

Abstract Submitted
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A Low-Cost, Hands-on Module to Characterize Antimicrobial Compounds Using an Interdisciplinary, Biophysical Approach VERNITA GORDON, KARISHMA KAUSHIK, ASHLEY KESSEL, NALIN RATNAYEKE, The University of Texas at Austin — We have developed a hands-on, experimental module that combines biology experiments with a physics-based analytical model to characterize antimicrobial compounds. To understand antibiotic resistance, participants perform a disc diffusion assay to test the antimicrobial activity of different compounds, then apply a diffusion-based analytical model to gain insights into the behavior of the active antimicrobial component. In our experience, this module was robust, reproducible, and cost-effective, suggesting that it could be implemented in diverse settings such as undergraduate research, STEM camps, school programs, and laboratory training workshops. This module addresses the paucity of structured training or education programs that integrate diverse scientific fields by providing valuable, interdisciplinary research experience in science outreach and education initiatives. Its low cost requirements make it especially suitable for use in resource-limited settings.

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