

# Developing Inclusive Excellence in STEM

---

---

## Developing a DEI Action Plan for Physics and Astronomy at EMU

Ernie Behringer

Department of  
Physics and Astronomy

# How P&A Sees Itself

---

- Friendly, supportive, and fun!



P and A = Panda!



# How P&A is Seen (?)

---

---

- Scary!



We are working to change this perception, at least locally!



# Outline

---

- The Big Picture in Physics and Astronomy
- Quick facts about EMU P&A
- Guidance from the Community
- Actions for right now
- The road ahead, together



# The Big Picture in Physics and Astronomy

Some demographic data:

Race	Percentage of Population (MI)	Percentage of Population (US)
White alone, not Hispanic or Latino	74.7	60.1
Black or African American alone	14.1	13.4
Hispanic or Latino	5.3	18.5
Asian alone	3.4	5.9
American Indian and Alaska Native alone	0.7	1.3

<https://www.census.gov/quickfacts/MI>

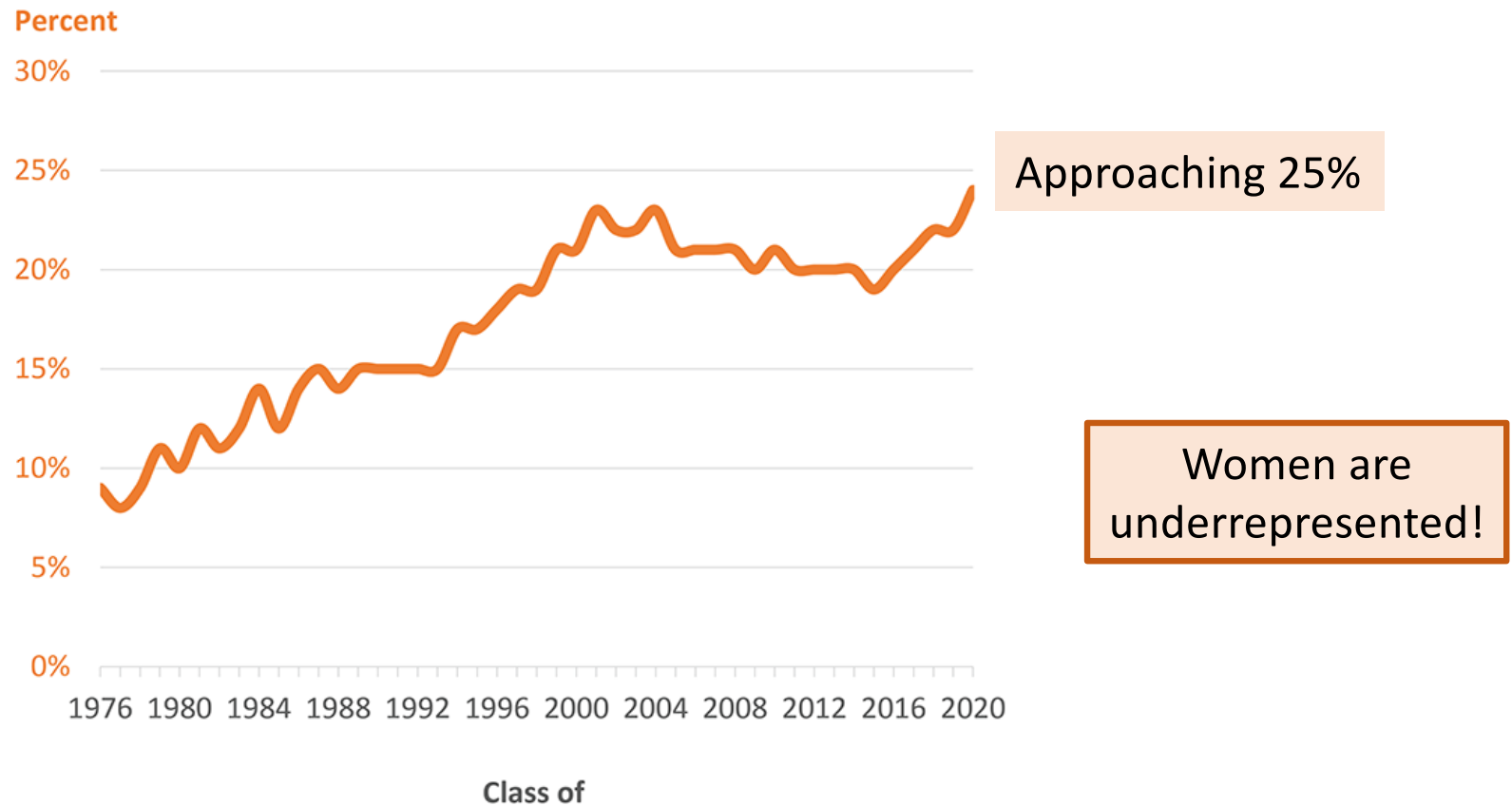
<https://www.census.gov/quickfacts/US>

And: 50.7% (50.8%) of Michigan (US) population is female.

