

Abstract Submitted  
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**Can Wettability Predict Cell Adhesion? Using Laser Ablation to Improve the Biointegration of Titanium Implants.**<sup>1</sup> JULIA WRIGHT, Willamette University — The speed and effectiveness of cell adhesion on an orthopedic implant can significantly affect a patient's recovery time and the long-term performance of the implant. Recently, laser ablation has been suggested as a method of texturing these implants to improve cell adhesion. However, different techniques and parameters for ablation can yield much finer or rougher surface textures. Directly testing the biocompatibility of these different surfaces by placing and growing cells on them is a tedious and time-consuming process. However, an alternative to this could be determining the wettability of the surface as measured by the contact angle between the edge of a water drop and the surface. This is a quicker macroscopic measurement that would allow us to efficiently characterize a wide variety of ablation parameters. So far, we have found that cell count increases dramatically at a very specific contact angle and set of ablation parameters. Therefore, we are now attempting to replicate these results for a different ablation pattern in order to show whether cell adhesion improves at this same contact angle regardless of ablation parameters. In my poster presentation I will discuss our results so far, and their implications, as well as future plans for the project.

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