A desert landscape at sunset. The sky is filled with warm, golden light from the setting sun, with scattered clouds. In the foreground and middle ground, there are several saguaro cacti and cholla cacti. The background shows a range of low mountains under the hazy sky.

We respectfully acknowledge the University of Arizona is on the land and territories of Indigenous peoples. Today, Arizona is home to 22 federally-recognized tribes, with Tucson being home to the O'odham and the Yaqui.

Committed to diversity and inclusion, the University strives to build sustainable relationships with sovereign Native Nations and Indigenous communities through education offerings, partnerships, and community service.

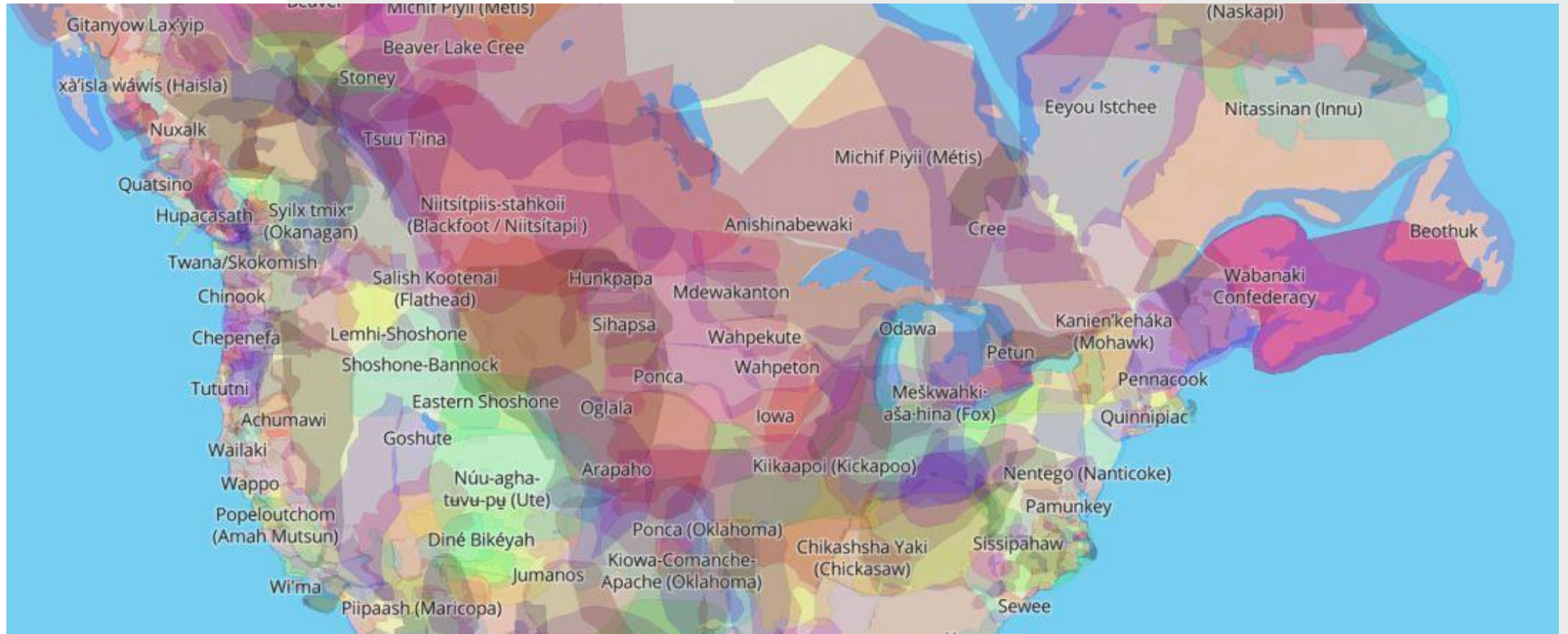


Queer and Trans in STEM, Building a De-Colonized Curriculum

Adrián Arroyo Pérez

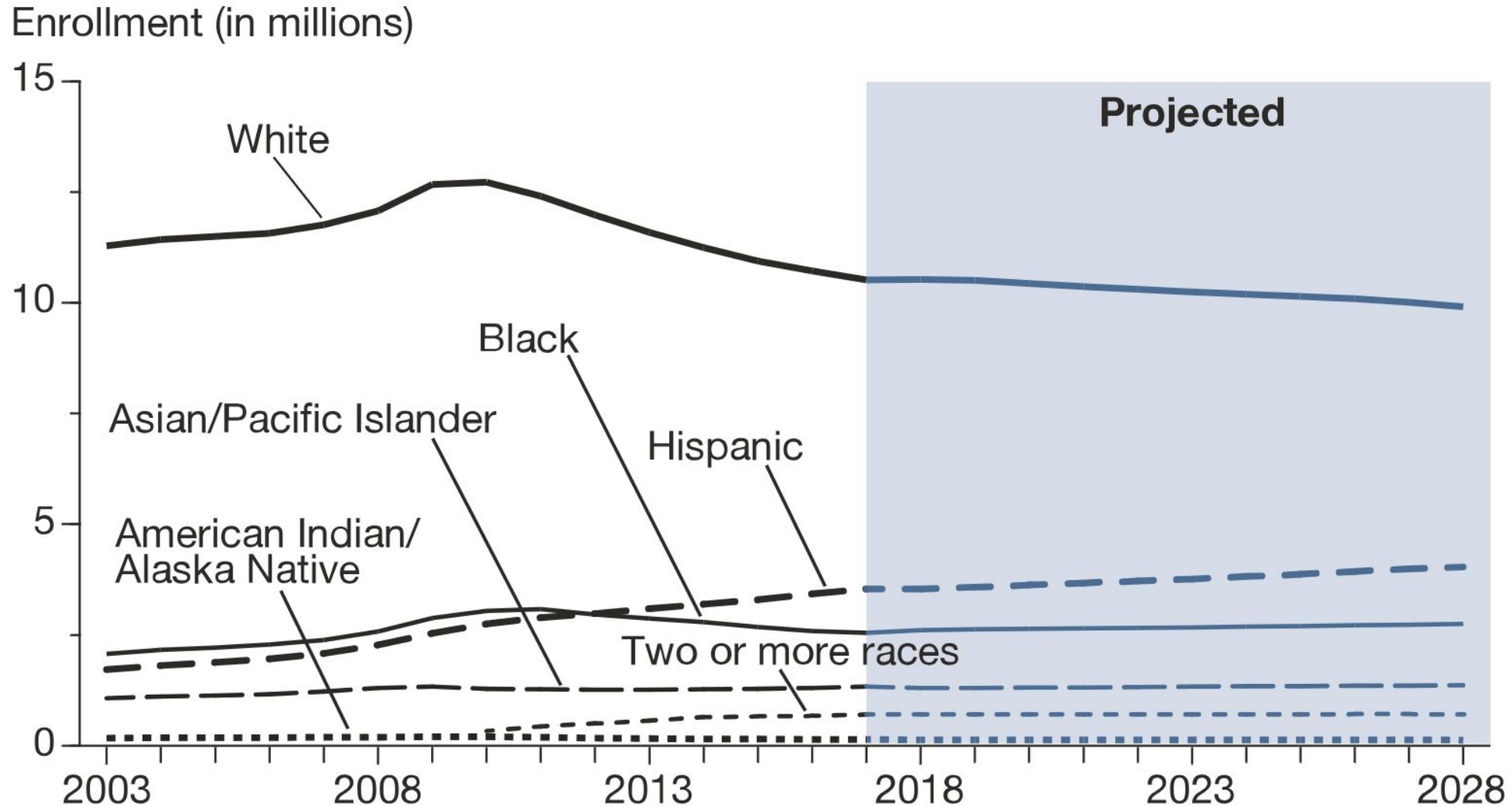


Current and future student demographics in the United States



Enrollment by Selected Characteristics and Control of Institution: Race/Ethnicity

Figure 21. Actual and projected numbers for enrollment of U.S. residents in all degree-granting postsecondary institutions, by race/ethnicity: Fall 2003 through fall 2028



SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Spring 2004 through Spring 2018, Fall Enrollment component; and Enrollment in Degree-Granting Institutions by Race/Ethnicity Projection Model, 1980 through 2028. (This figure was prepared April 2019.)

