

# Why is Diversity, Equity, and Inclusion (EDI) so difficult for scientists? EDI is like Quantum!

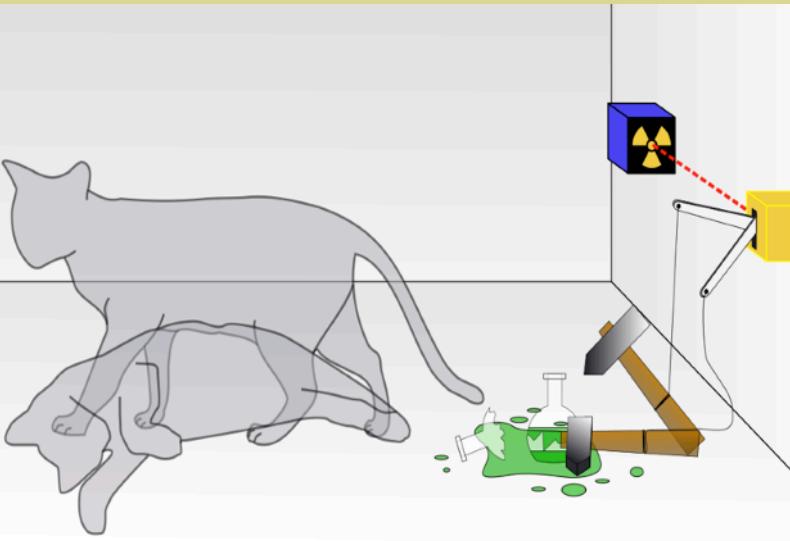
Remember the first time you took Quantum Mechanics (QM)? It was difficult! Why?

**QM is difficult because it is outside of our regular experience.**

Planetary science is overwhelmingly white and male, and EDI concerns are often out of the experience of scientists who are members of these majority groups.

So... Learn about EDI the way you learned QM!

1. Learn about the observables.
2. Trust the experts (at least until you become an expert).
3. Implement suggested changes even if you don't understand them!



How EDI is like Quantum Mechanics:

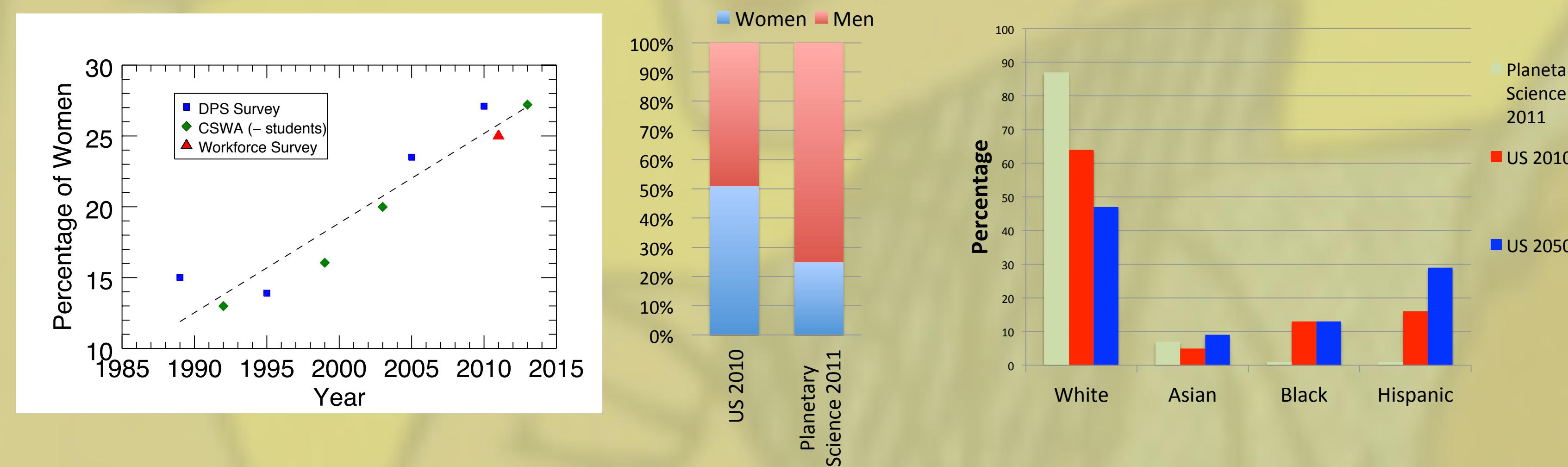
- It's hard
- It's not about fault or blame (Is it Einstein's fault the math is so complicated?)
- It can be studied academically
- Although the experiences of one group (quanta, members of underrepresented groups) are outside of the experience of another group (macroscopic objects, members of the majority groups), these experiences ARE connected and do affect each other
- **Observational biases exist**

