

Community Guidelines

Intent ≠ Impact

Lean into discomfort

Admitting ignorance

Share the air

Step up/step back

Actively listen

Be patient

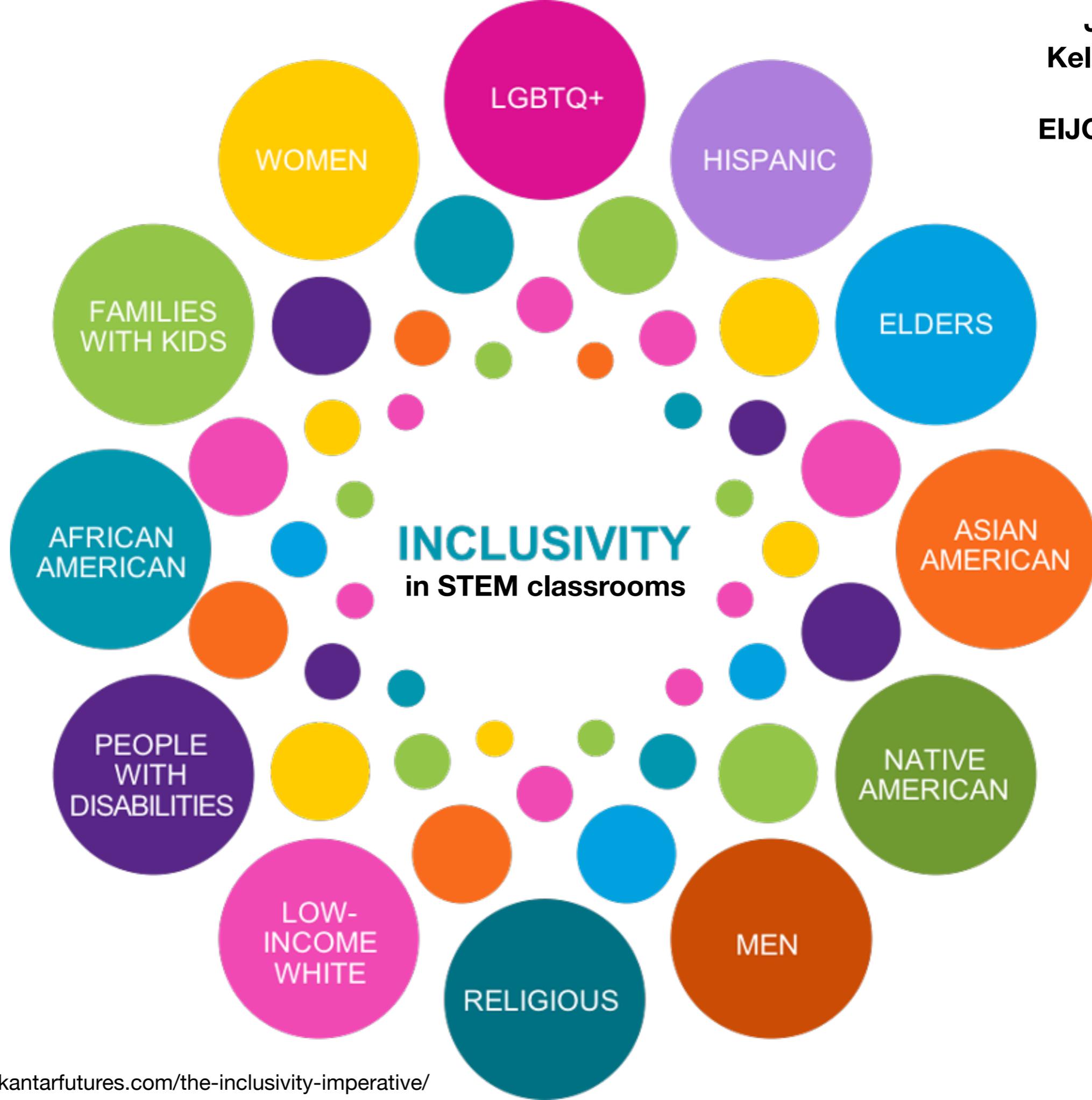
Give credit (props)

