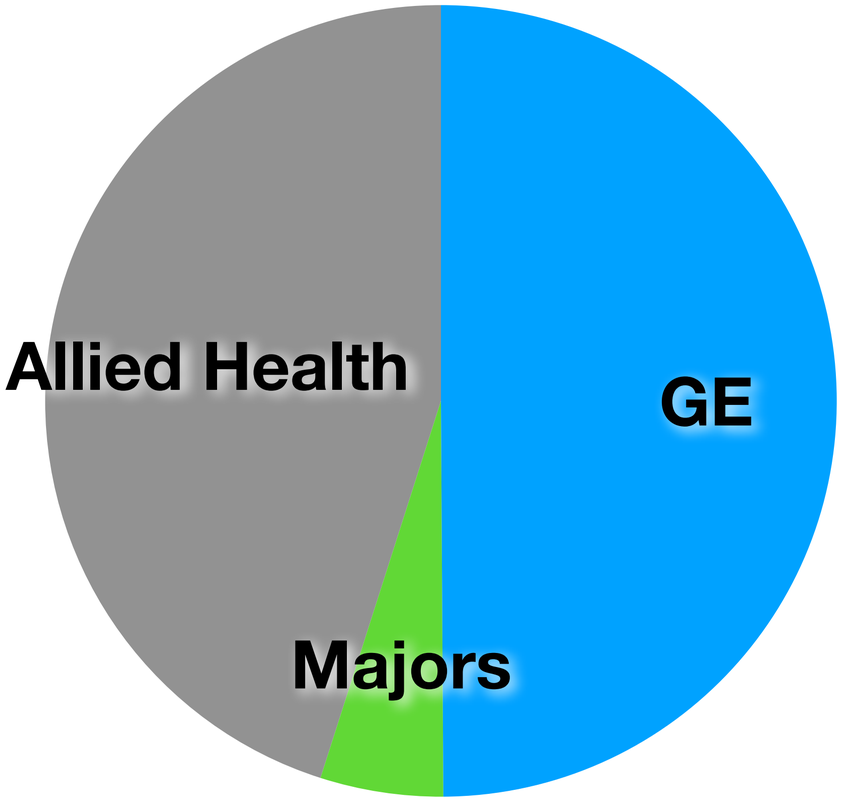
Biological Sciences Program

A look back and ahead

Spring 2022

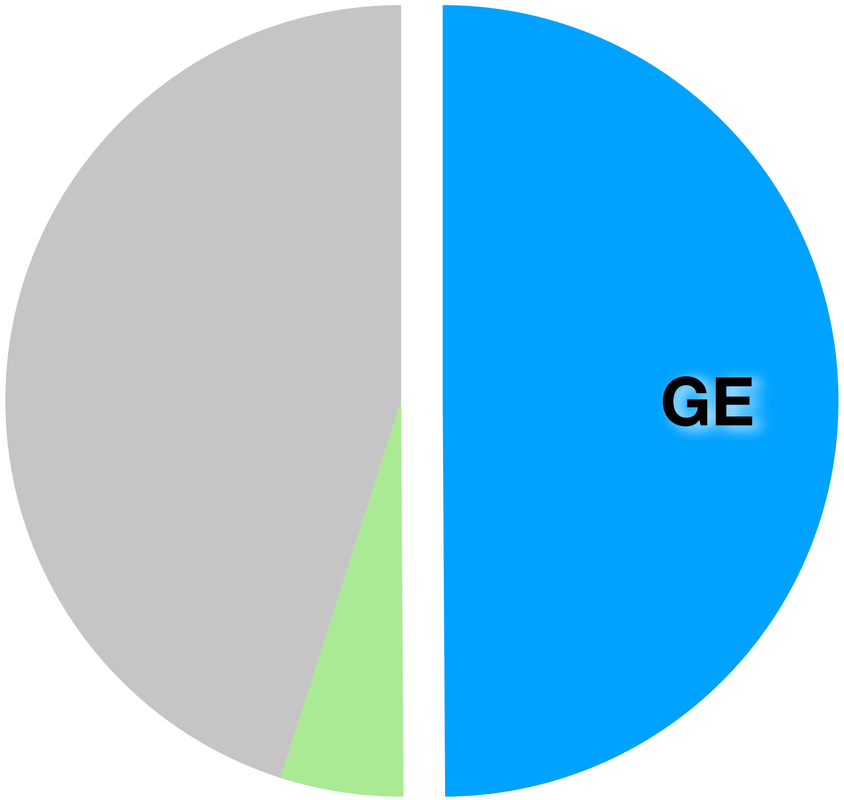
WE ARE 3 "PROGRAMS" IN ONE



% of enrollment

- 5-year average of 1980 students
- Each cohort has a distinct composition, preparation, and motivation
- Need program review data packets to be disaggregated by cohort in order to make strategic interventions

