

Anatomy in Action: Incorporating 3D Printing in Pre- Collegiate Anatomy Education

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Abstract:

Increasing and maintaining student engagement within anatomy education at a pre-collegiate level is a challenge that educators continue to encounter. Finding an appropriate level of difficulty that prepares students for the rigor of undergraduate anatomy education while balancing the need to inspire student interest in STEM-related fields of study can inadvertently discourage students, particularly when content is relayed in a 'traditional' lecture-based curriculum.

The University of Colorado's Pre-Health Scholars Program (CUPS) is an academic enrichment program for high school students from under-represented minority groups who are interested in healthcare and STEM- related professions. To address the challenges in pre-collegiate anatomy education, the CUPS anatomy curriculum has shifted away from instruction that is purely lecture-based, to a project-oriented curriculum utilizing 3D printing. Here, students are encouraged to connect hands- on experiences and collaborate on individualized projects that require mastery of anatomical principles to create. Students are also introduced to anatomic structures in a multi-dimensional fashion that allows them to examine the complementary relationship between structure and function. This model of curriculum has the potential to improve engagement and create better foundations of anatomical knowledge through thoughtful instructional design.