



David Edwards

Oregon Health & Science University, School of Medicine, Cancer Biology Department

Degrees:

B.S. Molecular Biosciences and Biotechnology, Arizona State University

B.A. Creative Writing, Arizona State University

Advisor:

Jeffrey Tyner, Ph.D.

Scholar Award Donor:

Sharon & Henry Hewitt

About the Scholar:

David is investigating gene expression patterns within subtypes of acute myeloid leukemia (AML), the deadliest hematological malignancy in the United States, in order to identify mechanisms of chemotherapy resistance and improve targeted therapy. This research involves analyzing a complex array of data from thousands of patient samples, combining next-generation sequencing and target prediction algorithms. A benefit of using vast amounts of information to answer specific biological questions will be to increase our general understanding of the mechanisms of the onset and progression of leukemia, especially in rare and understudied subtypes of AML.

Benefits to Society:

AML is the deadliest hematological malignancy in the United States, and no targeted therapy currently exists against RUNX1. David's research will harness new bioinformatics approaches and techniques to identify critical downstream proteins that are aberrantly expressed in patients with RUNX1 abnormalities. The results of his research have direct applications in the clinic, where eventually these inhibitors could be used as novel targeted therapies in patients suffering from this disease. Overall, one benefit of this focused approach using vast amounts of information to answer specific biological questions will be improving our general understanding of the mechanisms of leukemogenesis, especially in rare and understudied subtypes of AML.

Awards and Honors:

NSF Graduate Research Fellowship (2014)

OCTRI OSLER Fellowship [NIH TL1] (2014) – *declined*

NSF Graduate Research Honorable Mention (2013)

Publications and Posters:

Raz, G., Allen, K.E., Kingsley, C., Cherni, I., Arora, S., Watanabe, A., Lorenzo, C.D., **Edwards, D.K.**, Sridhar, S., Hostetter, G., and Weiss, G.J. (2011) Hedgehog signaling pathway molecules and ALDH1A1 expression in early-stage non-small cell lung cancer. *Lung Cancer* 76(2):191-6.