Managing Your Research Career: Basic and Translational Sciences

Akinyemi Oni-Orisan
Mercedes Paredes
Rachel Rutishauser

Faculty Development Day
Sept 10, 2024

WELCOME TO LIFE AS UCSF INVESTIGATORS!

Akinyemi Oni-Orisan

Mercedes Paredes

Rachel Rutishauser

Goals for Today's Session

The Nuts and Bolts of starting your lab

Incorporating DEI into your basic/translational sciences research program

The Balancing Act: all the duties of being a faculty member

Our goal will be to define an action item/commitment for yourself as a group leader

Let’s Get to Know One Another

In chat, please place:

Your name, department

Physician, physician-scientist, basic scientist?

Location

What is your lab song or mascot (or what would represent your lab)?

Guidelines for Discussions

We will have 3 separate sessions

1 panelist will serve as moderator to monitor chat—please post questions there during the didactic part.

There will be Open Discussion at end of each topic

Code of Conduct

Be respectful and collaborative with one another

Respect diversity, including communication differences

Respect privacy of participants Confidentiality

Please don’t hesitate to ask questions of the panelists and the group: there is no such things as a “bad" question

Getting Started: What I Wish I Knew

Mercedes Paredes MD, PhD
Dept of Neurology/Division of Neurosciences

What do you think is the biggest challenge of starting/running a lab?

Setting up your laboratory-equipment and reagents

- **Establish relationships with critical vendors**
- Negotiate price, accessories, delivery date remember…some instruments take time to deliver
- Assure that space is available and appropriate for a given purchase
- Think about service contracts
- **Who are your neighbors? Can you share equipment/co-purchase?**
- Understand the basics of the university procurement system

Getting people in your laboratory

- First, Determine your true needs
- What will be the initial focus of the laboratory?
- Who will train the members of the laboratory?
- What is the “talent pool” like?
- Don’t be flattered!

Staffing is the most important aspect of starting a lab

Three categories:

• graduate students (undergraduates)

•postdoctoral researchers

• technical staff

Invite for an interview--NEVER hire someone sight-unseen

Managing your lab: personnel

- Have clear expectations.
- Be available for your growing group and provide mentorship, especially to students.
- In addition to frequent informal interactions, have regular individual or subgroup meetings and group meetings.
- For postdocs and staff scientists, if notable performance concerns arise, consult HR immediately. Document.

Getting people in your laboratory

- Structure the interview day (not too much)
- If post-doc or senior scientist: candidate should present a seminar
- Judge their scientific approach and their skill set
- Their ability to think critically, answer questions

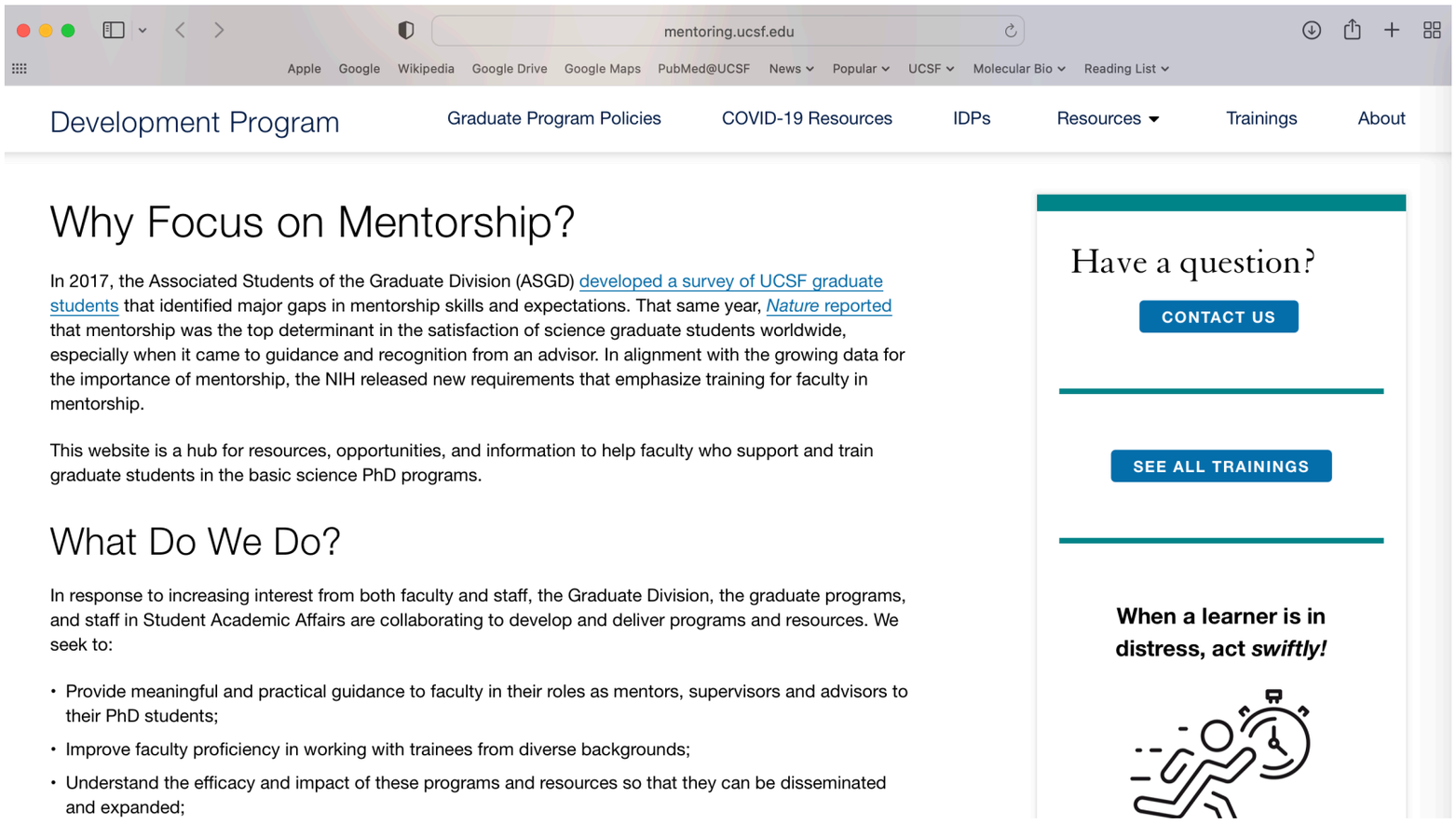
❑ Why do you want to work in my lab?
❑ What are your career goals?
❑ What projects have you led?

