University of Alberta

Postdoctoral Scholar in Agri-Ecological Data Integration & Synthesis

POSITION INFO

Position Type: Postdoctoral Fellows (PDF)
Posting Date: 02/03/2026
Apply Before: 15/04/2026
Job Schedule: Full time
College/Administrative Portfolio: College of Natural and Applied Sciences
Faculty/Department: Science | Biological Sciences and ALES |AFNS
Annual Salary: $65,000
Anticipated Start Date: 01/09/2026 (negotiable)
Locations: Edmonton, AB, Canada (Flexible - partially remote with valid work authorization)

ABOUT THE TEAM

The Departments of Biological Sciences (DBS) and Agriculture, Food & Nutritional Science (AFNS) at the University of Alberta are two of Canada's leading departments in Ecological and Agricultural Sciences. Numerous researchers from DBS and AFNS are leading the **Climate Action Through Grazing (CAT-G)** project and are seeking a Postdoctoral Scholar with proven expertise in agro-ecological data synthesis and a strong record of peer-reviewed publications.

CAT-G is a large and globally unique research initiative involving over 70 researchers. It leverages a landscape-scale grazing experiment centered in Alberta. This 1,200-hectare experiment combines controlled comparisons of continuous grazing with a rapid-rotational system called Adaptive Multi-Paddock (AMP) grazing, designed to mimic historic bison movement patterns. Core experiments are conducted at two University of Alberta research ranches, complemented by 50 working ranches across Alberta and Saskatchewan. With hundreds of long-term sampling locations, this platform enables investigation of how grazing strategies affect soil, microbial communities, vegetation, biodiversity, habitats, carbon sequestration, greenhouse gas emissions, and livestock performance over time. It offers rich opportunities for synthetic analyses that lead to novel insights, enhanced understanding of carbon and nutrient cycling, and application of statistical modeling and data analysis to achieve real-world outcomes.

The successful candidate will be based in either DBS or AFNS and will collaborate across multiple faculties and departments, as well as with Agriculture Agri-Food Canada and the University of Saskatchewan. Co-supervision of the postdoctoral fellow (PDF) is likely, depending on specific interests, and supervisors may include any combination of: Dr. James Cahill (DBS), Dr. Carolyn Fitzsimmons (AAFC, AFNS), Dr. Cameron Carlyle (AFNS), and Dr. Edward Bork (AFNS).

ABOUT THE POSITION

This position is part of the Post-Doctoral Fellows Association and has an initial appointment of **12 months**, with the possibility of extension subject to performance and funding availability. This position includes a comprehensive benefits package.

Location – This position is based at North Campus, Edmonton (flexible hybrid/partially remote, subject to Canadian work authorization and employer approval of remote work arrangements).

Description – The CAT-G initiative at the University of Alberta seeks a Postdoctoral Scholar to advance data integration, synthesis, and systems-level analysis of grassland and grazing systems. Central to CAT-G's mission, this position links diverse and heterogeneous datasets to uncover complex interactions, feedbacks, and emergent patterns across ecological, biogeochemical, biodiversity, habitat, and livestock dimensions of contrasting grazing systems. The role emphasizes cross-component and cross-disciplinary integration, rather

than specialization in a single domain, and prioritizes quantitative, computational, and integrative approaches. The position provides opportunities to develop innovative methods for data synthesis, contribute to high-impact publications, and generate applied insights that advance sustainable grazing strategies.
Available datasets are diverse, including traditional rangeland measures (plant diversity, forage quality, ANPP, soil chemistry, animal performance), as well as less frequently measured items such as soil and bovine fecal microbiome and metagenomics, enteric methane production, soil GHG dynamics, and soil metabolomics (phenomics). Though no single project integrates all data types, there is ample opportunity for a creative, ambitious, and analytically strong Postdoctoral Scholar to make novel contributions.

