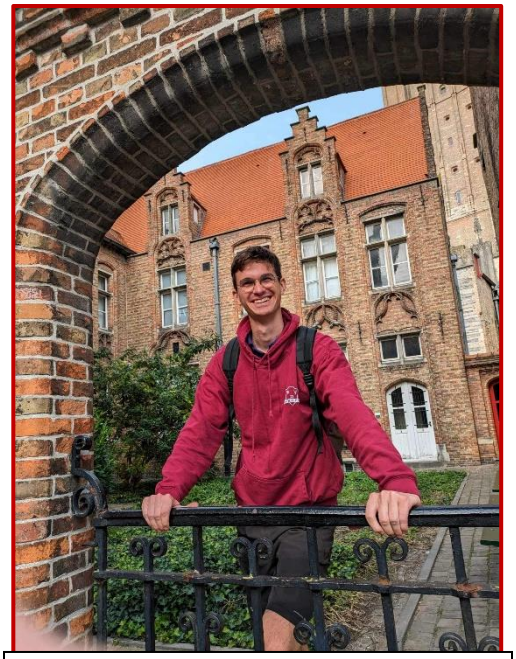
Arthur Garreau was a fourth-year graduate student attending the National Graduate School of Chemistry of Montpellier, France when he began his three-month internship with the Center for TRiM, under the scientific supervision of Vadim Fedorov, PhD with guidance support from Anya Goropashnaya, PhD. Dr. Fedorov is the TRiM research project leader for the study titled *Post transcriptional mechanisms of muscle atrophy prevention in hibernating mammals*. This research focuses on the post-transcriptional regulation of genes involved in skeletal muscle metabolism during hibernation of black bears and arctic ground squirrels to identify targets for sustaining skeletal muscle mass and strength during prolonged disuse that may lead to clinical applications for people in long-term care settings.



Arthur visiting the city of Bruges, Belgium.

Arthur applied to the Center for an internship during his gap year building on a lifelong interest in the flora and fauna of polar circle life and desire to understand its molecular mechanisms, including the metabolic processes of hibernation in arctic mammals. Arthur's desire for his gap year was to use his molecular biologist skills to help scientific researchers develop new therapies to treat disease based on the study of Arctic wildlife. This ambition motivated his interest to apply for an internship under Dr. Fedorov. Prior to his time with TRiM, Arthur conducted internships at the CIRAD, an international agrochemical and analytical laboratory that conducts analysis of soil extracts worldwide. In addition, he also interned at the Institute of Organic Chemistry and Biochemistry (IOCB) located in Prague with Tomáš Pluskal's lab to study plant specialized metabolites. While there, Arthur became familiar with untargeted metabolomics using mass spectrometry.

Arthur's internship with TRiM provided training in functional genomics of hibernating arctic mammals and specifically on learning wet lab techniques used to conduct quality assessments of RNA from mammalian tissues. Arthur's work focused on conducting transcriptomic analysis of black bear quadriceps samples, and identifying genes that were specifically regulated during hibernation and involved in muscle mass conservation during inactivity. Arthur was successful with identifying a few genes that are promising candidates.

Along with the vibrant outdoor activities that Alaska offers, Arthur particularly enjoyed learning about hibernation mechanisms while at UAF, which he said are "very intriguing." He also noted that the Center and the Institute of Arctic Biology helped him to attain his personal goals of learning scientific methods, discovering life in Alaska, and becoming integrated into this new culture.

Enjoying the view while hiking the popular Angel Rocks Trail in Fairbanks.

Since leaving UAF, Arthur worked on his master thesis in plant system biology at the Vlaams Instituut voor Biotechnologie (VIB) – Center for Plant Systems Biology (in Belgium), which is one of the most competitive institutes in plant molecular biology worldwide. He finished his double MS degree in Chemistry with specialization in biochemistry and molecular biology as well as a MS in biology/pharmacology from Montpellier University. He is now working as a PhD student at the Institute of Plant Science of Paris-Saclay. His PhD work will be related to the influence of climate change on MAPkinase cascades and its impact on plants' immune response. He attributes his 'experience at TRiM helping him to achieve these positions, both scientifically and personally.'