Figure 2. Postbaccalaureate enrollment in degree-granting postsecondary institutions, by race/ethnicity and nonresident status: Fall 2010, fall 2019, and fall 2021

Modify figure

Bar | Table

Race/ethnicity and nonresident status	2010	2019	2021
American Indian/Alaska Native	17,140	13,409	14,069
Asian	187,807	224,655	254,550
Black	361,882	367,159	382,090
Hispanic	197,816	307,473	358,247
Pacific Islander	6,466	5,997	6,173
White	1,824,865	1,641,935	1,667,357
Two or more races	31,738	85,947	95,434
Nonresident	309,297	426,064	433,511

2010 2019 2021

¿Por qué nos debería importar?

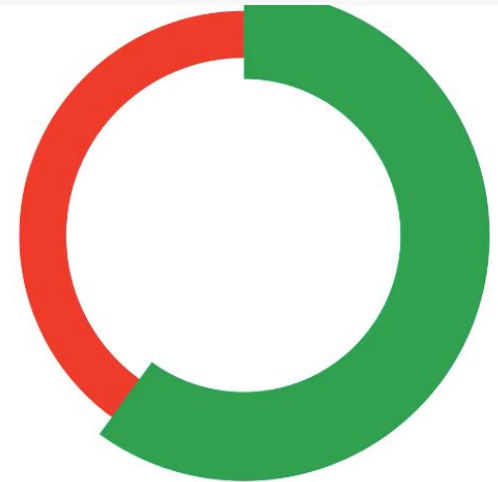


UNITED STATES
PHYSICISTS
TOLD TO
STAY
IN THE CLOSET



OF TRANSGENDER AND
NON-CONFORMING PEOPLE
**WERE HARASSED IN
THEIR DEPARTMENT**

LESS THAN
60%
OF LGBTQ+
PEOPLE
IN STEM
ARE OUT



WHY
IT MATTERS



A horizontal bar with segments of red, orange, yellow, green, and purple.

LGBTQ students in STEM

Hughes analyzed data from more than 4,000 freshmen university students at 78 US institutions in 2011 from the Higher Education Research Institute and compared their responses to those they gave to the survey when they were seniors in 2015.

This study tested whether students who identified as a sexual minority (for example, lesbian, gay, bisexual, or queer) were more or less likely to persist after 4 years in STEM.

Sexual minority students were 7% less likely to be retained in STEM compared to switching into a non-STEM program



