# Actionable Steps Toward Equity in STEM

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## Undergraduate **Biology Education** Research

### Gordon Research Conference

June 26-July, 2021 Bates College Lewiston, ME

\*June 26-27 graduate student & early professional programs



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» Update on 2021 Conference Season



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June 27 - July 2, 2021

Erin L. Dolan and Stacey L. Kiser

Vice Chairs

Stanley M. Lo and Carrie Diaz Eaton

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**Bates College** 

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# Land Acknowledgment UC Berkeley

#### We recognize that

- UC Berkeley sits on the territory, the ancestral and un-ceded land of the Ohlone people, the successors of the sovereign Verona Band of Alameda County.
- This land was and continues to be of great importance to the Ohlone Tribe and other familial descendants of the Verona Band.
- Every member of the UC Berkeley community has, and continues to benefit from, the use and occupation of this land, since the institution's founding in 1868.
- Consistent with our values of community, inclusion and diversity, we have a responsibility to acknowledge and make visible the university's relationship to Native peoples.
- As members of the Berkeley community, it is vitally important that we not only recognize the history of the land on which we stand, but also, we recognize that the Ohlone people are alive and flourishing members of the Berkeley and broader Bay Area communities today.

Modified excerpts from UCB's Centers for Educational Justice & Community Engagement <a href="https://cejce.berkeley.edu/ohloneland">https://cejce.berkeley.edu/ohloneland</a>

# Land Acknowledgment Penn State University

Pennsylvania State University does NOT have an official statement of land acknowledgment

We should recognize that University Park, PA home of Penn State University's main campus was built on land belonging to the Haudenosaunee, Lenape, Shawnee and Susquehanna peoples.

## **About Ourselves**

Our Personal/Professional
Histories and Connections to this Work

# 'Racial Justice'

Racial justice is the systematic fair treatment of people of all races, resulting in equitable opportunities and outcomes for all.

Racial justice — or racial equity — goes beyond "anti-racism."

It is not just the absence of discrimination and inequities, but also the presence of deliberate systems and supports to achieve and sustain racial equity through proactive and preventative measures.

Racial Justice in Education – Resource Guide

https://neaedjustice.org/wp-content/uploads/2018/11/Racial-Justice-in-Education.pdf

## 'DE&I'

- Diversity = Number
- Equity = How we get from diversity to inclusion
- Inclusion = Feeling

## Focus

Fix our Institutions, not our Students

# Reconciliation and Reparation

- Requires that individuals and institutions acknowledge and atone for the wrongs they have done
- That they apologize to and ask for forgiveness from survivors of their wrong-doing
- That they resolve never to repeat the wrongs and work to restore their victims to full humanity as fellow citizens
- That they provide payment/compensation/resources to repair the damages resulting from their practices, behaviors, policies, etc.

# Workshop Goals

- Challenge/interrogate practices, policies, assumptions and beliefs related to STEM DE&I work
- Raise awareness of ourselves/our surroundings
- Identify ways to address the negative impact of our language, practices, and policies on our students
- No 'Tool Boxes' or 'Answers'
- Instead Conceptual Frameworks and Questions for us to act to address our local DE&I challenges

## How We'll Proceed

- 1. We asked participants to submit 3 terms for each of 3 aspects of our DE&I work below
  - Categorizing and Naming Students
  - Advising, Teaching, Mentoring Students
  - Defining Student Success
- 2. We compiled the terms submitted by the audience. From the responses we constructed 3 Word Clouds for discussion and questions.
- 3. For each Word Cloud we'll discuss:
  - Frequently occurring words
  - The impact of those words on our students, staff, and faculty
  - How these words show up and translate into our policies and practices
  - How the words chosen, policies developed impact the behaviors of people in their daily lives
- 4. Use the 'Q&A' function for your questions and comments

# Our Discussion and Analysis

- Root Cause; 'Origin Story' behind the situation
- Bias that underlies and contributes to the situation
- Our Responsibility in the situation
- What we can do in our current Institutional Role
- Resources to help us translate thought into action
- Structural/Institutional Features facilitate or impede righting the wrong

# Word Cloud Categorizing and Naming Students

```
Honors Conservative Underprivileged
  Diamond-in-the-Rough Deficit-Labels
Colored-Kids Disengaged Star N-word Elite Diverse-Student Marginalized
   From-the-Res Bad Accommodations
                                       Straight-A
                                                     Disabled
  Ethnic Best-and-Brightest Cheating Bottom-third Perfect Those-People Underperforming
                                              Young-ladu
  Not-smart-enough Cream-of-the-Crop Homosexual
        Slackers Talented At-Risk Those-Students Caucasian
      Gifted Model Inner-City Deplorable
                                            Smart-Ones Lazy
  Differently-abled
                 Urban City Low-achieving
                                                 Curve-Wrecker
 Those-types Race
                       Good Underrepresented-mnority
   Model-minority
                        Grit Hispanic Problem Inner Middle
   Remedial Bottom Underachiever Unmotivated
Bright Smart Slow Unprepared
        Uneducated Underrepresented-minority
                  Handicapped Transfer-student
```