How EDI is NOT like Quantum Mechanics:

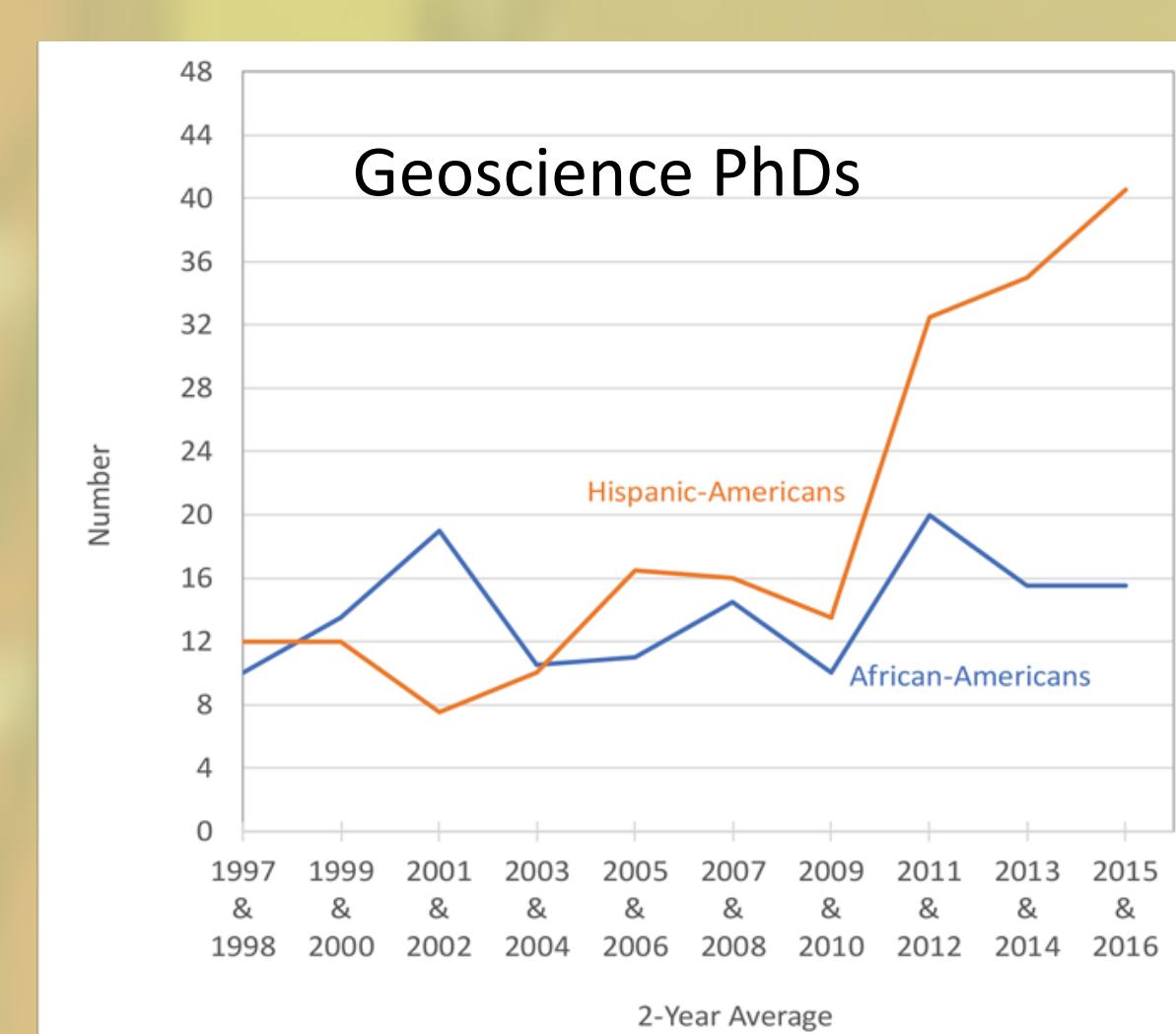
- If you don't "deal with it", bad things happen
- This affects real people with real feelings, it's not JUST an academic subject
- Can elicit emotional responses

