# Modeling and Designing a Sustainable Bicycle Helmet

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This project seeks to improve the overall sustainability of the bicycle industry by improving helmet materials and design. To accomplish this, I made use of 3D modeling and printing in combination with biodegradable foams to create a functional helmet. My results show that 3D printing technology is suitable for creating a structurally sound helmet shell and absorptive layer, and that a fully sustainable loop with proper waste management is possible due to the ability for 3D printed material to be returned to filament form once used. In addition, the biodegradable foams use were found to be useful in both absorptive purpose and in head forming. For manufacturers, this could indicate that switching to more sustainable materials and manufacturing methods may be a viable option in the future to reduce plastic waste output and provide a positive environmental impact.

**Awards Won:**