

@CTropini

TROPINI LAB

# Five things I wish I knew before I started grad school

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# Moving to Vancouver - xwməθkwəy̓əm (Musqueam) unceded territory

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# Science One and Biophysics at UBC

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# My undergraduate thesis project had a great impact on me

Dr. Carl Hansen

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# My goal: applied diagnostics research *not* fundamental experiments

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# Biophysics Ph.D. at Stanford

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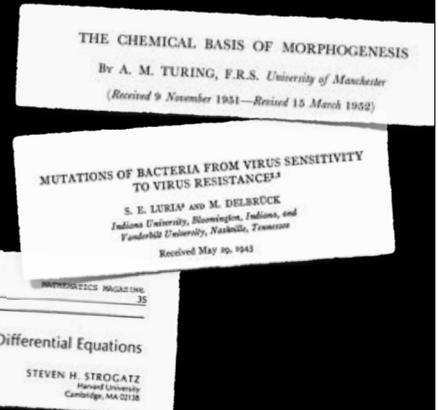
What I thought for sure would become my PhD research lab was not a good fit



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Dr. KC Huang



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Project dilemma?



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I. Choose *People* before projects



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Mentors propel you forward

You need mentors at EVERY career stage - reach out to them!

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Mentors are not only reference letter writers...

...they are allies

Who will also tell you when you have gone astray!

A **good mentor** chooses **People** over **Projects**

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# Five things I wish I knew before I started grad school

1. Choose People before projects
2. A life-long skill I learned from my mentors

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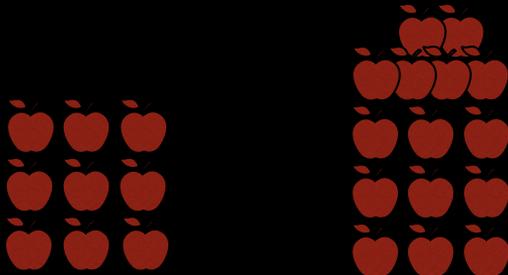


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But... everything seems important!

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Your bag of apples:  
set realistic goals



Chris Golde - gradlogic.org

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Your bag of apples:  
set realistic goals



Chris Golde - gradlogic.org

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## Your bag of apples: set realistic goals



Chris Golde - gradlogic.org

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## Some need-to-pack apples

As a graduate student you are expected to become a:

- Professional scientist/problem solver
- Professional speaker
- Professional writer
- Figure out your next step

 McGill | McGill Writing Centre

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LIFE → IMPORTANT

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How do we actually make sure  
to do what is important to us?

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## Effective time management: greater academic performance and lower student anxiety

Adams RV, Blair E. SAGE Open. January 2019

- Time management is one of the most frequent challenge faced by doctoral students.  
Schramm-Possinger et al. 2015 , Westet al. 2011
- Time management behaviors had a greater buffering effect on academic stress, even more than leisure satisfaction activities.  
Ranjita & McKean American Journal of Health Studies; 2000

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## I. Block out previous commitments (**personal** and professional) on your calendar

- Commuting time
- Time to work out
- Lunch
- Seminars
- Meetings

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## II. Figure out what is important (urgent and not!) Add in to your schedule

- Make sure you add time to develop critical skills: reading literature, writing.
- Label categories with different colours (helps you see how much time you are spending on each!)
- Block off extra time and build in flexible processing time.
- Don't underestimate short intervals - they can be highly productive! (Going for a walk, reading, writing etc.)

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## III. Optimize and revise!

- Protect the time you are most alert for the most critical tasks - do things that come to you more naturally when you are worn out
- Be realistic! Not everything will fit. Prioritize what is most important!
- Take time each week to prioritize for the next week.
- Figure out what to do with tasks that do not fit.
- Try it out with a peer and get advice from your mentors!

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## Five things I wish I knew before I started grad school

1. Choose People before projects
2. Schedule time for important things

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## 3. Make your work reproducible... by you first!

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Metadata from published studies are unfortunately often not very good.

### SUPPLEMENTARY MATERIALS

[science.org/doi/10.1126/science.abi4896](https://doi.org/10.1126/science.abi4896)

Materials and Methods

Figs. S1 to S17

Tables S1 to S9

References (40-94)

MDAR Reproducibility Checklist

[View/request a protocol for this paper from Bio-protocol.](#)

## How good is your local metadata?

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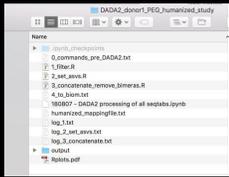
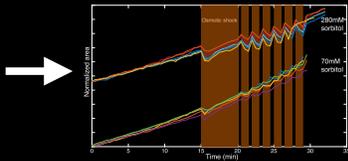
## Organizing your data goes a long way!

