

Lesson W-JT, Jason Telford, Maryville University of St. Louis, St. Louis, Missouri, USA

Lesson W-JT was developed for a 15-week, second semester biochemistry course at Maryville University of St. Louis, St. Louis, Missouri, USA. The goal of this project is for students to create and author a new page in Proteopedia as a means to examine the structure, function and significance of a protein or another biological molecule. Students are encouraged to choose a subject that does not already have a page in Proteopedia, but occasionally students decide to work with a structure for which a page already exists. In these cases, the student is directed to take a different tactic or write on different subjects than those that already exists.

The assignment is broken down into three independent assignments that increase in complexity and point value. In the first week students apply for an account on Proteopedia.

The first graded assignment is within three or four weeks of the start of the semester. Students research and decide on one (or two) biomolecules (usually a protein) that they are interested in, write a summary paragraph on the biomolecule and find two or three references. The biomolecule should be structurally characterized (deposited in the PDB) and should not have a dedicated page in Proteopedia. Hemoglobin is an example of a protein they should not use. This assignment is designed so that students will work with a molecule that can be put on Proteopedia and, importantly, this assignment is an opportunity for the student and instructor to discuss what the focus of the article will be.

The second assignment is two or three weeks after midterm. This comprises a two- or three-page narrative that discusses the biomolecule and includes the important points that will be highlighted in the final article and extensive references. At this stage, students are encouraged to 'storyboard' their figures to graphically organize and plan the layout and connections to the text. This will serve as the narrative to their final paper.

The final assignment is to put the paper onto Proteopedia, construct scenes, insert figures, include references and finally publish it as a new entry. This is done the last two weeks of class as an in-class project. Students work on porting the paper and additional coding during class time. The instructor, and often fellow classmates, help debug and research any code or tools that are needed. This is an opportunity for students to share their work with each other and work more deeply with the scene creation tool to embed 3D figures. Students get feedback on their writing, 3D figures and style from their classmates and the instructor as they are constructing the page.