

Abstract

Many agree that science must change to become more open. But change is difficult, and universities bound by size and conservative traditions may be slow to introduce incentives and rewards for the practice of Open Science (OS) (Lancaster 2016).

Johannes Vogel, director general of the Museum für Naturkunde and Professor of Biodiversity and Public Science at Humboldt University in Berlin, recognizes the power that young people have to mobilize movements and suggests that they can help to open up science. In his article “Scientists need to learn from the young”, Vogel (2019) states,

Science must learn to listen, open up and again become part of the community. Such a transformation ... will cost time and money, including the restructuring of the incentive systems in science itself.

Students have long been catalysts of social and political change, so why not introduce them to OS at an early stage? The University of British Columbia’s Okanagan Campus in Kelowna, B.C., Canada recently took the bold step of funding a two-year strategic project that includes the creation, deployment, and evaluation of a comprehensive Open Science library information literacy (IL) program specifically for undergraduates. Project leads from the Library and the Department of Biology intend to make the core tenets and practices of OS second nature to future graduates and global citizens. We believe that this initiative is unique in North America: it breaks new ground both as an effort from the university to foster change at the grassroots and as a model for comprehensive undergraduate IL instruction in Open Science.

Given the nascent nature of the Open Science (OS) movement, scant literature on best practices in library OS IL instruction exists. Extant publications on this topic (e.g. Lopes et al., 2019) tend to focus on IL instruction of researchers pursuing graduate studies – that is, EU Level 2 or higher. One exception is Ayris & Ignat, who suggest involving undergraduates (EU Level 1 students) in citizen science projects (Ayris & Ignat, 2018).

The beginning stages of the project are being implemented in the 2019/2020 academic year as a nine-module program that will interweave Open Science principles and practice into the Biology undergraduate curriculum, and five of the modules will have been delivered by the end of the 2019/2020 academic year. Ultimately, the project will attempt to secure further funding to instate the program as a micro-credential; expand it to other areas of study, starting with Psychology and Human Kinetics; and establish undergraduate research awards conditional on adherence to Open Science practices.

This talk will outline the undergraduate program’s modules and documents the creation, delivery, and evaluation of an introductory module for first-year Biology students on the Canvas

online learning platform in Fall 2019. The module, “OS 101”, will give students an overview of the practical challenges of conducting reproducible research, the societal impact of irreproducible research, and philosophical and ethical issues surrounding Open Science. Completed modules will be made available as Open Educational Resources in markdown format on GitHub.

References

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