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Building a Community of Practice for the Assessment of Biomolecular Visual Literacy

Kristen Procko, Josh T. Beckham, Diane M. Dean, Dan R. Dries, Shelly Engelman, Margaret A. Franzen, Henry Jakubowski, Walter R.P. Novak, Sandra Porter, Rebecca Roberts, Alberto I. Roca, Audrey C. Shor

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Abstract

The ability to understand, interpret, and create molecular images is a critical learning objective in biochemistry and molecular biology courses. Yet biomolecular visualization skills are rarely explicitly taught. Over a two-year period, the BioMolViz group organized seven one-day workshops to explore and establish best practices for the generation, revision, and finalization of biomolecular visualization (BMV) assessments. Our process utilizes a BMV framework (biomolviz.org) to build targeted assessments that address specific learning goals and objectives. We then revise the assessments through a peer review process and integrate a final analysis of images for accessibility to those who are colorblind. Although there is a wealth of information to guide the creation of multiple-choice questions, we have found that there are few resources for the generation and evaluation of other types of assessments. For example, BMV assessments are more likely to be open-ended and specifically target molecular visualization skills (e.g. require the student to create an image of DNA or identify a structural feature on a given image of a protein). We invite participants to help us address this gap and refine our method for generating assessments by attending our upcoming three-day NSF-funded summer workshops. Activities will include revising existing assessments and creating instruments of interest to new participants. In addition to producing high-quality BMV assessments aligned with the framework, these workshops will offer a unique professional development for instructors interested in promoting visual literacy by building a community of practice for the

instruction of BMV skills.

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