iJOBS Career Panel: Applying to Teaching-Intensive Faculty Jobs

July 1, 2025

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Research vs. Teaching Intensive
Ask yourself what do you enjoy more?

- My experience – Research Trajectory
  - BS at a teaching intensive school (Ursinus)
    - TA for Intro Biology
  - PhD at R1 school (Rutgers)
    - TA for Genetics
    - Mentored research students
    - Tutor with Douglass Center
    - Mad Science gig
  - Postdoc at R1 research facility (Geisinger)
    - Mentored research students
    - Internship director
    - Guest lectures

Recognize that everyone's preferences/goals/experiences are unique

Choose the one that will make you the happiest

For me… even though I was on a research trajectory, my favorite things were teaching related.

Dina Navon, PhD

Dina.Navon@ufv.ca, @evodevoDina.bsky.social

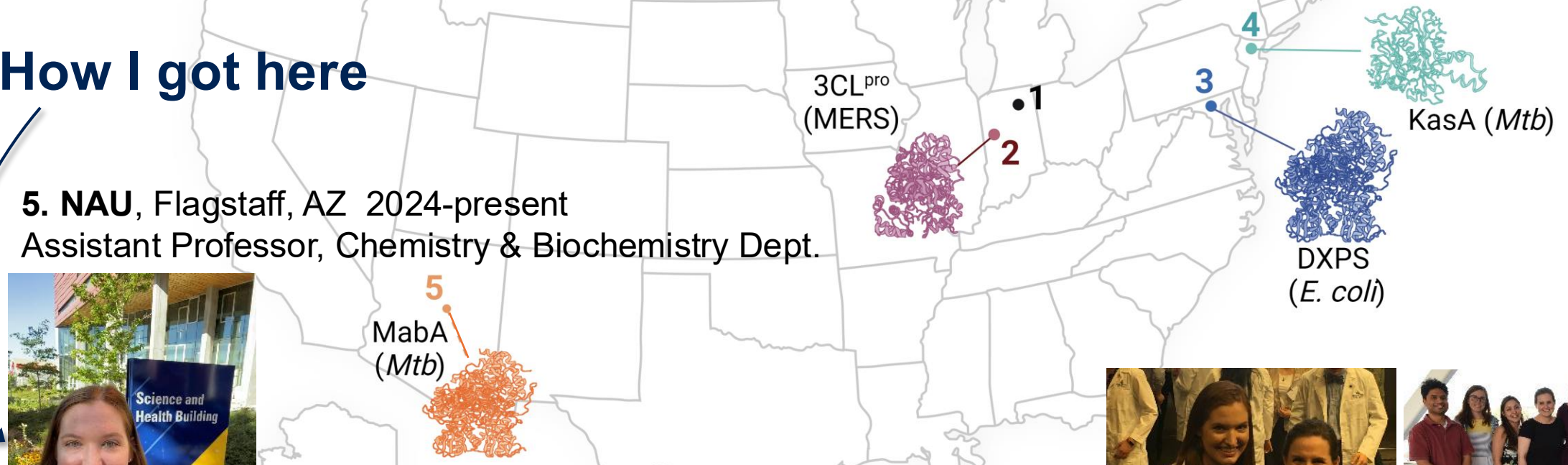
- “Backyard” biologist – spent my summers outside, teaching sailing & learning about biology informally
- Pre-med washout! Orgo & I are not miscible
- Switched to biology from biochem/pre-med after my second year
- Worked on research as an undergrad, was advised by a trusted mentor to consider teaching as a career option
- Did PhD with that goal in mind
- Loved research more than expected, still wound up @ a PUI (& very happy I did!)

Melanie Johnston, PhD
melanie.johnston@nau.edu

How I got here

2. Purdue University, West Lafayette, IN
B.S. Chemistry and Biochemistry
B.A. Creative Writing 2010-2015

4. Rutgers, Newark, NJ 2022-2024
NIH-IRACDA INSPIRE Postdoctoral Fellow



5. NAU, Flagstaff, AZ 2024-present
Assistant Professor, Chemistry & Biochemistry Dept.

2015-2022

3. Johns Hopkins School of Medicine, Baltimore, MD
Ph.D., Biochemistry, Cellular, & Molecular Biology

Jorge A. Avila, Ph.D.

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javila@college.ucla.edu

LinkedIn

Jorge Andres Avila
Assistant Director, Undergraduate Research Center-Sciences and Instructor of Research Practi...

NIH iCite

PreDoc Industry Detour
Psychogenics Inc.
Neurodegenerative Diseases
Associate Scientist
Role: Middle manager for contract pre-clinical studies
2018-2019

Contract Mentor and Professor
Indigo Research and Crimson Education
Instructor – High School/College Incubator courses
Mentor – 1:1 Development programs for High School and College students to develop research skills, communication and publication experience

Graduate Training
Hunter College Psychology
Grad Center CNC
RISE (R25 NIH)
Lab of Peter Serrano
Focus: Research
2012-2019

Postdoctoral training
Rutgers Brain Health Institute
INSPIRE Fellow (K12 NIH)
Lab of Gary Aston-Jones
Focus: 75% Research
25% Pedagogy training
100% effort toward the professoriate or equivalent
2019-2022

Administrative Faculty Position
Undergraduate Research Centers, UCLA
Instructor – Professor in Research Practice Area
Director – STEM Research Scholarships, LSAMP, Beckman Scholars, Science Journal, Interdisciplinary student organizations, service, mentorship