We are General Education



% of enrollment

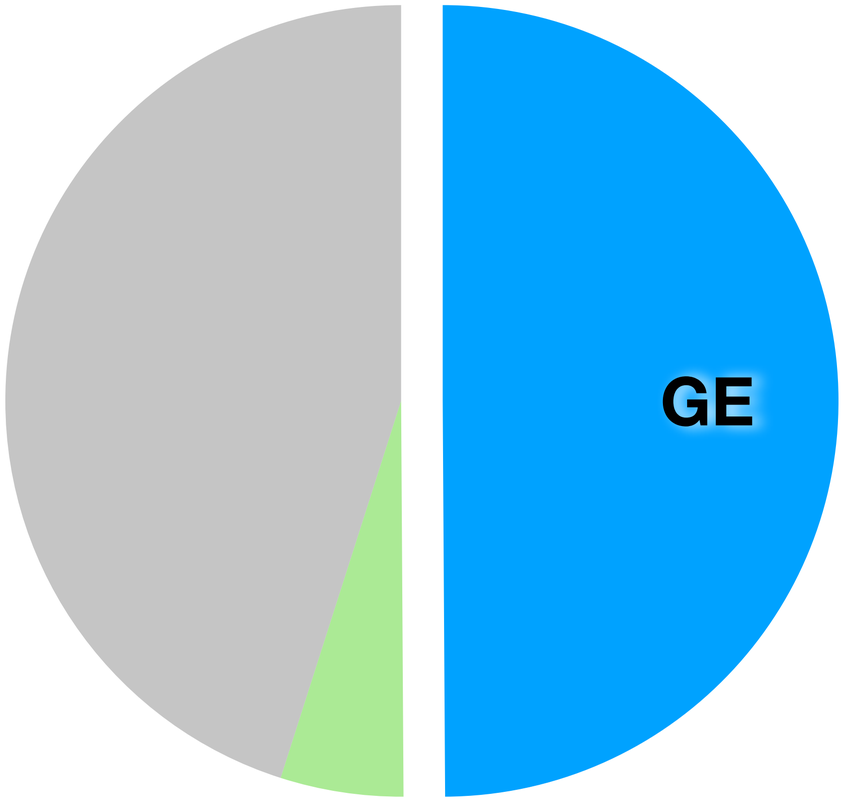
Area B Courses Offered

- Non-majors Biology with or without lab
- Human Biology with or without lab

Area E Courses Offered

- Nutrition
- Health Science
- Women’s Health

We are General Education



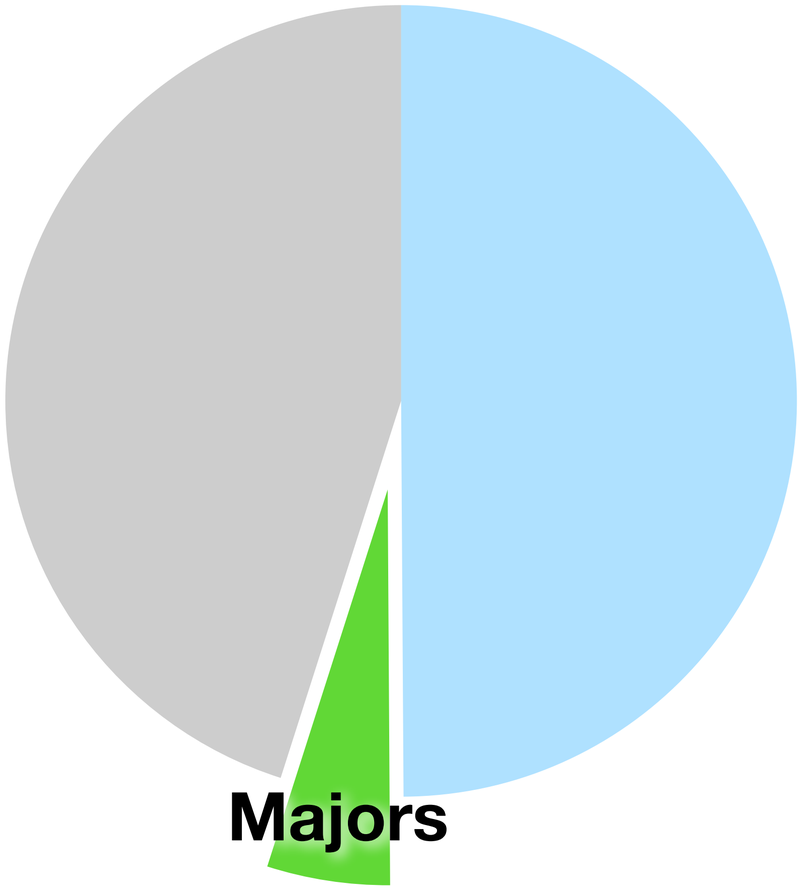
% of enrollment

Why EVERYONE Should Take Biology

Covid-pandemic 2019-present

A basic understanding of biology and how science is conducted is critical to making educated decisions and discerning truth from misinformation

We are Biology Majors



% of enrollment

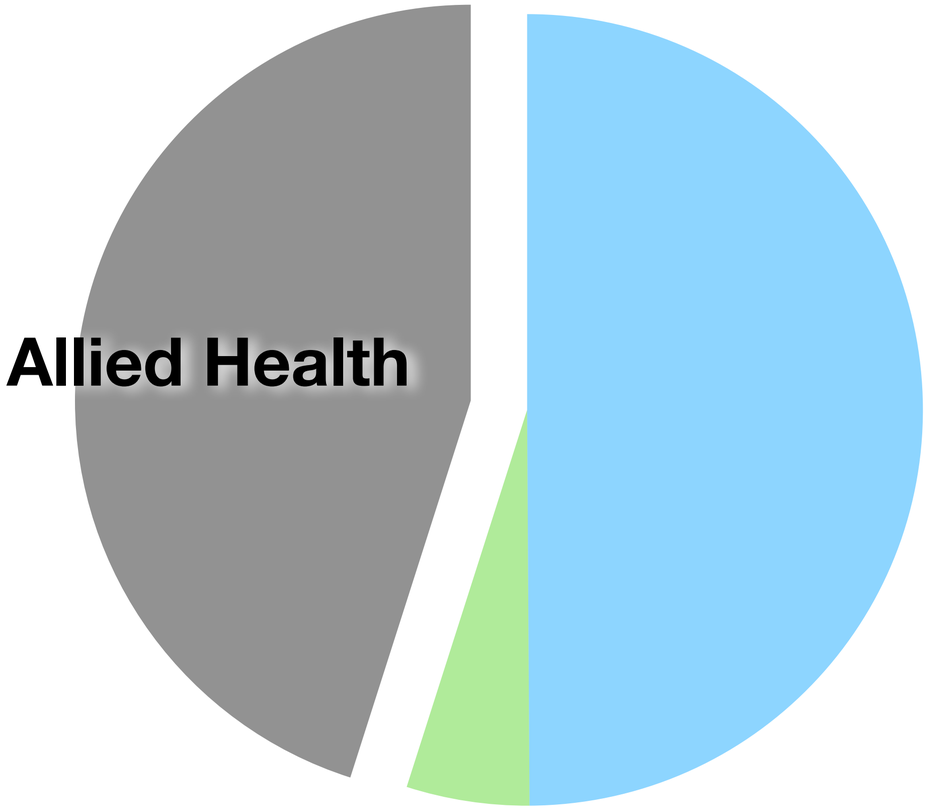
Degrees Supported

- Biology (AS and AS-T)
- Interdisciplinary Studies: Natural Sciences & Mathematics (AA)

Majors Courses

- Cell Biology
- Organismal Biology

We are Allied Health Career Prep



% of enrollment

Degrees & Careers Supported

- Allied Health (AA)
- Nutrition & Dietetics (AS-T)
- * Kinesiology (AA and AA-T)

* We offer 2 of the 3 core courses to the kinesiology degree

- Nursing
- Occupational Therapy
- Physical Therapy
- Physician Assistant
- Radiologic Technology
- Respiratory Therapy
- Surgical Technology

Meeting Community & Labor Needs

- In-person labs since January 2021
- BIOL 230 & 250
- Hyflex and hybrid modalities

- New Funeral Services Education Program
- Collaboration with Workforce Development
- Supported curriculum development and Program Director search

Image credit: https://www.shrm.org/resourcesandtools/hr-topics/people-managers/pages/managing-college-professors-during-covid-.aspx