What's learned here leaves here; what's said here stays here

Oops/ouch

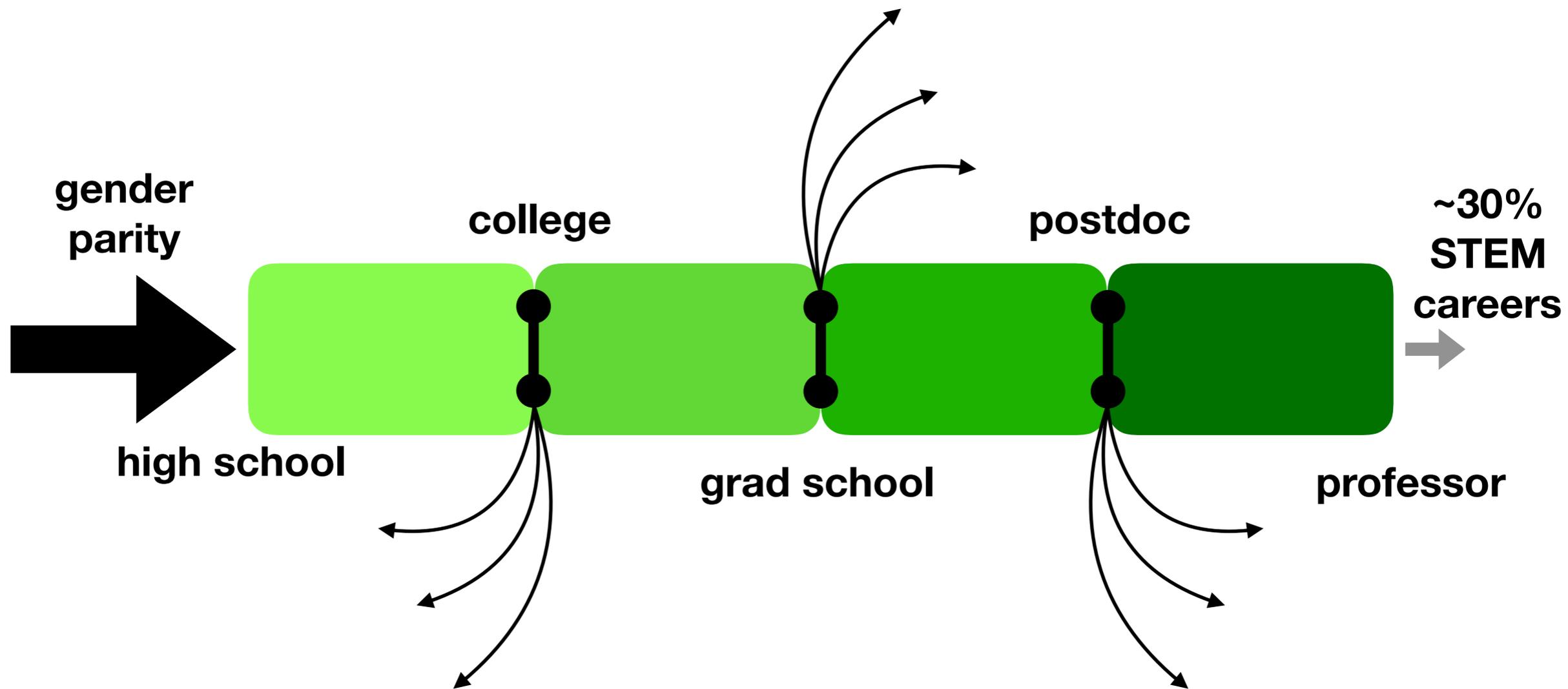
Assume good intentions

Beware of overgeneralizing (~be precise; define terms)