# The Big Picture in Physics and Astronomy

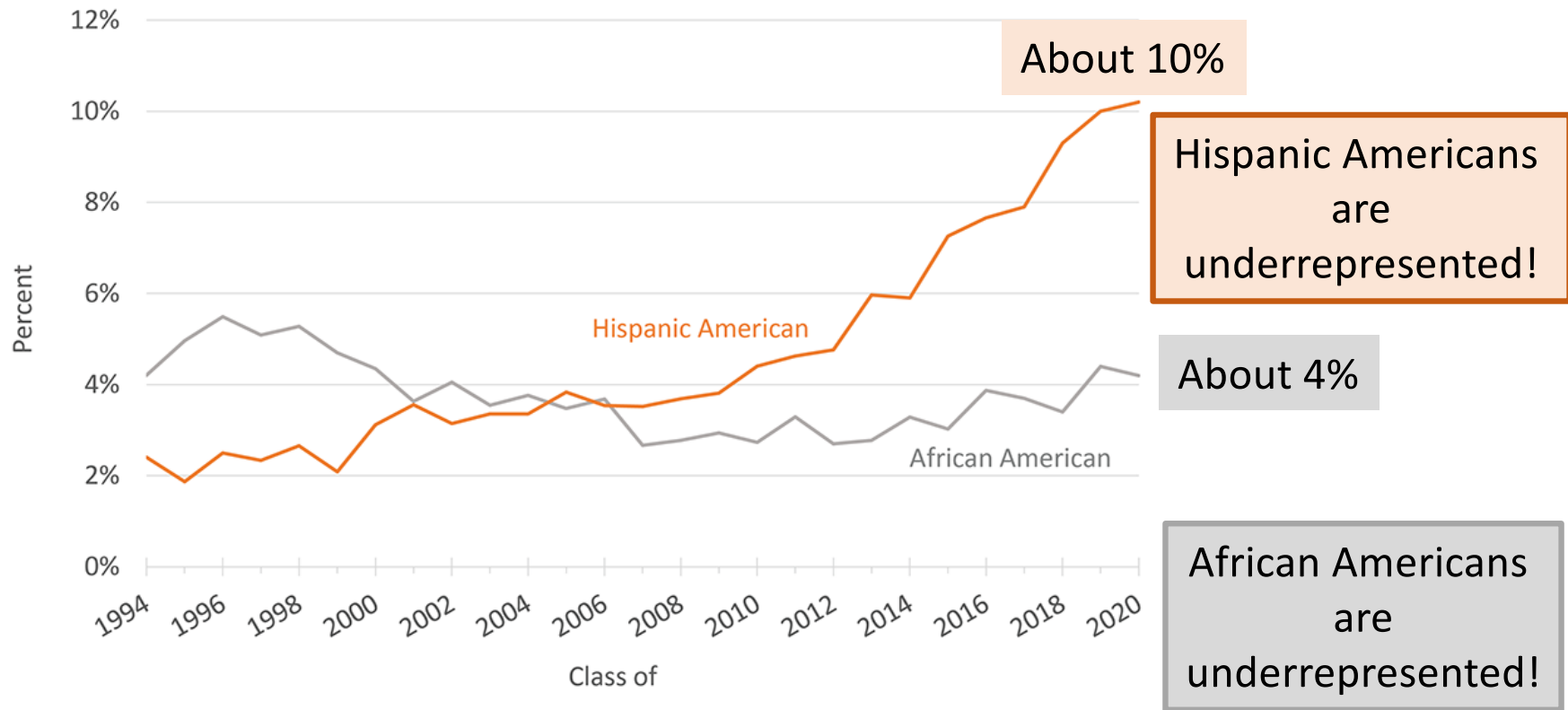
U.S. Data:

