



NATHAN SHOCK CENTERS
OF EXCELLENCE IN THE
BASIC BIOLOGY OF AGING

PILOT AWARDEE SPOTLIGHT



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Role of CD8 T cells in age-related liver and visceral adipose inflammation

How did you become interested in aging?

Truthfully, I fell into aging research by accident! During my undergraduate and PhD studies I was primarily interested in exercise physiology. My PhD mentor, Dr. Chris Woodman introduced me to the mechanisms of aging in the blood vessels and that really set the hook in and I've been interested in the biology of aging ever since.

Briefly describe your project in non-scientific terms. What questions are you trying to answer?

Aging is associated with increased risk of Type 2 diabetes. One of the ideas we are testing is that old CD8 T cells from the immune system contribute to inflammation and dysfunction of the liver and adipose tissue with aging.

What previous research or experience informed the development of this proposal?

There are a couple of reports that have shown that T cells contribute to metabolic dysfunction in young obese mice. In addition, we recently published a paper in *GeroScience* showing that total T cells (all T cells not just CD8s) contribute to glucose intolerance in old mice. We are now working on figuring which type of T cell is the major contributor to this effect.

What's exciting about your project's potential impact?

We think that is possible that aged T cells contribute to multiple age-related chronic diseases. If we can figure out how to preserve T cell health with age it may help us prevent have to employ a "whack-a-mole," different drug for each disease approach of healthcare in older adults.

If your project is successful, what is the next step?

If these CD8 cells are indeed the "bad guys" we are trying to figure out why they are going to adipose and liver and what they are doing when they get there.

How has support from and collaboration with the NSCs helped further this project and/or your research overall?

This award is really helpful to our research program. The San Antonio Nathan Shock Center has the expertise in histology and next generation sequencing to complement the existing strengths of my lab. I anticipate that this award will contribute to future NIH grant applications and high impact publications.