



D.E.I.

Robin Erbacher - U.C. Davis

P5 Town Hall Meeting - LBNL - Feb. 22, 2023



Diversity



Equity



Inclusion

[Link](#)



Diversity



Equity



Inclusion

[Link](#)

CONCEPTS OF EQUITY, DIVERSITY, AND INCLUSION

- ▶ **EQUITY:** Treating people of all identities and backgrounds fairly and respectfully with regard to opportunities, access, treatment, power, outcomes, and resources.
- ▶ **DIVERSITY:** Embracing differences, which may include race, ethnicity, gender identity or expression, family status, disability status, sexual orientation, age, and socioeconomic situation.
- ▶ **INCLUSION:** Intentionally creating welcoming and respectful environments and systems in which inequities in power and privilege are addressed and everyone is given an opportunity to flourish.

From the P5 Charge...

Both NSF and DOE are deeply committed to diversity, equity, inclusion, and accessibility principles in all the scientific communities they support. Creating a more diverse and inclusive workforce in particle physics will be necessary to implement the plan that this panel recommends, and the panel may further recommend strategic actions that could be taken to address or mitigate barriers to achieving these goals.

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Why am I here?

To respond to the charge, P5 needs to hear from the community (us!)

Who am I?

Who am I?

Not an expert!

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- I'm a professor, teacher, researcher, leader, US CMS CB Chair
- I'm ALSO a mentor, employer, supervisor, role model,learner
- This means DEI is *my concern*!

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In recent years, I have promoted DEI in my department/university by making it my concern: committees, student DIP,

My leadership positions on CMS have also necessitated concern for DEI.

My research group right now happens to be diverse, intersectional, and they are teaching me constantly. (non-binary/Latinx, trans, female)

Why is DEI important?

The business case:

a broader pool will improve economic, creative, competitive advantages

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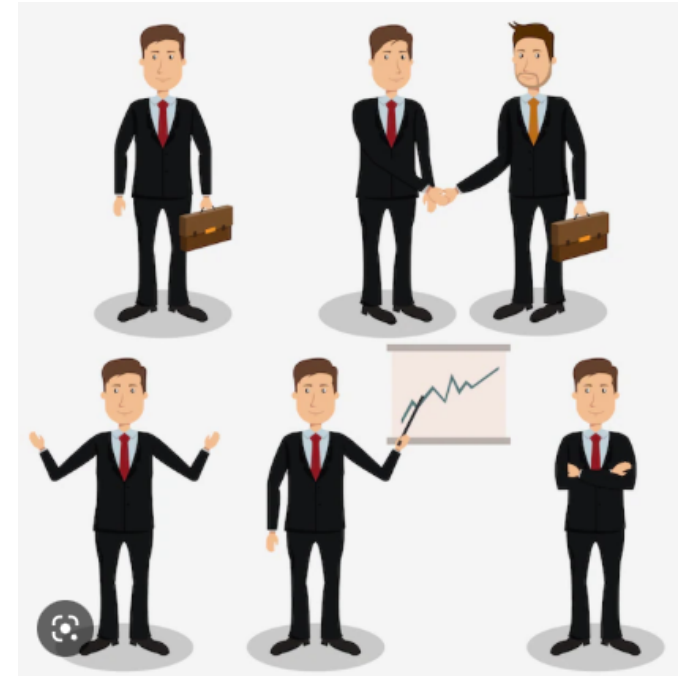
a broader pool will improve economic, creative, competitive advantages

Trouble with the business case:

why do we have to *prove* that adding underrepresented groups adds value?

having to show that diversity has positive effects sets bar higher!

