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Bringing Chemical Biology to First-Year Organic Chemistry: Adapting Workshops to Remote and Online Contexts

From the perspectives of students, introductory courses, focusing on core concepts and problem-solving approaches, can feel disconnected from the global challenges and fundamental questions that inspired them to pursue science generally, and chemistry more specifically. Particularly for those students majoring in the biological sciences, organic chemistry can seem tangentially related to their subject. This talk will present an example of practice that addresses how organic chemistry enables the unraveling of biochemical puzzles. A series of workshops were developed to accompany a first-year organic course that serve a dual purpose of emphasizing the utility that first-year concepts have for contemporary and cutting-edge research, while consolidating material at key points throughout the academic year. Each workshop includes exercises similar to "typical" introductory course questions, but also ones that challenge students, while working together in small groups, to answer the same questions approached by researchers. By centering each workshop on a biochemical research endeavor, the students readily recognize the relevance of organic chemistry to their course. Initially developed as classroom sessions, these workshops have been adapted to a remote format over the past year. This talk will discuss the adaptations and online tools used to preserve the key aspects of the original workshop design: (1) synchronous student collaboration; (2) research-centered questions; (3) student-led discussion and peer-to-peer teaching (with the instructor in a facilitator role). More generally these workshops present an avenue to integrate aspects of topics that are typically considered advanced such as chemical biology, materials, and others into introductory courses in a scaffolded and accessible way.

Key words

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