

Abstract 1239

From Poison to Medicine: Development of a Molecular Case StudyShravya Yarlalagadda, *The University of Texas at Austin*

Kristen Procko

The Foundations of Biochemistry course at the University of Texas at Austin targets upper-division biochemistry majors and focuses on macromolecular structure, enzymes, and pathways. Some of the most challenging topics for students to visualize and comprehend are protein-ligand interactions, reaction mechanisms, and kinetics. We used the common thread between these topics to author a case study for the Molecular CaseNet network. We started with the neurotoxin, sarin, and introduced medicinal biochemistry with the vivid symptoms experienced by an individual that had survived a sarin gas attack. Then, students visualized the acetylcholinesterase active site using either the PyMOL or iCn3D biomolecular modeling programs. Next, we focused on the acetylcholinesterase mechanism and concluded with an in-depth analysis of inhibition and enzyme kinetics. We based the final activity on acetylcholinesterase's connection to Alzheimer's treatment, concluding with an optimistic outlook. The development of the Poison to Medicine case study was a faculty-led project supported by Undergraduate Course Assistants; we will present case study authorship from an undergraduate's perspective. Preliminary data from student surveys indicate positive responses to the case study format, particularly regarding the kinetics portion (IRB: University of Texas at Austin #STUDY00001087).

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Abstract 1254

Creating and Maintaining Access for Deaf and Hard-of-Hearing ScientistsPaul Craig, *Rochester Institute of Technology*

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RIT is the home of the National Technical Institute for the Deaf, the first and largest technical college for deaf and hard-of-hearing students (D/HH). It serves more than 1100 students; about half of these students are enrolled in B.S. and M.S. programs in other colleges on our campus. RIT hosted an NIGMS RISE program from 2017–2022, with the specific goal of supporting more D/HH students to enter Ph.D. programs in biomedical, biobehavioral and clinical sciences. We are now transitioning from that research grant (which was under the NIGMS R25 mechanism) to an NIGMS training grant (T34 mechanism), with the same specific goal. As we transition, we face the challenge of providing continuing support and resources that will equip our students to succeed in their undergraduate careers, so that they can compete effectively for positions in highly regarded Ph.D. programs. Under the R25 program, we developed a series of tools to support our students: the Scientists-in-Training Series, Doctoral Readiness Meetings, Mentor Training, Lab Accessibility Evaluations, Responsible Conduct of Research Workshop, and Rigor & Reproducibility in Research Workshop. This presentation will describe how we are transitioning these tools into the T34 training program format in the midst of the pandemic and the adjustments that students and faculty have needed to make.

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