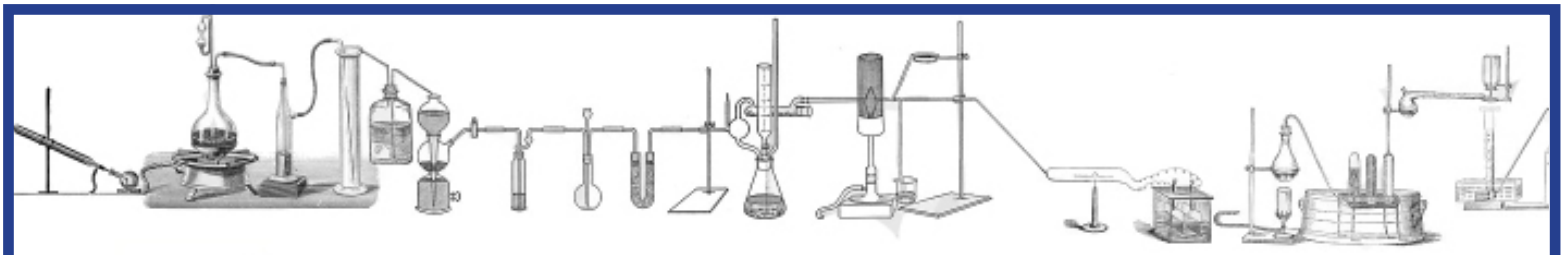

Seattle Institute for Biomedical and Clinical Research

January - March 2023

Spotlight Feature

ELIZABETH RHEA, PHD

Elizabeth Rhea, PhD, is a Research Biologist at the VA Puget Sound Health Care System and Research Assistant Professor at the University of Washington (UW) in the Division of Gerontology and Geriatric Medicine. She received her PhD from Vanderbilt University in 2014 in Molecular Physiology and Biophysics. During her time as a post-doc at the UW in Dr. Bill Banks' lab, she developed a great interest in the blood-brain barrier (BBB) and transport of key regulatory peptides, such as insulin, into the brain. While much is known about the impact of hormones within the brain, little is known about how they are transported across the BBB. Currently, Dr. Rhea is further investigating transport properties and the role of BBB proteins and serum factors in BBB peptide transport.

In addition, while insulin signaling in the periphery is well-characterized and helpful in advancements for treatments with diabetes, the role of insulin action in the brain for cognitive improvements is still unclear. Brain insulin resistance is a common feature in Alzheimer's disease and understanding how brain insulin resistance arises is a big area of research for Dr. Rhea. Dr. Rhea is currently exploring ways to reverse brain insulin resistance by increasing brain insulin levels through enhanced BBB transport, intranasal delivery, or direct delivery to the brain. Further understanding the transport of insulin into the brain as well as the basic molecular impact once present in the CNS is a current ongoing study of Dr. Rhea. It is her goal to better understand how insulin is transported into the CNS and what it does once it gets there, especially under various conditions, such as aging, Alzheimer's disease, and diabetes.

Her National Institutes of Health supplement and ongoing local pilot projects and a foundation award are aimed at further elucidating the connection between the BBB and brain insulin resistance. She is investigating the contribution of the insulin receptor in astrocytes and neurons on insulin transport into the brain. She is also investigating the relationship between levels of the soluble insulin receptor in CSF from Alzheimer's disease patients and brain insulin signaling. Lastly, she has begun exploring the impact of exercise on the BBB, as it relates to insulin interactions.

In her free time, Elizabeth goes on adventures with her husband, two young kids, and energetic yellow Labrador. They enjoy camping, snowshoeing, hiking, and tidal pool exploring. She enjoys cooking and tackling creative projects with wood.

NEW WEBSITE

A new SIBCR website will lauch on January 10th!

SIBCR is hosting a demo and Q&A Session on January 13th.

Email webadmin@sibcr.org to request an invite.

GOT IDEAS?

SIBCR is working with members of the VA Puget Sound's Inclusivity, Diversity, Equity, and Accessibility (IDEA) Committee to assess ways in which SIBCR can provide IDEA related educational opportunities that add value to your experiences as investigators, research staff, research administrators, and our Veterans. If you would like to provide feedback and suggestions for content and/or speakers, please reply to the questionnaire sent to you on December 21st. If you did not receive the questionnaire, please email dei@sibcr.org. Thank you!