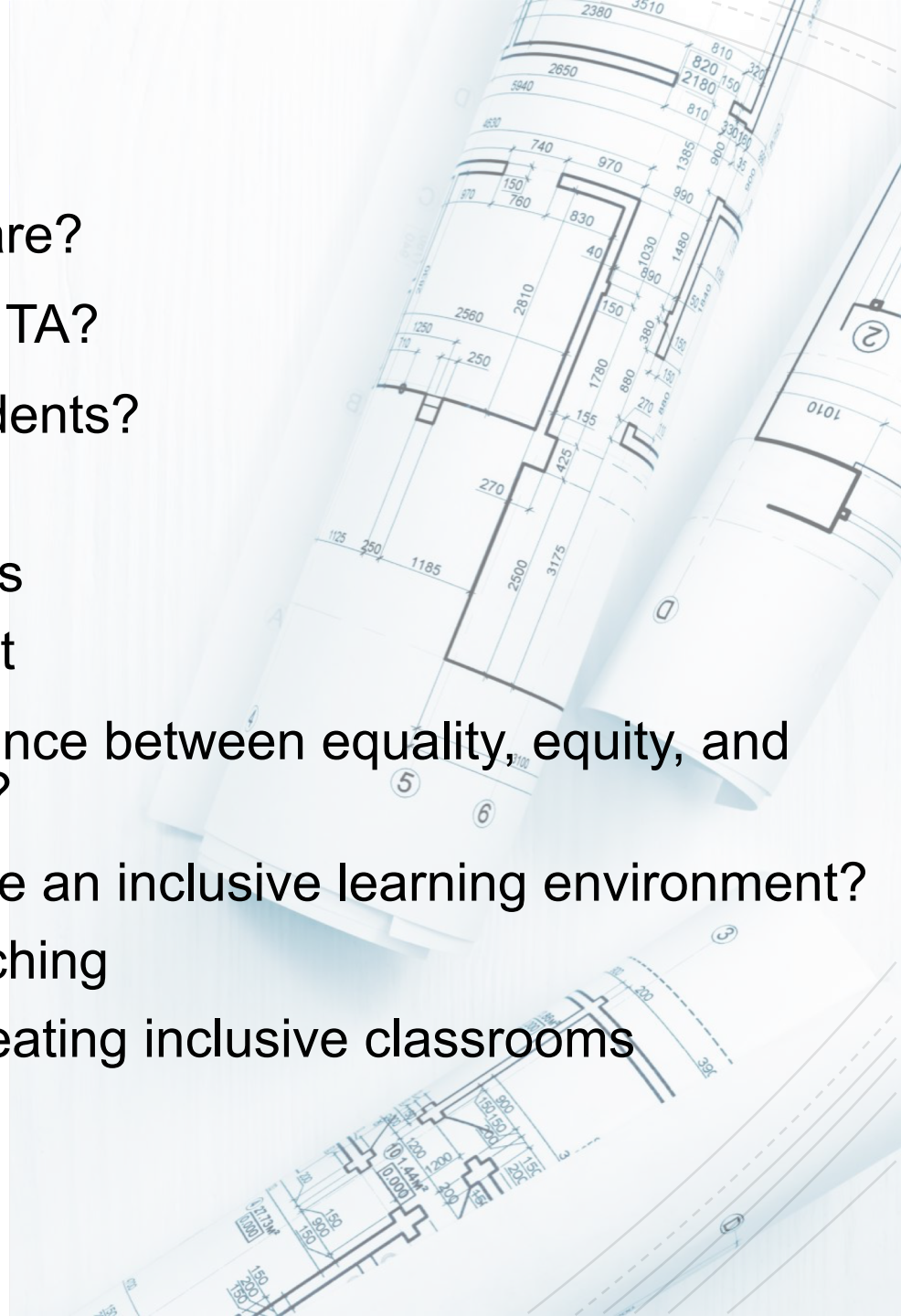
Inclusive Classrooms

Sophie Miller, G5, Chemical Engineering

Caltech

Session Outline

1. Why should we care?
2. Who are you as a TA?
3. Who are your students?
   - Identity
   - Unconscious bias
   - Stereotype threat
4. What is the difference between equality, equity, and equal opportunity?
5. How can we create an inclusive learning environment?
   - Transparent teaching
   - Strategies for creating inclusive classrooms



Learning Outcomes

- By the end of this session, you will be able to:
  - Recognize and appreciate the value brought by diverse backgrounds and experiences
  - Recognize unconscious bias and stereotype threat
  - Understand the differences between equality, equity, and equal opportunity in the classroom
  - Create an inclusive course and class environment for your students

How Diversity Makes Us Smarter

- Research shows that **socially diverse groups** (i.e. diversity of race, ethnicity, gender and/or sexual orientation) **are more innovative than homogeneous groups**
- Simply interacting with individuals who are different forces group members to:
  - better prepare
  - anticipate alternative viewpoints
  - expect that reaching consensus will take effort

Phillips, K. W. (2014). How diversity works. *Scientific American*, *311*(4), 42–47. https://doi.org/10.1038/scientificamerican1014-42

How are we doing in STEM?

