Tested Studies for Laboratory Teaching
Proceedings of the Association for Biology Laboratory Education
Vol. 37, Article 79, 2016

Introducing Primary Literature Analysis and Collaborative Work Via a Dissection and Histology Laboratory Associated with a Huntington's Disease Inquiry-based Laboratory

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In many introductory Biology laboratory courses, students are asked to perform dissections. Often these dissections are assigned with limited contextual information and are assigned as independent assignments disparate from other laboratories required for the course. Over the course of the last several years, the curriculum of the introductory biology laboratory course series at Brandeis University has been completely rewritten to incorporate only inquiry or project-based protocols with biomedical relevance. As the number and intensity of inquiry-based laboratories has increased, the time allotted for traditional dissections has decreased while the need for scientific literacy skills has increased significantly. One module incorporated into the spring semester asked students to analyze the effectiveness of a potential inhibitor of Huntington's disease in *Drosophila* expressing polyQ repeats. We have designed a dissection and histology laboratory to be performed concurrently with the Huntington's fly experiment. During this lab, students dissect a sheep brain taking careful note of structures and features of the brain associated with Huntington's disease progression. Additionally, students perform a Nissl stain on rat brain section to more closely analyze the distinct composition of the associated tissues. In small groups, the students are then asked to complete an assignment in which they analyze a series of figures taken from primary literature articles related to neurodegenerative diseases. Preliminary results indicated that students found the assignment engaging, relevant to their ongoing Huntington's project, and increased their overall understanding of the use of model systems when studying neurodegenerative diseases.

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Citing This Article

Mehrmanesh, L.A., K.N. Piasta, and M.S. Kosinski-Collins. 2016. Introducing Primary Literature Analysis and Collaborative Work Via a Dissection and Histology Laboratory Associated with a Huntington's Disease Inquiry-based Laboratory. Article 79 in *Tested Studies for Laboratory Teaching,* Volume 37 (K. McMahon, Editor). Proceedings of the 37th Conference of the Association for Biology Laboratory Education (ABLE). http://www.ableweb.org/volumes/vol-37/?art=79