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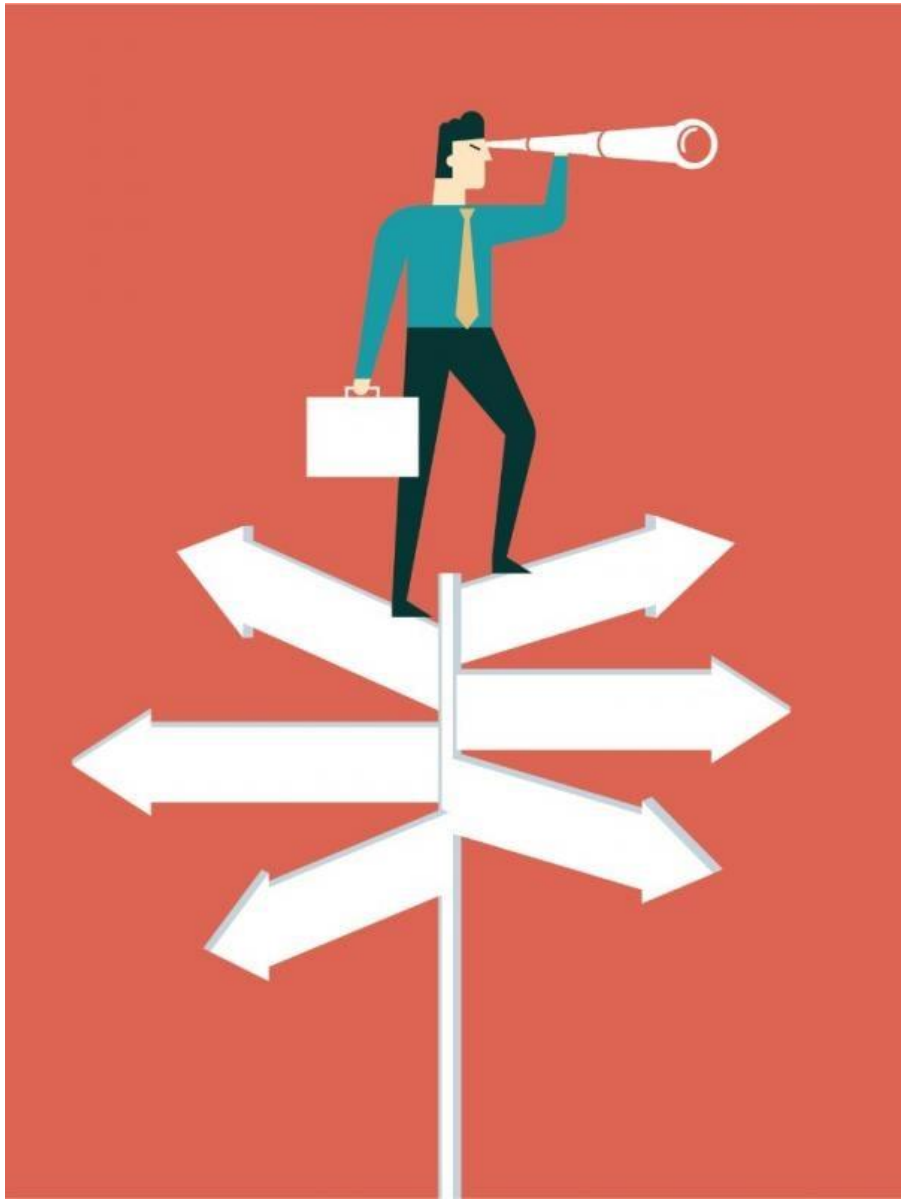
Teaching vs. Research Intensive

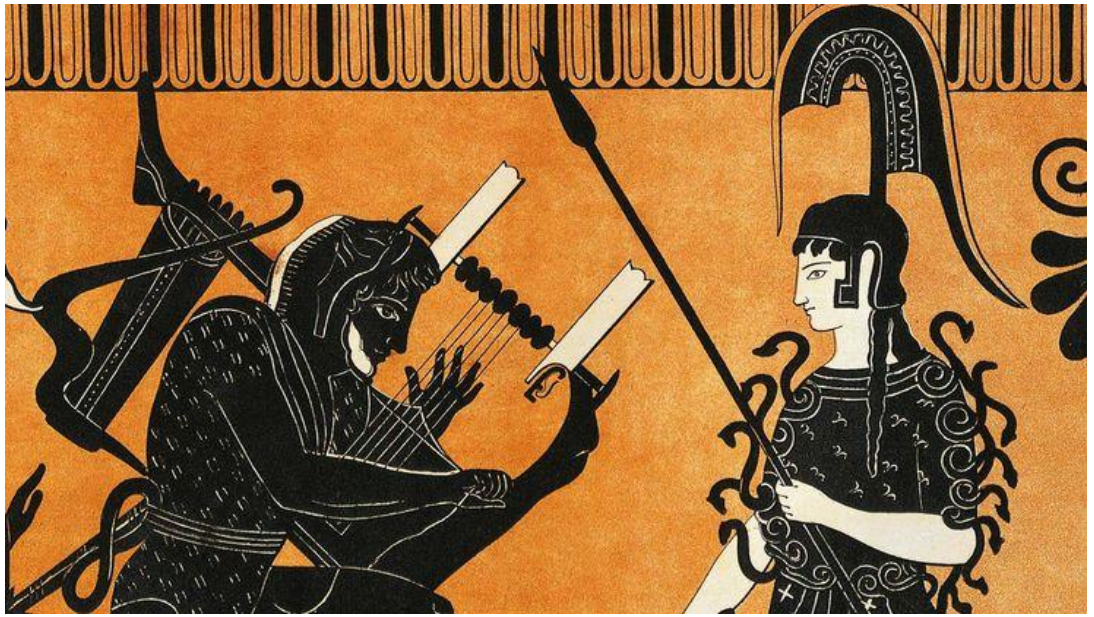
Your Goals Should Fit YOU!