- Female, African American or Black, and Hispanic or Latinx students are underrepresented in most STEM fields
- There is a disproportionate loss of these students in the natural sciences and engineering when comparing intentions and ultimate degrees received by undergraduates
- **WE CAN HELP CHANGE THIS** by creating more inclusive classrooms and by ensuring we provide students with equal opportunities to succeed

http://www.nsf.gov/statistics/seind14/index.cfm/chapter-2

Who are you as a TA?

- Before you assume your first teaching role, **reflect on your own identity, background, and experiences**
- Recognize the limitations of your own perspectives and experiences
- Introduce yourself to your students with your pronouns
  - Lay the foundation for an inclusive and welcoming environment

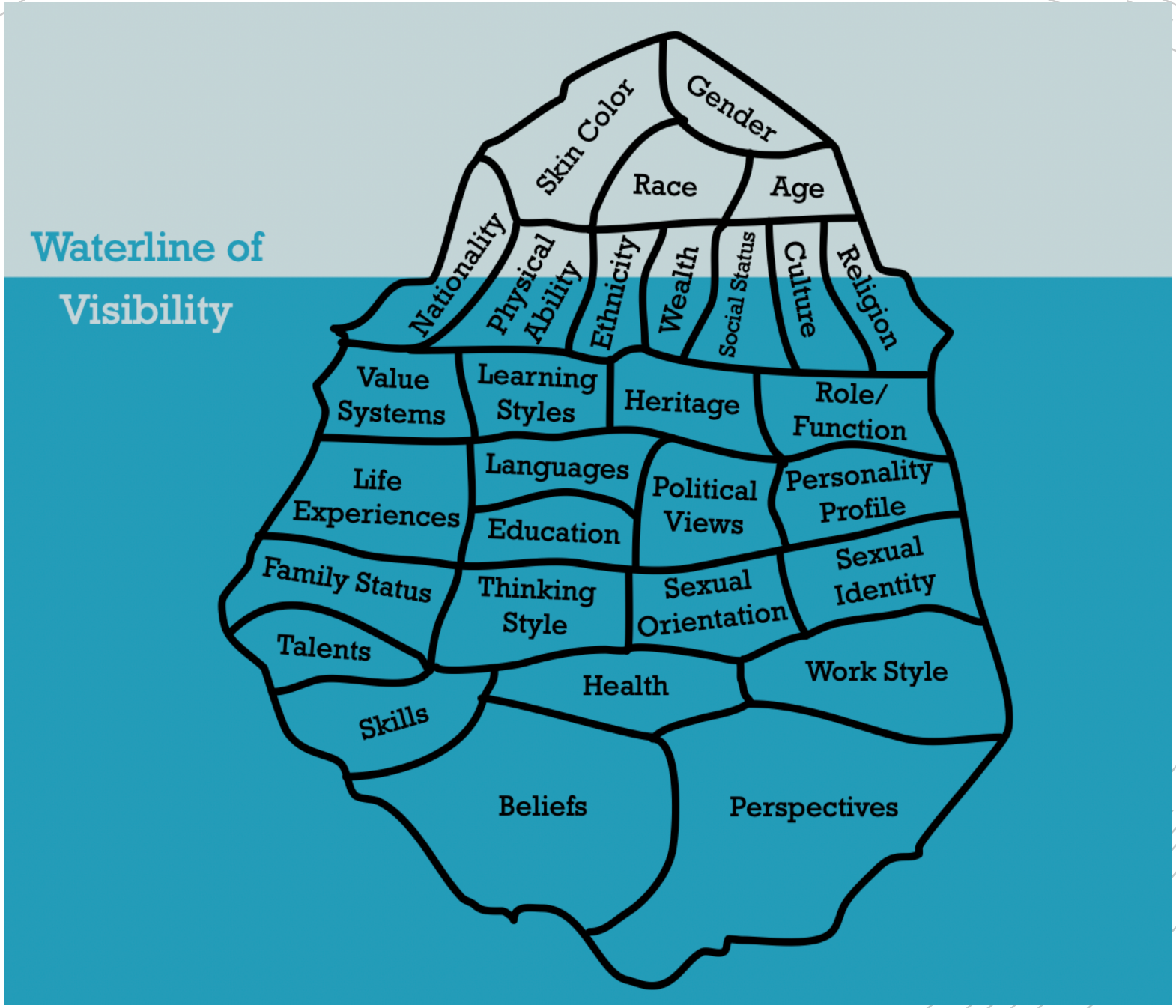
Who are your students?

