

# Tools and Collaborative Approaches to Bridging the Communication Gap Between Northern Communities and Scientists About Caribou Anatomy and Health

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## Abstract

Reindeer and caribou (*Rangifer tarandus*) populations across the circumpolar north are facing dramatic impacts in response to climate change and human development. Despite a shared interest in *Rangifer* sustainability, sometimes misunderstandings have arisen among caribou users, researchers, and management agencies. These conflicts often reflect differences in world views, language barriers, and lapses in communication. With regard to understanding and communicating caribou health, there are relatively few resources available to help facilitate discussion and describe what is 'normal' structure and function so that we can begin to understand 'abnormal'. At the same time a diverse set of knowledge, tools, and approaches are needed that meaningfully address bridge the differences that exist. Despite a range of anatomical features that are unique to the species, little work has been done to describe the anatomy of the genus *Rangifer*. Given the range of perceptions and knowledge regarding caribou and reindeer from scientific and community perspectives, it is essential to develop tools that integrate scientific approaches to caribou anatomy with the observations and knowledge of indigenous people in northern regions in that northern communities have expressed a desire to be involved in research and monitoring. The purpose of the Rangifer Anatomy Project (RAP) is to describe *Rangifer* in ways that are useful to indigenous hunters, educators, students, biologists, and veterinarians through posters, books, and electronic tools. Development of these resources involves detailed anatomical dissections and histological analysis in the laboratory, collaborative dissections that engage hunters, youth and elders during community caribou hunts in the North, and interviews that document knowledge of historical and contemporary uses of caribou for food, medicine, and tools. We anticipate that the process of this project and the final products that describe caribou anatomy from multiple perspectives will ultimately facilitate greater discussion about caribou health.

## The Challenge

Tools are needed to facilitate discussions about caribou anatomy and health between scientists and communities that effectively incorporate traditional and scientific knowledge.



## The Process

### Participation on Community Caribou Hunts

- scientists participate on caribou hunts to observe harvesting and butchering
- document traditional knowledge of caribou anatomy and health
- sharing scientific knowledge of caribou structure and function
- engage youth in scientific dissections and documenting traditional knowledge



### Youth-Elder Workshops

- elders share traditional perspectives on respect for caribou
- youth interview elders on names of caribou parts and their uses
- scientists share technical knowledge of caribou and health.