- Their personality—how do they interact? Answer/respond to difficult questions?
- Candidate should meet with individual lab members

Mentoring: key lessons

- **Establish good practices starting Day 1**
  - **Setting expectations**
  - **Individual development plan**
- **You are no longer just another person in the lab**
  - ***your words will likely have more impact than any other member of the lab***
- **Develop a mentorship style that works for you**
  - **Recognize your own strengths and weaknesses**
  - **Be specific to your mentee**
- **Match projects with people not positions**
  - **What is the mentee interested in learning?**
  - **Are you willing to give up that research project?**
- **Hope for best; prepare for worst (you may have to fire someone)**

Opportunities to improve mentorship skills



Mentorship training series

- Department/ORU specific
- SOM faculty development
  - https://mentoring.ucsf.edu
- CTSI Mentor Training Program
  - formal application to the program
  - https://accelerate.ucsf.edu/training/mtp

Managing your lab: finances

Budgeting is critical.

Arrange regular meetings with your post-award analyst.

Ask for help in developing budget (pre-award, mentors).

Encourage your students and postdocs to apply for fellowships (there are many benefits irrespective of funding outcome).

Managing your lab: authorizations and protocols

Authorizations (Ground Rules):
BUA: Biological Use Authorization
IACUC: Animal Protocol
CSA: Controlled Substance Authorization
CUA: Chemical Use Authorization
RUA: Radioactivity Use Authorization
IRB: Institutional Review Board (protecting human subjects)

- Meet the officers personally to establish a rapport and review the submission process.
- Ask colleagues for examples for boilerplate language.
- Do it yourself the first time, then delegate.

Questions
Reflections

What strategies of managing a lab have worked for you?

Incorporating diversity, equity, inclusion, and anti-racism into your basic/translational sciences research program

Akinyemi Oni-Orisan, PharmD, PhD

Department of Clinical Pharmacy

Institute for Human Genetics

Have you intentionally created a safe and inclusive environment in your lab?

Are you aware of any biases that may hinder diversity and equity in your team?

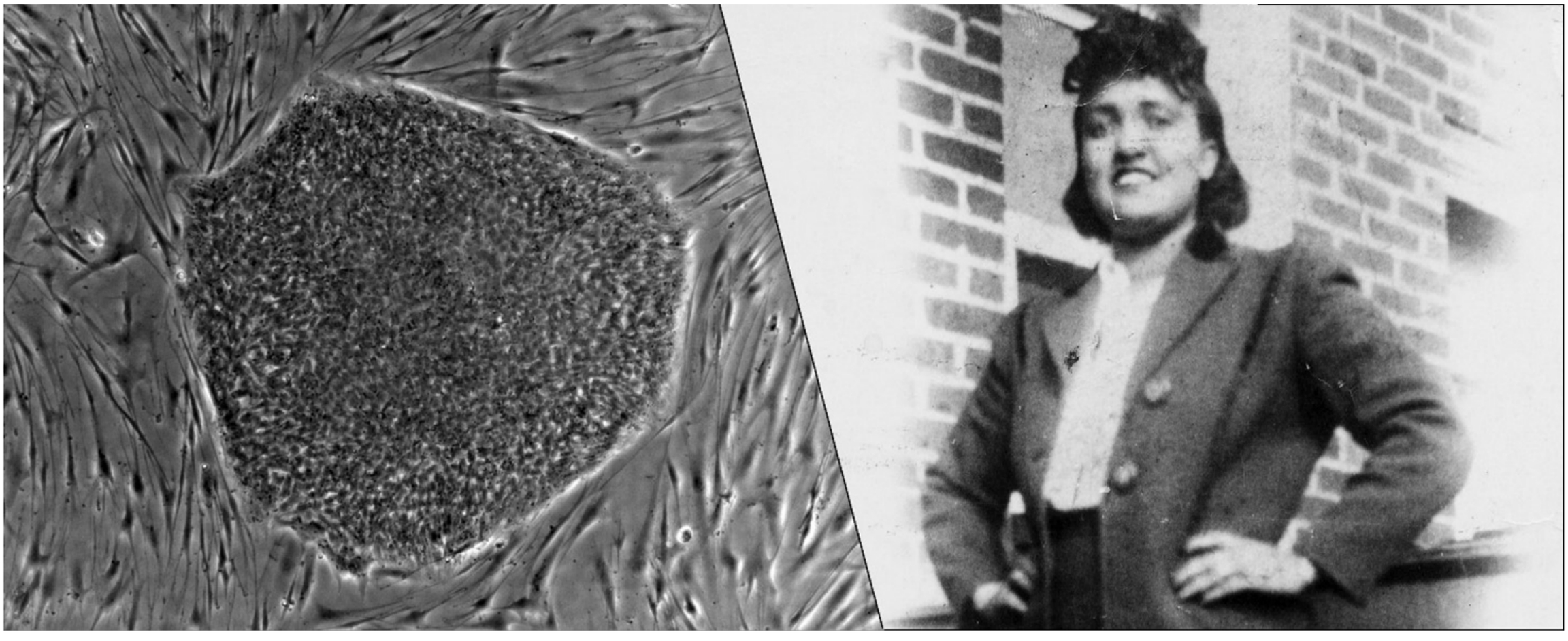
Can I incorporate DEI into my basic research?