- Make an effort to get to know your students and learn about identities other than your own
- Become more aware of the identities and languages around you
- **Don’t make assumptions** about your students!

Identity Iceberg

Natalie Lucier, “Iceberg in Newfoundland Canada"
https://www.flickr.com/photos/36121888@N08/3623933748

Identity Iceberg



Unconscious Bias

- ***Bias*** *is a prejudice in favor of or against one thing, person, or group compared with another usually in a way that's considered to be unfair.*
- Biases are created and reinforced by our environments and experiences
  - Individuals tend to be biased to favor people similar to them and biased against those who are different
- When we are moving quickly or lack all the data, our unconscious biases fill in the gaps
- Once we realize we don't know something, **it is our responsibility to learn a little more**

https://diversity.ucsf.edu/resources/unconscious-bias

Examples of Unconscious Bias

- For an identical CV, faculty were more likely to hire someone named John than Jennifer, but they thought that Jennifer was more likeable
- When asked to rate a verbal skills test, evaluators gave:
  - lower scores if told an African American wrote the text than if told a Caucasian person wrote it
  - lower ratings when told a man wrote it than a woman
- Parents estimate higher math abilities for sons than daughters, despite no differences in test scores.

Moss-Racusin, C. A., Dovidio, J. F., Brescoll, V. L., Graham, M. J., & Handelsman, J. (2012). Science faculty's subtle gender biases favor male students. *PNAS*, 109(41), 16474–16479. https://doi.org/10.1073/pnas.1211286109

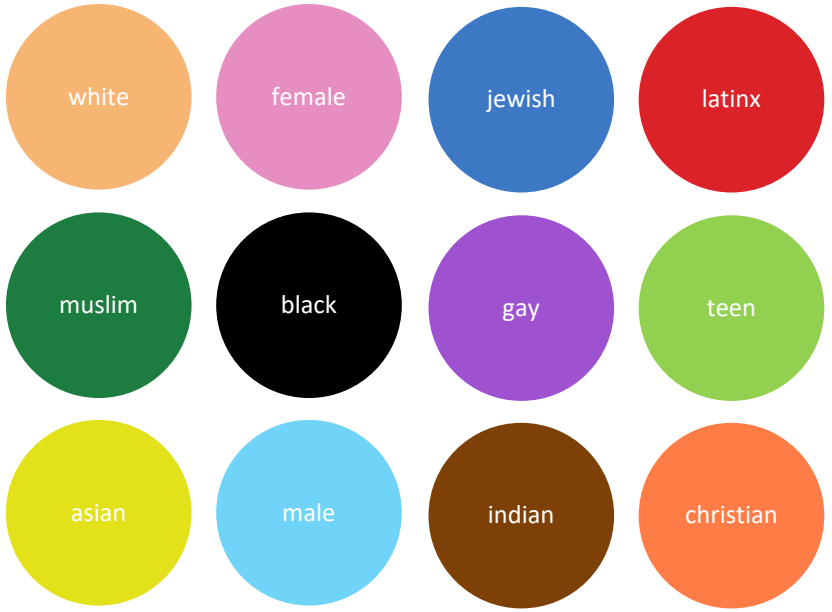
Steinpreis, R. E., Anders, K. A., & Ritzke, D. (1999). The impact of gender on the review of the curricula vitae of job applicants and tenure candidates: A national empirical study. *Sex Roles*, 41(7–8), 509–528. https://doi.org/10.1023/A:1018839203698

Biernat, M., & Manis, M. (1994). Shifting standards and stereotype-based judgments. Journal of Personality and Social Psychology, 66(1), 5–20.

