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Academic Excellence

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Academic Excellence

03.05.2009 | Students From 1 to 5 p.m. Friday, Kennedy Union will be a treasure trove of academic excellence, with students presenting their honors theses on topics as diverse as nanofibers and cultural commodification. Here's a sample:

"The Viability of Carbon Foam as a Material for Bone Implants"

Mechanical engineering and German major Beth Huelskamp's honors thesis provides insight about advanced materials that could be superior to metal pins and plates in helping bones to heal.

In her work with Khalid Lafdi of University of Dayton Research Institute and biology professor Panagiotis Tsonis, Huelskamp studied carbon-based foams that could lend strength to bones while they heal. Carbon foam is strong enough to be used in lieu of titanium pins and metal plates but is much lighter and more resistant to rejection. Plus, because it's resorbable, it wouldn't have to be surgically removed, Huelskamp said. Carbon foam could help improve bone regrowth, and patients should experience less discomfort.

For her thesis, she recorded the growth of osteoblast cells on carbon foams of varying porosities and measured the strength of foams made with different base materials, geometries and coatings. Using that data, researchers can decide which foams would be the best candidates for further study.