- Integration of epigenetic and genetic profiles identifies multiple sclerosis disease-critical cell types and genes
- Transcription factor binding site orientation and order are major drivers of gene regulatory activity
- Mitochondrial single-cell ATAC-seq for high-throughput multiomic detection of mitochondrial genotypes and chromatin accessibility
- Mass cytometry reveals single-cell kinetics of cytotoxic lymphocyte evolution in CMV-infected renal transplant patients
- Narcolepsy risk loci outline role of T cell autoimmunity and infectious triggers in narcolepsy
- Shaping faces: genetic and epigenetic control of craniofacial morphogenesis

Incorporating DEI into your basic/translational research program

1. Take a deep dive into the history of your research area
2. Strive to eliminate biases in your field
3. Develop transdisciplinary collaborations to solicit unique perspectives
4. When hiring, ditch the “culture fit” in favor of the “culture add”
5. Create an inclusive environment in your lab
6. Connect with your lab on a deeper level
7. Leverage your team’s lived experience to advance your science
8. Access continued DEI education/training for you and your team

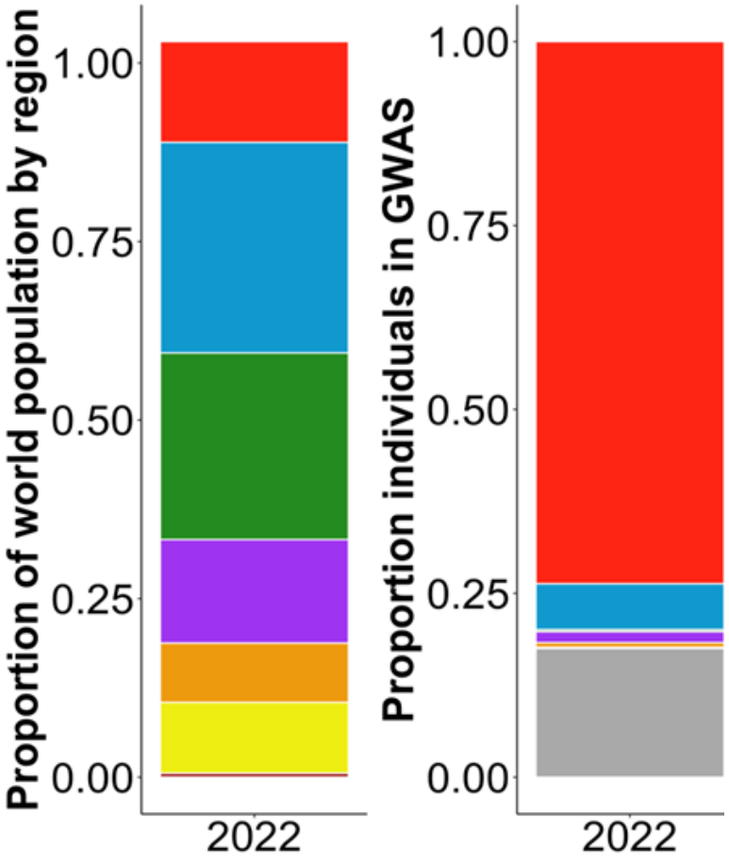
1. Take a deep dive into the history of your research area