Percent of Physics Bachelor's Earned by Women,  
Classes of 1976 to 2020



# The Big Picture in Physics and Astronomy

## U.S. Data: The Proportion of Physics Bachelor's Degrees Awarded to African Americans and Hispanic Americans, Classes 1994 to 2020

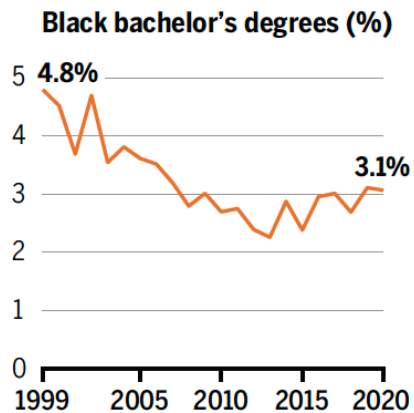
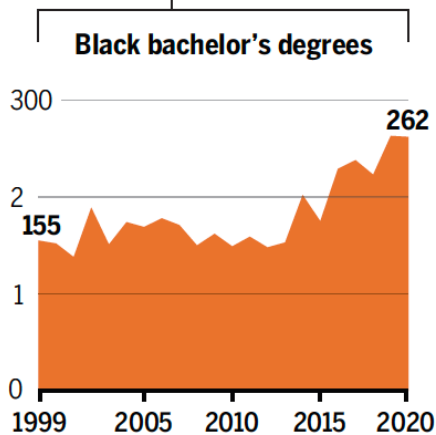
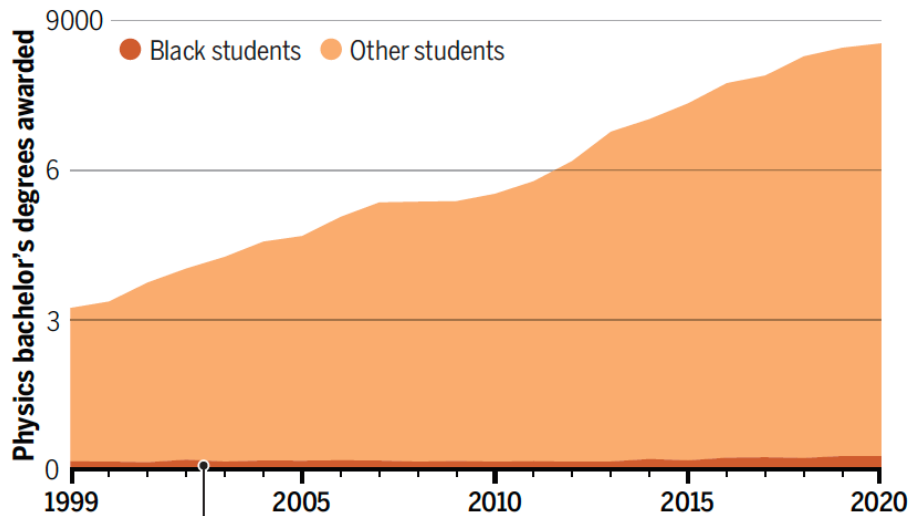


Note: Between 5% and 11% of physics bachelors were awarded to non-US citizens over this time period. The percent of physics bachelor's degrees awarded to African-Americans and Hispanic Americans are based on US citizens only.