Yee, D. K., & Eccles, J. S. (1988). Parent perceptions and attributions for children's math achievement. Sex Roles, 19(5–6), 317–333. https://doi.org/10.1007/BF00289840

Stereotype Threat

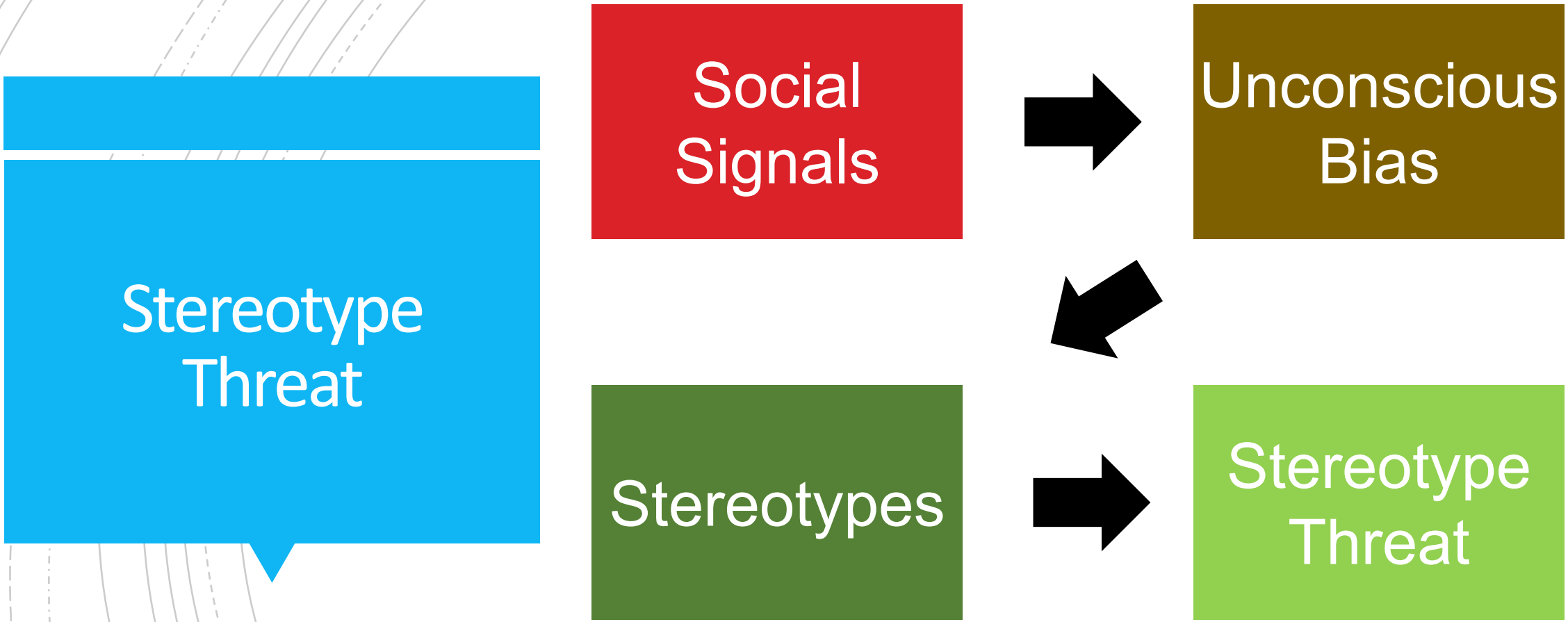
- ***Stereotypes*** *are over-simplified ideas about an entire group of people without regards for individual differences*
  - E.g. “All _____ are good at _____.”
- **Stereotype threat** describes the fear that one’s behavior will confirm an existing stereotype of a group with which one identifies



Examples of Stereotype Threat

- If female students or African American students are asked to identify their race or gender, respectively, at the start of an exam, they will do statistically worse on that exam.
- “Even groups who typically enjoy advantaged social status can be made to experience stereotype threat. Specifically, White men perform more poorly on a math test when they are told that their performance will be compared with that of Asian men (Aronson et al., 1999), and Whites perform more poorly than Blacks on a motor task when it is described to them as measuring their natural athletic ability (Stone, 2002; Stone, Lynch, Sjomeling, & Darley, 1999).”

Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. Journal of Personality and Social Psychology, 69(5), 797–811.
Schmader, T., et. al. An Integrated Process Model of Stereotype Threat Effects on Performance. Psychol Rev. 2008 Apr; 115(2): 336–356.