should non-diverse teams have to justify their composition? →



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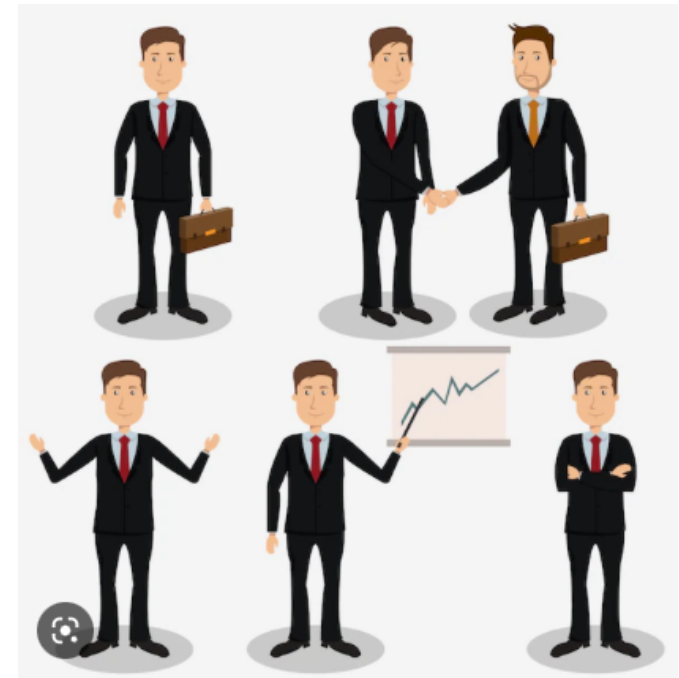
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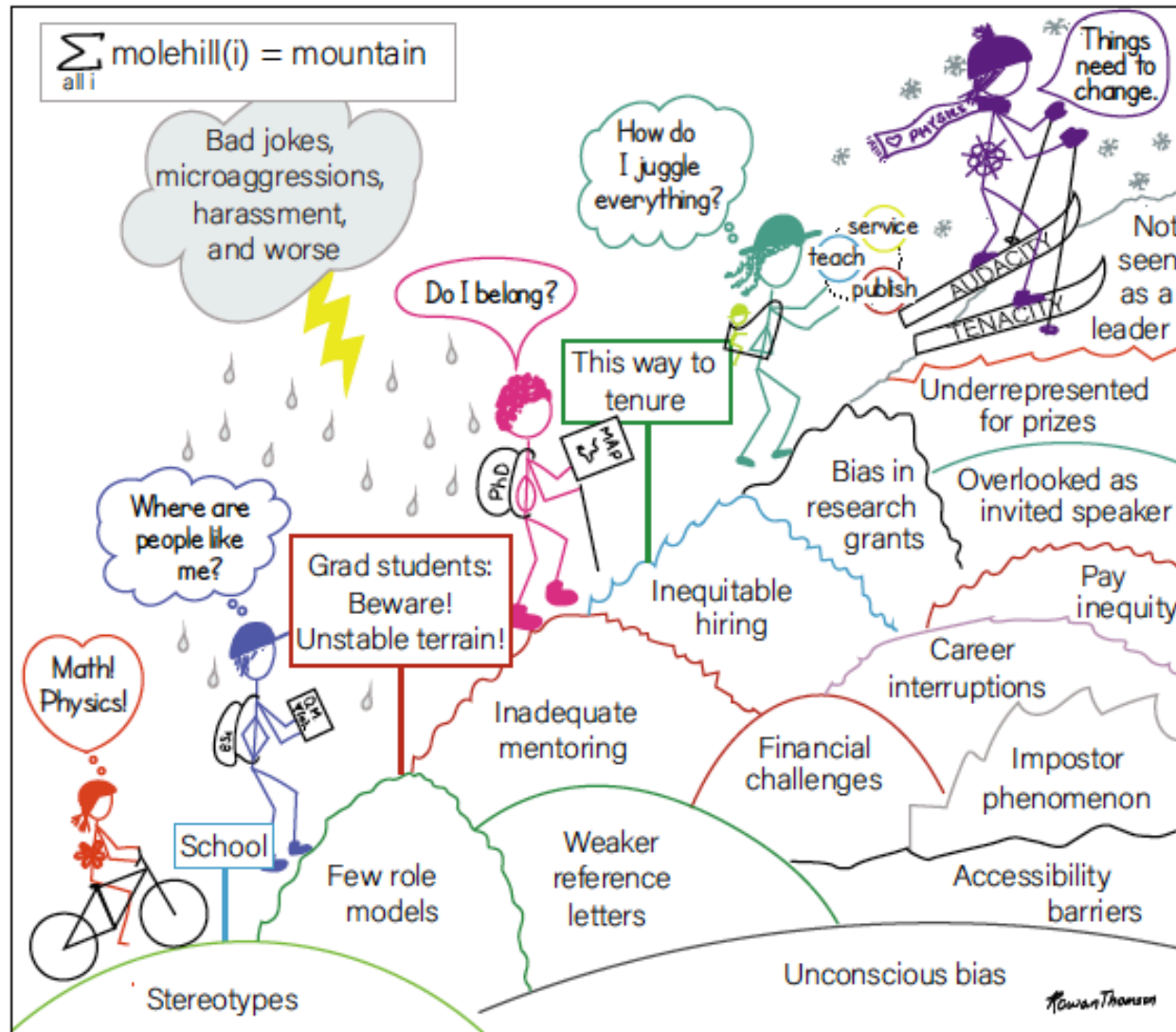
should non-diverse teams have to justify their composition? →



Let's agree that our teams should reflect the pool...