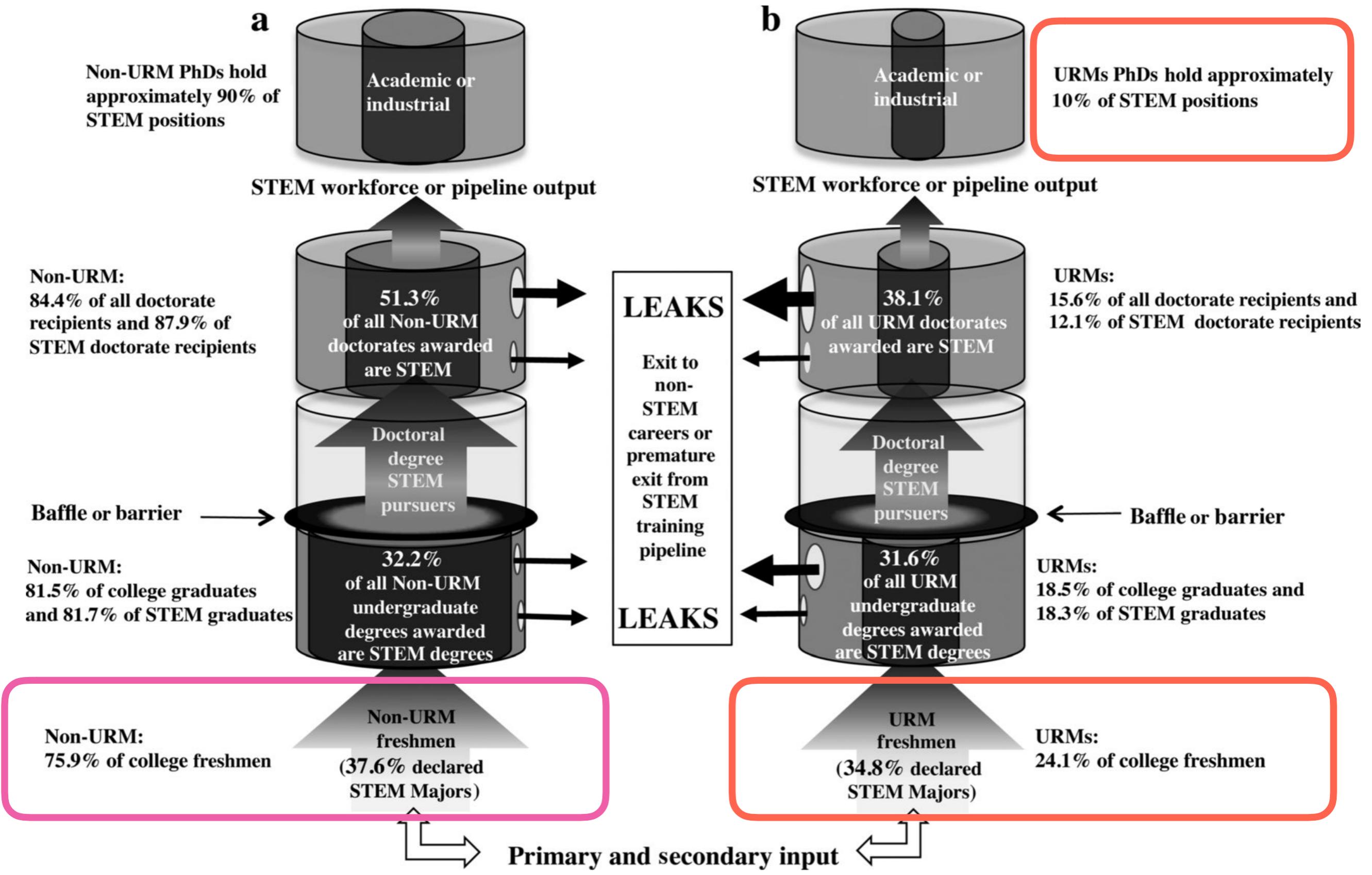
leaky pipeline

... typically only for women



leaky pipeline

... now for URMs



inclusivity

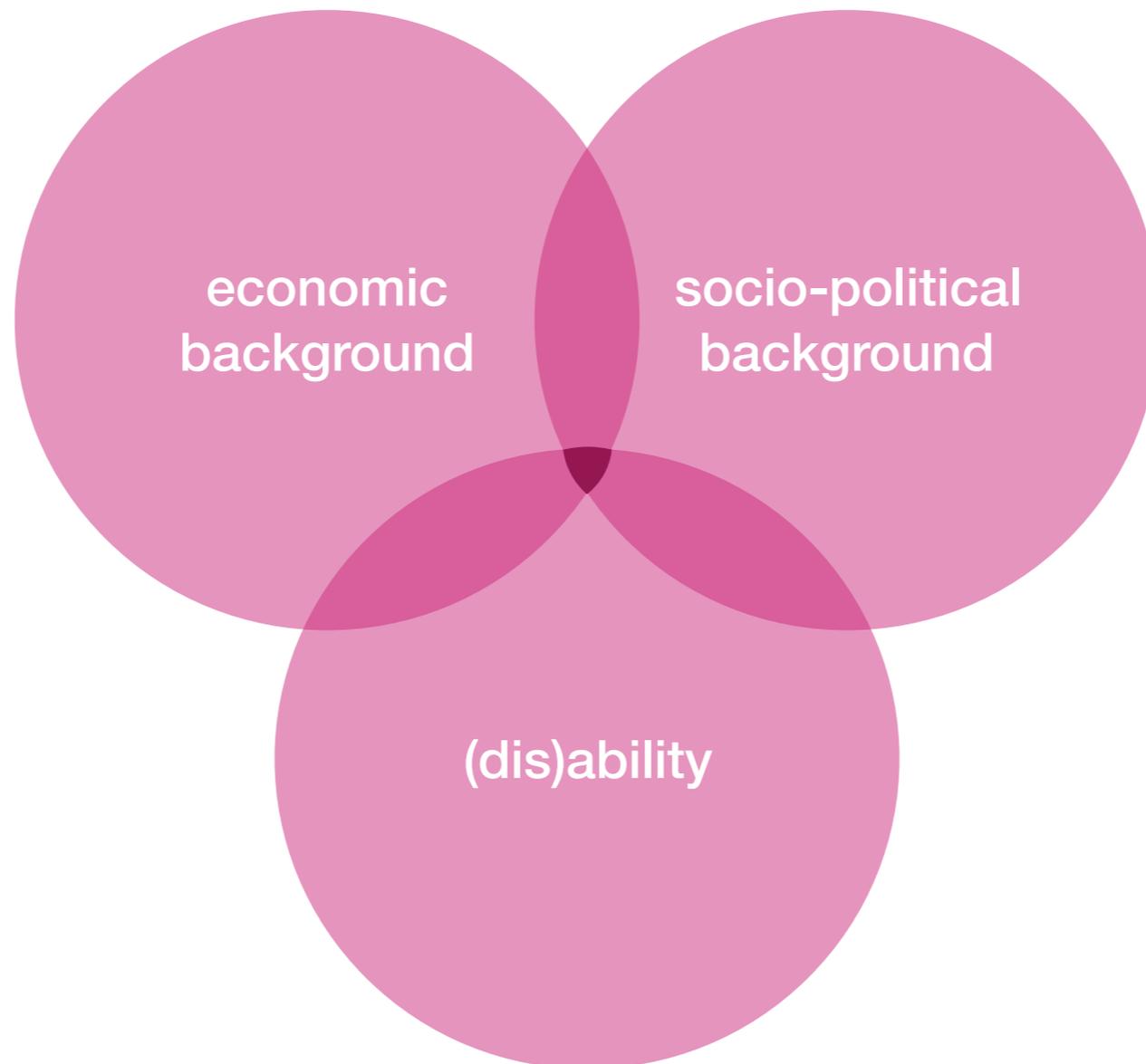
noun

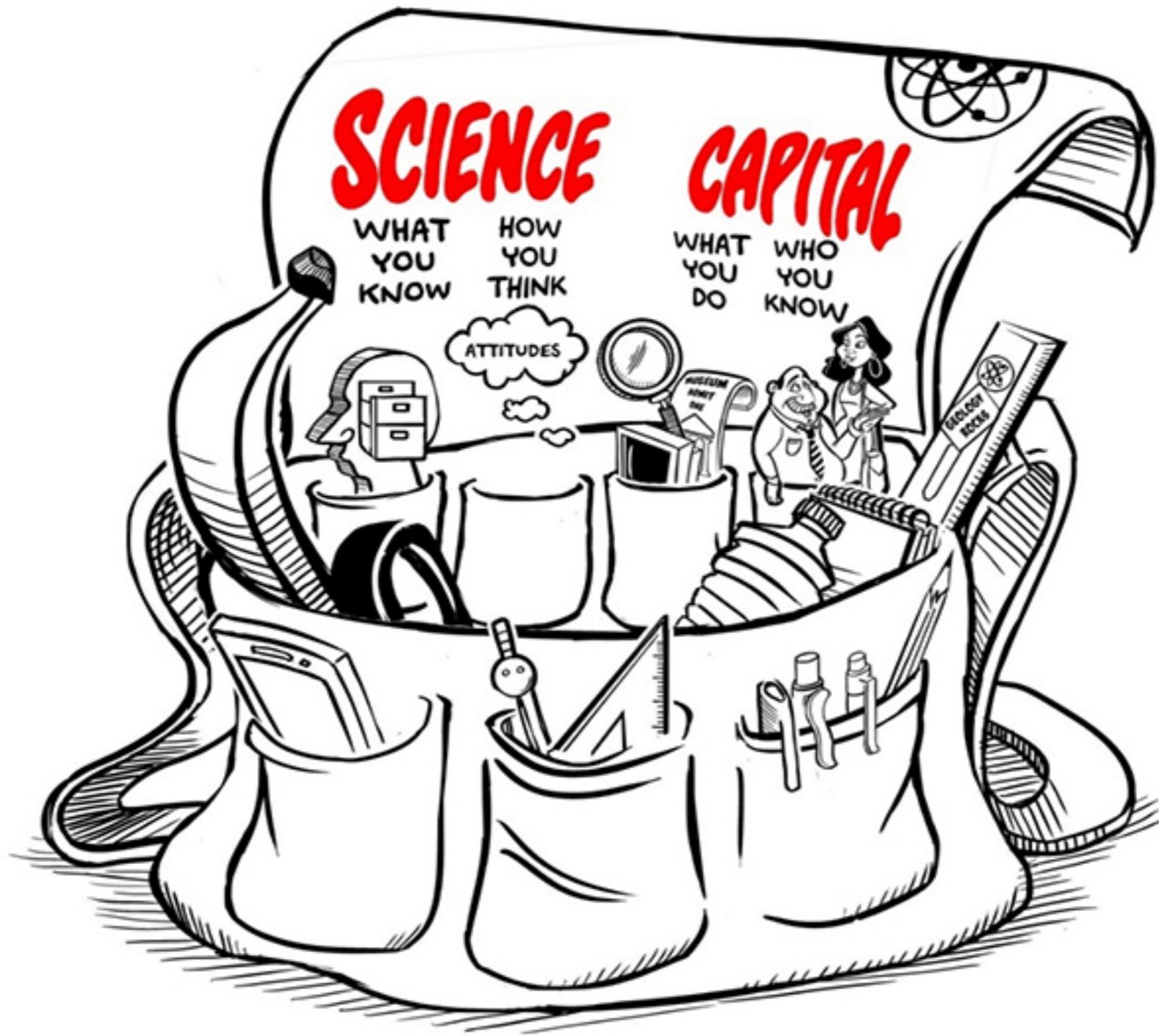
an intention or policy of including people who might otherwise be excluded or marginalized, such as those who are handicapped or learning-disabled, or racial and sexual minorities.

inclusivity

noun

an intention or policy of including people who might otherwise be excluded or marginalized, such as those who are handicapped or learning-disabled, or racial and sexual minorities.





