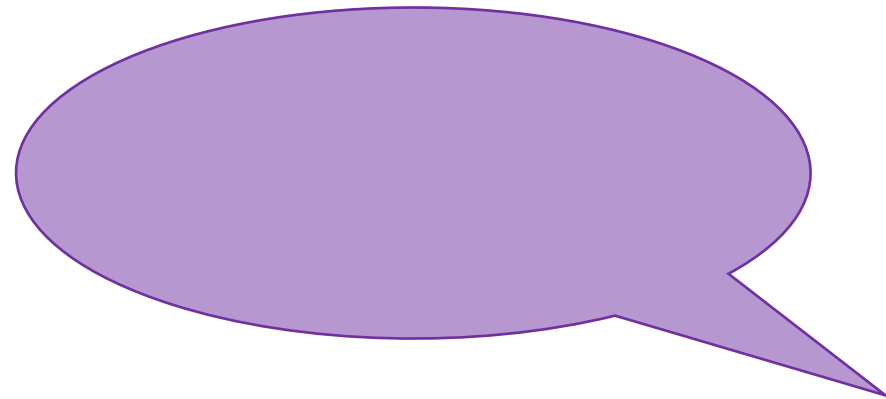
How not to get steamrolled by science

- Verify your reagents
 - Sequence plasmids
 - Genotype & sequence strains
 - Check for mites
- Verify the foundational bases of your research
 - Perform key experiments for verification before building on them
- Know your assay
 - Know the limitations of your assay
 - Know the lower and upper bounds of your quantifications
- Consult
 - Draw from a wide variety of mentors to determine the best course

Words of wisdom on how to be successful in science?



What do you wish you learned earlier?