# ?

```
Conservative Underprivileged
       Honors
  Diamond-in-the-Rough Deficit-Labels
                           Underserved Elite Diverse-Student
               Kids
Colored-Kids Disengaged Star N-word
                                  Marginalized
  From-the-Res Bad Accommodations
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                                           Young-ladu
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      Gifted Model Inner-City Deplorable
                                          Smart-Ones Lazu
  Differently-abled
                Urban City Low-achieving
                                              Curve-Wrecker
 Those-types Race
                     Good Underrepresented-mnority
   Model-minority
                      Grit Hispanic Problem Inner Middle
   Remedial Bottom Underachiever Unmotivated
Bright Smart Slow Unprepared
        Uneducated Underrepresented-minority
 Not-for-everyone
                 Handicapped Transfer-student
       Weed-out
```

# Word Cloud

# Advising, Teaching, Mentoring Students

```
Break-down-and-build-back-up Mothering
             Research Apprenticeships Teaching Tolerance
Needy Cream-of-the-Crop
                                             Study guide Babying
                                       Underachiever Lazu
       Babysitting Not-cut-out-for-this
      Cream-will-rise Sage-on-the-Stage
                                             Raise-all-boats
         Special-Treatment Remediate
                                             Midwife Leaky
                   That's-the-way-it-was-for-me
                                                    Tempered
                 Forged C-student people
                                                Clueless Failure
       Too hard for you Slow-Learner Grit Suck-it-up Transf
          Equip
                                                             Moldina
Teaching
           Independent Dumb-down
                                                      hard Mother
               Rockstars Hen Pipeline Weed-out Course prion-Seeking Provide
           Attention-Seeking
                         Intrusive <mark>see T</mark>
Take-responsibility-for-learning
      Asset-to-their-race
                                                       Drag-along
            Rigorous
Unmotivated
                                             Supplemental Instruction
               Tested
Underprepared
                                              Impart-knowledge
            Motivated From a troubled family
                                                I'm-bad-at-biology
         Memorization
                           Give-away-points
```



Break-down-and-build-back-up Mothering Research Apprenticeships Teaching Tolerance

```
Needy Cream-of-the-Crop
                                           Study guide
                                                        Babuing
                                      Underachiever Lazu
      Babysitting Not-cut-out-for-this
      Cream-will-rise Sage-on-the-Stage
                                           Raise-all-boats
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                                    Transfer Humanizing
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                                                   hard Mother
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           Attention-Seeking
                                                  Provide
                        Intrusive <mark>see [</mark>
Take-responsibility-for-learning
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            Rigorous
Unmotivated
                                           Supplemental Instruction
                    Tested
              Underprepared
                                            Impart-knowledge
            Motivated From a troubled family
                                              I'm-bad-at-biology
         Memorization
                          Give-away-points
```

# Word Cloud Defining Student Success

```
Standardized-test-scores
                                                        Bright Good
   Doctor or engineer
                       Exams-only-to-assess-learning
                                                       Persisting in STEM
     Strongest students
                              Tenure-track-position
          Medical Just like me Smarter-than-expected Honors-student
                                                  High-GRE Unable Natural-talent
           Bottom-of-the-class
                                     Most-worthy
                                High-achieving High-functioning DFW
         Because you are Black
                           Deficit-based-language
              Brilliant
                                                     test
                                                              Pre-med-bound
                           Legacy AP Credit SAT student Fit
        Retained-in-the-pipeline vs
                                   Test-Scores ACT Mainstream Meeting benchmarks
Top-of-the-curve
                IQ Research Best
                                                      Good-students
                                                      staying
                                                                      students
                High-GPA Most
                                     Research Job at an R Grades Top-5-percent
           Natural-ability The brightest
                                        Top-percentile The-Curve Just-graduate
                Smart STEM-PhD Top
       coming
                                        Drop PhD th-year-senior
    As-compared-to-others Anything Grades, GPA, etc
                                                      Bell-Curve related
           Advanced Graduation-rates Weeder-course Motivated Assimilate
  Standardized-tests
                                   Bottom-of-the-curve Top-scores
                     Make-the-cut
                                                                     leaving
                                 Only a BA-student
  Going to good-graduate-schools
                                                           It's not rocket-science
                                  Four-year graduation rate
                   Born-to-Succeed
                                                          standards
```



```
Standardized-test-scores
                                                        Bright Good
   Doctor or engineer
                       Exams-only-to-assess-learning
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                                 Only a BA-student
   Going to good-graduate-schools
                                                           It's not rocket-science
                                  Four-year graduation rate
                   Born-to-Succeed
                                                          standards
```

# Next Steps for Us All

### As we plan to translate thought into action

#### Start with

- Definition of 'Success'
- Work Backwards
- Ask How to measure Progress?

#### Related to this

- Leverage what's in place
- Think 'Triage'
- Low-hanging/near-term opportunities
- Mid- and long-term opportunities

### <u>Inventory</u>

- What you Think
- What you Know
- What you can Prove/have Evidence

#### Associate yourself

'Critical Friends'

#### Remember

- 'The Why' as we shoulder 'The Cost'
- Evidence = Necessary/not Sufficient
- 'Marathon not a sprint'



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# Some Relevant Frameworks Appendix 1

### **Solutions**

- 'Fix'
- 'Bad Apples' and 'Better Students'
- 'Programs'/Counter-spaces
- 'Best Practices'

### **Institutional Characteristics**

- Fairness and Merit
- Mindset
- Responsibility
- Quantitative v. Qualitative
- Implicit Bias

- Stereotype Threat
- Gaslighting
- Erasure/Silencing
- Competition
- 'Expert'/Institutional Role

#### <u>Actions</u>

- Truth and Reconciliation
- Reparation acknowledgement, apology, and amends
- Rewards, Accountability, Consequences

### References & Resources

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