SCIENCE

CAPITAL

WHAT
YOU
KNOW

HOW
YOU
THINK

WHAT
YOU
DO

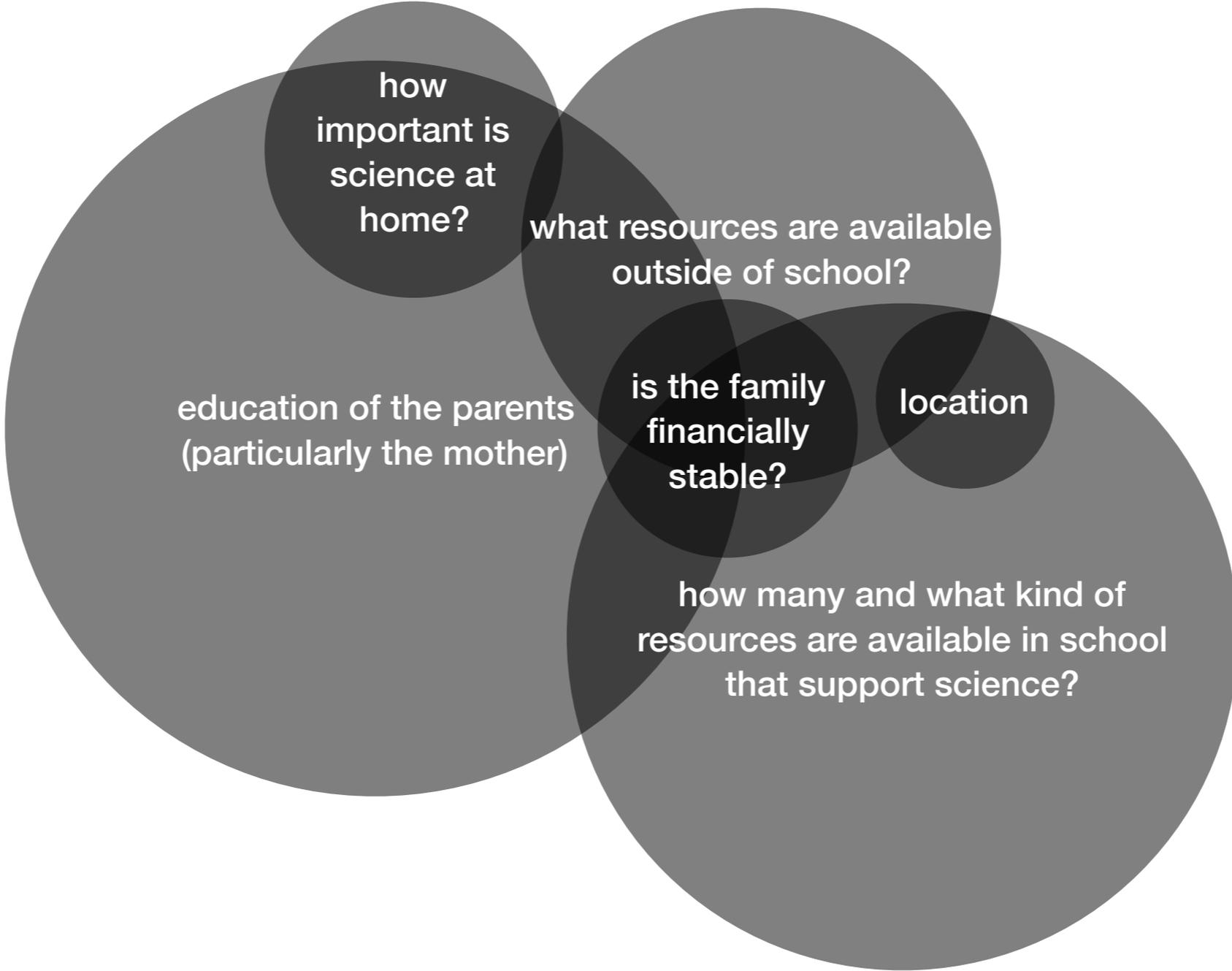
WHO
YOU
KNOW

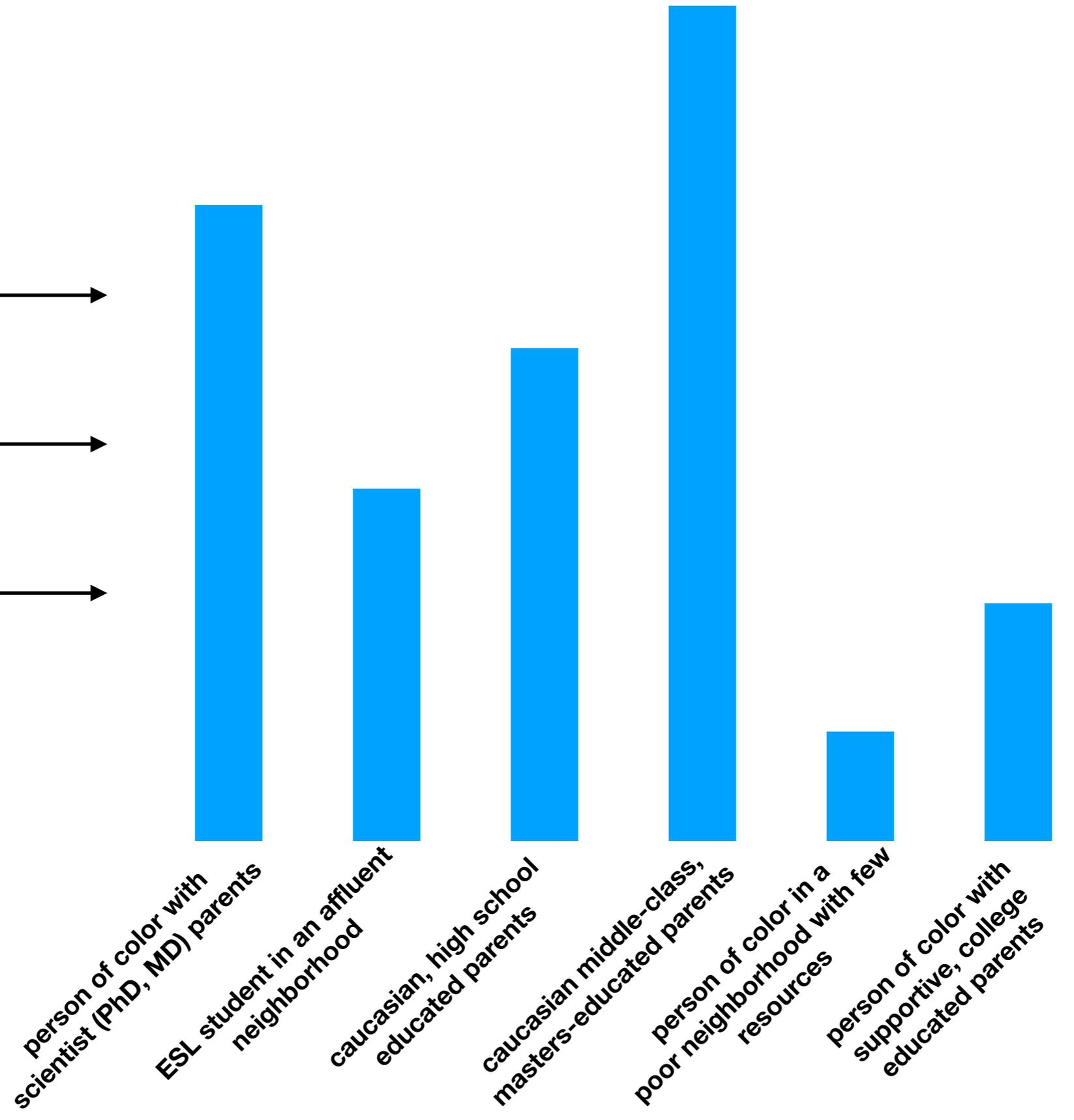
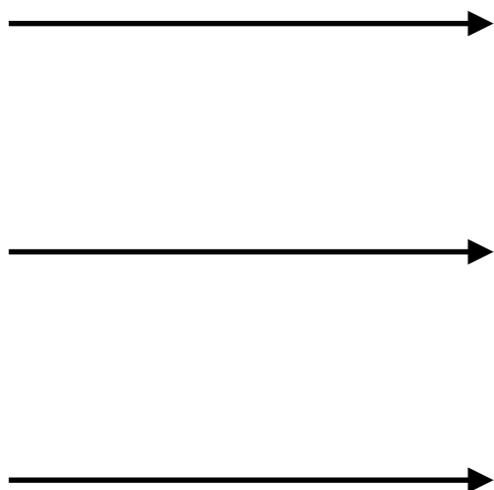
ATTITUDES

MUSEUM
MONEY
INC.

GEOLOGY
ROCKS

science capital





science capital

Problem Definition

Identifying what is important for students to know, and explicitly articulating why that information is important. Also establish consistency between leading issues and course goals through attention to what is taught.

Redundant Systems

Recognize that even well-designed systems face unanticipated obstacles, making it necessary to provide more than one means to a desired end

Expert Practice

The demonstration that teaching practices are not biased to favor particular outcomes for particular learners, but rather, are designed to support effective learning or all students who do what is required for the course.