Learn the observations: Planetary Science is overwhelmingly white and cis-gender male

We've made great strides with participation of white women, but we're still not at parity [1]. Additionally, members of racial and ethnic minority groups are the most underrepresented group in planetary science, and the problem gets worse at higher levels.



- African-American first-year students indicate an interest in STEM at **higher** rates than their white peers [3] (O'Brien et al., 2015)
- No measurable differences in STEM entrance among White, Black, and Hispanic students [4]
- Racial diversity within our community is **not** getting better [5] →



Trust the experts – Social Scientists: Our brains have systematic biases that require correction.

First – A Riddle!

- A father and son are in a horrible car crash that kills the dad. The son is rushed to the hospital; just as he's about to go under the knife, the surgeon says, "I can't operate—that boy is my son!"
- As recently as 2014, only 15% of respondents gave the "right" answer [6], Why?
- Our brains have systemic biases that require correction.



How the brain works - Schemas

- Describes a pattern of thought or behavior that organizes categories of information and the relationships among them [7]
- A mental structure of preconceived ideas, a framework representing some aspect of the world, or a system of organizing and perceiving new information
- Enable quickly interpreting the vast amount of information that is available in our environment.
- Leads to difficulty interpreting information that contradicts our Schemas.

Opportunities to learn more

- Learn about issues affecting members of our community who are also members of underrepresented groups.
  - This means research!
- Read blogs: Astronomy in Color [8], Women in Astronomy [9], Women in Planetary Science [10], etc.
- Diversity presentations
  - See Janet Vertesi's OPAG talk from 2/2017 [11]
  - DPS diversity presentations on PCCS/DPS page [12]

Implement the suggested changes (even if you don't yet understand why they are necessary)

Things you can do as an individual

- Amplify voices of scientists that are least likely to be heard
- Be aware of your social capital and use it to help members of URM groups
- Fill out surveys after meetings, include **positive & negative comments**
- Bring considerations of diversity, equity, and inclusion into all aspects of doing science.
- **Think along multiple axes:** race, gender, LGBTQ+ status, ability status...
- **Learn how to apologize** [13]. Mistakes WILL happen.
- Pay attention to whom you work with. Who is missing from your collaborations? What can you do to fill those gaps and engage with different people?
- Fill out demographic information when asked by, for example, DPS or nspires
- Ask people at periphery of your network for new networking opportunities
- Ensure that diversity efforts don't fall into the arena of "colorless diversity": efforts that focus solely on gender, ability, etc. are often ineffective at including members of racial and ethnic minority groups

Structural Changes

- Have explicit, well-defined expectations and criteria for hiring, admission, etc.
- Track demographics, strive for *at least* 30% of any underrepresented group at all levels
- Have clear anti-harassment policies, such as: Use training that works; Sanction perpetrators; Protect members of marginalized groups
- Support Diversity/inclusion efforts
- For large meetings: consider demographics of hosting region. Is the environment one that could make members of underrepresented groups feel uncomfortable?