What about the pool?

when many molehills make a mountain



...or no opportunity to even approach.

Aren't we doing better?

MSNBC.com

Newsweek

Science and the Gender Gap

A generation ago, women physicists and chemists were rare in the lab, but their number is increasing every year.

By Barbara Kantrowitz and Julie Scelfo

Newsweek

Sept. 25, 2006 issue - To get a sense of how women have progressed in science, take a quick tour of the physics department at the University of California, Berkeley. This is a storied place, the site of some of the most important discoveries in modern science—starting with Ernest Lawrence's invention of the cyclotron in 1931. A generation ago, female faces were rare and, even today, visitors walking through the first floor of LeConte Hall will see a full corridor of exhibits honoring the many distinguished physicists who made history here, virtually all of them white males.

But climb up to the third floor and you'll see a different display. There, among the photos of current faculty members and students, are portraits of the current chair of the department, Marjorie Shapiro, and four other women whose research covers everything from the mechanics of the universe to the smallest particles of matter. A sixth woman was hired just two weeks ago. Although they're still only about 10 percent of the physics faculty, women are clearly a presence here. And the real hope may be in the smaller photos to the right: graduate and undergraduate students, about 20 percent of them female. Every year Berkeley sends freshly minted female physics doctorates to the country's top universities. That makes Shapiro optimistic, but also realistic. "I believe things are getting better," she says, "but they're not getting better as fast as I would like."

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Larry Summers v. women in STEM

May 15, 2008

LIFE'S WORK

Diversity Isn't Rocket Science, Is It?

By [LISA BELKIN](#)

BACK in the bad old days, the workplace was a battleground, where sexist jokes and assumptions were the norm.

Women were shut off from promotion by an old boys' network that favored its own. They went to meetings and were often the only women in the room.

All that has changed in the last three decades, except where it has not. In the worlds of science, engineering and technology, it seems, the past is still very much present.

“It’s almost a time warp,” said Sylvia Ann Hewlett, the founder of the Center for Work-Life Policy, a nonprofit organization that studies women and work. “All the predatory and demeaning and discriminatory stuff that went on in workplaces 20, 30 years ago is alive and well in these professions.”

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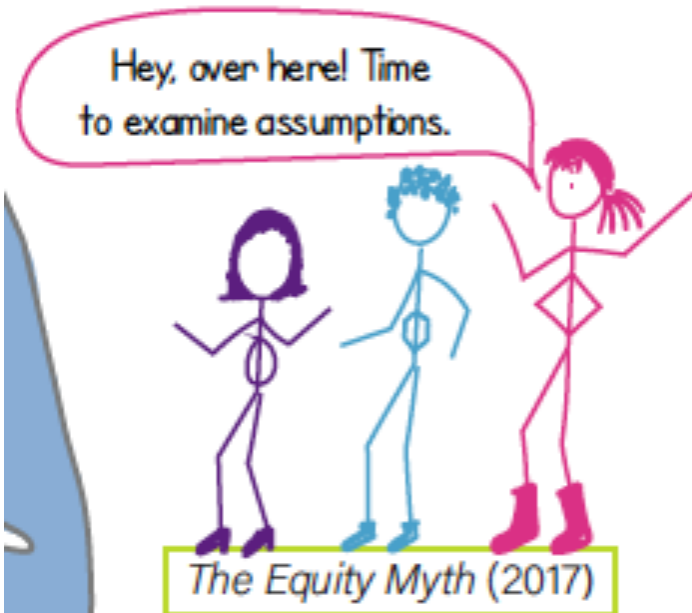
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Aren't we doing better?

- Recent CUWiP poll: 74% of 455 undergrad women in physics were harassed for their gender.
- Women and people of color who are also LGBTQIA+ face greater risks of harassment.
- Equity myth: major study in 8 large research universities, gendered or racial identifiers showed large biases - same CV ranked lower!
- Affected “hirability” and salary considerations.