Four-year STEM retention by sexual minority status

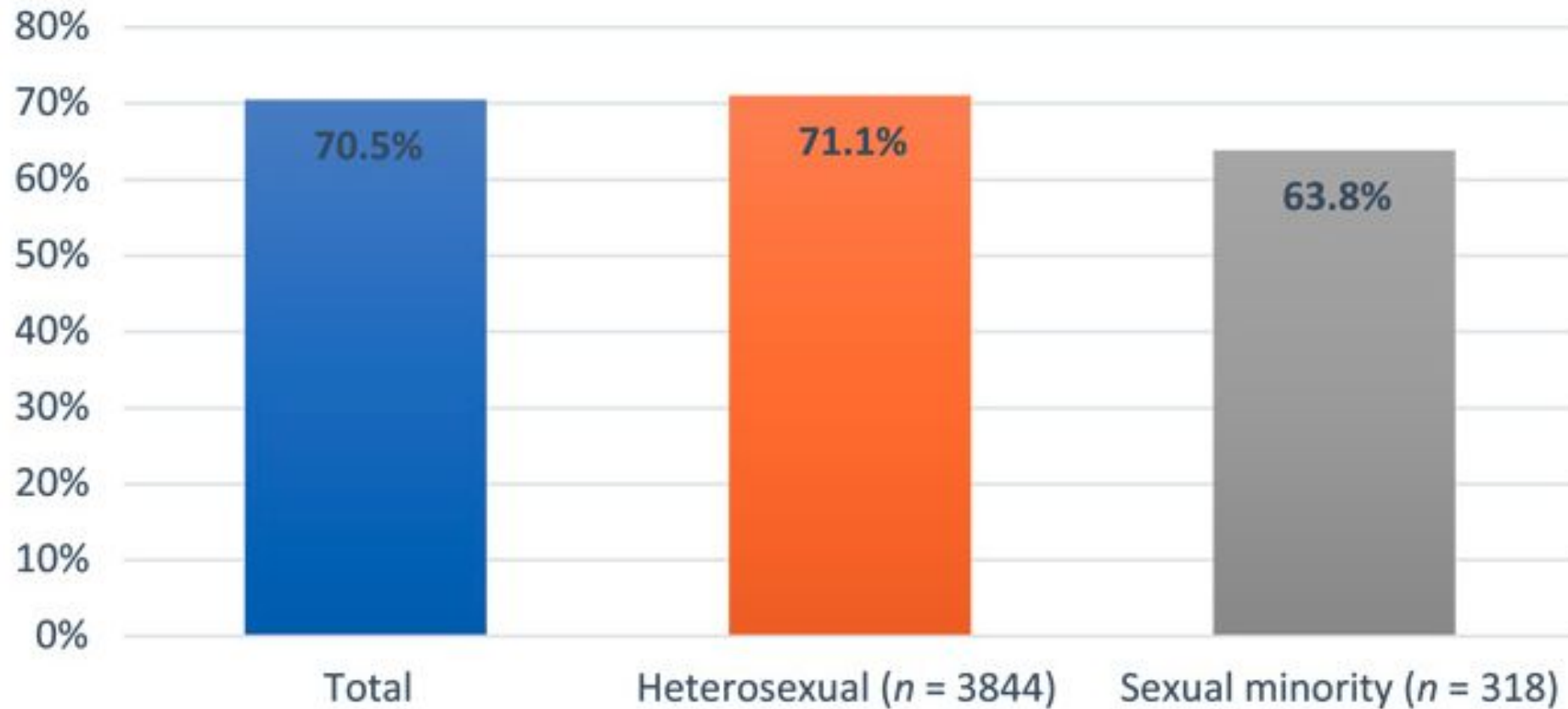


Fig. 1 Proportion of students who aspired to a STEM degree at college entry, in 2011, and who also indicated a STEM major at the end of their fourth year, in 2015, in total and disaggregated by sexual minority status.



Tlal-nepantla

Tlalnepantla de Baz is one of 125 municipalities of the state of Mexico, north of Mexico City.

Tlalnepantla comes from the Náhuatl words *tlalli* (land) and *nepantla* (middle) to mean the middle land.





Nepantla

In her book, *Borderlands/ La Frontera: The New Mestiza* (1987), Anzaldua drew upon the Aztec word "nepantla" which means "the space between two bodies of water, the space between two worlds" (p. 276).

She used nepantla to describe a multidimensional (physical, spiritual, psychological, and developmental) and transitional location of in-betweenness, a space and an experience of fully belonging neither to one group, territory, identity, or another.



Aquí nos tocó vivir

La frontera

Nepantla

The borderlands

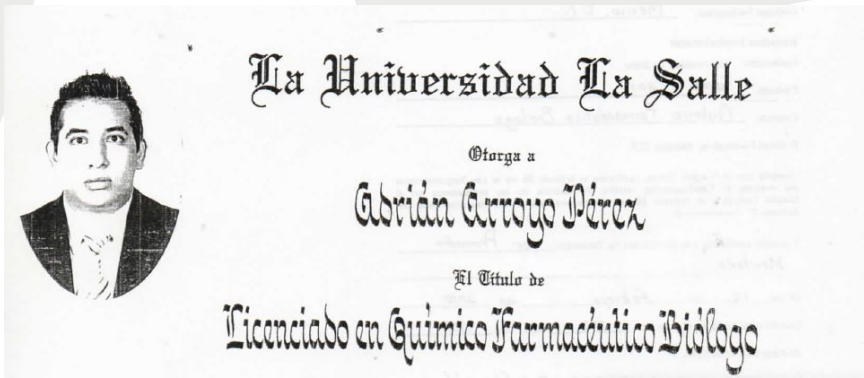
SONDEH
MAY
H
G R A N D O
A

A
L A

L I B
E R T A D

VOLEAMOS KUMBU
SIN SIGAMOS
AL VIENTO

Mi historia





Issue + framework =

**Culturally Responsive
Curriculum**



Nepantla

- Nepantla also yields a transformative power derived from **self-reflection**, stepping back from and challenging dominant worldviews, and the growth that comes from these processes.
- Elenes (2013) referred to nepantla as a zone in which critical reflection and analysis of dominant societal beliefs and assumptions takes place, as well as questioning of personal assumptions, beliefs, and practices and those of groups with whom a person identifies.
- This experience, while painful, can launch a process that enables people to reexamine beliefs about the world and **evolve in their thinking and critical reflection**. To the extent that most people may experience nepantla in their lives, it is a concept with broad potential for application.