Enrollment Trends

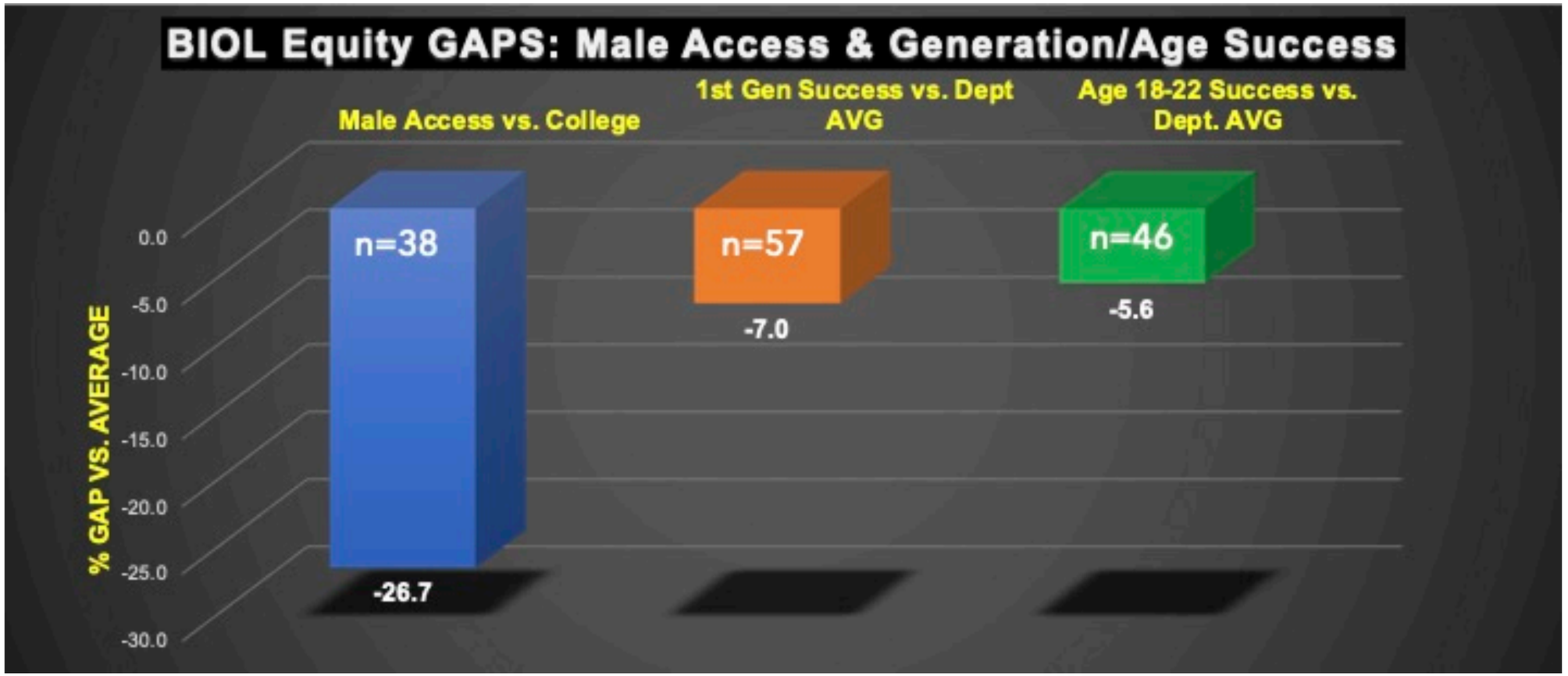
Diagnosis: reduced student demand
Prognosis: positive outlook

- Declines are comparable to, or less significant than, the overall college trends