- 13% of senior authors are female, rising 0.1% per year. Time to 5% of parity? 258 years!

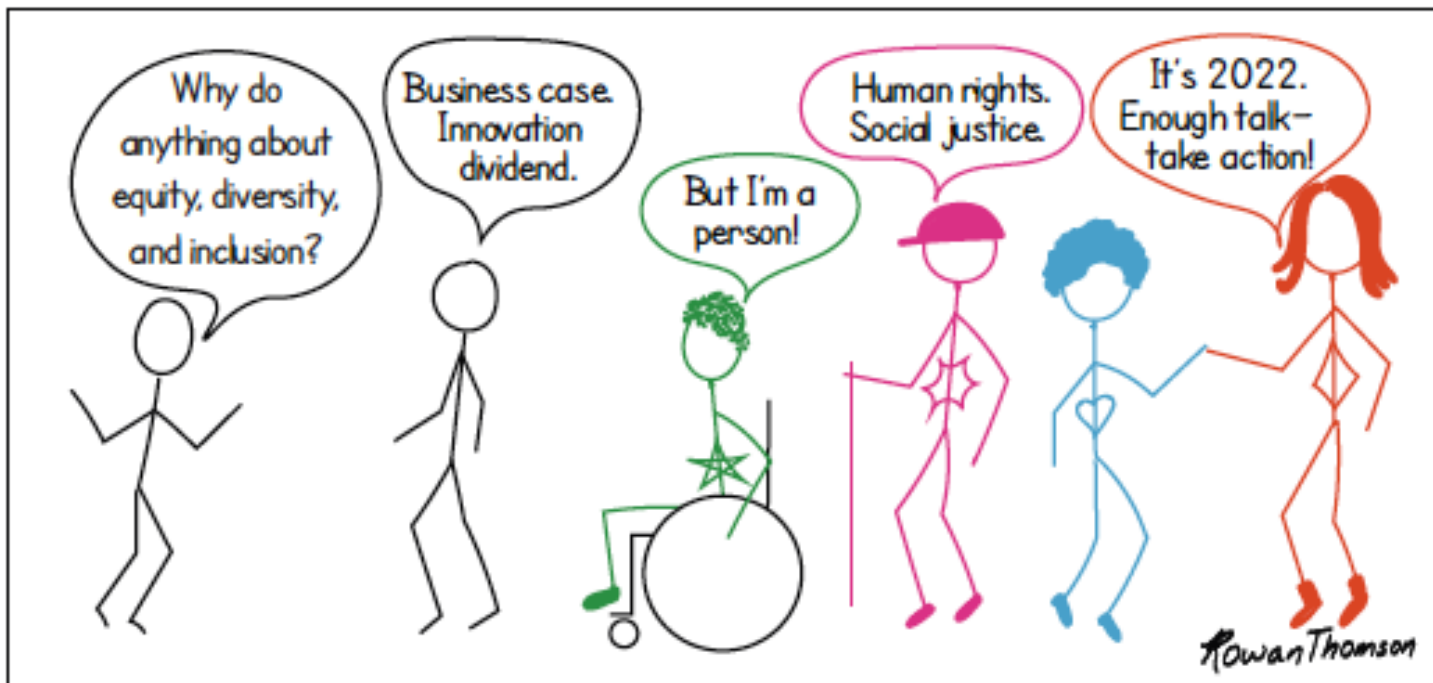
A.A. Eaton et al., Sex Roles 82, 127 (2020).

M.Aycock et al., Phys. Rev. Phys. Educ. Res. 15, 010121 (2019). 12

How can we improve DEI?

- First step is admitting we have a problem.
- Next: Each of us can be responsible for committing to diversity, equity, and inclusivity.

P5 Charge is about funding agency policies to promote DEI, but WE are the ones who can take the actions.



My own experience: Department

- We developed “Principles of Community” (published on walls, website) after finding hate flyers posted
- Developed a Mentoring Guide to hand out start of year: helps faculty and mentees make a plan for expectations and behaviors
- Assigned faculty advisors to graduate DIP group (Diversity in Physics), which meets weekly; support workshops- imposter syndrome, applying to grad school, peer mentor program
- Developed a comprehensive climate survey, professionally analyzed
- Required implicit bias training for all hiring committees (university)
- Following murder of George Floyd:
 - ▶ Solidarity statements posted, anti-racism reading group
 - ▶ Joined APS Team-Up, APS IDEA
 - ▶ Re-applied and was accepted as a Bridge Program

Much work is ongoing...



