UA Center for Transformative Research in Metabolism
Translational Advisory Committee, Draft Agenda
Tuesday, February 20, 2024
11:30 a.m.-12:30 p.m. AST; 12:30-1:30 p.m. PST; 2:30-3:30 p.m., CST; and 3:30-4:30 p.m., EST

Join Zoom Meeting

TAC Meeting Objectives: (1) Report on the CCD event for veterinarians (2.20.2024) and funding to support the CCD assessment project; (2) Discuss TRiM's focus integrating research involving hibernation science, canine studies, metabolism, and aging in its translational efforts; (3) Schedule date for the next TAC meeting and discussion topics. If you are unable to make the meeting or have questions, please email Denise, dldaniello@alaska.edu, or Kriya Dunlap, kldunlap@alaska.edu.

Participants	Attend	Invitees	Attend
Kriya Dunlap			
Nicolaas Deutz			
Katherine Tuttle			
Daniel Promislow			
Judith Kelleher			
Greg Pietsch			
Kelly Drew			
Denise Daniello			

Time (AST)	Topic	Lead
11:30 a.m.	• Welcome and call the meeting to order	Kriya
11:35 a.m.	• Report on the upcoming CCD event and the NeuroNascent grant to the UAF Dept of Veterinary Medicine to support a CCD assessment project for Interior Alaska	Greg and Judy
11:45 a.m.	• What is the connection between using the canine model and the hibernation discovery platform in TRiM's translational research?	Kelly and All
12:00 p.m.	• What types of translational research projects can TRiM pursue given our resources, investigators' interests, and infrastructure capacity? What sets TRiM apart from other research centers that focus on metabolism and aging?	Kelly, Kriya, and ALL
12:10 p.m.	• How can the TAC complement TRiM's work and support the development of research aims for the COBRE renewal?	Kelly, Kriya, and ALL
12:20 p.m.	• TAC member updates • Set the next meeting date and suggestions for discussion topics • Adjourn	All

TRiM Translational Advisory Committee (TAC) Meeting Notes
June 28, 2023, 12:30-1:30 p.m. (ADT)

Members Present: Kriya Dunlap, Chair, Kelly Drew, PhD; Nicholaas Deutz, PhD, MD; Judith Kelleher-Andersson, PhD; Daniel Promislow, DPhil; and Denise Daniello, MA (ex officio)

Meeting Purpose: New member introductions, research updates, discuss future directions for translational research using the canine model, and suggest topics for the next meeting.

Discussion

Introduce New Members – The TAC gained three new members who provided self-introductions. Other committee members introduced themselves to the new members. TAC's new members include Kriya Dunlap, PhD, Judith Kelleher-Andersson, PhD, and Greg Pietsch, DVM.

Kriya Dunlap, PhD, an Associate Professor of Chemistry and Biochemistry at UAF, was a recent TRiM pilot project investigator engaged in canine studies and will complete her project on June 30. Her project goal was to determine the dietary effects of increased vitamin D found in wild Alaskan salmon on the biomarkers of brain aging associated with insulin signaling, cognitive functioning, and metabolic health using the sled dog model. Kriya was awarded a R03 grant from the NIH National Institute on Aging in May 2023 for her project titled *Vitamin D and Healthy Aging, Establishing the Sled Dog Sentinel for the Circumpolar North*. This project begins on July 1st, 2023. Kriya agreed to serve as TAC's Chair, taking over from Kelly as interim.

Judith Kelleher-Andersson, PhD is the founder and CEO of NeuroNascent, Inc., a small molecule drug company in the biotechnology industry for developing novel therapies to treat chronic neuron degenerative diseases. Judith has more than 20 years of research experience in the fields of Alzheimer's disease, Parkinson's disease, and other age-related chronic cognitive disorders. Her research focuses on developing drugs to increase neuron regeneration in affected brain areas for patients with neuron degenerative diseases. Judy shared that her company has a therapeutic drug heading toward a phase 2 clinical trial for Alzheimer's and Parkinson's disease. She has done animal research as well as human clinical research and is very interested in using canines as a natural translational model.

Greg Pietsch, DVM is an Assistant Professor of Veterinary Medicine at UAF. Before coming to UAF, Greg was in clinical practice for 20 years specializing in small animal veterinary medicine. Greg noted that he helped draft the IACUC protocol for the newly proposed canine research project that aims to assess the incidence of CCD in dogs living in the Interior and the need for intervention. Down the road, we may be able to test a novel USP-grade therapeutic developed by NeuroNascent, Inc. in dogs showing clinical signs of canine cognitive dysfunction and to evaluate any improvements in memory, anosmia, anxiety, as well as volume changes in the hippocampus. The MRI at UAF, part of the Health and Metabolism Research Core, will be used for brain imaging to measure volume changes in the hippocampus as a result of the drug treatment. The MRI is currently being used by Kriya Dunlap's research for brain imaging. Greg noted that using canines in research is proposed as a translational model with the potential to inform human clinical trials.

