



Science and Science Education by, with and for Underrepresented Students

Jessica Latimer and Peyton O'Regan (Dalhousie University)

In this session, we will share lessons from the co-creation of a microbial diversity research study motivated by the principles of environmental justice. We will also describe and evaluate its delivery as a science education workshop - a Microbial Observatory Science Outreach Module (MOSOM) - for underrepresented students in STEM. The MOSOM program uses inclusive science communication and teaching-as-learning models to highlight diversity and prosocial values while preparing students to communicate their science. With this case study we illustrate how undergraduate students can design and carry out a study of environmental racism within their community through the lens of microbial biodiversity and explore how their pro-social science communication goals shaped their learning. During this discussion participants will be asked to consider who knowledge is produced by, with and for, and how those expectations shape the creation and communication of knowledge.

References

Kobayashi, K. (2024). Interactive Learning Effects of Preparing to Teach and Teaching: A Meta-Analytic Approach. *Educational Psychology Review*, 36(1), 26.

<https://doi.org/10.1007/s10648-024-09871-4>

Massey, M. D. B., Arif, S., Embuldeniya, S., Nanglu, K., & Bielawski, J. (2022). Ten simple rules for succeeding as an underrepresented STEM undergraduate. *PLOS Computational Biology*, 18(6), e1010101. <https://doi.org/10.1371/journal.pcbi.1010101>

Vickery, R., Murphy, K., McMillan, R., Alderfer, S., Donkoh, J., & Kelp, N. (2023). Analysis of Inclusivity of Published Science Communication Curricula for Scientists and STEM Students. *CBE—Life Sciences Education*, 22(1), ar8. <https://doi.org/10.1187/cbe.22-03-0040>