

Purdue Pete Unveiled: The Story and Technology Behind the Mascot

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Abstract

This project aims to introduce Purdue students to the unique story and advanced manufacturing process behind Purdue Pete, Purdue University's iconic mascot. For over a decade, we have been involved in creating Purdue Pete models using aerospace-grade carbon fiber-reinforced composites, making the mascot both lightweight and exceptionally durable. While Purdue Pete may have once been voted the “creepiest” mascot in the U.S., repeated interaction and knowledge of his history reveal a character with depth and charm. Sharing this story with students offers an opportunity to build a deeper connection with the Purdue legacy.

The manufacturing of Purdue Pete mirrors techniques used in the aerospace industry, involving reverse engineering, 3D laser scanning, and precision mold-making with CNC milling. The final structure is created by curing carbon fiber composite prepregs in an autoclave under elevated temperature and pressure. This complex process highlights the sophistication of composite technology, offering students a chance to appreciate Purdue Pete’s creation on a technical and artistic level.

For Boiler Gold Rush (BGR) 2025, we plan to showcase Purdue Pete’s evolution through displays of his design iterations and stories, a 3D model, mold samples, and an educational video of the manufacturing process. This exhibit aims not only to entertain but to instill pride in Purdue’s innovative spirit. Beyond BGR 2025, the vision is to establish a permanent “Hall of Purdue Pete,” featuring a comprehensive history, live manufacturing demonstrations, and a collection of themed designs. This space would become a resource for students, alumni, and families, celebrating Purdue Pete’s legacy and engaging the Purdue community in an ongoing tradition. The BGR 2025 Entertainment Challenge marks the beginning of this larger initiative, fostering a lasting connection with Purdue Pete for generations to come.

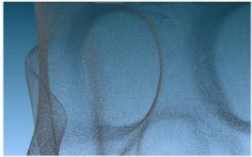
Budget

Labor	Students hourly payment \$10/hr	\$2,000
Material	Composite material showcase sample manufacturing cost (prepreg, mold, equipment operating cost)	\$800
Presentation	Video, presentation & poster	\$200
Total		\$3,000

Virtual Process to Reverse Engineer Pete



Laser 3D Scan of Master Mold



Point Cloud Data Collection



Surface Mesh

Refined Surface Generation (CATIA)



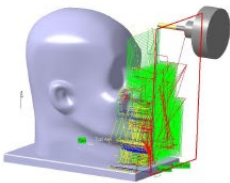
Master Mold Recreation



3D Printed Prototype

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CNC G-Code



Machining Tool Path