Nepantla in STEM

- We propose that this state of nepantla may be especially familiar to women and members of ethnic minority groups who have navigated their educational and career pathways amid racism and sexism, in settings that privilege maleness and Whiteness. STEM settings may generate nepantla experiences as newcomers encounter norms, values, policies, and assumptions that are incongruent .
- Educators, managers, and students in training can learn to elicit and affirm others' sociocultural knowledge, experiences, and worldviews and to implement practices that activate these resources. The ability to identify and **support nepantlerxs within classrooms and organizations** may help retain not just those individuals but the students and workers who they affect and enrich. **Nepantleras/os (x) in STEM** settings will have insights valuable, if not essential, to transformation efforts.

Cultural competence

Acknowledge the influence that culture plays in communication and action, recognize the dynamics within cross-cultural relations, enhance their cultural competence through the acquisition of additional knowledge, and amend and **adapt** existing knowledge and practice with accompanying shifts in cultural competence."

Bowman, S. (2012). Cultural competence. In S. M. Barton-Bellessa (Ed.), *Encyclopedia of community corrections* (pp. 101-103). Thousand Oaks, CA: Sage Publications.

Inclusive education

Refers to a way of **structuring educational services** so that all students are educated together in a shared community. Inclusive education is not only an administrative arrangement but also an **ideological and philosophical commitment** to a vision of schools and societies that are diverse and nonexclusionary.

A comprehensive definition of inclusion can be extended to discuss the ways in which education is provided that **recognize, honor, and respond to** other demographic differences—**race, class, gender, ethnicity, religion, language, sexual orientation, and family configuration**—in addition to differences in students' skills and assumed abilities."

Culturally Responsive Pedagogy

An approach to teaching that **incorporates attributes, characteristics of, and knowledge from, students' cultural background** into instructional strategies and course content to improve their academic achievement.

A primary aim of culturally responsive pedagogy is to **create learning environments that allow students to use cultural elements, cultural capital, and other recognizable knowledge from their experiences** to learn new content and information to enhance their schooling experience and academic success."

Howard, T. (2012). Culturally responsive pedagogy. In J. A. Banks (Ed.), [Encyclopedia of diversity in education](#) (Vol. 1, pp. 550-552). Thousand Oaks, CA: Sage Publications.

Understanding Identity and sense of belonging

During this meeting we will dive further into our identities and understand intersectionality, tokenism, affirming environments and liberation in education. We will talk about how we perceive ourselves and how others perceive us. We will find our strengths in our identities. We will visit the first QTPOC Scientist profile from [500 Queer Scientists](#).

Assignment #1:
Photography Project:
Owning my campus.
Take three pictures that represent how you feel you own the University of Arizona campus and reply to five of your classmate's pictures.
Due: 9/9/21



I was walking to the food court when I saw this sign by the UA Mall, and I just had to take a photo of it. Since I have been on campus, I have met a lot of nice people of all origins that made me appreciate our differences that we all have. By owning campus using compassion, I am accepting that our differences are what make us human AND what connect us as human beings.