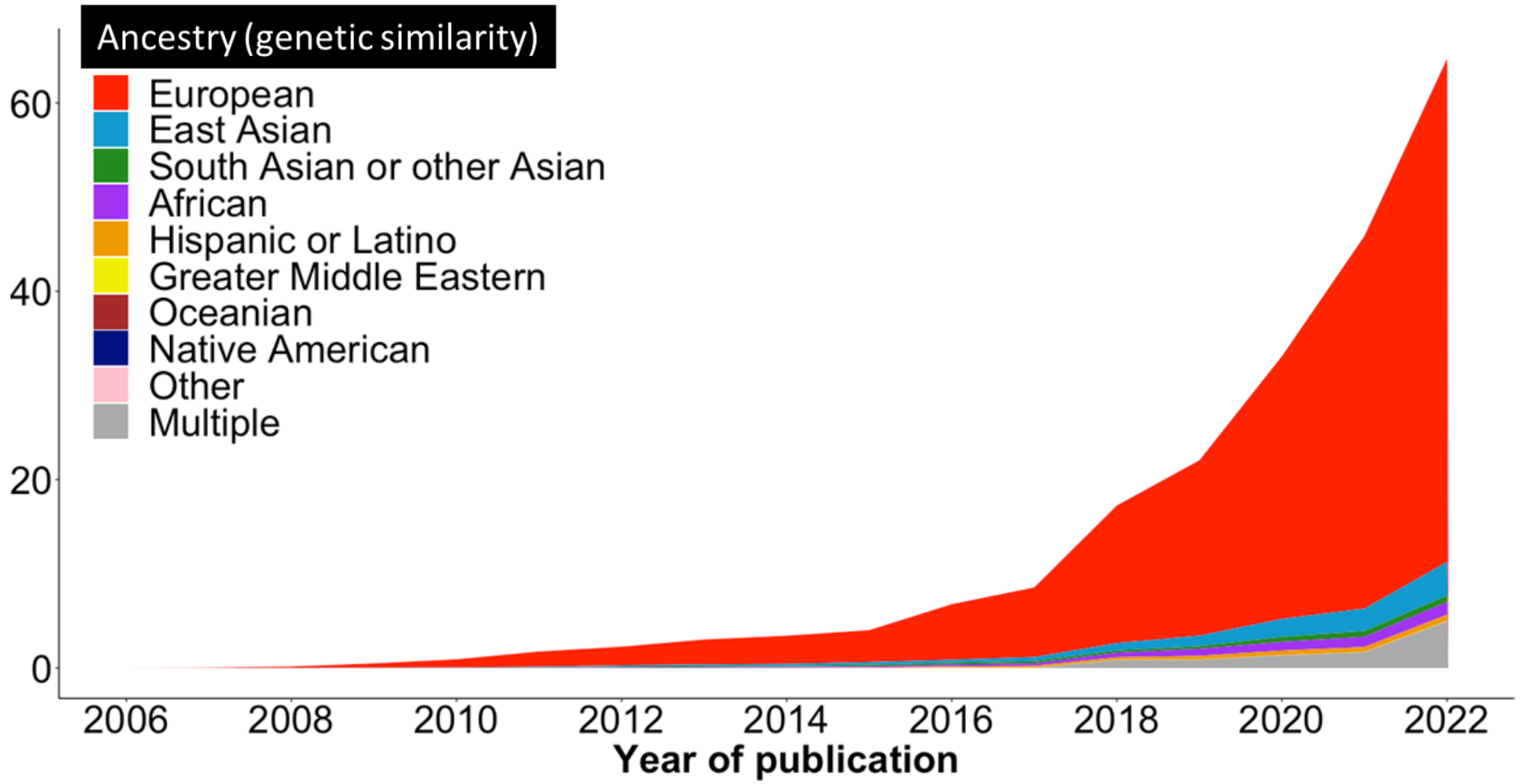


HeLa cells

Henrietta Lacks

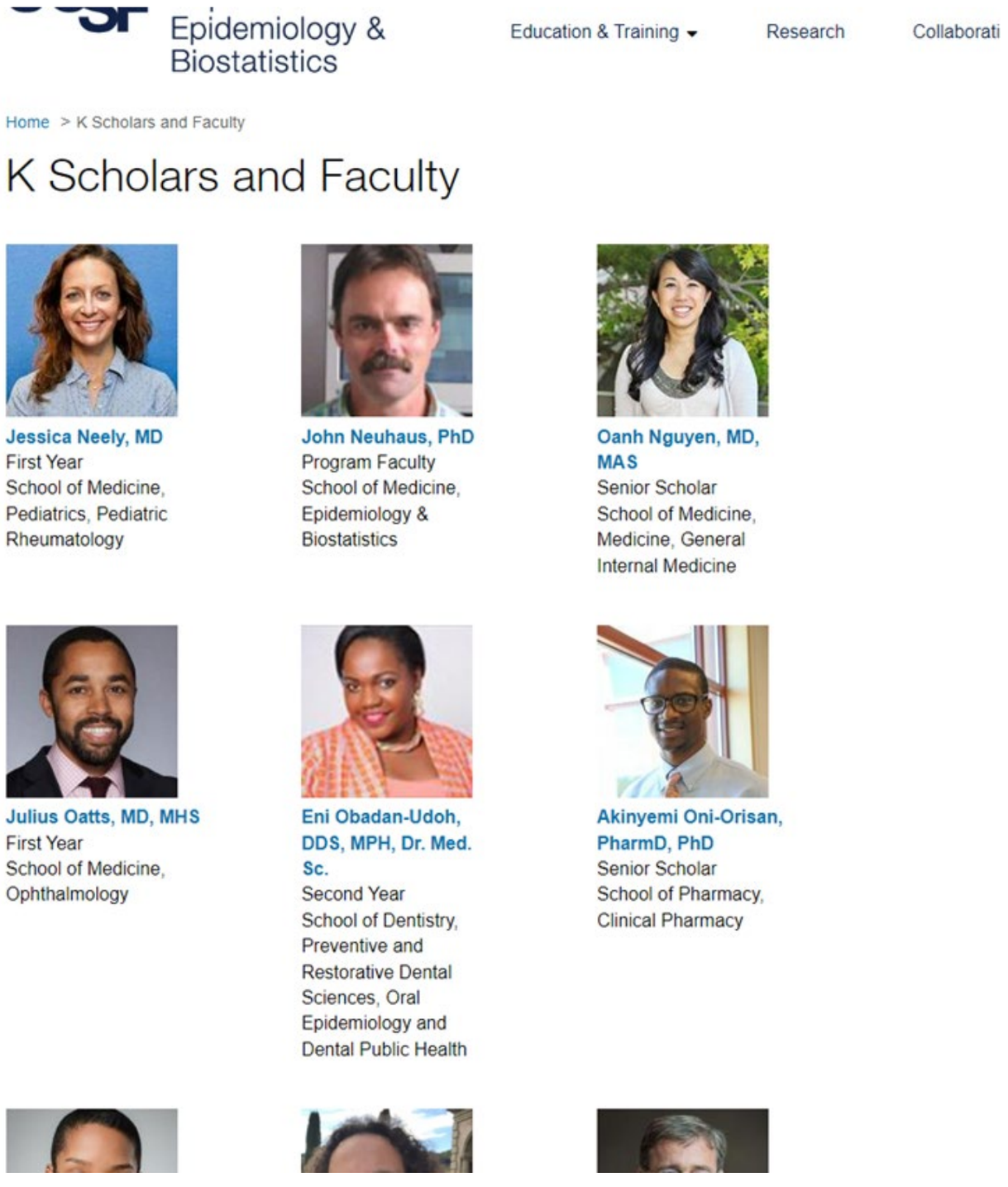
Strive to eliminate biases in your field