CMS Experience

- Women's Forum: during collaboration meetings: good to provide counter-spaces for underrepresented groups

- CMS developed a Diversity Office (Joel Butler's leadership)

- US CMS DEI committee: Mentoring program, trainings, statistics

- Allyship training during annual US CMS collaboration meeting

- PURSUE Internship - new! summer intern program for students from HBCUs and minority communities

- Conduct codes, Pamphlet on D&I, ... more!

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EXPLORING DIVERSITY & INCLUSION



**BY THE CMS DIVERSITY
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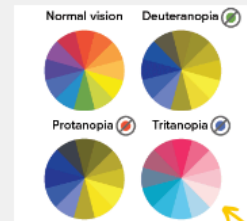
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WHAT IS COLOUR-BLINDNESS?



Colour blindness or Colour Vision Deficiency (CVD) is a predominantly inherited condition that affects the cones in our eyes, which are sensitive to colour.

- ☀ Affects more than 300 millions people worldwide
- ☀ 1 in 12 males and 1 in 200 females are affected
- ☀ Currently no cure available



What can we do to help?

THERE ARE MANY TYPES OF CVD

EXPLORING DIVERSITY & INCLUSION



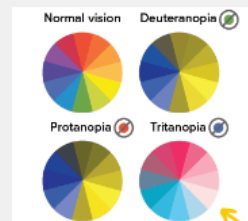
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IMPLICIT BIAS

What is it? Why does it matter?

- Implicit bias is a form of bias that occurs automatically and unintentionally, that nevertheless affects judgments, decisions, and behaviors.
- Think about these examples: "The nurse came to help the patient"; "the renowned professor gives the lecture". What gender do people usually assume?

How to counteract them?

1. Think about counter-stereotypic examples:

EXPLORING DIVERSITY & INCLUSION



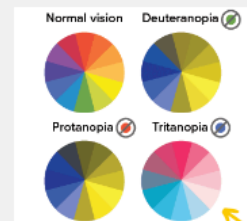
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EXPLORING DIVERSITY & INCLUSION



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TEST YOUR DIVERSITY, EQUITY & INCLUSION VOCABULARY

What is the most gender-inclusive way to say:

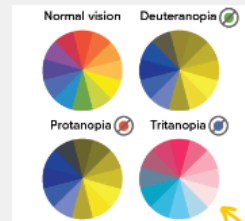


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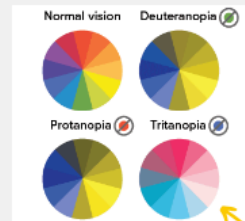


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BE AN ACTIVE BYSTANDER!

Tips for intervening when you see something wrong

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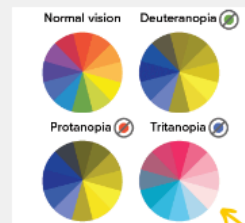


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report any instances of inappropriate behavior.

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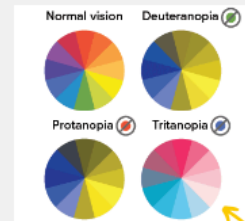
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Maintain a professional environment in an atmosphere of tolerance and mutual respect.

What should P5 do?

- Great news! Snowmass had a broad Community Engagement frontier, with interesting reports and findings.
- Not great news: Engagement with the CEF was not terrific within our communities. **CEF2**: career & pipeline. **CEF3**: D&I

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CommF3: Diversity & Inclusion

This topical group is focused on issues and projects related to **(1) Diversity, (2) Inclusion, and (3) Equity**. All three are essential not only to professional success in our field, but to developing a better society at large. We aim to gather information concerning diversity/inclusion/equity in our field, instances of success **and failures**, actions that have been taken by individuals and organizations to promote our core tenets. Ultimately, we aim to produce recommendations and resources that are tailored to particle physics, cosmology, and astrophysics that promote diversity and encourage inclusion and equity at all levels of scientific discourse, engagements and managements.