- Start with self-reflection:
  - What energizes YOU?
  - What is more fulfilling to YOU?
  - What do YOU value most? (e.g. work-life balance, job security, community impact, intellectual freedom, grant funding prospects etc.)
- Explore & keep your options open
  - Seek out “extra” experience, e.g. specialized TA opportunities, guest lectures, IoR possibilities, & postdocs with different emphases
  - Talk to faculty in both types of positions
- There’s no “one size fits all” approach



Teaching Intensive Myths

- "You won't have time to do research!"
  - Heard this from Rutgers faculty when they reviewed the job ad for my current position
  - FACT: I lead field research teams every summer to Bamfield & Friday Harbor, & supervise students throughout the year
  - FACT: the scope, goals & support for this research looks different from how it would at an R1, but it's still research
- "R1 is the only path to a 'real' academic career"
  - Was told that "even" PUIs want research success these days
  - FACT: research success looks different at a PUI; e.g. my tenure is not tied to my publication record, & it is SO FREEING
  - FACT: success, impact, & fulfillment look different to everyone, don't judge yourself by my or anyone else's standards!



Dina Navon

Research Intensive Pros/Cons (for me)

Pros

- Cutting edge research
- Cool new toys
- One-on-one mentorship of research students
- Make more money

Cons

- Salary based on grant funding
- Tenure/Promotion influenced by grant funding and publications
- Publish or perish mentality
- Little to no teaching

Teaching Intensive Pros/Cons (for me)

Pros

- Salary based on teaching load
- Tenure/Promotion focus on curriculum development and teaching effectiveness
- Wider variety of students
- One-on-one mentorship of research students
- More autonomy

Cons

- Teaching load is intense
- Herding cats
- Research scaled back
  - But …. Still very cool opportunities
  - NatGeo Visiting Scientist
  - Genomics Education Partnership
- Make less money (PA state system)
  - started at $63K base ($70K on avg)
  - now make $90K base ($100K on avg)
  - top tier is $133K base ($150K on avg)
  - Academic Deans make $150K to start

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Selecting A Postdoc That Will Land You An Academic Career

Be STRATEGIC in Picking Your Postdoc Position(s)

- Mentorship
  - Ideally, someone who can advise on your preferred track
  - Can be your main supervisor (or not)
  - Feel free to contact me directly via email (Dina.Navon@ufv.ca) or on Bluesky (@evodevoDina.bsky.social)
- Research Scope
  - It IS true, PUIs typically want strong research records
  - "Strength" includes: UNDERGRAD COAUTHORS!!!, independent funding success (not necessarily NSF or NIH, can be smaller grants → feature not a bug), modular, adaptable, flexible....publications too

Be STRATEGIC in Picking Your Postdoc Position(s)

- Research Area
  - HUGE!!! Look to develop/practice novel (to you), IN-DEMAND skills
  - Consider how you would integrate research into teaching
  - Multidisciplinary a plus → great for collaborating in smaller departments
- Continued Teaching Development
  - Crucial to showing commitment to teaching excellence
  - E.g. NIH/IRACDA programs (INSPIRE) offer combined research & mentored teaching
  - OR other options (e.g. guest lectures, TAships, developing novel courses as IoR, engaging with teaching development workshops through CIRTL or similar avenues like TIIP)

Dina Navon

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Discussing with your postdoc PI the project that you will take with you

Discussing with your postdoc PI the project that you will take with you and getting them to help you advance your career

- Discuss projects you can take with you during the postdoc interview **or** start as soon as you can
  - Also, discuss your timeline (how long can they fund you, how long they'd like you to stay in the lab)

- Negotiate what materials you will take with you (some or all of what you generate, things that already existed that are vital to your work)

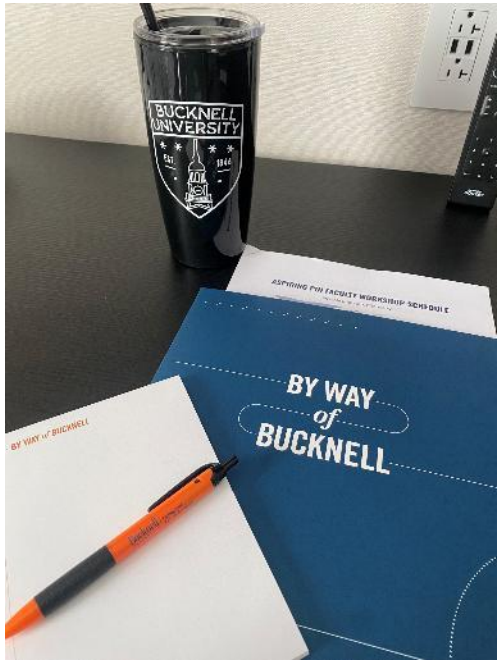
- Protect time for yourself (work out a certain percent effort on the project you'll take with you, if possible)

- Draw the line: if you keep your work in this area, you won't be stepping on anyone's toes

- Discuss the possibility of collaborating, if your future department is okay with that

- Making connections
  - Introductions to others in the field (via email or in person, if possible)
  - Ask them to use their connections to get you invited talks

- Talk to them about leadership/development grants (big ones like K99 or small ones like workshops)



Melanie Johnston

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Other things you should be doing during your postdoc to prepare

What other things you should be doing during your postdoc to be ready to apply for faculty jobs