External constraints

Anticipate/minimize/compensate for ways in which teaching and learning processes and outcomes are influenced by environmental and other external factors

Comprehensiveness

Maintain thoroughness and rigor of what is taught, grounded in actual (rather than idealized) conditions.

Content Integration

Utilize resources from a diverse range of cultures and groups to illustrate course concepts and ideas

Knowledge Construction

Facilitate students' understanding of the value-laden assumptions and biases operating within a given field or discipline

Prejudice Reduction

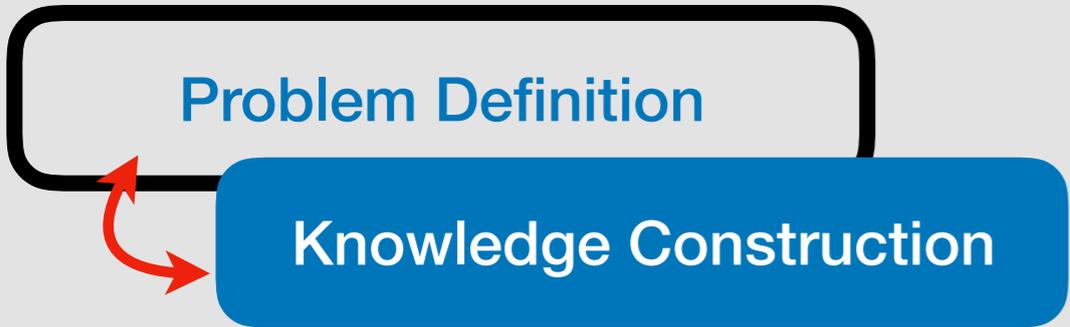
Creating learning environments that foster students' rejection of negative attitudes and values.