Fatumo et al, Nat Med 2022

Develop transdisciplinary collaborations to solicit unique perspectives into your work



Ditch the “culture fit” in favor of the “culture add”

Culture fit

- Affinity bias
- Similar training background
- “I could have a beer with them”
- “They would fit right in”
- Stifles innovative thinking

Culture add

- Geographic/regional diversity
- Historically excluded in the field
- Unique educational background
- Personality (e.g., introversion)
- They seem “weird”

Create an inclusive environment in your lab

Equity for women and underrepresented minorities in STEM: Graduate experiences and career plans in chemistry

Jean Stockard[a], Celeste M. Rohlfing[b], and Geraldine L. Richmond[c,1]

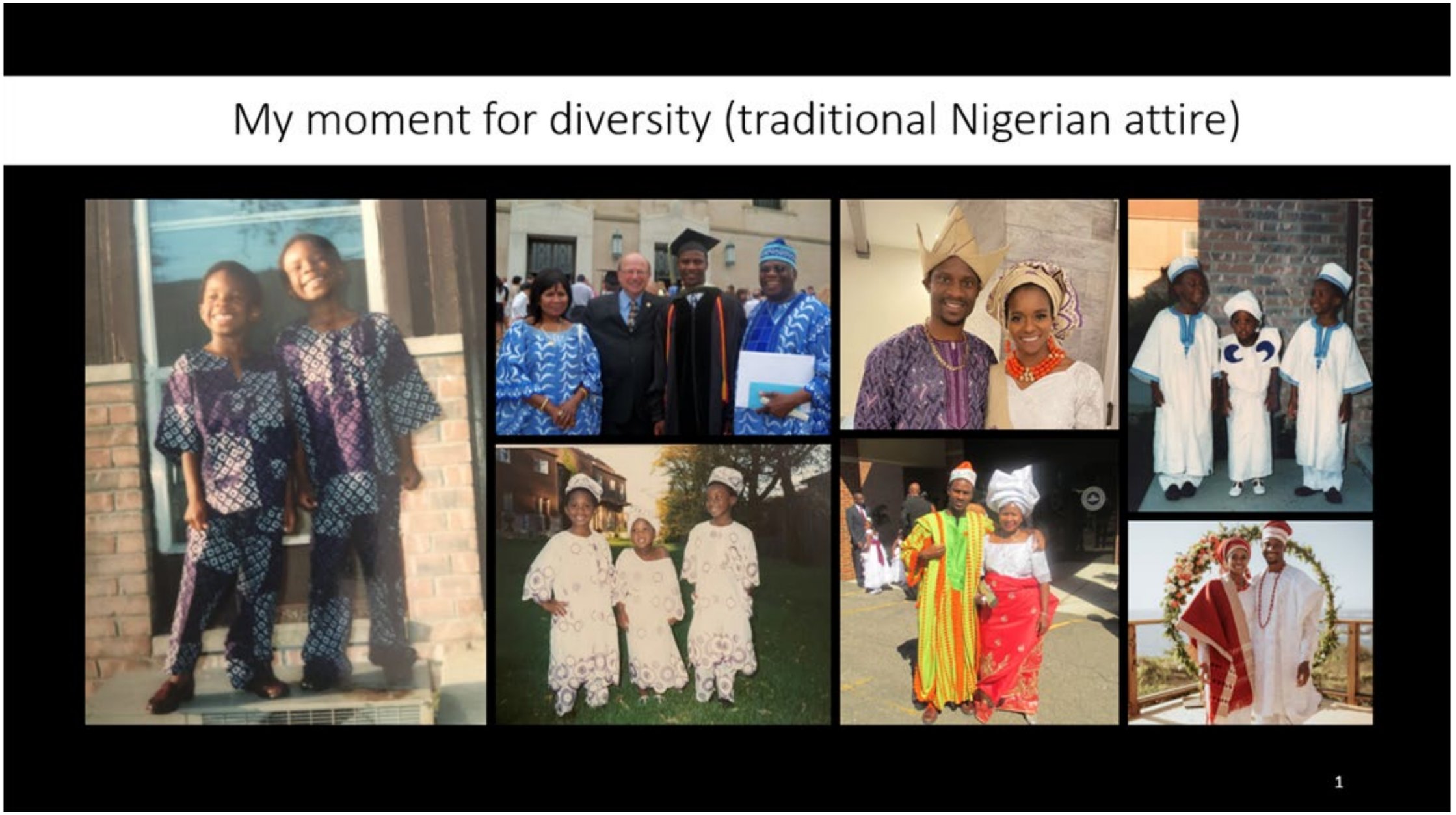
[a]Department of Planning, Public Policy and Management, University of Oregon, Eugene, OR 97403; [b]Committee on the Advancement of Women Chemists (COACh), University of Oregon, Eugene, OR 97403; and [c]Department of Chemistry, University of Oregon, Eugene, OR 97403

