Data Science and Analytics in Undergraduate Chemistry Education

Department of Chemistry, Assistant Professor, anticipated start date in August 2024

Departments of Chemistry teach introductory chemistry and organic chemistry to students across STEM, typically in large courses. Given the wide range of student backgrounds, instructors would benefit from detailed just-in-time feedback about student knowledge. Open-ended items that require students to explain their reasoning or demonstrate scientific practices provide better information to instructors and communicate to students that deep reasoning is important. Previously this has been impossible in large courses but machine-learning can revolutionize the formative assessment data available to chemistry instructors, allowing them to better meet students where they are. Learning analytics prediction models can identify struggling students earlier so they can receive additional support to improve success and retention and assess student understanding and how non-cognitive factors influence learning and engagement. This candidate will have expertise in data sciences or machine learning to develop predictive analytics with application to chemical education. Their scholarship will develop and integrate modern machine learning and/or diverse data sciences methods to transform assessment of students in chemistry, and support chemistry faculty and programs. Research synergy and collaborations across the STEM disciplines will be encouraged. The candidate will contribute to teaching in the organic chemistry program and develop coursework targeted to enhance its growing teaching needs.

The position posting is forthcoming.