1. Build up your resume and your community

2. Teaching (but it doesn't need to be a whole class!)

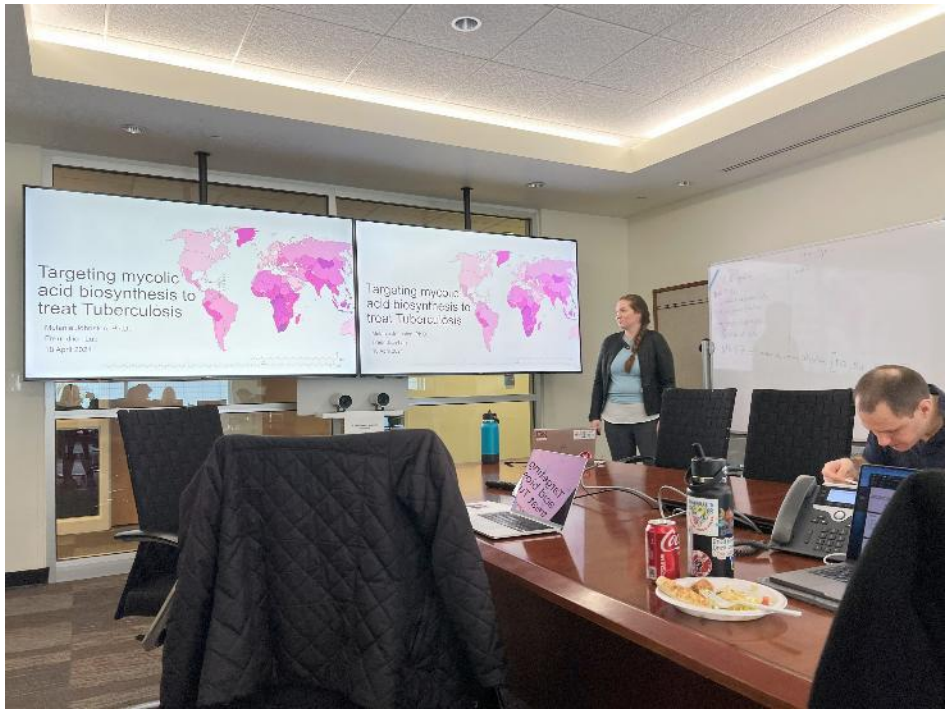
3. Mentoring students in the lab

1. Talk with people in the job you want (even better: at the school you want)

2. Give practice talks, even if your research hasn't progressed as much as you'd like

3. Keep in touch with your mentors and get their advice

4. Start teaching/research statement drafts early (join a writing group to review them!)



Melanie Johnston

What I did to prepare during my PostDoc

- Guest lecturer and seminars at Bucknell University and Susquehanna University
  - Biology, Psychology, Neuroscience, Statistics, Computer Science Depts.
- Attended local symposia for undergraduate research
  - Networking with faculty and students
  - Learn what kinds of research and project scales are feasible at different types of schools for different types of students
- Developed genetics curriculum for our clinic staff
- Developed and became director of a summer undergraduate internship program
  - Hired, placed, and mentored undergraduate research interns
  - Designed immersive program that included clinic shadowing opportunities
  - Developed a weekly course for all internship students about genomic medicine
  - Organized professional development workshops

What I wish I had done to prepare

- Coursework on how to teach
  - Instructional design
  - Online instruction
  - STEM Pedagogy
  - Inclusive Teaching
  - Mentoring Practices
- Work with MD/PA/GC Students and PhD students
  - I spent more time with undergrads than graduate-level students
- Had training in mental health crisis management (it comes up a lot)
- Asked for more teaching opportunities
- Been willing to recalibrate to a teaching focused PostDoc

Abby Hare-Harris

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Finding Academic Jobs To Apply To

Cast A Broad Net…

- Try not to limit yourself too much
  - E.g in terms of geographic area, etc.
  - Caveat: if planning field work as part of your independent research, you WILL need to balance research feasibility
- PUIs are diverse! ← apply accordingly!
  - Liberal Arts colleges
  - HBCUs, MSIs, HSIs, etc.
  - Community colleges
  - & more
- Use websites & listservs
  - Chronicle of Higher Ed (***)
  - Insider Higher Ed
  - Liberal Arts College Consortiums
  - Field-specific resources, e.g. Society for Dev Bio, SICB, etc.

Dina Navon

…But Evaluate Fit Carefully, & Don’t Waste Your Time If Fit Looks Off!

- Teaching Load
  - 3-3 or 4-4 common
  - TA support?
  - Course releases?
- Research Expectations
  - “Publish or perish”?
  - Pedagogy scholarship?
  - Impact?
- Research Support
  - Dedicated research office?
  - Startup funds? (amount, conditions, etc.)
  - Student summer research experiences?
  - Work-study programs?
  - Internal grants?

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Networking

Networking

- …before you apply
  - Recommenders
  - References
- …as you job search
  - Your Mentor’s network
  - Understanding the politics within your future academic circles
  - Opportunities outside your academic circles – LinkedIn, conferences…
- …as you apply
  - Research the department, institution, and your potential colleagues
  - DO NOT reach out to your committee during the interview process

Jorge Avila

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Preparing the Research Statement

Preparing the research statement

- Gauge appropriate length (if not in description) from type of institution. Ask if you don't know
- Include data (from students if you can)
- Describe how students will be involved in the work or how it could be spread out to allow more work in the summer and less in the school year

Sections

- Research overview (background)
- Planned studies (~2 aims)
- Feasibility
- Training opportunities for students

Feasibility

As a postdoctoral fellow, I have successfully trained Undergraduate- and Master's-level researchers to perform protein purifications, enzyme kinetics, MIC assays, and IBDM experiments; I will use this mentorship experience to train students at NAU. Through a SUMO tag strategy,[6] my students and I have successfully improved the expression and purification of MabA with only Ni-NTA affinity chromatography (Fig 1a). Notably, previous use of Ni-NTA affinity chromatography to purify histidine-tagged MabA resulted in impure MabA with decreased enzymatic activity. Additionally, students have performed and analyzed the MabA functional assay (Fig 1b,c). At NAU, my lab will use this assay to study MabA inhibitors.

Training Opportunities for Students

Overall, my multi-disciplinary approach will benefit Undergraduate- and Master's-level students in their training. Students in my lab will gain experience in biochemistry, enzymology, computational biology, microbiology, and bacterial metabolism. The variety of techniques used in my lab will also benefit students by allowing flexibility based on their schedule. For example, enzyme kinetics or IBDM data collection and analysis can easily be fit into students' class or work schedules, whereas protein purifications may fit better into summer research. As an NIH-IRACDA Postdoctoral fellow, I know first-hand the importance of research in scientific learning, and I will approach each mentoring and training opportunity in my lab with a flexible and self-evaluative approach. My expertise in biochemistry and enzymology coupled with my postdoctoral training in drug discovery and mycobacterial metabolism place me in an ideal position to lead a research program spanning the biochemical disciplines.