# The Big Picture in Physics and Astronomy

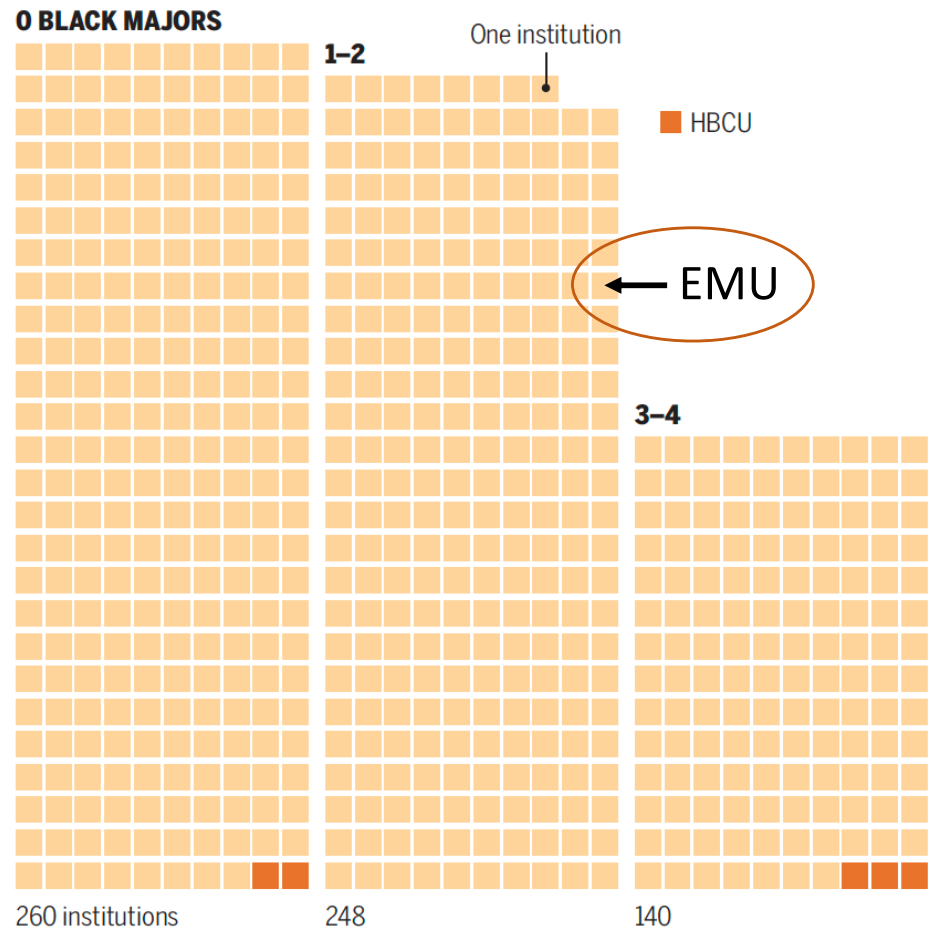
## A rising tide, but not for Black students (1)

The number of U.S. undergraduate degrees in physics had tripled by 2020 compared with 1999. Although the absolute number of Black physics majors also rose, their share of the total plummeted.



## Black majors rare at most U.S. campuses (2)

Some one-third of all U.S. physics departments graduated no Black physics majors between 1999 and 2020. Despite their small size, historically Black colleges and universities (HBCUs) far outpaced predominantly white institutions in awarding bachelor's degrees in physics to Black students.





# Quick Facts about EMU P&A

---

---

1995: 12 TTF + 3 FTL + 1 DH      25% of TTF female

2022: 6 TTF + 2 FTL + 1 DH      33% of TTF female

Four main physics major programs:

Physics, Engineering Physics, Physics Research, Physics Teaching

Of EMU physics degree recipients from 1999 to 2020:

22% are female (consistent with national data)

1.5% are African American (lower than national data)

1.5% are Hispanic/Latino (lower than national data)

# Guidance from the Community

## American Institute of Physics 2020 TEAM UP Report

The main point of the report is:

“...the persistent underrepresentation of African Americans in physics and astronomy is due to

- (1) the lack of a supportive environment for these students in many departments, and
- (2) the enormous financial challenges facing them and the programs that have consistently demonstrated the best practices in supporting their success”



# Guidance from the Community

The American Physical Society has rolled out



Equity, Diversity, and Inclusion

## Effective Practices

1. Educate yourself and your department members (faculty, students, staff, and postdocs) about equity, diversity, and inclusion
2. Analyze the current state of affairs for marginalized groups in your department

3. Create, publicize, implement, and assess an action plan for equity, diversity, and inclusion
4. Pay separate attention to the particular needs and concerns of different groups and individuals
5. Use known strategies to improve equity, diversity, and inclusion

<https://ep3guide.org/guide-overview/equity-diversity-and-inclusion>

# Actions for Right Now

The American Physical Society has rolled out



Equity, Diversity, and Inclusion

## Effective Practices

1. Educate yourself and your department members (faculty, students, staff, and postdocs) about equity, diversity, and inclusion
2. Analyze the current state of affairs for marginalized groups in your department

Our first Departmental EDI meeting took place on March 18.

- Reviewed recent science.org articles
- Overview of TEAM UP report
- Looked at APS EP3 Guide for EDI
- Resolved to acquire data on our students (nearly done)
- Examine inclusivity statements
- Obtain information from our students (begun in PHY 406)
- **Joining a SEA Change cohort**

# The Road Ahead, Together

---

---

Initially, it seems like  
a lot to take on! →



*The Scream*  
Edvard Munch 1893

We hope to learn from you  
and work together to  
use effective practices  
so that we get here →

