



# RMB CVRC Seminar

The Robert M. Berne Cardiovascular Research Center Presents

## Heddwen Brooks, PhD

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### **Sex differences in hypertension, inflammation and diabetes, and the impact of menopause on disease progression**

Premenopausal females are known to be protected against developing hypertension. However, after going through menopause, a woman's risk of developing hypertension and other cardiovascular complications increases dramatically. The average age of menopause for women in the US is 51, thus a significant proportion of a woman's lifespan is spent in the postmenopausal state. Despite the longstanding knowledge that premenopausal women are protected from developing hypertension, our fundamental understanding of the shift in blood pressure regulation that occurs with menopause, remains inadequate. It is critically important to understand the different mechanistic pathways leading to hypertension in post-menopausal females in order to adequately treat and combat postmenopausal complications.

Our lab addresses how premenopausal females are protected hypertension and we investigate the role of the immune system in this protection and then how the immune system changes with menopause. We study sex differences in the ability of T cells to mediate Ang II hypertension, and how estrogen influences T cell populations in the kidney. Using the VCD model to induce menopause we have demonstrated that following menopause, T cells activation causes a significant increase in blood pressure in the presence of a hypertensive stimulus and have a significant increase in renal proinflammatory cytokines (Pollow 2019). I will also present our work in diabetic kidney disease, looking at the role of menopause to remove female protection from metabolic syndrome

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**Thursday February 27, 2025**  
**11:00 AM-12:00 PM**  
**MR5 Room 3005**

**\*\*Refreshments served\*\***  
Hosted by: Brant Isakson, PhD