VANDERBILT SCHOOL OF MEDICINE | Basic Sciences

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Biosketch

Dr. Alyssa Hasty earned her Ph.D. at Vanderbilt University and completed a postdoctoral fellowship at Tokyo University. She is currently a Professor in the Department of Molecular Physiology and Biophysics and in 2017 she received a Cornelius Vanderbilt Endowed Chair. She was Director of Graduate Studies for the MPB Department for 6 years, was one of the founding members of Women on Track and is currently the Director of the DDRC Career Development program. In 2017, Dr. Hasty was appointed as Associate Dean for Faculty Development of the Basic Sciences in the School of Medicine.

Key Publications

"High CD8 T cell receptor clonality and altered CDR3 properties in adipose tissue of obese mice," 2018, *Diabetes*

"Links between Immunologic Memory and Metabolic Cycling," 2018, *Journal of Immunology*

"Obesity impairs adipose tissue macrophage and systemic iron handling," 2014, *Diabetes*

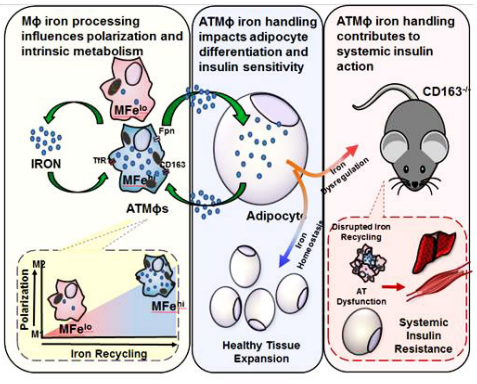
The Traitor Within: How our immune system can betray us to promote diabetes

We study **how obesity impacts health**. The growing worldwide obesity epidemic is frequently linked to hyperlipidemia, inflammation, and insulin resistance leading to increased risk of diabetes and cardiovascular disease.

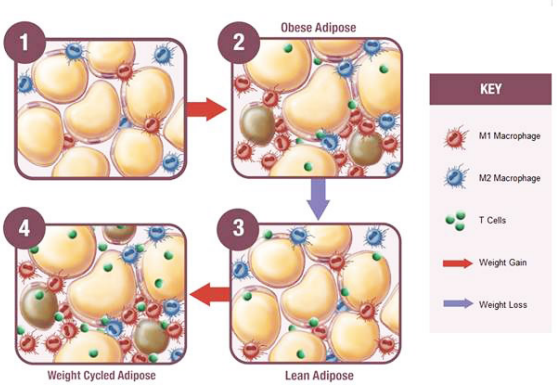
The **long-term goal** of our laboratory is to determine mechanisms by which obesity increases risk for and pathophysiological consequences of these devastating diseases.

Macrophages are part of the innate immune system that infiltrate white adipose tissue (fat) in obese rodents and humans, and produce most of the inflammatory cytokines and chemokines secreted from adipose tissue. In addition, their presence has been shown to be temporally associated with the development of insulin resistance.

Our **current research focus** is threefold: to determine mechanisms by which macrophages accumulate in adipose tissue, to determine the role of resident macrophages in normal adipose tissue function, and to determine how other immune cells like eosinophils and T cells also contribute to adipose tissue function.



Macrophage iron handling is critical for adipose tissue health



Adaptive immune cells contribute to worsened metabolic disease in weight cycling