

RESEARCH INTERN – NEWMAN LAB

POSITION SUMMARY

Ketone bodies are the energy currency that allows the body's cells to utilize fats for fuel. They are made normally in the liver from fats whenever carbohydrates are scarce, as when fasting or exercising. Ketone bodies are to fats what glucose is to carbohydrates. But beta-hydroxybutyrate has signaling activities as well, including regulating gene expression, modulating inflammation, and controlling metabolism by inhibiting enzymes, binding to proteins, and activating receptors. We have found that long-term exposure to ketone bodies using a ketogenic diet can extend the healthy lifespan of normal mice and, in particular, protect the aging brain. We seek a mechanistic understanding of how ketone bodies might work in an aging mammal to promote health, particularly in age-related memory decline and Alzheimer's disease. Our goal is to develop targeted therapies that might enhance the resilience of older adults to diseases like Alzheimer's and stresses like hospitalization.

LEARNING OBJECTIVES

- Explore basic laboratory techniques (i.e., pipetting, making buffers)
- Learn to perform quality benchwork and assays (i.e., making solutions, running PCRs, Western blots and immunostaining)
- Collaborate with scientists on how to use analytical and chemistry skills
- Practice lab record keeping skills
- Introduction to data analysis

ADDITIONAL INFORMATION

- Spring
- Part-time position (8 to 12 hours per week)
- Intern will be paid \$1,500 for the term

KEY RESPONSIBILITIES

- Assist in the operation and maintenance of the laboratory and related areas
- Perform specialized and technical duties
- Prepare and maintains chemical solutions, media, biological specimens, reagents
- Perform a variety of assays
- Operate a variety of equipment

QUALIFICATIONS

- Working towards AA/BA/BS degree in a biological, chemical or physical science
- Strong aptitude, background, and knowledge of basic scientific theory
- Strong motivation to perform research
- Excellent technical and problem-solving ability
- Precise attention to detail and accuracy
- Works well both with other scientists under general supervision as well as independently
- Excellent communication, interpersonal and organizational skills

ABOUT US

Our success will ultimately change healthcare. At the Buck, we aim to end the threat of age-related diseases for this and future generations by bringing together the most capable and passionate scientists from a broad range of disciplines to identify and impede the ways in which we age. We are an independent, non-profit institution located in Marin County, CA, with the goal of increasing human healthspan, or the healthy years of life. Globally recognized as the pioneer and



Live better longer.

leader in efforts to target aging—the number one risk factor for diseases including Alzheimer’s, Parkinson’s, cancer, macular degeneration, heart disease, and diabetes—the Buck seeks to help people live better longer.

We are an equal opportunity employer and strive to create an atmosphere where diversity of identity, experience, and background are welcomed, valued, and supported. Candidates who contribute to this diversity are strongly encouraged to apply.

TO APPLY

Please send a resume and cover letter indicating your interest in this internship opportunity via email to HRrequests@buckinstitute.org.