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(I) Engaging diverse student interests through independent projects

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When designing coursework and assessment, there can be a tension between prescribed content and engaging diverse student interests. In this talk, I will describe how I have attempted to balance this tension by including independent projects as part of coursework. I have used independent, student-chosen projects as part of a third-year classical thermodynamics class, a third-year biophysics class, and a fourth-year biophysics lab. I'll describe the guidance given to students for the scope and presentation styles of these projects. My desire to provide students with more control over their lives during the pandemic led me to substantially broaden the scope of projects in the biophysics lecture course. Students chose projects ranging from technical reports on papers from the primary literature, to research proposals, to review articles on a biophysics topic or experimental technique, to blog posts or infographics presenting the marvelous physical properties of biological systems. The target audience for these projects ranged from their peers to graduating high school students. I'll describe how assessment for these diverse projects was conducted, how students participated in peer review, and provide some student feedback. Students and I have found independent projects to allow them to deepen their scientific learning along an axis of interest to them, and to present their findings in a format that excites them and allows them to develop their scientific communications skills.

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