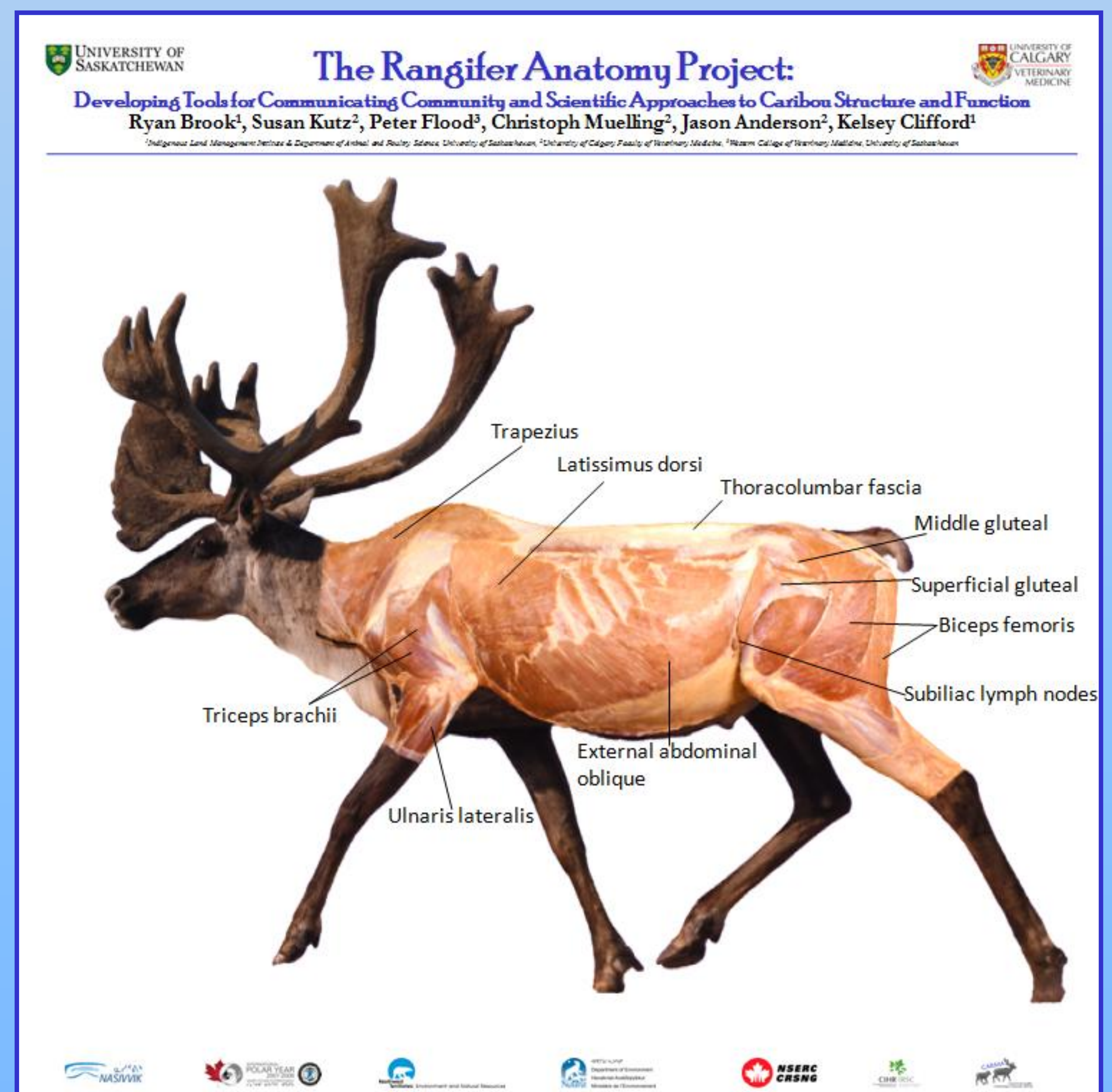
### Lab-Based Scientific Dissections

- scientists conduct detailed dissections to describe all parts in detail
- controlled lab conditions allow high resolution photos of each part to be taken