Responsibilities

- Integrate, curate, and harmonize high-dimensional datasets from experimental and working ranch sites to support coordinated systems-level analyses of grazing systems.
- Apply advanced quantitative approaches to investigate complex interactions, feedback loops, and emergent patterns in grassland systems.
- Apply computational methods to analyze nonlinear dynamics among biological, physical, and livestock components under contrasting grazing strategies.
- Develop and implement ecological modeling frameworks to generate robust, quantitative predictions of ecosystem responses to grazing management strategies.
- Contribute to the development of biological markers of carbon sequestration pathways in soil and enteric methane in cattle.
- Collaborate with interdisciplinary research teams and partner institutions to ensure cross-component integration.
- Lead and contribute to high-quality publications and applied outputs that advance understanding of complex responses of grassland ecosystems to grazing.

Qualifications

- Ph.D. in ecology, agroecology, environmental science, biogeochemistry, or a closely related discipline (earned within the last 5 years).
- Experience working with multi-domain, high-dimensional ecological, environmental, or agricultural datasets.
- Demonstrated ability to conduct complex quantitative analyses of natural or agro-ecological systems.
- Experience in systems-level analysis and predictive modeling of ecosystem responses.
- Proficiency with computational and statistical tools for data integration and synthesis.
- Experience applying machine learning, multivariate statistical methods, and network or dynamical systems modeling approaches.
- Evidence of peer-reviewed publications and a strong record of scholarly productivity.
- Must be legally entitled to work in Canada; non-citizens/permanent residents must obtain a valid work permit.

Application Instructions – Applicants should submit a cover letter outlining their relevant research experience, accomplishments, and interest in this position, along with a complete CV detailing their relevant publications and research activities.

Please send your complete application in a single PDF file to **catg@ualberta.ca**. If you need any additional information or have questions, don't hesitate to reach out to the same email.

Review of applications will begin on **April 16, 2026** and will continue until a suitable candidate is selected. We thank all applicants for their interest; however, only those selected for an interview will be contacted.

ABOUT UNIVERSITY OF ALBERTA

The University of Alberta acknowledges that we are located on Treaty 6 territory, and respects the histories, languages, and cultures of First Nations, Métis, Inuit, and all First Peoples of Canada, whose presence continues to enrich our vibrant community.

The University of Alberta is a community of knowledge seekers, change makers, and world shapers who lead with purpose each and every day. We are home to over 14,000 faculty and staff, more than 40,000 students, and a growing community of over 300,000 alumni worldwide.

Your work will have a meaningful influence on a fascinating cross-section of people - from our students and community members, to our renowned researchers and innovators, making discoveries and generating solutions that make the world healthier, safer, stronger and more just. Learn more.

At the University of Alberta, we are committed to creating an inclusive and accessible hiring process for all candidates. If you require accommodations to participate in the interview process, please let us know at the time of booking your interview and we will make every effort to accommodate your needs.

All University employees have a responsibility to foster a workplace that prioritizes safety in all its forms—physical, cultural, and psychological. This is achieved by promoting a safe environment, adhering to all safety laws, policies and procedures, completing all required safety training, identifying hazards and implementing controls, reporting incidents, and contributing to a culture of belonging and respect, while endeavoring to ensure that all colleagues feel valued and safe to express their thoughts, perspectives and concerns.

The University of Alberta is committed to creating a university community where everyone feels valued, barriers to success are removed, and thriving connections are fostered. We welcome applications from all qualified persons. We encourage women, First Nations, Métis and Inuit persons, members of visible minority groups, persons with disabilities, persons of any sexual orientation or gender identity and expression, and all those who may contribute to the further diversification of ideas and the University to apply.

L'Université de l'Alberta s'engage à créer une communauté universitaire où chaque personne se sent valorisée, où les obstacles à la réussite sont éliminés et où des connexions enrichissantes peuvent se développer. Nous accueillons les demandes de toutes les personnes qualifiées. Nous encourageons les femmes; Premières nations, Métis et Inuits; membres des groupes minoritaires visibles; personnes handicapées; personnes de toute orientation sexuelle ou identité et expression de genre; et toutes les personnes qui peuvent contribuer à la diversification des idées et à l'université à postuler.