ABET, Ethics, and DEI

CEE Faculty Meeting/DEI Presentation

~~October~~ **November** 2022

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UNIVERSITY OF DELAWARE
ENGINEERING

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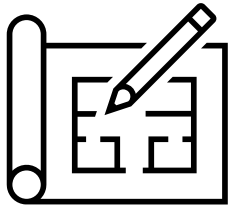
DEI integrated into our teaching: is it possible?

We can and we must: DEI is an integral part of our work

- Principles of diversity, equity, and inclusion are reflected in 2 guiding documents:
  - ABET Student Outcomes
  - ASCE Code of Ethics

DEI in ABET Student Outcomes

2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.



~~Design~~

→ Design to meet societal needs

DEI in ABET Student Outcomes

3. an ability to communicate effectively with a range of audiences.

~~Communicate~~

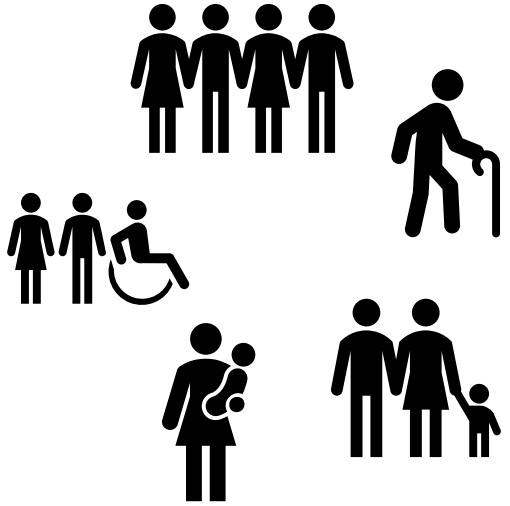
→ Inclusive communication

DEI in ABET Student Outcomes

4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

~~Ethics~~

→Social and economic impacts of engineering



DEI in ABET Student Outcomes

5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

~~Work in teams~~

→ Inclusive teamwork

UD COE Inclusive Teaching Workshop Series:

Teamwork

DEI is embedded in the ASCE Code of Ethics

Engineers govern their professional careers on the following fundamental principles:

- create safe, resilient, and sustainable infrastructure;
- treat all persons with respect, dignity, and fairness in a manner that fosters equitable participation without regard to personal identity;
- consider the current and anticipated needs of society; and
- utilize their knowledge and skills to enhance the quality of life for humanity

DEI in ASCE Code of Ethics

SOCIETY

Engineers:

f. treat all persons with respect, dignity, and fairness, and reject all forms of discrimination and harassment;

g. acknowledge the diverse historical, social, and cultural needs of the community, and incorporate these considerations in their work;

