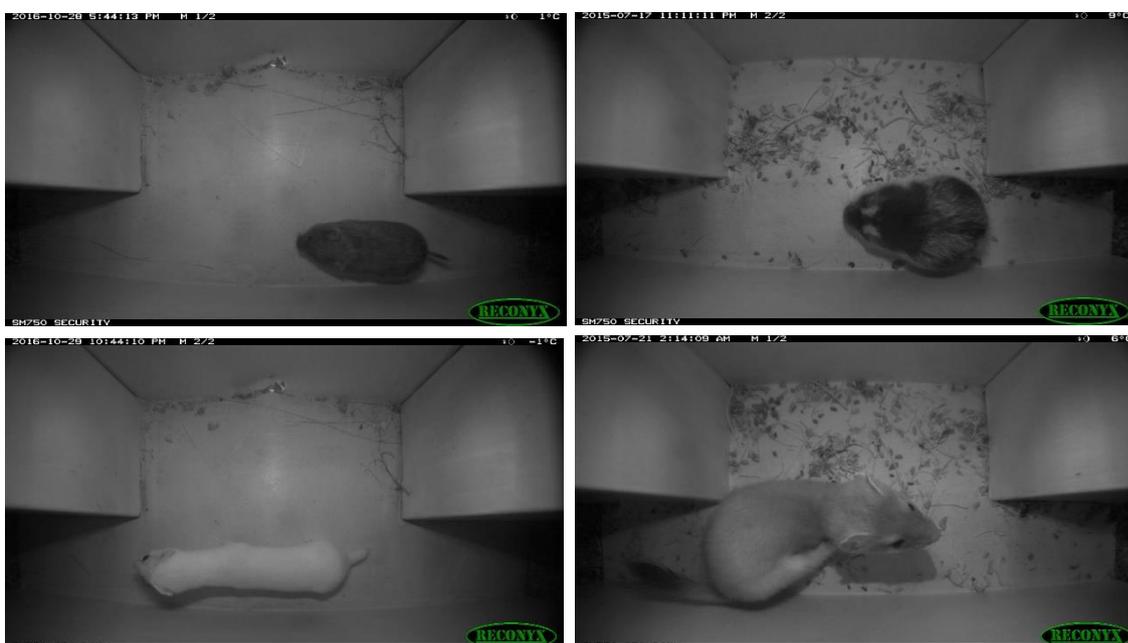


## Master project: The small rodent cycle seen through the lens of a wild life camera



Small rodent cycles has historically received much attention due to their key ecosystem function in tundra and boreal ecosystem. However, after almost a century with a tremendous effort from the scientific community there are still a lot of gaps in the knowledge about this intriguing phenomenon. A proposed reason for this is difficulties connected to monitoring of lemming population dynamics. Trapping of lemmings is fraught with measurement error and there is today no reliable monitoring methods for small mammals during the 7-8 months long arctic winter. As a part of the long-term monitoring program COAT ([www.coat.no](http://www.coat.no)), we have newly developed camera traps for small mammals. These camera traps collect data on the entire community of small mammals continuously year round, also during winter when the lives of small mammals takes place under a thick carpet of snow. Thus this new method provides opportunities to investigate phenomena that until now has not been open to scientific investigations. The camera traps have been deployed in a spatially extensive design in the arctic tundra in the northeastern part of Finnmark (Varanger Peninsula) since 2014. This setup gives us data on 3 small rodent species, Norwegian lemming (*Lemmus lemmus*), Gray-sided vole (*Myodes rufocanus*) and Tundra vole (*Microtus oeconomus*) as well as 1-2 species of shrews. We also acquire data on two mustelid species, the stoat (*Mustela erminea*) and the Least weasel (*Mustela nivalis*), which are the most specialized small rodents predator and claimed to play a key role in the small rodent cycles.



This study design gives new and exciting opportunities to gain insight about the ecologically important population cycles of arctic small rodents. Moreover, it allows multiple different questions to be answered. Possible topics for MSc thesis are analyses of environmental factors that determine the spatial and temporal distribution of the different species in this small mammal community, interspecific competition between rodent species, predator-prey interactions and plant-herbivore interactions. The student will be expected to take part in fieldwork in Finnmark, but the type of data collection will depend on the research topic.

A team of supervisors will be formed to fit the research interest of the student; possible candidates are Eivind Flittie Kleiven (eivind.f.kleiven@uit.no), Eeva Soininen (eeva.soininen@uit.no), Rolf Ims (rolf.ims@uit.no), Nigel Yoccoz (nigel.yoccoz@uit.no) and Kari Anne Bråthen (kari.brathen@uit.no).

If you are interested, don't hesitate to contact us either by email, or simply drop by our office.