**Global challenges | [Bio5](#)
labs tour
(virtual depending on
COVID-19 status)**

In this personalized visit we will explore how the BIO5 connects hundreds of world-class plant, animal, and human bioscientists, engineers, physicians, and computational researchers to develop creative solutions for complex challenges such as disease, hunger, water and food safety, and other health issues

Assignment #2:
Write about a Global challenge humanity is facing (this could be related to your community or not), and how you would creatively solve it. More directions and guidance will be given in D2L. Due: 09/29/21

6 10/01/21	Mi historia	In this class we will have a guest speaker who will tell their story and how they arrived in their position at the University of Arizona. We will discuss the importance of telling our stories and sharing them with those around us. <u>Guest Speakers:</u> <ul style="list-style-type: none">• Dr. Marla Franco, Assistant Vice Provost for Hispanic Serving Institution (HSI) Initiatives	Bi-weekly blog and reflection #1 (on D2L) Due: 10/7/21
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When reflecting on past things this semester, the one thing or person that inspired me the most was Dr. Marlo Franco. Dr. Marlo Franco's story brought me to tears and I came to respect her very, very much. I admired how hard she had to work to get where she is and the impact she makes today. I also related to her in some ways in relation to childhood and this made me even more inspired by her. Dr. Marlo Franco's time in our class has strongly stuck out to me throughout the entire semester and I'm really glad to have met her.

Changing perspectives and paradigms

Coming out in STEM

In this class, we will visit the experiences of LGBT+ people in STEM, why they came out and how it has helped them move forward in their careers.

Research with Purpose

In this class we will review examples of our very own UA scientific development and innovations that have helped underserved populations overcome issues in their communities.

Guest Speaker:

- [Dr. Vicky Karanikola](#), Associate Professor, Environmental Eng.

Coded Bias



```
mirror object to mirror_ob.  
mirror_mod.mirror_object = mirror_ob  
  
operation == "MIRROR_X":  
    mirror_mod.use_x = True  
    mirror_mod.use_y = False  
    mirror_mod.use_z = False  
operation == "MIRROR_Y":  
    mirror_mod.use_x = False  
    mirror_mod.use_y = True  
    mirror_mod.use_z = False  
operation == "MIRROR_Z":  
    mirror_mod.use_x = False  
    mirror_mod.use_y = False  
    mirror_mod.use_z = True  
  
#selection at the end -add  
mirror_ob.select= 1  
modifier_ob.select=1  
context.scene.objects.active = mirror_ob  
print("Selected" + str(modifier_ob.name))  
mirror_ob.select = 0  
bpy.context.selected_objects = [mirror_ob]  
data.objects[one.name].select = 1  
  
print("please select exactly one mirror")  
  
----- OPERATOR CLASSES -----  
  
class MirrorOperator(bpy.types.Operator):  
    bl_label = "X mirror to the selected object"  
    bl_name = "mirror_mirror_x"  
    bl_rna = "bpy.types.mirror_x"  
  
    @classmethod  
    def poll(cls, context):  
        obj = context.active_object  
        return obj is not None and obj.type == 'MESH'  
  
    def execute(self, context):  
        mirror_ob = context.active_object  
        mirror_mod = mirror_ob.mirror_mod  
        mirror_mod.mirror_object = mirror_ob  
        mirror_mod.use_x = True  
        mirror_mod.use_y = False  
        mirror_mod.use_z = False  
        return {'FINISHED'}  
  
    def draw(self, context):  
        layout = context.layout  
        layout.prop(mirror_mod, "mirror_object")  
        layout.prop(mirror_mod, "use_x")  
        layout.prop(mirror_mod, "use_y")  
        layout.prop(mirror_mod, "use_z")  
  
    def invoke(self, context, event):  
        mirror_ob = context.active_object  
        mirror_mod = mirror_ob.mirror_mod  
        mirror_mod.mirror_object = mirror_ob  
        mirror_mod.use_x = True  
        mirror_mod.use_y = False  
        mirror_mod.use_z = False  
        return {'FINISHED'}
```




Gracias!

This class was one of the most eye opening and liberating classes that I think I've ever had. I'm extremely thankful and blessed that I had the opportunity to take this class and learn so much from it. I also feel very lucky that I took this class so early on in my academic career. I feel as though this class taught me things and gave me opportunities that will stick with me for years and years to come, not only for my academic career but also for my future career in medicine. Reflecting back on the semester, the couple of field trips that we took all meant so much to me. They were chances to experience things I had never come close to experiencing and also chances I never thought about experiencing. Meeting the people we got to meet this semester was also such a gift. It was beyond inspiring to talk to such successful, powerful people. Hearing their stories and just really being able to see for my own eyes how great of people they are was something unbeatable. They helped me see the big picture a lot this semester and I felt motivated