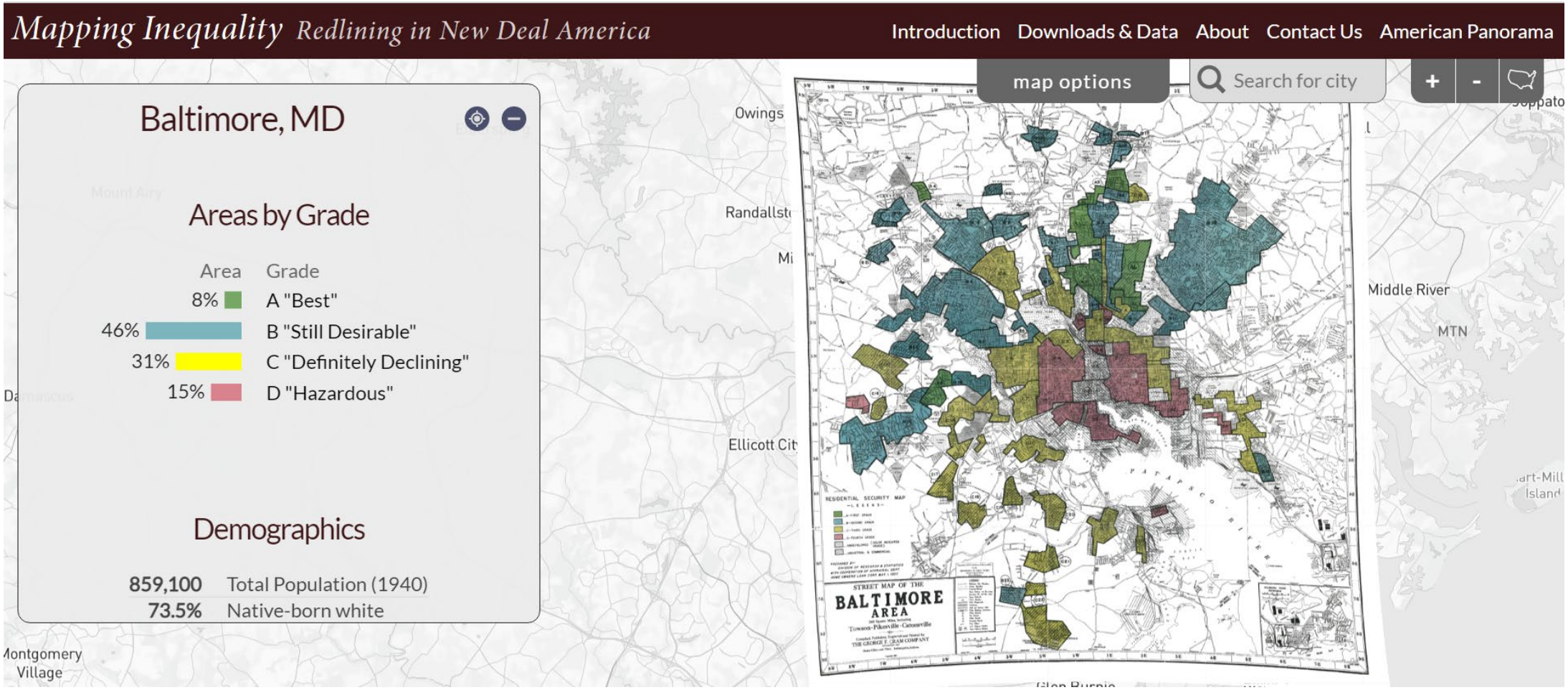
NATURAL AND BUILT ENVIRONMENT

Engineers:

b. consider and balance societal, environmental, and economic impacts, along with opportunities for improvement, in their work;

c. mitigate adverse societal, environmental, and economic effects;

Opportunities



DEI in ASCE Code of Ethics

PROFESSION

Engineers:

e. promote mentorship and knowledge-sharing equitably with current and future engineers;

f. educate the public on the role of civil engineering in society; and

g. continue professional development to enhance their technical and non-technical competencies.

PEERS

Engineers:

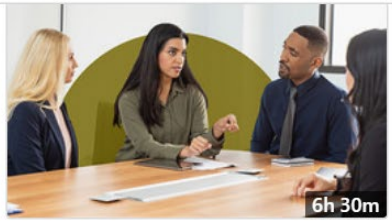
d. promote and exhibit inclusive, equitable, and ethical behavior in all engagements with colleagues;

f. encourage and enable the education and development of other engineers and prospective members of the profession;

Opportunities

LEARNING Browse diversity Home

English Type Content by Time to Complete Level All f



LEARNING PATH

Diversity, Inclusion, and Belonging for All

LinkedIn · Oct 2019

81,142 learners · Skill: Diversity & Inclusion

COURSE

Diversity, Inclusion, and Belonging

LinkedIn · By: Pat Wadors · Dec 2019

4.7 ★★★★½ (9,482) · 812,240 learners · Beginner

LEARNING PATH

Create an Inclusive Work Culture

LinkedIn Learning · 4 weeks ago

Online Ethics Center
FOR ENGINEERING AND SCIENCE

Site Search GET INVOLVED

LOG IN

HOME ABOUT OEC RESOURCES COMMUNITIES OF PRACTICE GET INVOLVED MEMBERS

HOME / SEARCH / SEARCH

Search for diversity

diversity

About searching

SEARCH RESULTS

1. Diversity in Education and the Workplace Bibliography

   … Discrimination in the Workplace **Diversity** … annotated list of websites, books and articles looking at **diversity** in education and the workplace. … goals is to address the benefits and challenges of **diversity**, inclusivity and culture within mentoring …

2. Diversity Subject Aid

   … Discrimination in the Workplace **Diversity Diversity** in Research Design and Practice … guide to some key resources and readings on the topic of **diversity** in the STEM disciplines. …

3. Chapter 6: Underrepresented Groups in Physics

But really – can it work? Curricular reform at Rowan

Strategies for Improving Diversity and Inclusion in an Engineering Department

Harriet Hartman, Ph.D.[1]; Tiago Forin[2]; Beena Sukumaran, Ph.D.[3]; Stephanie Farrell, Ph.D.[4]; Parth Bhavsar, Ph.D.[5]; Kauser Jahan, Ph.D.[6]; Ralph Dusseau, Ph.D.[7]; Theresa Bruckerhoff[8]; Peter Cole[9]; Stephanie Lezotte, Ph.D.[10]; Danilo Zeppilli[11]; and Danielle Macey[12]

What: "CEE Department's initial efforts to increase class and curricular inclusion focused on situating technical content within a broader context, drawing connections to other disciplines, recognizing the impact of technical solutions on different segments of society, and recognizing the importance of contributions of individuals from diverse groups to the field of civil and environmental engineering."
How: "Courses are being revised to include concepts from the humanities such as history of civilizations, ethics, gender/racial biases, social injustices, and public policy… using a multipronged approach."
Specifics: "Students are assigned case studies, readings, movies, and documentaries that expose them to social and cultural issues."

