Heather Machkovech
hmmachko@uw.edu

EDUCATION

University of Washington
MD/PhD program, entered 2012 — Seattle, WA
Department of Genome Sciences

Washington University in St. Louis — St. Louis, MO
Bachelor of Arts, Graduated May 2009
Major: Chemistry

Honors and Awards:
NIH Viral Pathogenesis Training Grant (2015-present)
ARCS Fellowship (2014)
Summa Cum Laude (2009)
Weissman Award in Chemistry Washington University (2009)
Sigma Xi (2009)
HHMI Summer Undergraduate Research Fellowship (2008)

RESEARCH

Fred Hutchinson Cancer Research Center, Department of Genome Sciences, University of Washington
Graduate Student, Bloom Lab — *2014 - Present*

- Statistical analysis to identify evidence of positive selection of CD8 T-cells on influenza
- Evaluate mechanisms of influenza CD8 T-cell epitope generation

Washington University in St. Louis School of Medicine, Department of Cardiology
Research Technician, Schaffer Lab — *2010 – 2012*

- Delineate mechanism of macrophage cell death and ceramide production mediated by saturated fatty acids and bacterial LPS
- Evaluate role of macrophages in murine model of lipotoxic cardiomyopathy

Washington University in St. Louis, Department of Chemistry
Undergraduate Researcher, Maurer Lab — *2008 – 2009*

- Develop a method for patterning a surface using light by organic synthesis of a photo-reactive molecule

Washington University in St. Louis School of Medicine, Department of Cardiology
Undergraduate Researcher, Ory Lab — *2006 – 2007*

- Molecular characterization of mutant cell line with defects in cholesterol trafficking

Publications (* Authors contributed equally to work)

Machkovech HM, Bedford T, Suchard MA, Bloom JD. Positive Selection in CD8+ T-Cell Epitopes of Influenza Virus Nucleoprotein Revealed by a Comparative Analysis of Human and Swine Viral Lineages. *J Virol*. 2015; 89(22), 11275–11283.

Kumar A, *Dougherty M, *Findlay GM, *Geisheker M, *Klein J, *Lazar J, *Machkovech HM, *Resnick J, *Resnick R, *Salter AI, et al. Genome Sequencing of Idiopathic Pulmonary Fibrosis in Conjunction with a Medical School Human Anatomy Course. *PLoS One*. 2014; *9*(9), e106744.

Schilling JD, Machkovech HM, He L, Diwan A, Schaffer JE. TLR4 activation under lipotoxic conditions leads to synergistic macrophage cell death through a TRIF-dependent pathway. *J Immunol*. 2013; 190(3):1285-96.

Schilling JD, Machkovech HM, He L, Sidhu R, Fujiwara H, Weber K, Ory DS, Schaffer JE. Palmitate and lipopolysaccharide trigger synergistic ceramide production in primary macrophages. *J Biol Chem*. 2013; 288(5): 2923-32.

Schilling JD, Machkovech HM, Kim AH, Schwendener R, Schaffer JE. Macrophages modulate cardiac function in lipotoxic cardiomyopathy. *Am J Physiol Heart Circ Physiol*. 2012; 303(11): H1366-73.

TEACHING EXPERIENCE

Teaching Assistant for Fundamentals of Genetics and Genomics, University of Washington (2016)
Teaching Assistant for Advanced Physical Chemistry Lab, Washington University in St. Louis (2009)
General Chemistry Peer Led Team Learning group leader, Washington University in St. Louis (2006-2009)