The group is being led by ✉ [Mu-Chun Chen](#), ✉ [Carla Bonifazi](#), ✉ [Johan S. Bonilla](#) and ✉ [Yi-Hsuan Cindy Lin](#). We welcome anyone and everyone to contribute following the guidelines here - [🌐 Link to Slides](#) - and **we encourage all topical group discussions to use these slides to frame their own groups meetings to ensure that the *entire community* feels invited to contribute.**

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A couple more ideas:

- DEI panel discussions at Town Halls to complement those from Snowmass. Imbed it inside program to maintain attendance. Allow time for audience input, too. Take notes!
- Sticky note session at Zoom Town hall? Some way to make it interactive, and create a space to discuss ideas for funding agencies.

What should DOE/NSF do?

I will put forth some ideas based on conversations with people active in DEI. What are your ideas?

Mentoring

- DOE now requires a plan for PIER in funding applications: Promoting Inclusive and Equitable Research.
- Great step forward! However, three pages for a whole proposal appendix — we had 19 PIs, so nobody could say anything specific about their work on PIER, it was generalized to “some of us do some things like...”
- Why not a page per Task? Or half page per PI, to hold each person responsible for their own plan in this area? (Or scale length to number of PIs at least.)

What should DOE/NSF do?

Pipeline: Undergraduates

- Pay undergrads during the summer. Research program support for undergraduates is difficult in DOE: Often hired with project money, or they need to take an unpaid internship during the summer. This only works for students with resources!
- Undergraduate research opportunity is a big predictor of success for grad school. Research positions during the summer should be accessible, regardless of means.
- Argument: what if funds are used on non-diverse students? Not clear if a diversity stipulation could or should be made: students deserve pay for their summer work. (to consider further...)
- NSF has good record on trainee programs (REU, etc). DOE RENEW funding program: **great** endeavor— please keep it up! Now supporting (in part) the US CMS PURSUE internships, and other worthwhile projects across the country.

What should DOE/NSF do?

Comparative reviews: Recognition

- Create space for DEI!
- DEI is a priority (is it in the DOE mission? as workforce development, e.g. see RENEW FOA)
- PIs who work a lot on DEI are often not credited professionally. Allocating optional extra space for discussing DEI activities and plans for PIs, without penalizing the space for research plans, would go a long way in communicating that this IS VALUED in our field.
- (NSF biosketch format is not sufficient space for this.)
- Agencies state that we can use some small fraction of our time to work on future experiments/colliders. Could that also hold for DEI activities? Can that be stated?

What are your ideas?

Thank you for inviting me, and for listening.

