Advances in Biology Laboratory Education
Publication of the Association for Biology Laboratory Education
Volume 41, Article 70, 2020

Beyond Dissection: Modifying a Traditional Crayfish Dissection Lab to teach Hypothesis Testing, Data Analysis, and Scientific Writing

Jessica L. Goldstein

Barnard College, Biology, 3009 Broadway, New York NY 10027 USA
(**jgoldstein@barnard.edu**)

Our majors-level introductory biology class includes animal dissections in which students examine anatomical structures to help relate form and function. We wanted to expand the student's learning experience to include hypothesis testing and data analysis. To do this, we modified a traditional crayfish dissection lab to include information about organism variability and introduce statistical methods to describe and compare this variability. We chose to focus on front claw size, a sexually dimorphic trait in many decapods. This poster will describe how we gave students information from the scientific literature about the function and size of decapod claws in relation to sex. We asked students to interpret this data and form hypotheses about what they might find in their crayfish samples. Students then collected quantitative data from their specimens and statistically analyzed their data to determine if their hypotheses were supported. Students wrote a formal results and discussion section based on this experiment to help them learn principles of scientific writing and to assess understanding of the data analysis activity.

Keywords: hypothesis testing, scientific writing, crayfish dissection

Link to Original Poster File: **https://doi.org/10.37590/able.v41.poster70**

Mission, Review Process & Disclaimer

The Association for Biology Laboratory Education (ABLE) was founded in 1979 to promote information exchange among university and college educators actively concerned with teaching biology in a laboratory setting. The focus of ABLE is to improve the undergraduate biology laboratory experience by promoting the development and dissemination of interesting, innovative, and reliable laboratory exercises. For more information about ABLE, please visit **http://www.ableweb.org/.**

Advances in Biology Laboratory Education is the peer-reviewed publication of the conference of the Association for Biology Laboratory Education. Published articles and extended abstracts are evaluated and selected by a committee prior to presentation at the conference, peer-reviewed by participants at the conference, and edited by members of the ABLE Editorial Board. Published abstracts are evaluated and selected by a committee prior to presentation at the conference.

Citing This Article

Goldstein JL. 2020. Beyond dissection: modifying a traditional crayfish dissection lab to teach hypothesis testing, data analysis, and scientific writing. Article 70 In: McMahon K, editor. Advances in biology laboratory education.Volume 41. Publication of the 41st Conference of the Association for Biology Laboratory Education (ABLE). **https://doi.org/10.37590/able.v41.abs70**

ABLE strongly encourages individuals to use the exercises in this volume in their teaching program. If this exercise is used solely at one's own institution with no intent for profit, it is excluded from the preceding copyright restriction, unless otherwise noted on the copyright notice of the individual chapter in this volume. Proper credit to this publication must be included in your laboratory outline for each use; a sample citation is given above.