

Organic
chemistry; A
call to Action
for Diversity
and
inclusion



Why & When this Paper came in picture?



In June 2020, an earthquake hit the global chemical community.

An Article published on 4th of June 2020 by Dr. Thomas Hudlicky, Professor of chemistry at Brock University, Canada, who discussed factors influencing the progress of organic synthesis in the last 25 years in a manner many found offensive. and then quickly removed as a result of rapid and strong criticism on social media and in other forums.

Certain individuals and groups, implied to be women and minorities, have been "designated" with "preferential status".

When Black Lives Matter demonstrations protesting for George Floyd's murder.

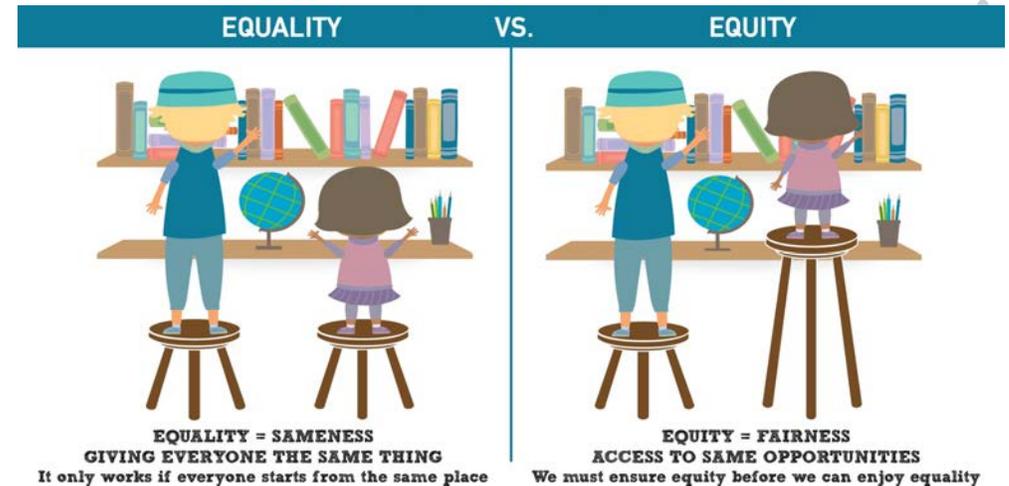
First, What Is Diversity, Equity, and Inclusion?



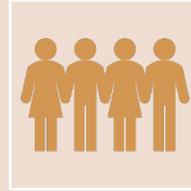
Diversity: Social diversity, runs the spectrum from race and gender identity, to nationality, sexual orientation, disability status, religious affiliation, and socioeconomic background.

Equity: Equity is about the fair treatment and equal opportunity for success and advancement for all people, irrespective of their identities.

Inclusion: Inclusion refers to an organization's active efforts to invite and nurture the participation of its diverse members.



Second, Why Do Diversity, Equity, and Inclusion Matter?



There is also substantial evidence that diverse teams are more successful.



Studies show that across many financial sectors, companies with more diverse leadership teams are more innovative and have better financial outcomes than those with lower levels of gender, racial, and ethnic diversity.



Many decades of sociological research provide strong evidence that diverse teams are more creative, make fewer factual mistakes, and make better decisions.



Second, Why Do Diversity, Equity, and Inclusion Matter?

Nobel Laureates in Chemistry often come from a diverse set of countries. A specific example of the fruits of international diversity is the synthesis of vitamin B12, which was a joint effort between groups from North America and Europe and involved 99 people from 19 countries.

Even to this day, [Carolyn Bertozzi](#) is only the eighth woman to receive the Chemistry Nobel Prize (2021), 4.1% of 191 awards; and there have been no Black Chemistry Laureates.

Diversity alone is not enough: diverse teams and their constituents need to be intentionally supported by equity and inclusivity in order for both the individuals and the team to benefit.

Current State of the Field: Progress and Challenges.



Analysis of the US faculty listed on the ACS Division of Organic Chemistry → which lists organic faculty at R1 institutions by state, found that → 13% of the listed faculty were women

only 1.4% were Black. → While this directory is not comprehensive, it is striking that 19 states did not have any female faculty members listed, → With that approximately 49% of chemistry BS and 38% of PhD degree earners are women.

These trends are consistent with the data collected by the Oxide project across all of chemistry, which show that chemistry faculty in the top 75 R1 research universities → only 20% women,

2.3% Black, → 3.1% Hispanic/Latinx → 0.3% Indigenous (data collected in 2015)

These data are a stark reminder of the attrition of talented chemists that occurs in the academy en route to the professoriate.

Current State of the Field: Progress and Challenges.



There are also marginalized groups that are not recognized by federal statistics and for whom data are not available.

For example, students who come from low-income families often lack access to resources as they proceed through their education and careers. Additionally, despite recent, hard fought, legal protections for LGBTQ+ Americans, they still suffer from significant stigma and systemic barriers to equitable housing, facilities, and healthcare that prevents their full participation in our discipline.

Women and under-represented minority chemists experience stereotype threat and higher rates of "imposter syndrome".

Even after Years of subtle (or not so subtle) messaging assert that successful individuals are "given" positions, fellowships, or awards as a result of diversity initiatives. This messaging can lead to insecurities as to whether recognitions were earned, or whether it was luck or undeserved favoritism.

What Can We, as a Community, Do to Foster Diversity, Equity, and Inclusion in Our Field?



Acknowledge our own biases. Racism, sexism, and homophobia are insidious because we have heard these messages repeated throughout our lives, so even if we personally do not suffer the negative consequences of these biases (or if we have never consciously imposed them), we are not free of them. Listen to corrections without interruptions. Own our mistakes and learn from them.

Continue to educate yourself. Familiarize yourself with the scientific literature on diversity and bias

Do not expect your colleagues and co-workers from marginalized groups to do the work of educating you.

Use privilege to speak out to combat discriminatory and abusive behaviors.

Nominate students, postdocs, and faculty from marginalized groups for networking opportunities, conferences, and awards. Insist on a diversity and inclusion mindset in selection committees.



*What Can We, as
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Our Field?*

Individual actions will not be sufficient. Systemic racism, sexism, and homophobia are sustained by institutional structures that were created in a time when the culture of science was essentially white, male, and straight.

“this culture is still pervasive”. If not Hudlicky’s Perspective would not have been made through editorial review and Peer review.

Learning to be more inclusive toward all of our colleagues and co-workers-across the entire spectrum of social diversity-is uncomfortable but necessary work if we are sincere in our efforts to make meaningful changes to the culture of organic chemistry.