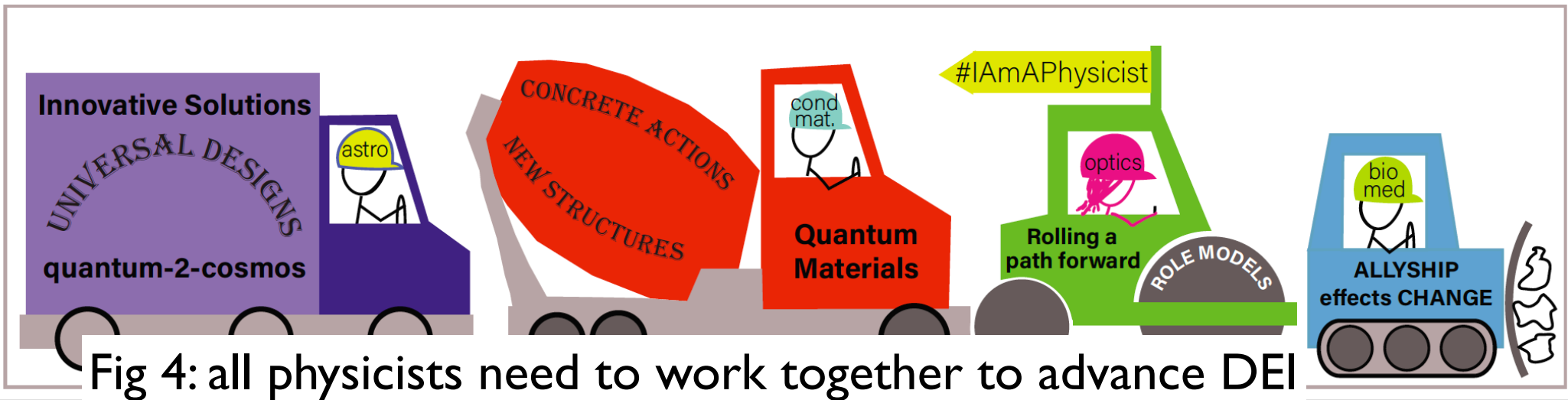
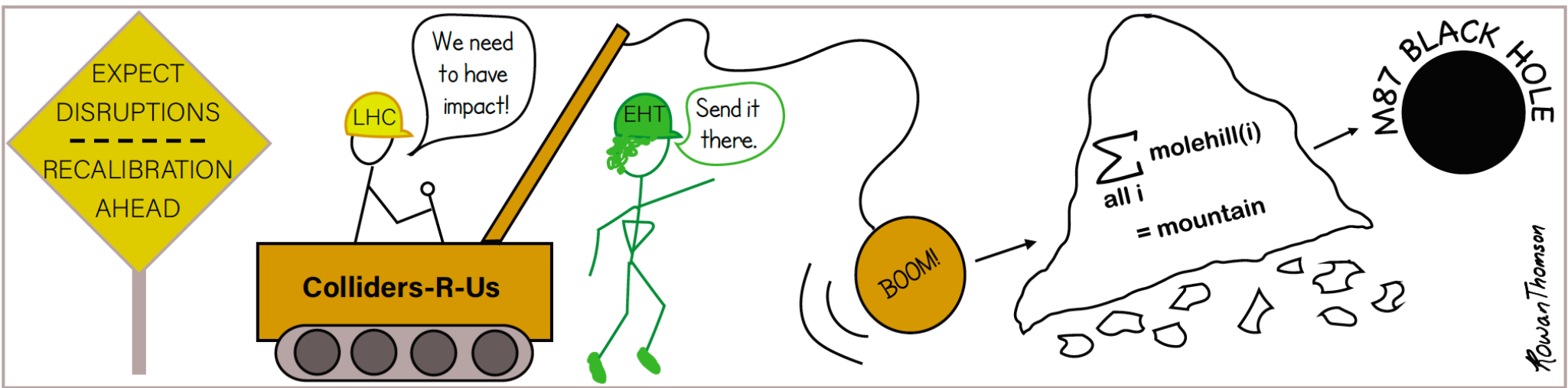
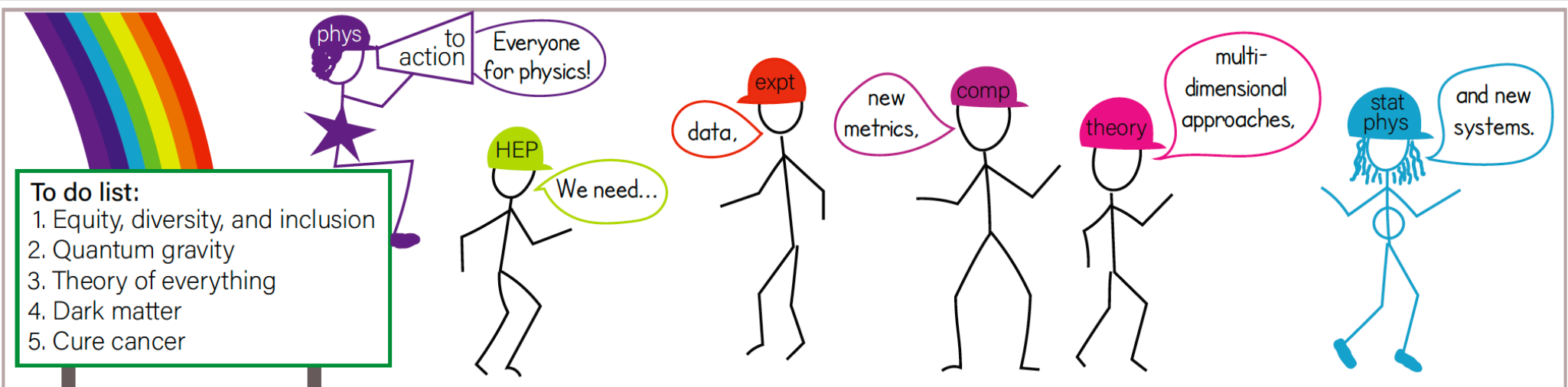


Fig 4: all physicists need to work together to advance DEI

Talk dedicated to:

Meenakshi Narain
1964 - 2023



Snowmass Energy Frontier Convener, Brown Dept Chair, former US CMS CB Chair, excellent physicist, wife, mother, friend, colleague, and passionate DEI champion.

<https://www.forevermissed.com/meenakshi-narain/about>