Stereotype Threat
Social Signals
Unconscious Bias
Stereotypes
Stereotype Threat

Addressing Stereotypes and Biases in the Classroom

- Establish students' prior knowledge
- Reward current learning over prior preparation, knowledge, or access to experiences or information
  - Design assessments with this in mind
- Be open to and seek out feedback
- Change the narrative
  - Who are your examples? Are they current? Are they young? From different places and backgrounds?
  - Be aware of the historical figures you highlight
  - Talk about how your subject ties in to others to help students from different majors relate more to the topic
- Growth Mindset > Fixed Mindset

Equality, Equity, and Equal Opportunity

Equality

- Treating everyone the same
- Promotes fairness only if all start from the same place

Equity

- Giving more resources to certain students

Equal Opportunity

- Giving everyone the opportunity to be successful by:
  - Being accessible
  - Giving constructive feedback/grading
  - Changing classroom structure
  - Transparent teaching

Equality, Equity, and Equal Opportunity

Equality

- Treating everyone the same
- Promotes fairness only if everyone starts from the same place

Equity

- giving more resources / things to do to certain students

Equal Opportunity

- *Giving everyone the opportunity to be successful by:*
  - *Being accessible*
  - *Giving constructive feedback/grading*
  - *Changing classroom structure*
  - *Transparent teaching*

Accessibility in Online Learning

- Closed captioning and transcription features
- Repeat questions asked out loud or in the chat box during Zoom lectures
- Consider students' abilities to engage synchronously and create opportunities for asynchronous engagement
  - Record lectures
  - Inform students about video recording
  - Save chat messages
- Include accessibility statement on your course syllabus and in Canvas
- Eliminate high-cost materials/books where possible and encourage use of more affordable early editions

Teaching Continuity at Caltech, "Accessibility and Inclusion Online." http://teach.caltech.edu/online-teaching/accessibility-inclusion

Transparent Teaching

- Thoughtfully design your course syllabus
  - Be explanatory and positive
- Teach with transparency
  - Focus explicitly on how and why students are learning course content in particular ways
  - Promote students' conscious understanding of how they learn
- Create rubrics for grading or evaluation
- Utilize a variety of names/genders/pronouns/examples of scientists and leaders

Inclusivity in Online Learning

- Survey students *before* the start of classes
- Create a sense of community in your virtual classroom
- Communicate frequently and provide as much information as possible
- Be clear about expectations, especially around grading
- Get frequent feedback
  - Informal polls to get feedback on course logistics and understanding of material
  - At least one survey during the term
- Give guidelines for in-class discussion and/or engagement in online forums
- Acknowledge the challenges both for learning and teaching online – “we’re all in this together”

Summary: Creating Inclusive Classrooms

Address this (concept):	By doing this (strategy):
Understanding social identities	▪ Learning more about our own identities AND about identities other than our own ▪ Creating frameworks / ground rules for classroom discussions ▪ Introducing yourself with your pronouns
Mitigating stereotype threat	▪ Establishing prior knowledge and getting feedback ▪ Rewarding current learning over prior prep ▪ Incorporating scaffolding in assignment design
Creating an inclusive classroom	▪ Thoughtfully designing your course syllabus ▪ Teaching with transparency ▪ Utilizing a variety of names/genders/pronouns/ examples of scientists and leaders ▪ Creating rubrics

Articles of Interest

- https://www.insidehighered.com/news/2020/02/04/university-california-faculty-decline-endorse-test-optional-admissions
- https://www.insidehighered.com/news/2020/01/02/minority-students-sense-place-higher-two-year-four-year-institutions
- https://www.nytimes.com/2015/09/13/opinion/sunday/are-college-lectures-unfair.html
- https://campustechnology.com/articles/2020/01/28/study-many-faculty-still-dont-know-where-to-start-with-textbook-affordability-issue.aspx
- https://www.insidehighered.com/news/2019/02/26/latinx-black-college-students-leave-stem-majors-more-white-students

Articles of Interest

- https://www.universityaffairs.ca/career-advice/career-advice-article/three-recommendations-for-accessible-remote-learning/ https://www.academicimpressions.com/inclusive-pedagogy-in-higher-education-a-mindset-and-continual-practice/
- https://www.academicimpressions.com/blog/microaggressions-online-learning
- https://community.chronicle.com/news/2379-6-quick-ways-to-be-more-inclusive-in-a-virtual-classroom?cid=VTEVPMSED1
- https://www.chronicle.com/article/how-to-make-your-teaching-more-inclusive/
- https://insidehighered.com/advice/2020/08/05/small-steps-instructors-can-take-build-more-inclusive-classrooms-opinion
- https://www.gse.harvard.edu/news/20/04/harvard-edcast-remote-learning-and-digital-divide

Next Steps

- Please visit https://teach.caltech.edu for more resources on teaching remotely
- Visit https://learn.caltech.edu for more resources on learning remotely