	Program	College
2019-20	-3.6%	-3.2%
2020-21	-2.3%	-8.0%

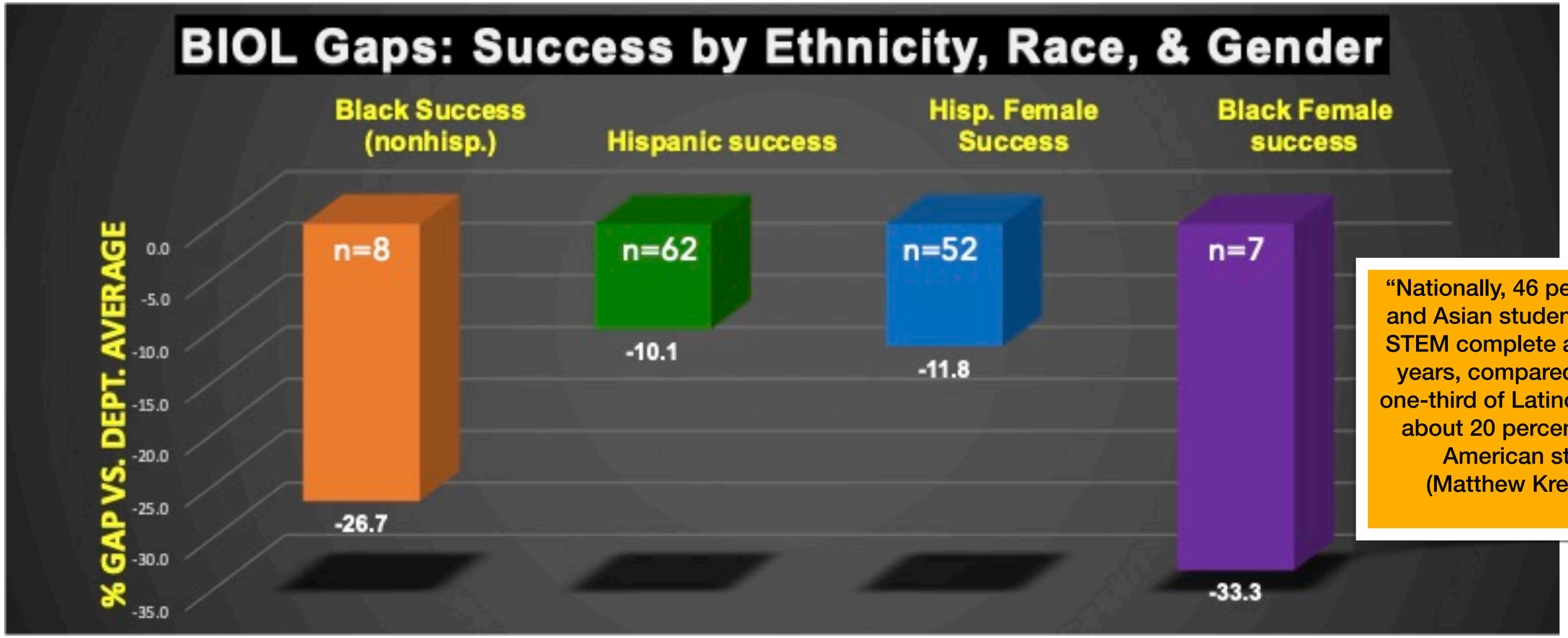
- Reduced number of sections but zero course cancelations
- Program continues to strongly attract students who are undeterred either by the pandemic or online learning challenges

EQUITY GAPS Access & Success



- Historical misperception of allied health as “women’s careers”
  - Outreach to male students; Reduce misperception through advertisements with males in healthcare
- Imposter Syndrome, Family pressure, Guilt, Lack of representative role models; Science is “intimidating”
  - Summer Jams; FYE; Highlight Faculty/Staff who were 1st Gen. college students

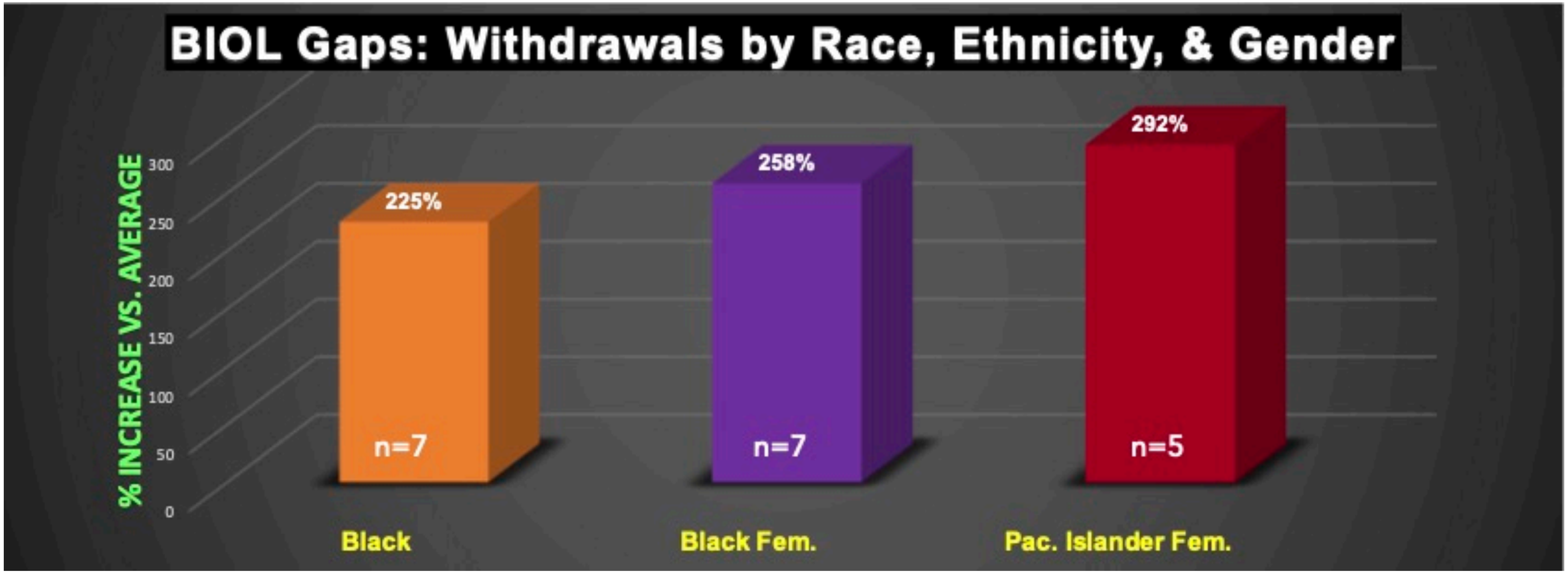
EQUITY GAPS Success by Ethnicity, Race and Gender