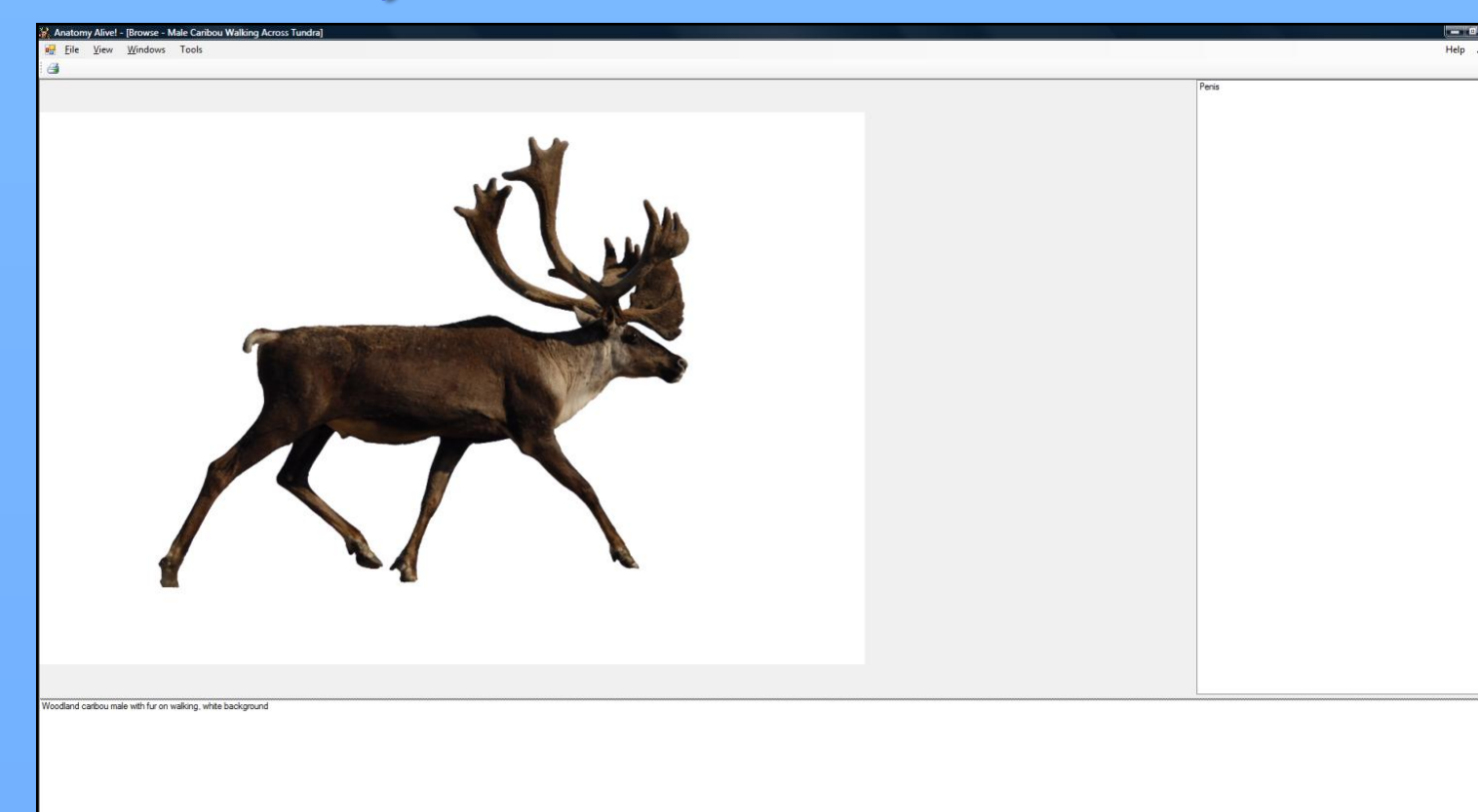


## The Tools

### Posters

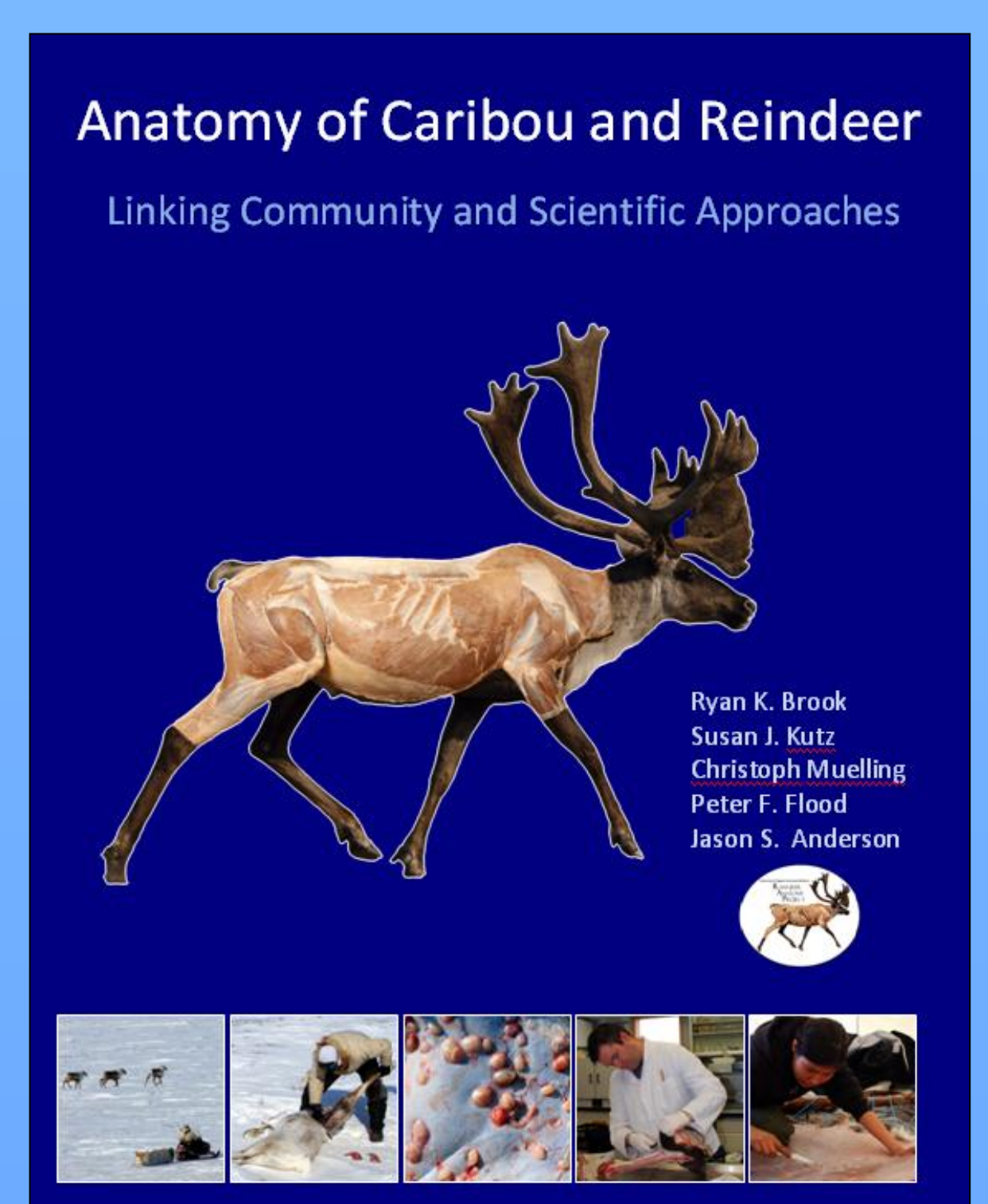


### Computer-Based Dissection



We are currently developing a computer-based virtual dissection program and evaluating it with youth in northern communities. The Anatomy Alive software integrates photographs, video, sound files and allows scientific descriptions to be linked with traditional knowledge.

### Books



The team is producing two books that integrate the accumulated information; one at a grade six level and a more advanced textbook.

## Acknowledgements