Contributed by Geraldine L. Richmond, November 20, 2020 (sent for review October 7, 2020; reviewed by Arthur Bienenstock and Victor McCrary, Jr.)

Recent events prompted scientists in the United States and throughout the world to consider how systematic racism affects the scientific enterprise. This paper provides evidence of inequities related to race–ethnicity and gender in graduate school experiences and career plans of PhD students in the top 100 ranked departments in one science, technology, engineering, and math (STEM) discipline, chemistry. Mixed-model regression analyses were used to examine factors that might moderate these differ-

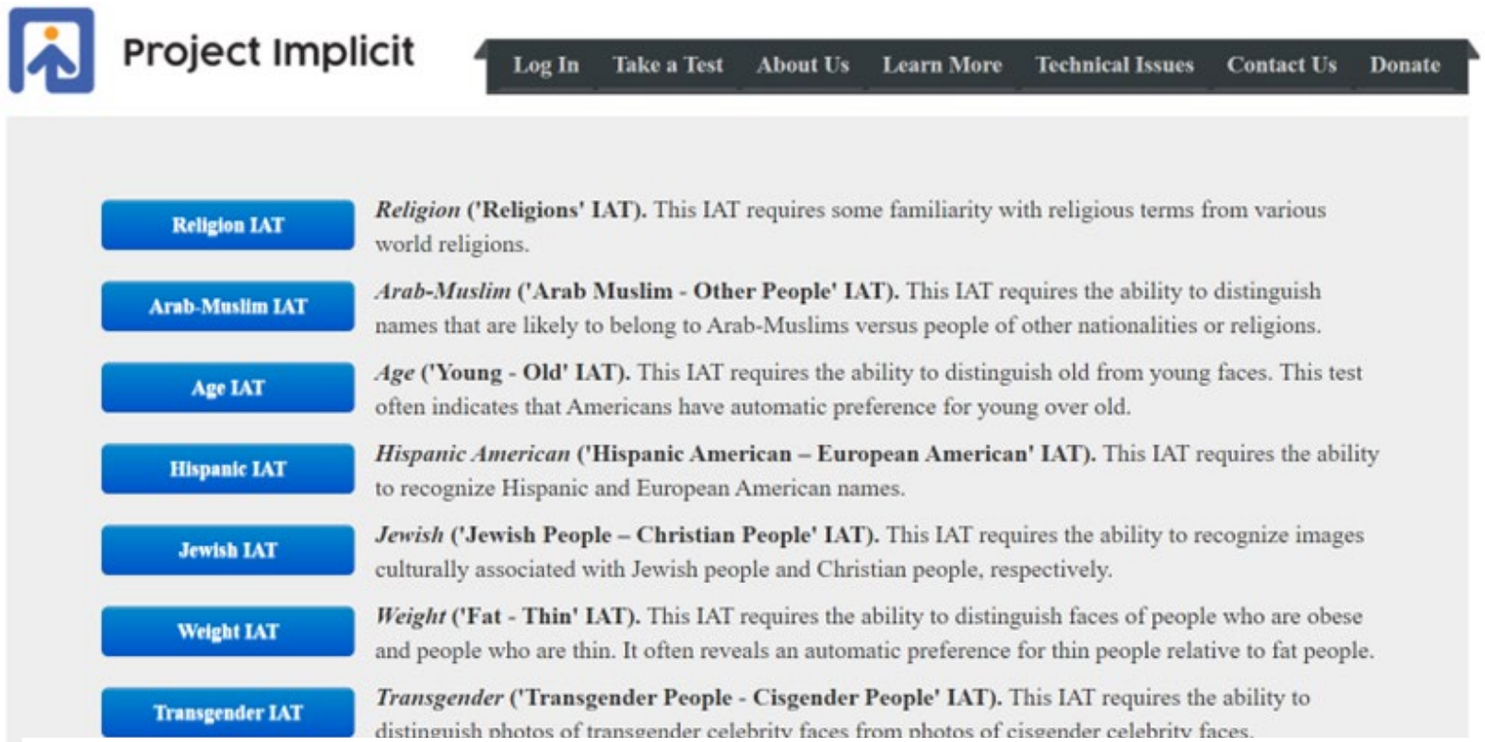
career plans of chemistry graduate students differ by gender or identification as URM, and factors that might moderate, or help explain, these differences. Data came from a 2013 survey of chemistry graduate students sponsored by the American Chemical Society (ACS) (10) and publicly available data on chemistry departments. The sample was restricted to doctoral students enrolled in the 100 departments in the United States that receive the largest share of research funding and who had been enrolled