Equity Pedagogy

Teaching skills and techniques that reflect multiple learning styles. Adopt set of teaching skills that reflect the consideration of the full range of cultural perspectives and practices that influence student learning

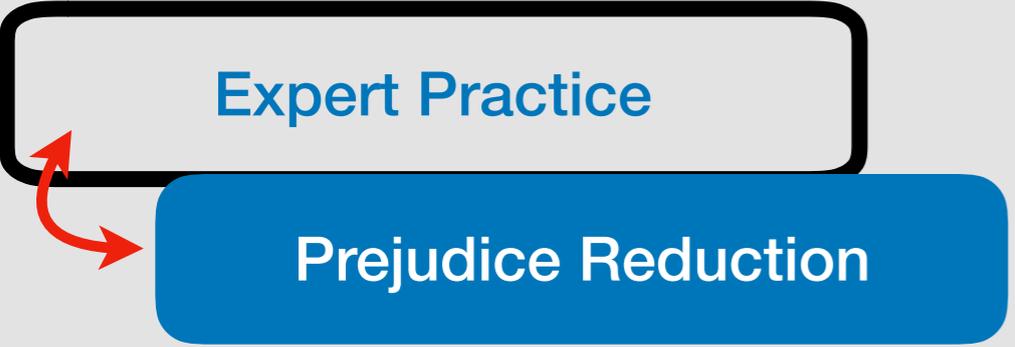
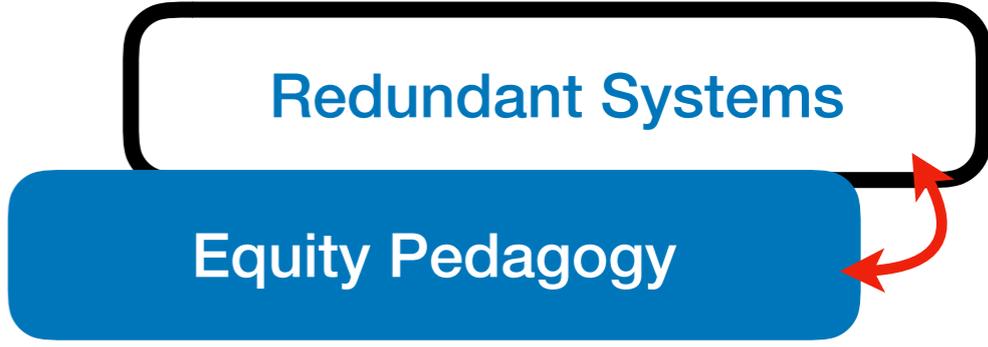
Empowering School Culture

Questioning assumptions about student achievement, and also providing opportunities for meaningful interactions with and among students both academically and socially.



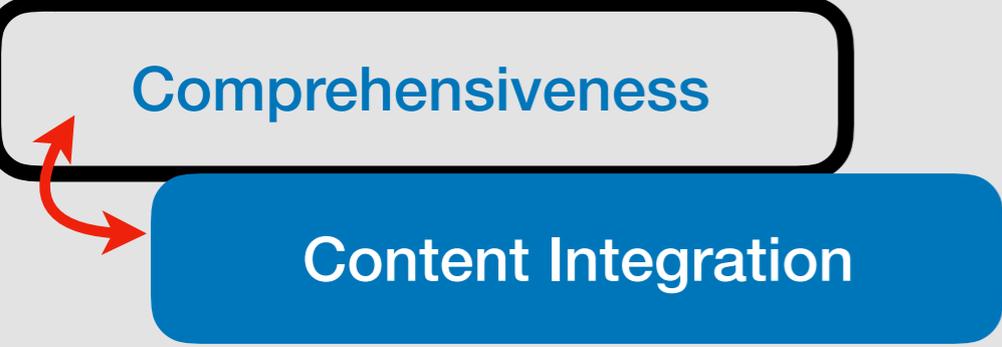
Change learning outcomes and evaluation with an understanding of values and biases operating in a field

Use teaching styles that reflect the multiple cultural perspectives and paths to success



Use teaching practices that are less biased to particular learners and foster rejection of negative values

By creating a culture that is supportive, we can mitigate the effect of external factors



The course should rigorously teach the subject from a range of cultural perspectives

Teach avoiding bias and working towards your desired value system

Use multiple cultural perspectives and teaching styles to reach all students

Teaching practices that benefit all students and foster rejection of prejudice

Create a supportive & welcoming environment

Course should be rigorous, with equity & justice integrated naturally

multi-modality

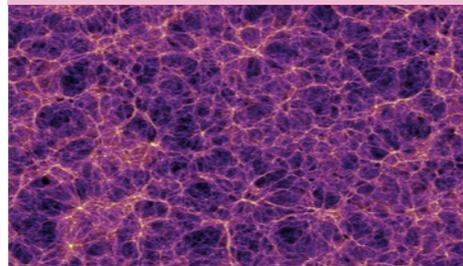
smell /
taste

Jupiter's moon Io



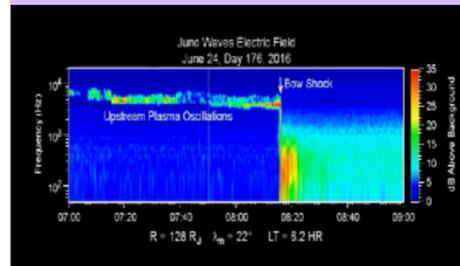
sight

Cosmic web



hearing

Juno spacecraft



touch

Feel the sky



Classroom primer

What are your norms for success?