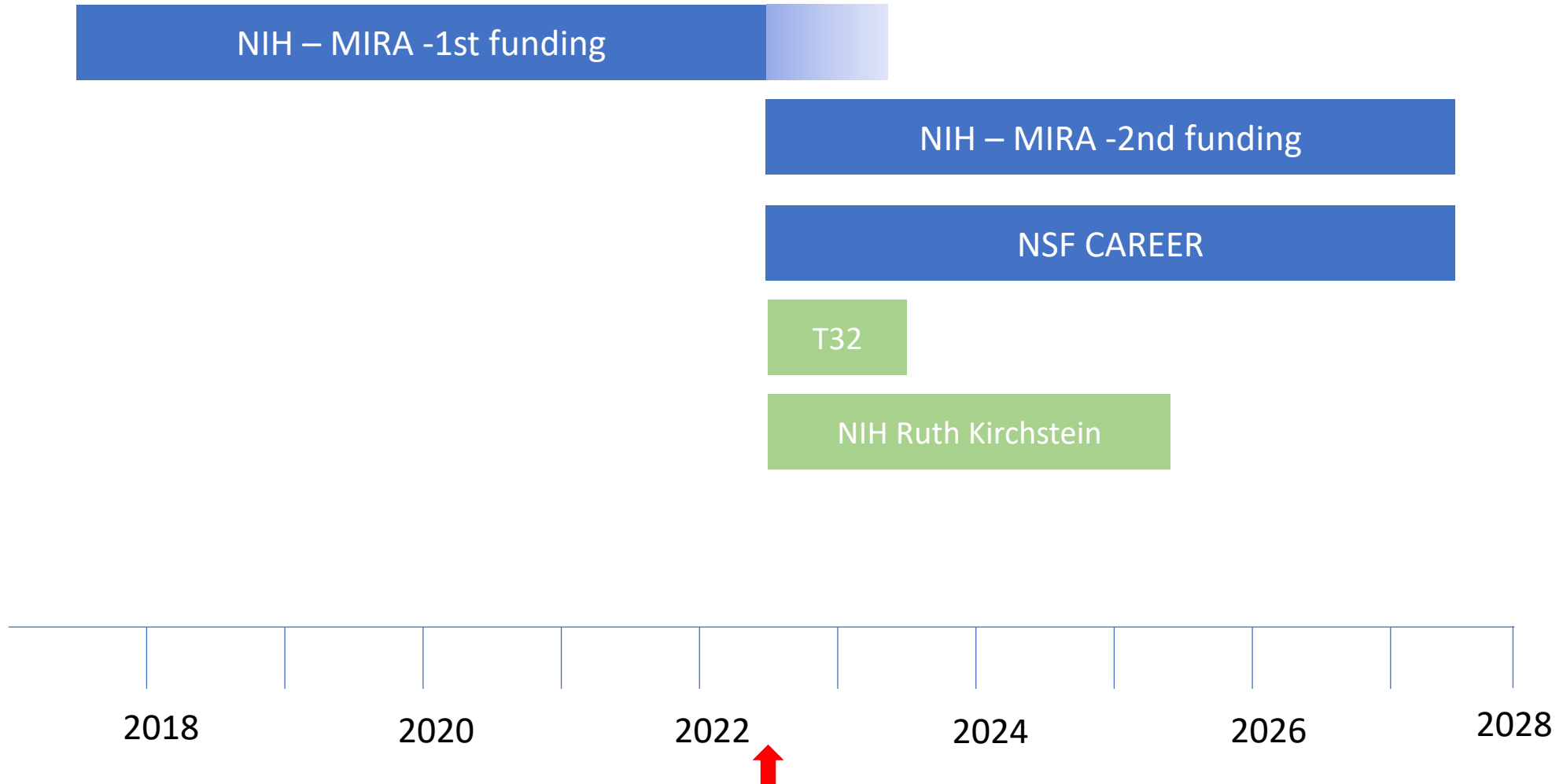


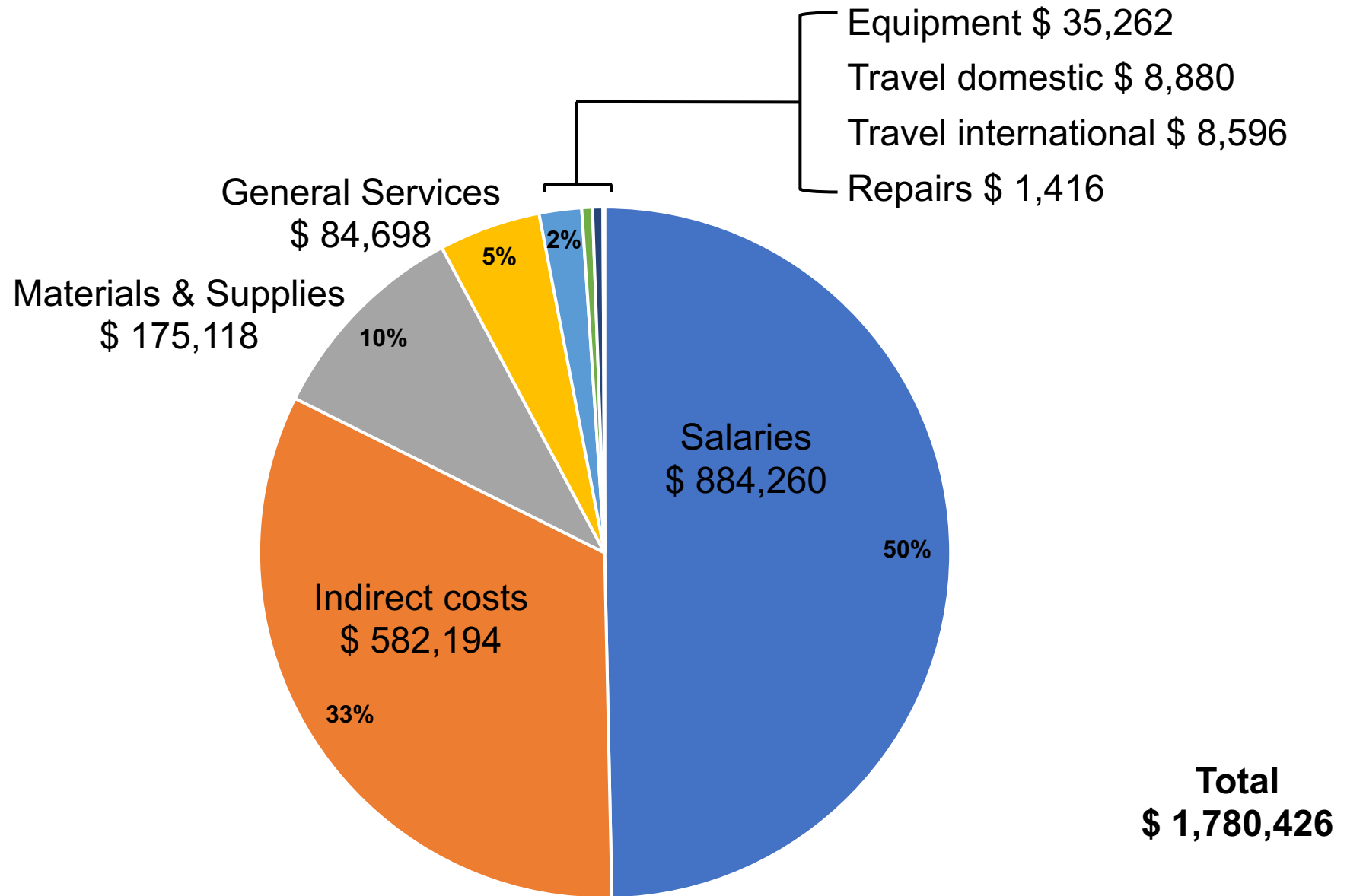
Lab Finances & Updates



"Spare a dollar for some lab consumables, buddy?"

Lab funding - timeline





How did we spend the NIH MIRA grant?

Thanks for making the lab an enjoyable place to work!

Fun events for the summer



- Lab hiking day?
- PROST?
- Nishimura house party?
- Other ideas?