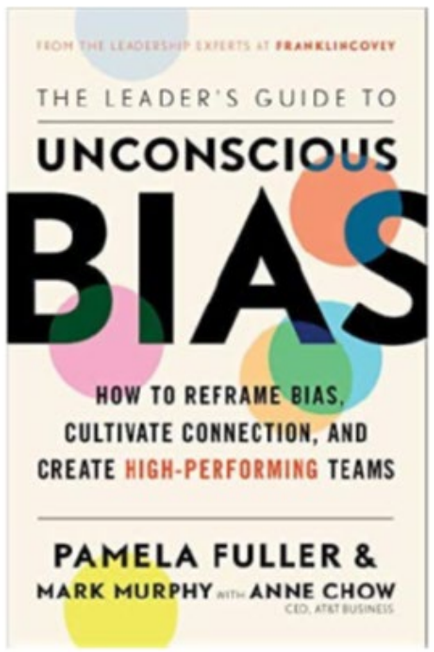
Connect with your lab on a deeper level

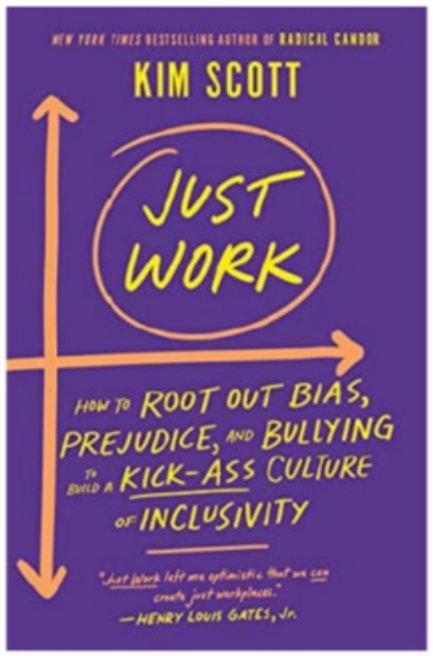


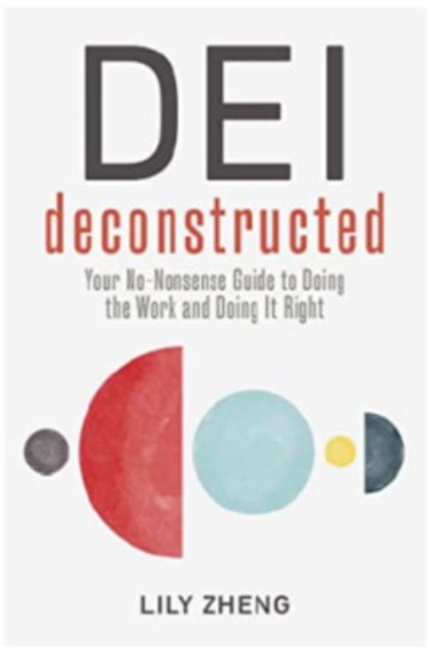
Leverage your team's lived experience to advance your science

Access continued DEI education/training for you and your team









Questions
Reflections

How have you incorporated DEI-AR into your research and lab team? Does this discussion spark any ideas?

The Balancing Act

Rachel Rutishauser, MD, PhD

Associate Professor, Division of Experimental Medicine, Department of Medicine, ZSFG

What do you think is the biggest challenge of finding/maintaining balance as a PI?

Understand the expectations of your position

Be strategic

Communicate

Understand Expectations for Promotion

- Financial and scientific independence
- National reputation (for Associate promotion)
    - Requires establishing a clear ”identity” as a researcher
- Specific expectations of your Department / Division:
    - Teaching / mentoring
    - Dept/University Service (increases with advancement)
    - Diversity, Equity and Inclusion
- Get advice
    - Mentors (internal & external)
    - Division Chief/Dept Chair (>1x/yr)

Primary Research vs Collaboration

- Traditional advice: Focus, focus, focus!
  - Benefits: quicker time to first R01, establish identity
  - Drawbacks: all eggs in 1 basket (scientifically & financially)
- Collaboration can be very good!
  - Benefits
    - Novel scientific opportunities / alternative directions, new ideas
    - Bring in additional resources and diversify funding portfolio
    - Increase networking / build reputation through collaboration
  - Drawbacks
    - Spread too thin, delays in advancing 1^{o} research agenda
    - Competing demands on time

Advice on Balancing Collaborations

- Be strategic by engaging in collaborations that
  - Reinforce & enhance rather than distract from your identity
  - Provide scientific opportunities for growth
  - Network you with key leaders in your field
  - Provide you with sufficient resources to do the work
- Communicate proactively with colleagues
  - Discuss up front what you *and your collaborator* need
    - Resources, data, authorship expectations (including mentees)
  - Be up front about competing demands
    - We're all busy people, most people will (or should) understand
  - Set realistic expectations, communicate proactively if delayed
  - Maintain engagement: meetings to discuss data, brainstorm, etc

Clinical Responsibilities

- Benefits
  - Get ideas from observations in patients
  - Develop relationships with clinical colleagues who might be able to partner with you in research (refer patients, etc)
  - Inspire young physician-scientists in training
  - Maintain professional skills
  - Some additional salary support
- Drawbacks: Time!
- Advice
  - Limit clinical work to that which <u>enhances</u> your research
  - Coordinate schedules long in advance to avoid major clinical commitments around known grant deadlines, etc.
  - Be up front with your Division Chief/Dept chair RE your needs