"Nationally, 46 percent of white and Asian students majoring in STEM complete a degree in six years, compared to less than one-third of Latino students and about 20 percent of African-American students."
(Matthew Kredell, 2017)

- Lack of role models, representation, family support
  - Umoja, Puente, Retention Specialists, Tutoring, CARES
  - Diverse representation among STEM Speakers

EQUITY GAPS Withdrawals by Ethnicity, Race & Gender



- Lack of role models, representation, added family responsibilities
  - Umoja, Puente, Early Alert, FYE - Community Building – Cohorts
  - Diverse representation among STEM Speakers

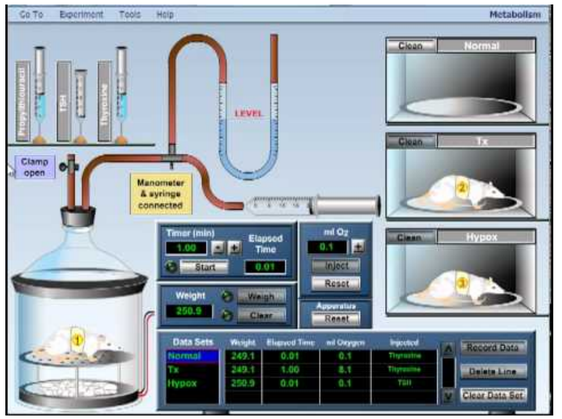
Progress on Prior Plans

Sidelined by the Pandemic

Objectives	Status
Undergraduate research	4 Hispanic women conducted research at Stanford Medical School; presented posters at conferences in Wash. DC and Hawaii
Anatomy Success Initiative	Release time proposal denied; Research postponed due to pandemic and conversion to online modality
Revise non-majors labs	Postponed due to pandemic and conversion of all lab curricula to online modality
Health Science discipline	Postponed due to pandemic and resignation of principal health science faculty member

TAKING HANDS-ON LEARNING ONLINE

- Virtual lab simulations
- Online test subject recordings
- Live labs via Zoom
- Posting prior years' data
- Photographing specimens
- DIY lab-at-home kits
- Synchronous/hyflex dissection-at-home



Sample Redesign Process

Lab	Can it be done at home?	Safety concerns?	Develop print and video guides	Online simulation available?	Quality of simulation	Live demo and post data	Develop new lab
Week 1	✓	N	✓				
Week 2	N			✓	✓		
Week 3	N			✓	poor	N	✓
Week 4	✓	✓	✓				
Week 5	N			N		N	✓
Week 6							
Week 7							
Week 8							
Week 9							
Week 10							
Week 11							
Week 12							
Week 13							
Week 14							

Current Plans

Learning From the Past and Envisioning the Future

Objectives
Optimize instructional modality and assessment methodology
Increase budget to support continued production of at-home lab kits
Expand use of molecular technology in cell & microbiology labs
Study long-term viability of Health Science discipline
Create cadaver dissection opportunities for students
Develop exercise physiology labs

Questions?