



**Heather O'Leary**  
**PhD Graduate**  
**Cancer Cell Biology Graduate**

**Advisor: Laura F. Gibson, Ph.D.**  
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**My Research:**

While in the Gibson lab I studied the role of cues from the bone marrow microenvironment in leukemic cell protection from chemotherapy. My work focused on the expression of VE-cadherin (Vascular Endothelial Cadherin) in Acute Lymphoblastic Leukemia (ALL) and its role in the response of leukemic cells to treatment. During my graduate research we determined that VE-cadherin in ALL was regulated by Abl kinase activity and was also maintained by the bone marrow stromal cells. The expression of VE-cadherin, and its regulation by the bone marrow microenvironment, resulted in the leukemic cells being more resistant to chemotherapy. Inhibition of VE-cadherin signaling sensitized the leukemic cells to chemotherapy even in the presence of bone marrow derived survival cues. These data warrant further investigation into VE-cadherin as a potential therapeutic target in ALL. This work was recently published in *Cancer Microenvironment* (O'Leary, et. al) and was presented at the 2010 TRC3 Conference.

**Future Plans:**

I am currently a post doctoral fellow in the laboratory of Robert Brock. After this fellowship, I aim to find a second postdoctoral fellowship that will allow me to obtain funding as well as a faculty position so that I may continue doing research as a principal investigator.