JEREMY GLYNN
Oregon Health and Science University, Biomedical Engineering

Degrees:
B.S. in Biomedical Engineering, University of Wisconsin – Madison

Scholar Award Donors:
ARCS Foundation Portland Chapter

About the Scholar:
Jeremy is developing cardiovascular devices that resist blood clots. Specifically, Jeremy is covering vascular graft material with cells derived from blood to reduce blood clots on small diameter vascular grafts. Additionally, Jeremy is modifying a biomaterial with a bioactive complex to generate an anti-coagulant at the surface of a venous valve. The efficacy of these modifications is assessed with a number of techniques including *in vitro* quantification of coagulation factor production and *ex vivo* measurement of clot formation in an arteriovenous shunt loop with flowing blood. Outside of lab, Jeremy enjoys many outdoor activities including cross-country skiing, cycling and running.

Benefits to Society:
Currently, there are no clinically-viable small diameter vascular grafts, nor are there any artificial venous valves. Jeremy's work is improving upon past designs by attempting to reduce blood clot formation on the devices, which is the predominant cause of failure for both devices. The vascular graft would be used to replace occluded small blood vessels, such as the coronary arteries during a bypass operation, and the artificial venous valve would be used in the treatment of chronic venous insufficiency. Additionally, the modification techniques Jeremy is developing could be used to improve the performance of other cardiovascular devices that suffer from unwanted blood clot formation.

Awards and Honors:
NSF Graduate Research Fellowship

Publications and Posters:
"Characterization of the heterogeneity in endothelial outgrowth cells' surface marker expression and thromboprotective function." **Jeremy J. Glynn**, Deirdre E.J. Anderson and Monica T. Hinds. – Poster presented at the *Gordon Research Conference: Signal Transduction by Engineered Extracellular Matrices* – Biddeford, ME, July 7-8, 2012.

"Functional assessment of flow-conditioned, endothelialized ePTFE grafts and their correlation to in vitro hemostatic markers" Deirdre E. J. Anderson, **Jeremy J. Glynn**, Randall F. Ankeny, Robert M. Nerem, and Monica T. Hinds – Poster presented at the *International Symposium on Biomechanics in Vascular Biology & Cardiovascular Disease* – Georgia Institute of Technology, April 26-27, 2012

"Thrombotic responses of endothelial outgrowth cells to protein-coated surfaces." Kathryn A. McKenna, Deirdre E. J. Anderson, **Jeremy J. Glynn**, Ulla Marzec, Stephen R. Hanson, and Monica T. Hinds. *Journal of Tissue Science and Engineering*. In Press.