- Choose consistent naming systems - write notes on what they mean!
  - If they can be machine-parsed that's a bonus!  
E4D5S7M33 (exp 4, day 5, sample 7, mouse 33)
- Write notes about how you ran each experiment in each folder where you store data
- Take pictures of experiments and add them to your folders/online notebook

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# Create code for each plot

```
clear
clc
close all
cd('D:\Users\Troginka\Documents\RESEARCH\Sonnenburg_group\Phages\K12_T2_T1')
% NUC1 run
% Import the data
[~, raw] = xlsread('2018_09_27_K12.xlsx', 'Sheet1');
raw = raw(240:1:97);
plotreaders1 = reshape(raw(1), size(raw));
time_minplaterreader51(1);
time_minplaterreader51(2:97);
clearvars time;
clearvars time;
[~, labels_curves] = xlsread('2018_09_27_K12.xlsx', 'Sheet1');
labels_curves = labels_curves(2:97);
labels_curves(cellfun(@(x) ~isempty(x) && isnumeric(x) && isnan(x), labels_curves, 'UniformOutput', false));
[~, raw] = xlsread('2018_09_27_K12.xlsx', 'Sheet1');
raw = raw(2:1:97);
osmolarity = reshape(raw(3), size(raw));
hatched_cells = reshape(raw(4), size(raw));
```



Have README files in each data folder

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# Backups and Reproducibility

- I Backup is not enough
- Make sure your work is reproducible... By YOU to begin with!!

gettyimages  
wsfurlan

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# Five things I wish I knew before I started grad school

1. Choose People before projects
2. Schedule time for important things
3. Make your work reproducible... by YOU!

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# 4. Beware of finish lines ...and the importance we attribute to achieving a goal

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"When I will reach this peak...  
...then I will be happy"

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“There is another steeper  
peak ahead”



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“Everyone around me  
can climb such steep hills”



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“The hills behind me  
are no big deal, everyone  
surpassed them just fine”



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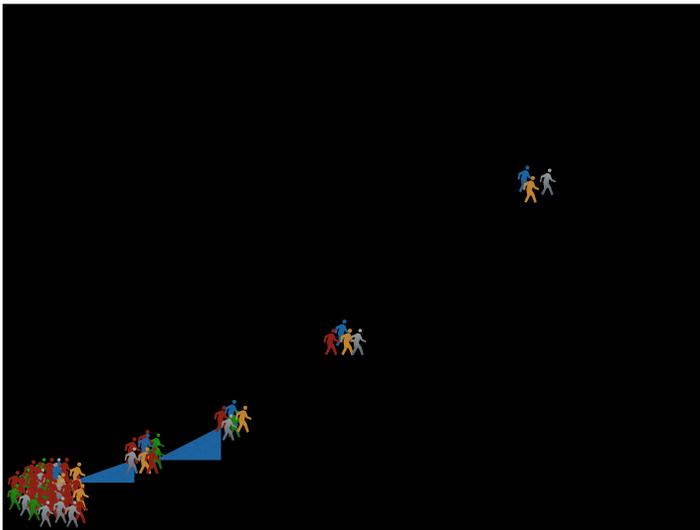


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“If only I could  
achieve the next goal!”



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Finish lines do not hold  
a key to happiness or resolution

... but you should hold on to them  
as a record of your successes

Don't forget why you are climbing  
the mountain in the first place!!

An illustration on a black background showing a group of colorful figures climbing a blue mountain. The figures are at various stages of ascent, from a large group at the base to a few individuals at the peak.

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# The achievements folder

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## Five things I wish I knew before I started grad school

1. Choose People before projects
2. Schedule time for important things
3. Make your work reproducible... by YOU!
4. Beware of finish lines

Background graphics for slide 46, including icons of a microscope, a person, a clock, and a document.

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## 5. Follow your gut!

- you will fail. you will win some.
- you will be fine.
- everyone's path to "success" looks different, part of the journey is to figure out what works for you.
- what do YOU want out of your academic experience?

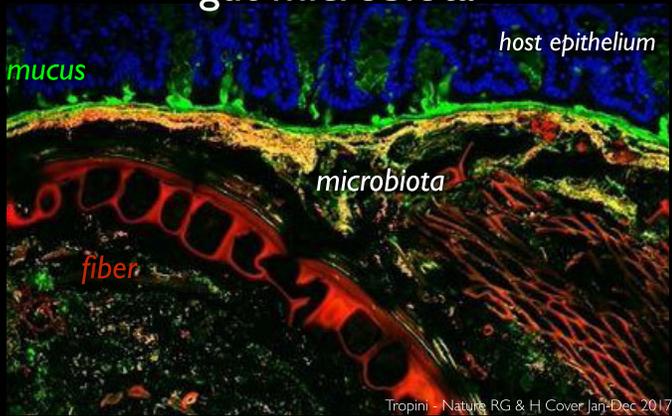
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## Where I am now - studying the gut microbiota

A composite image for slide 48. On the left, a person in a white lab coat is working at a desk in a laboratory. On the right, a colorful 3D visualization of gut microbiota is shown, with various colors representing different microbial species.

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## Where I am now - studying the gut microbiota



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“I’ve learned that you shouldn’t go through life with a catcher’s mitt on both hands. You need to be able to throw something back.”

- Maya Angelou -



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