Melanie Johnston

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Preparing the Teaching Statement

Preparing The Teaching Statement

- Read the mission statement and strategic plan of the institution and department
  - Address each point in your teaching statement (does not have to be explicitly stated)
  - Explain how your own philosophy of teaching and learning aligns with their mission
- Give specific examples of your work as evidence of your skills
  - Course development, undergrads in your lab, professional development
  - Example: I developed a course module to teach genetic counselors how to use a new variant interpretation tool. I use this to teach bioinformatics to non-coders.
- Include a variety of teaching areas
  - Classroom, research mentoring, professional development, community outreach

Preparing The Teaching Statement

- Make a point to talk about flexibility in your teaching style
  - Adaptability is key (no one was prepared for the COVID times)
  - Students, Topics, Approaches
- Research the school and identify programs that interest you
  - STEM outreach, DEI initiatives, professional development, learning communities, etc.
  - Tie your interests and experience into what they already do and how you would want to get involved
- If you choose to include something about DEI….
  - Use appropriate terms and DO YOUR RESEARCH!
  - Do not just say that you “treat all students equally”… that is pandering lip service and is nonproductive
  - Be specific and use a concrete example: I incorporate inclusive teaching practices by using closed captions while I lecture.

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Preparing the Job Talk

The Job Talk

- The committee's prompt
  - Teaching demonstration for specific topic X
    - My own recent examples:
      1. *"Correlation vs. Causation in the Context of Psychological Experiments"*
      2. *"…the physiology of the action potential and neurotransmission at an introductory level"*
  - Related to the future courses or curriculum, that you will be asked to teach for the department
- Knowledge of the topic is essential
    - As a scientist, you can relearn this within 2 weeks
- The committee seeks the ability for a colleague to inspire through the content
    - Your ability to develop an effective demo, while avoiding teaching pitfalls, will make or break your talk
- Students & Faculty in attendance

The Job Talk

- The “other” job talk
  - Teaching AND Research
    - Incorporating students in your research
      - Demonstrate previous and ongoing success in this regard
    - Stick to your strengths and develop a research program that speaks to the goals for the position
- Potential Pitfalls
  1. Not comfortable enough to teach the topic
     - Develop a strict schedule to develop a stronger comfort level
     - Talk with friends and mentors about the preparation and execution
     - PRACTICE!!!
  2. Not engaging the needs and wants of the audience effectively
     - Students vs Faculty
       - PRACTICE!!!
     - Teaching will be student-focused, but your future colleagues are the gatekeepers
       - Ensure that they would be comfortable entrusting you with their students
       - PRACTICE!!!
     - Executing the demonstration
       - Online activities
       - Worksheets
       - Audience engagement
       - PRACTICE!!!

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Preparing For Teaching Demo

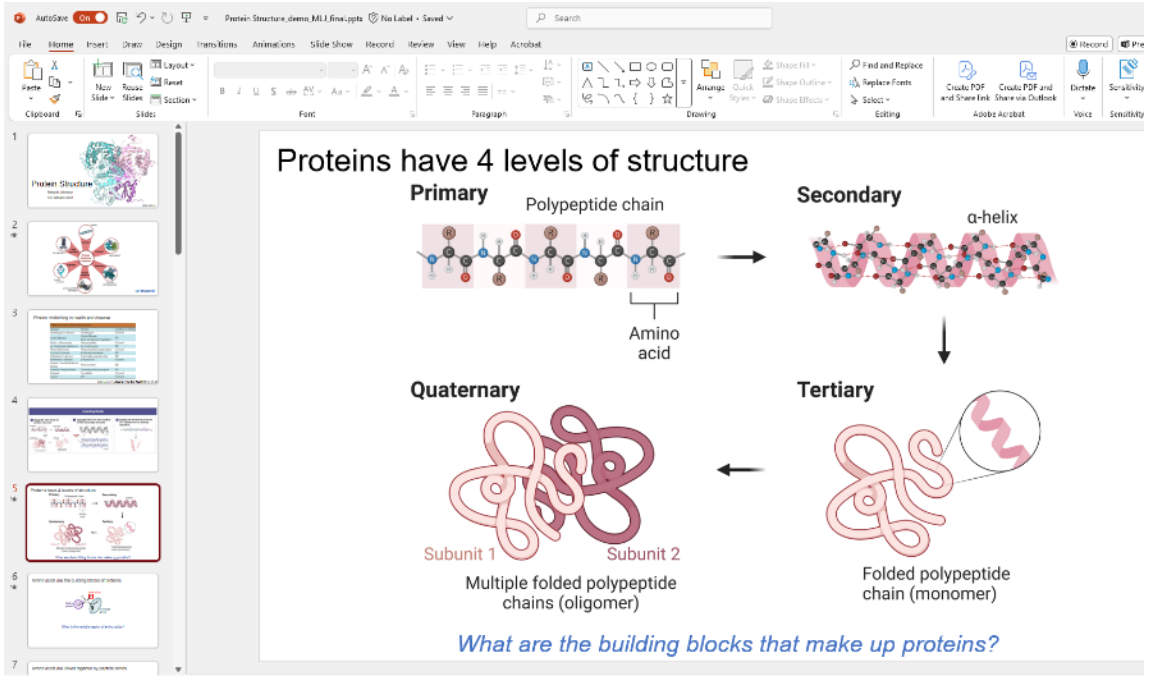
Preparing the teaching demo

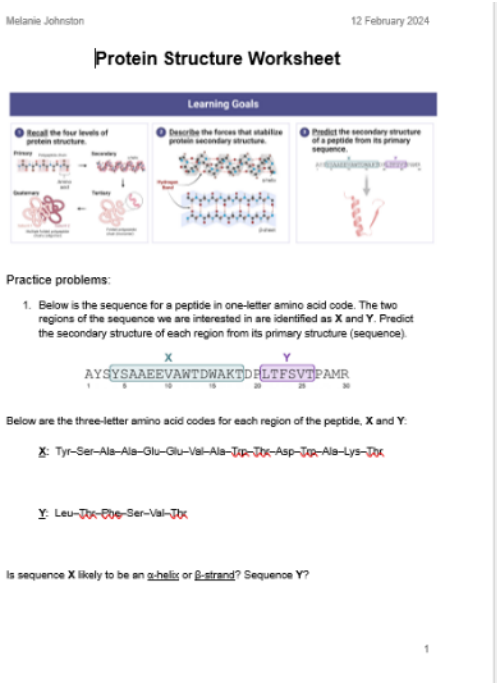
- Get the background information
  - Time limit
  - Materials (a textbook, etc. you should draw from)
  - Audience (real class vs. seminar, what population to aim your talk)

