

Table 2. Framework for introducing Inclusive Pedagogy content in Biochemistry course.

1. Science is done by individual scientists, and the scientist's personhood (who they are) affects the science produced.

Throughout the semester, we go through profiles of individual biochemists and scientists, introducing diverse scientists, with a focus on how their individual character, history and personhood affected the science done. This list includes:-

1. Dr. Linus Pauling and his activism, in the context of Sickle Cell Anemia.
2. Dr. Roland Scott and his work in Black hospitals in DC, and his advocacy for Sickle Cell Anemia research and for treatments for Black patients.
3. Dr. Fedrick Sanger, his love for difficult problems along with his unassuming humility, despite his successes in solving sequences of DNA, RNA, proteins, and sequencing genomes.
4. Dr. Maud Menten, and her persistence in pursuing both a research and medical career despite misogynistic restrictions limiting who can do research.
5. Juxtaposing Dr. Herman Branson and Dr. Robert Corey in the Pauling lab, and their relative roles in solving the secondary structures of proteins.

2. When society limits who can be a scientist, this limits scientific progress.

We use cases of biochemists to illustrate how there are restrictions and barriers to who

gets to be a scientist in a society, and how that can limit scientific progress, and is inherently unjust. The nature of these barriers and limits are discussed, and the idea is established that diversity enriches science, and therefore a lack of diversity impoverishes science.

6. Dr. Hans Krebs, a German Jewish biochemist, and his persecution in Nazi Germany followed by his successes in England both as a scientist and mentor.

7. Dr. Margaret Oakley Dayhoff, and how her training as a physical chemist introduced new ways to organize structural and sequential data in biochemistry, thus establishing the field of bioinformatics.

8. Dr. Lynn Margulis, and resistance by evolutionary biologists to her endosymbiosis theory; and the persistence required to overcome that resistance.

9. Dr. Rosalind Franklin, the brilliance of photograph 51, and the ingrained, casual misogyny and cruelty that she faced at her institute and lab that ultimately led to loss of ownership and control of her own data.

3. When there is lack of diversity in science, this can lead to science that amplifies and supports the worst characteristics of that society, reinforcing systemic racism and misogyny.

We end by revisiting the work of Dr. Linus Pauling, to illustrate how his initial work on sickle cell anemia eventually led to nation-wide talks by Dr. Pauling that horrifyingly supported identification of (Black) carriers of the mutated alleles, along with forced sterilizations and tattooing carriers (on the forehead). We place this into context of the eugenics in the U.S., and the role of science/academia in providing scientific evidence in

support of eugenics.

Importantly, we end with how eugenics lost legitimacy; through social movements like the civil rights movement, women's right movement and others that forced society to confront social injustice, and changed what is socially acceptable; to claim voice and social spaces where these groups had been excluded.

Dr. Pauling stopped his lectures in 1972, when a woman at a lecture stood up and accused him of racism and promoting genocide. He never spoke in support of eugenics again, but also never apologized.

4. The future of science belongs to you.

This framework ends with a call to action for my students.

"To be clear, the answer to the question 'Who gets to be a Scientist?' remains 'Not everyone'. These barriers are systemic, systemic racism and misogyny, and these barriers are manifested in individual everyday interactions within our field. As you proceed down your individual career paths, you will find that your agency will grow, and your ability and power to either support or challenge the status quo will increase. How will you use your power to build a better, more inclusive science? What are you compelled to do?"