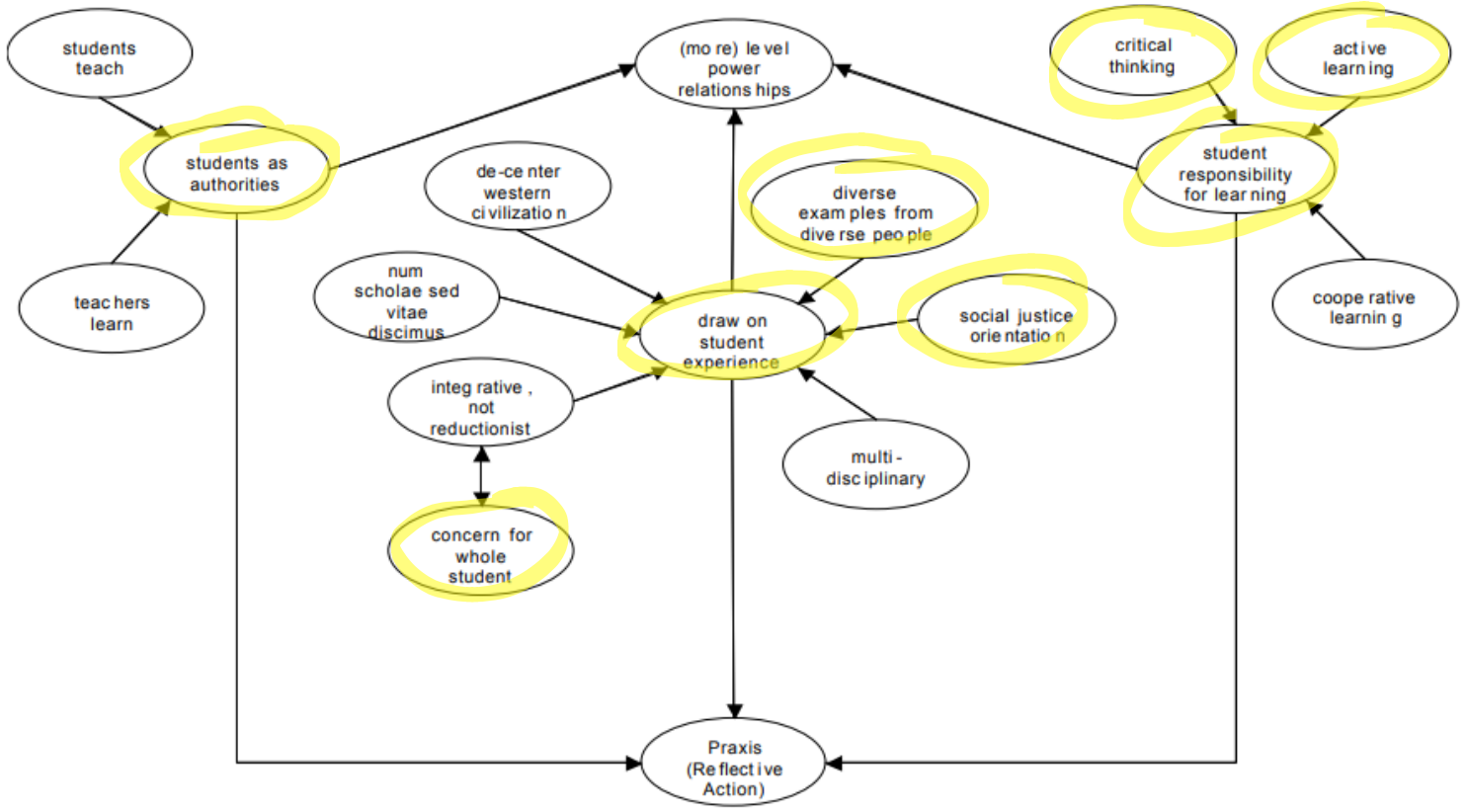
But really – can it work? Teaching thermo at Smith

Pedagogies of Liberation in an Engineering Thermodynamics Class

Donna Riley
Assistant Professor
Picker Engineering Program, Smith College
Northampton, MA 01063

Approach:

- Connect to the known to motivate & build confidence
- Have students teach content to another
- Arrange the room in a circle
- Open-ended student reflections
- De-center Western experiences
- Make student work on ethics, diversity, and inclusion matter (it should be worth credit)



For further reading

Inclusive teaching
https://ctal.udel.edu/resources-2/inclusive-teaching/

CoE inclusive teaching series
https://resources.engr.udel.edu/faculty/inclusive-teaching/

Mapping Inequality
https://dsl.richmond.edu/panorama/redlining/#loc=5/39.1/-94.58

Online Ethics Center
https://onlineethics.org/