- Teach how you normally would, but try to include active learning

- Relate the talk to something you're interested in (your research, if possible)

- Practice! For people outside your area of expertise

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Protein Structure Worksheet

Learning Goals

Practice problems:

1. Below is the sequence for a peptide in one-letter amino acid code. The two regions of the sequence we are interested in are identified as **X** and **Y**. Predict the secondary structure of each region from its primary structure (sequence).

AYSYSAAEEVAWTDWAKTDDPLTFSVTPAMR

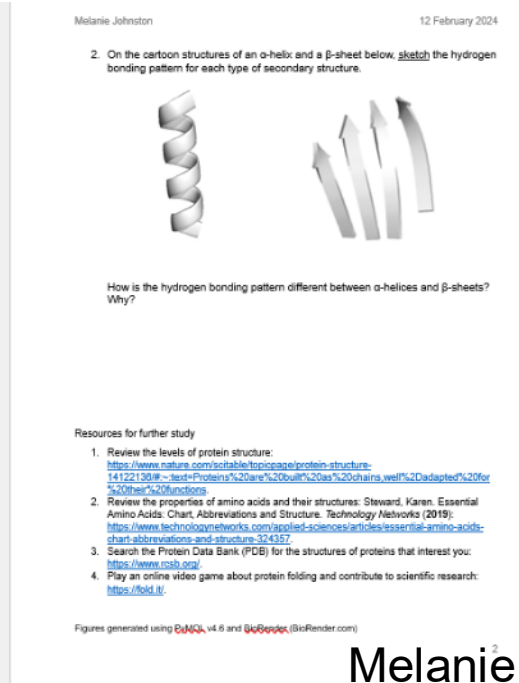
Below are the three-letter amino acid codes for each region of the peptide, **X** and **Y**:

X: Tyr–Ser–Ala–Ala–Glu–Glu–Val–Ala–Trp–Thr–Asp–Trp–Ala–Lys–Thr

Y: Leu–Thr–Phe–Ser–Val–Thr

Is sequence **X** likely to be an α-helix or β-strand? Sequence **Y**?

1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2. On the cartoon structures of an α-helix and a β-sheet below, sketch the hydrogen bonding pattern for each type of secondary structure.

How is the hydrogen bonding pattern different between α-helices and β-sheets? Why?

Resources for further study

1. Review the levels of protein structure: https://www.nature.com/scitable/topicpage/protein-structure-14122136/#:~:text=Proteins%20are%20built%20as%20chains,well%2Dadapted%20for%20their%20functions.
2. Review the properties of amino acids and their structures: Steward, Karen. Essential Amino Acids: Chart, Abbreviations and Structure. *Technology Networks* (2019): https://www.technologynetworks.com/applied-sciences/articles/essential-amino-acids-chart-abbreviations-and-structure-324357.
3. Search the Protein Data Bank (PDB) for the structures of proteins that interest you: https://www.rcsb.org/.
4. Play an online video game about protein folding and contribute to scientific research: https://fold.it/.

Figures generated using PyMOL v4.6 and BioRender.com (BioRender.com)

2

Melanie Johnston

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Preparing For The Interview

Chance Favors The Prepared Mind

- Above all else, convince them you ARE serious!
  - Esp. if previous career all @ R1s
  - Searches are proportionally more expensive for PUIs, they will NOT want to waste their money inviting candidates who are using this as a stepping stone to an R1 job
  - This IS a bias you will need to confront head-on!
- Research the institution, department, & hiring committee thoroughly
  - Personal touch is important in a small department
  - Think through how you will collaborate & how your research fills a gap in their department
  - Consider student demographics & DEI
- Ask informed questions – e.g. examples from previous slides!!!

Possible Interview Questions

What They Ask:	What They're Listening For:
Why this institution?	Awareness of & enthusiasm for school's mission, values, & PUI status
How do you teach diverse learners?	Evidence of background in & concrete experiences with inclusive pedagogy
How do you mentor undergraduates in research?	Realistic, feasible, modular, student-centered approach & research plans, clear evidence of past success in mentorship (e.g. mentees who went on to grad or med school)
What courses could you teach or develop?	Flexibility, curriculum fit, evidence of past experiences as a TA or IoR, awareness of current faculty & gaps in teaching expertise
How would you handle heavy teaching loads?	Strategies for time management, effective use of teaching tools, awareness of institutional support & limitations
How do you incorporate DEI into your pedagogy & research mentorship?	Thoughtful, meaningful engagement, past concrete experiences with activism
…possibilities are as diverse as the institutions…	…so practice with trusted mentors!