Kelly Drew, PhD is Director of the Center for TRiM and a Professor at the UAF Department of Chemistry and Biochemistry. She is also the owner of BeCool Pharmaceutics, a small drug development company focused on creating therapeutics to modulate metabolism and body temperature by mimicking mechanisms used in hibernation. She is excited to have Kriya Dunlap on the TAC and serve as Chair to explore new research paths using canines for TRiM's translational research.

Nicholas Deutz, MD, PhD, serves as Director for the Center for Translational Research in Aging and Longevity, at Texas A&M University. His research has focused on the role of nutrition, metabolism, and physiology studies using stable isotopes and methodologies, in both humans and large animals. His current research involves protein and amino acid metabolism, focusing on the anabolic effects of specialized nutritional protein

supplements to address different chronic diseases, including muscle wasting. Dr. Deutz noted he was recruited to serve on the TAC by Dr. Robert Coker, who was TAC's first Chair. Dr. Coker was formerly the PI on TRiM's Project 3 which employed a small human clinical trial to study the effects of an experimental meal replacement to improve metabolic health for older obese adults. Dr. Coker was a UAF professor as well.

Daniel Promislow, DVM has been the Co-Director of the Dog Aging Project at the University of Washington for the last 15 years. He has a long-standing interest in aging and previously studied the genetic and environmental determinants of the natural variation for aging and age-related diseases. The Dog Aging project has had over 45,000 dogs enrolled since the project's inception. This research follows the life of the dog to understand the determinants of healthy aging and dogs.

Denise Daniello, MA, is the Program Coordinator for the Center. She is an established advocate, planner, and educator regarding older adult issues in Alaska, at the state and local levels. She completed an MA degree in anthropology from UAF.

Katherine Tuttle, MD, FASN, FACP, FNK is the Executive Director for Research, at Providence Medical Research Center and the Co-Principal Investigator at the Institute of Translational Health Sciences, University of Washington. Dr. Tuttle's research interests include clinical and translational science for diabetes, chronic kidney disease, hypertension, and renal vascular disease. Dr. Tuttle was excused from this meeting due to travel commitments.

Research presentation by Dr. Deutz – Dr. Deutz shared findings from his recent research involving bear hibernation. Because these findings are new and not yet published, Dr. Deutz asked that his presentation not be recorded and included in the meeting notes.

Expanding TRiM's Translational Models – Kelly provided the background for TRiM's use of the canine model as an intervention platform for our translational research. TRiM will continue to use hibernation as our discovery platform that uses Arctic Ground Squirrel and black bear animal models. Dr. Trey Coker, the former TAC Chair, had an interest in pursuing human clinical research. His departure from UAF was, in part, due to barriers he encountered with his clinical studies (Project 3) to engage local physicians who were overwhelmed with patient loads and not available for clinical research. Physician involvement is a critical element for successful human clinical trials.

The canine model, Kelly explained, is a better fit for UAF. The Vet Med program provides veterinary diagnostic imaging services and employs veterinarians on staff who can provide appropriate oversight making it possible to conduct canine intervention research. In addition, dogs show similar patterns of aging as humans, especially brain aging, but at an accelerated pace due to a shorter life span. Canines are a natural model for Alzheimer's disease as older dogs are at risk for canine cognitive dysfunction and frailty associated with aging. Frailty, associated with muscle loss, is relevant to TRiM's metabolic research focus for humans and cognitive function. The canine model can produce timely and affordable results and can be used to inform human clinical trials for testing new drugs to protect against or reverse cognitive decline in age-related disorders.

Before Kelly had to leave the TAC meeting for another scheduled meeting, she summarized that using the dog model is a more translationally relevant model than the mouse or rat for TRiM. This model was inspired by research being conducted by Kriya Dunlap and Daniel Promislow. It is being used as an intervention platform to study age-related brain dementia and to potentially test new treatments to prevent or reverse canine cognitive dysfunction, which has relevance to treatments for Alzheimer's and other brain dementia. The canine model is supported by infrastructure from the MRI and the Vet Med program at UAF.

Updates on Translational Research in Progress – Dr. Promislow provided updates regarding research with the Dog Aging Project that will include a new clinical trial testing rapamycin as a cancer treatment for middle-aged

to older dogs using a 3-year trial. His group is working with Stephanie McGrath at Colorado State who co-leads a brain health study for dogs with CCD, which is not a clinical trial. The Dog Aging Project has ongoing studies with various partners and would like to initiate subsequent clinical trials after the successful completion of this first trial.

Discussion of topics for next TAC meeting – Kriya read TAC's purpose which is to "identify barriers and opportunities to enhance translational research in Alaska, specifically with regards to translating the knowledge gained from the study of hibernating mammals, to improve human health and unique opportunities or need for translation."

TAC members proposed the following three topics for the next meeting:

1. Discuss the relationship between hibernation, the canine model, factors that influence aging, and translational research for COBRE renewal. Where is the common ground? (TAC members asked Kelly to lead this discussion.)
2. What are the distinguishing aspects of TRiM's research and areas of expertise where our researchers excel? What types of translational projects can TRiM pursue given our resources, investigators' interests, and infrastructure capacity? What is TRiM's unique contribution to the translational research of metabolism and aging?
3. How can the TAC complement TRiM's work and support the development of research aims for the COBRE renewal?

The meeting adjourned at 1:45 p.m.