Teaching

- Benefits:
  - Exposure to potential trainees
  - Networking within University
- Drawbacks: Time!
- Advice:
  - Avoid signing on to teaching commitments that require developing completely new material
  - Steer toward teaching that draws on material that you already have prepared or can easily repurpose

University and Professional Service

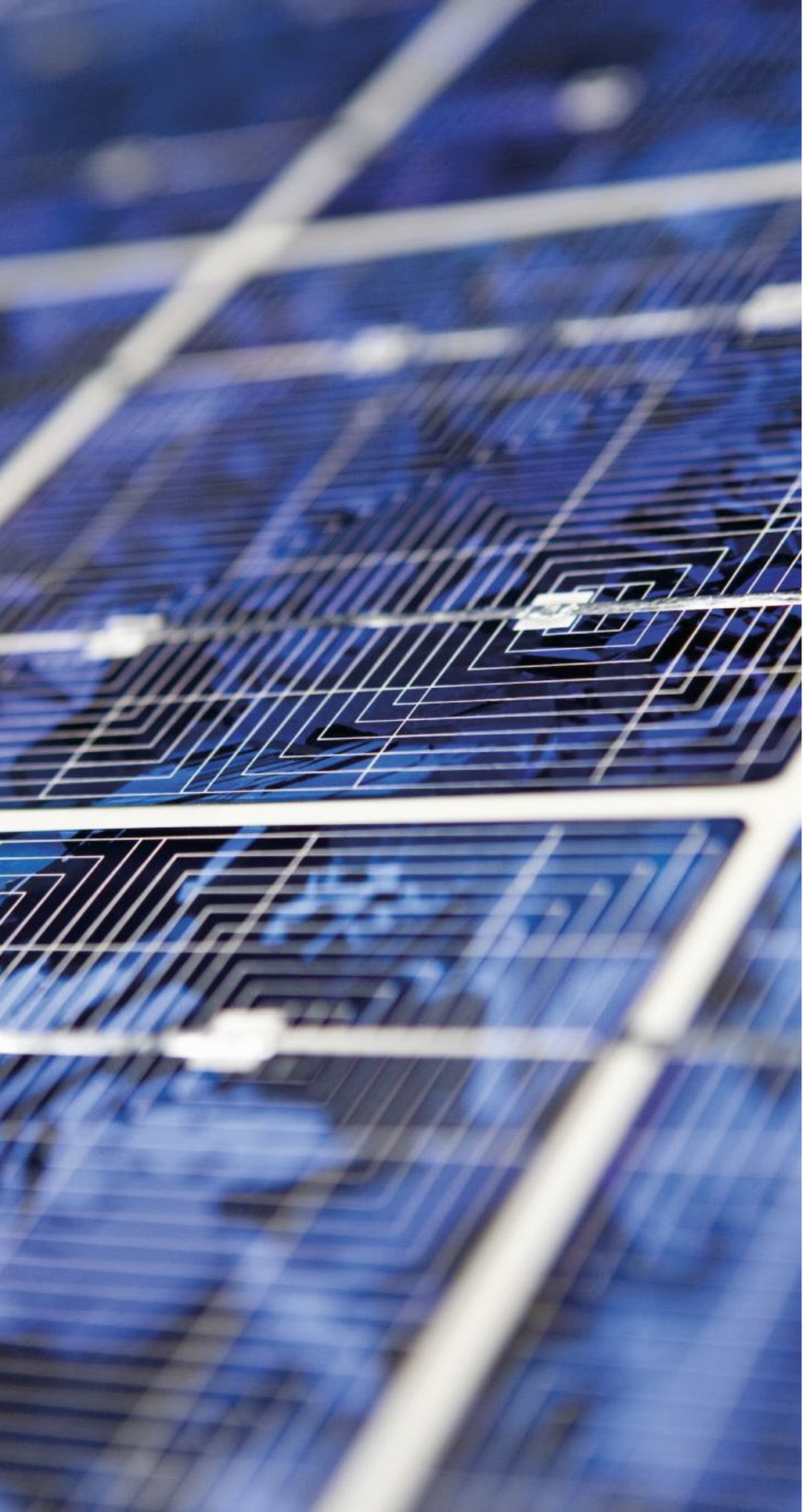
- University service should be limited at Assistant level
  - Possible exception: when it enhances your identity as a researcher
  - When promoted, seek service activities from which you can learn something useful or address issues important to you
- Study section service (local, NIH, or foundations)
  - A time commitment, but you can learn a lot about writing successful grants by seeing how they are evaluated by study sections.
- Reviewing papers
  - Can learn a lot by this process and develop your reputation in the field
- National organizations
  - When it synergizes with your career goals and identity

Maintain a Healthy Life Outside of Work

- Too much work can be unhealthy / overly consuming
  - Set limits for yourself
  - Your partner/family may help set limits for you!
- You will be more effective in work if you are happy outside of work
- Just as you prioritize what reinforces your identity as a researcher, prioritize your identity as a person
  - Make time and be present for your partner and family
  - Maintain things that enrich your life outside of work

Questions
Reflections

How have you been able to organize all of your PI duties?



Our Action Items

Please take 3 minutes and write down a goal you would like to achieve as a new PI

You can add to chat or share with the group