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Negotiating offers

Negotiating Job Offers

- Do your research
  - The job advertisement
  - Find the pay scales for your position, department, institution
  - Find the Union contract and related tables
- Understand intimately the compensation vs benefits vs soft negotiables
  - Compensation BEFORE taxes
    - Take-home pay not always clear - - - → Talk to HR!!!
  - Benefits
    - How much is immediately available to you upon hire vs after a delay
      - Is this up for negotiation via delayed start-time, earlier onboarding…?
    - Are medical, retirement, dental…benefits taken out of your base pay, or are they additional pay?
  - 10 month, 9 month salary
    - Teaching seasons (semesters vs quarter)
    - Dividing the salary for full year or options to get paid during teaching commitments

Jorge Avila

Negotiating Job Offers

- The pay range vs the expected starting salary
  - Entry-level – Assistant prof. Vs Mid-career – Associate to Tenured

- In good faith…
  - **Know your worth**
  - Understand **what you need to succeed**
  - If you are the top candidate, the Institution will work to meet your demands
  - Looking at payscales, advert, Union contracts, **always demand** the highest possible salary for your experience
  - Request explanation when the offer does not align with your expectations

- Research start-up
  - Space
  - Materials funds
  - Tenure clock expectations

- Tenure expectations
  - Should be clear to you upon interviewing, and upon negotiating
  - Is there flexibility in timeline?
  - What requirements, deliverables, and procedures will be asked of you

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Setting up the lab

Setting up the lab

- What materials do you need?
  - List everything you use over a few months and get prices
    - Equipment, reagents, consumables, core facilities, etc.
  - Prioritize materials by immediate, intermediate, or long-term need
- What does your space look like?
  - Get a schematic of your lab if possible
- When can you spend the money?
  - Check how startup funds are distributed (by semester or yearly)
  - Large purchases usually require multiple quotes
- Establish a system for managing inventory - including supplies, equipment, and reagents

Filling your labs with students

1. Advertise in your classes and tell other faculty members
2. Screen for fit:
   - Require application/ interview process
   - Set clear expectations – hours, reports/presentations (especially if for credit)
   - Probationary period
3. Meet with students regularly to monitor progress

- Hiring postdocs & techs??

Suzanne Gantar

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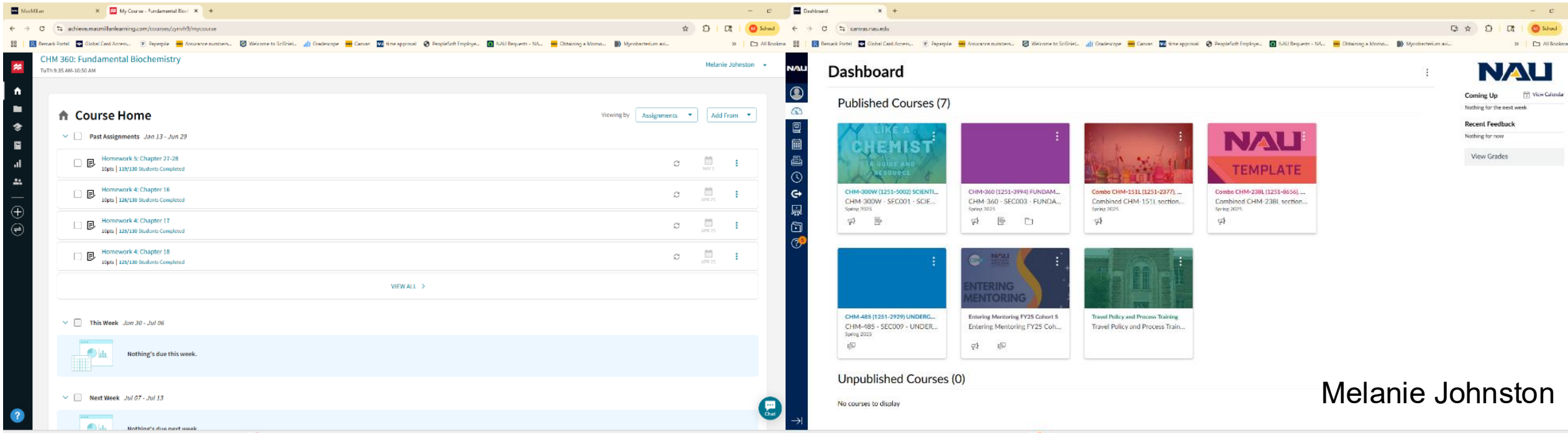
Teaching for the first time

Teaching for the first time and preparing classes

- Use materials from others (peers, the publisher)
- Use a book with an online homework platform; use that homework and use the slides
- Ask peers what you can use directly regarding homework/quiz/exam/lecture materials
- Get the other professor's or previous professors' syllabi
- Something about not putting in more effort than you have time for
- Mostly (or all) multiple choice is okay, especially to start
- Ask about TA support in advance (paid from school/dept., work study, or unpaid for class/internship credit)



Melanie Johnston

Teaching for the first time/preparing for classes

- Team teaching
  - Not instructor of record (course coordinator)
  - Responsible for a portion of the course
    - **Lab section**
    - Lecture unit
    - Seminar section
  - Often given set of materials or protocols that everyone is using

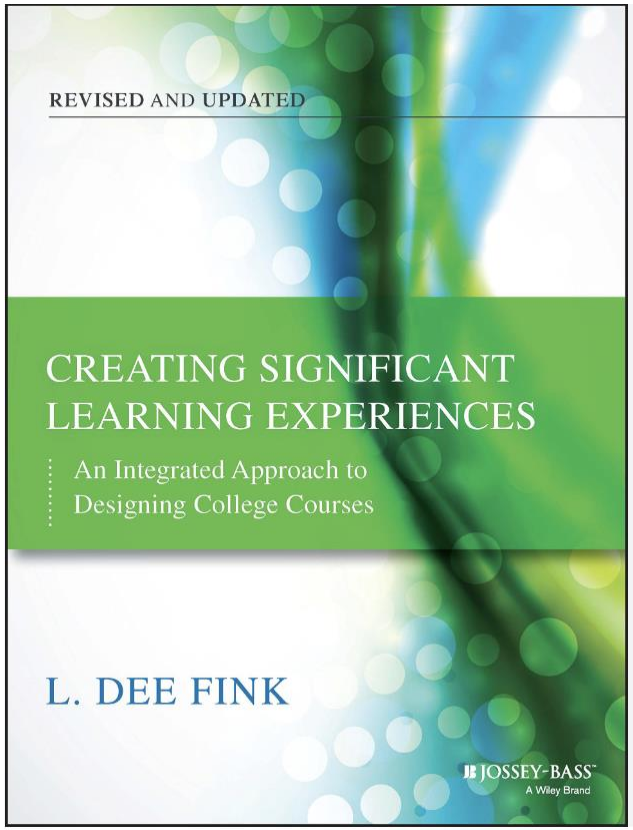
- **Observe your colleagues' sections**
- Try to stay as consistent as possible
- Work on timing
- Attend the lecture if you can
- Ask questions
- Communicate regularly with the team
- Stay ahead of the students!!!