What does your classroom look like?

What do you (or do you) set as cultural norms?

How do you grade? Attendance?

Is your class accessible?

Do you know what resources are available to students, if any?

What values are implied in your classrooms?

- physical accessibility in spaces - library (public space, not just CfA), classroom, bathrooms
- other constraints outside of class (e.g., job) makes attendance difficult, esp if that's part of your grade
- how do you measure success? formative and summative assessment
- initial survey might affect peoples' desire to continue in the course
- long standing practices with little-to-no guidance from higher ups
- busy work - students don't feel like they're doing something important/worthwhile
- communicate values among related classes
- information literacy - how do you find the information you need to succeed?
- project oriented learning — inquiry based
- understanding your classroom demographics - implicitly sets the norms of your course

1. trans woman of color

loves all science, particularly biology

deaf / hard of hearing. she's also still in high school, but is taking classes at your college for credit because she's very advanced.

2. woman of color

loves history, not a fan of science

blind, but doesn't know braille. she prefers to listen to lecture, and has a seeing eye dog named Buster.

3. exchange student from japan (woman)

loves art, doesn't have strong feelings about science

has a chronic illness, and is in a wheelchair. some of her classes are in rooms that are not handicap accessible, so she's often not at class.

4. gay caucasian man

not sure what he likes, but maybe physical education

comes from a poor family / neighborhood, and his parents didn't graduate high school. they aren't very supportive of him pursuing a college education.

5. Palestinian woman

likes science in general, but thinks astronomy is a waste of time

she's older than the average college student, and had a career as a musician before coming to your class. she's also not fluent in English, and often has issues following lecture.

6. man of color

loves mathematics and computer science

works 3 jobs to attend college and support his family, and sometimes has to bring his infant daughter to class because he can't find a babysitter

7. caucasian woman

really loves science, especially physics

is schizophrenic and has PTSD from an early-childhood trauma, and has had to miss class frequently in the pass for mental health reasons

Different teaching strategies

time constraints are really important. online or extra supportive material, don't necessarily need to be in class. lectures online with transcriptions.

accessibility of your classroom. place for Buster. tactile globes, books (Touch the Sun) with tactile images. 3D printing of objects you're discussing in class. astronomical data is often inaccessible. you have to make people curious about what they're learning... make it relatable to things your students might be interested in.

make sure your classroom is accessible. find one if it isn't. recording lectures, make them available online. maybe even in real time? you can submit questions and still feel like you're part of the experience. know the office that helps students with disabilities. images in astronomy are a good way of transferring information. make it a part of your curriculum.

physical activities to explain/demonstrate physics concepts. grouping students together who have different perspectives/ science capital. encouraging in interactions = extra meetings. make sure your students know that YOU care about their education and success. individual meetings with every student at the beginning of semester? survey of what they're interested in? there are things that are good for everyone - it doesn't matter who is in your class.

hands-on. audio education. material provided online. interpretive projects - students can interpret things in different ways. written language isn't the only way to communicate things. music, visual art, painting. keeping an open mind on how your students might express their ideas and show their expertise/ knowledge

accessibility!!! lectures and class notes are available online. perhaps live online lectures. make it clear upfront that people are welcome to bring their children to class if absolutely necessary. maybe have a place nearby that students can leave their kids. aid in the problem solving. have multiple sections that students can attend - be flexible with your students and their time.

set classroom norms early on. make sure students have all the resources they might need and give them that information explicitly. we need to be trained on mental health issues and equity etc.

The Nashville Recommendations for Inclusive Astronomy

<http://womeninastronomy.blogspot.in/2016/07/the-nashville-recommendations-for.html>

Resources for Inclusive Astronomy (includes Diversity 101 links)

<http://www.astrobetter.com/wiki/Diversity>

Resources for Making Astronomy Accessible

<http://www.astrobetter.com/wiki/tiki-index.php?page=Accessibility>

Bok Center Inclusive Teaching Strategies

<https://bokcenter.harvard.edu/inclusive-teaching-strategies>

Reimagining the Pipeline article

<https://academic.oup.com/bioscience/article/64/7/612/2754151>

IAU Working Group for Equity & Inclusion

<http://sion.frm.utn.edu.ar/iau-inclusion/>

Science Capital

<https://nustem.uk/resource/what-is-science-capital/>

Listen to Juno

https://www.youtube.com/watch?v=8CT_txWEo5I