

# Master of Science program on using remote sensing techniques to assess soil surface conditions

September 13<sup>th</sup>, 2021

We are seeking a highly motivated and talented candidate for a Master of Science degree program starting in January, 2022 with Brandon University (BU) and Agriculture and Agri-Food Canada (AAFC) on using remote sensing techniques to assess soil surface conditions. In agricultural fields, soil surface conditions such as soil cover (canopy and crop residue cover) and soil roughness (random roughness due to the size and shape of soil clods and aggregates and oriented roughness due to the height, spacing and direction of tillage furrows) are important factors that can strongly affect many soil landscape processes such as soil erosion and surface hydrology. Traditional methods for measuring soil surface conditions are labour intensive and time consuming. A cheaper and more efficient alternative is remote sensing. Various remote sensing techniques have been used to assess soil surface conditions. However, improvements are still needed for: 1) assessing the accuracy, efficiency and cost of different remote sensing methods; 2) an integrated method that can be used to estimate multiple soil surface condition parameters under Canadian crop management and soil conditions; and 3) linking remote sensing results to soil erosion and hydrological processes. The student will join a diverse team of researchers from AAFC, BU, as well as University of Manitoba (UM) and take the lead on field experiment and data analysis as part of the thesis program.

## Position description

- The position is open for application immediately until October 15, 2021 but application will be evaluated as it comes and offer will be made to the first qualified candidate
- Field work will mainly be in Manitoba, Canada
- The candidate is expected to be enrolled in BU by January, 2022
- Stipend: ~24k CAD per year

## Requirements

- Holds a Bachelor degree in soil science or a relevant area of agri-environmental science
- Fluent in English (spoken and written) and with excellent academic records
- Research experiences on agriculture or environmental sciences are considered an asset
- Willingness to work in both field and laboratory settings
- Have a valid drivers license
- Meet all other applicable Human Resource requirements in AAFC
- Canadian citizenship (unfortunately only domestic students will be able to meet the BU application deadline, as the deadline for international students has already passed)

## Application

- A letter of interest (maximum one page)
- A resume describing qualifications and experience
- Transcripts
- Contact information for three references
- Email to Dr. Alexander Koiter ([KoiterA@BrandonU.CA](mailto:KoiterA@BrandonU.CA))