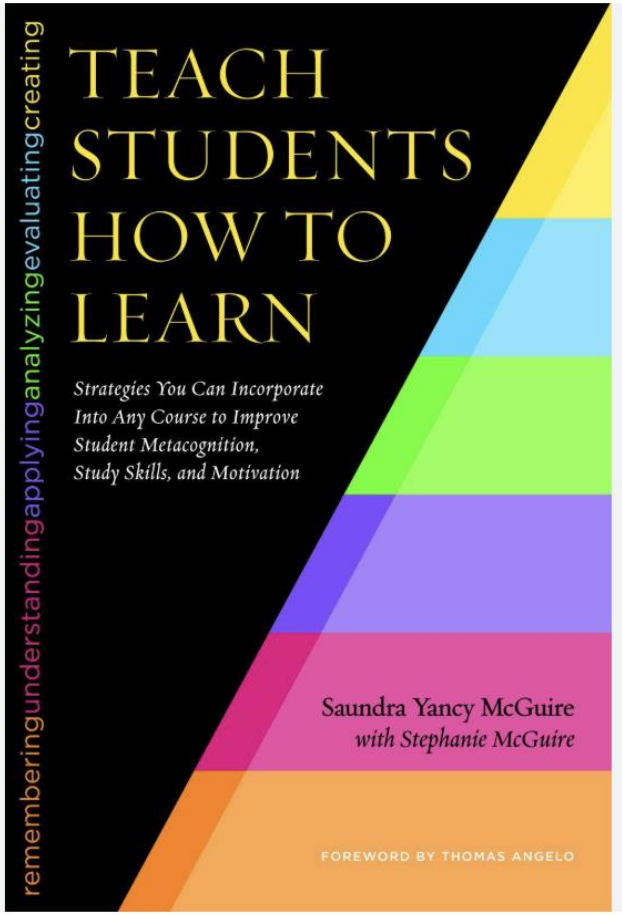
Designing your own course/curriculum

- Look up syllabi from other instructors for ideas
- Utilize the textbook content and tools
- Get as much prep work done before the semester starts as you can

- "Design backwards"
  - Start with a list of skills/topics that you want the students to leave your class with
  - Decide how you want to assess these skills
  - Design assignments
  - Fill in with content
  - Incorporate active learning and lots of assessment check points for students

- It will take 3 semesters to get the course the way you like it
  - Semester 1: Hang in there and give yourself some grace
  - Semester 2: Fix your mistakes
  - Semester 3: Tweak and polish





Abby Hare-Harris

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Service to the school

Service to the school

- Department, College, & University Level
  - Committee Work
  - Faculty Governance
  - Overseeing and directing programs
  - Sponsoring student organizations
  - Coordinating outreach activities
  - Advising students
  - Mentoring students

iJobs Panel

Preparing for tenure and expectations

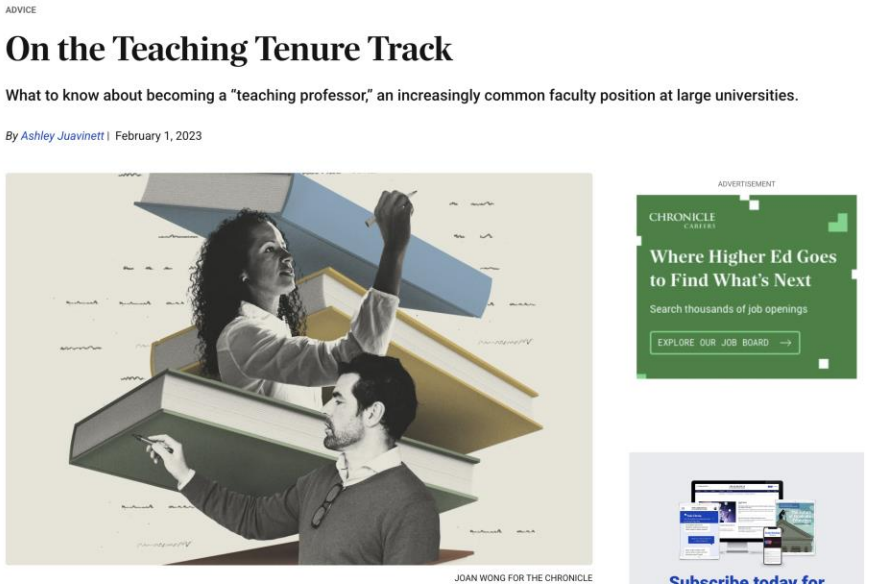
Tenure and Career Expectations

- NTT vs Tenure track
  - Lecturers, Adjuncts
  - “lecturer with the potential for security of employment”
  - Job security vs the mission

- Tenure
  - Expectations should be clear to you upon hire
  - Timeline and required deliverables, milestone accomplishments, should be made very clear
    - Number, quality of publications
    - Teaching milestones
    - Service
    - Regular performance/merit reviews

- Career Outlook
  - Evolving roles
  - Teaching, Research, Service… But more is always needed
    - Administration
    - Leadership
  - Service to Science
    - Reviewer

- For deep perspectives, see:
  - The Chronicle of Higher Ed
  - LPSOE at UC Plos One



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