Postdoctoral Researcher in Disease Ecology Modeling

Below you will find the details for the position including any supplementary documentation and questions you should review before applying for the opening. To apply for the position, please click the Apply for this Job link/button.

If you would like to bookmark this position for later review, click on the Bookmark link. If you would like to print a copy of this position for your records, click on the Print Preview link.

Please see Special Instructions for more details.

Reference letter writers will be contacted immediately upon submission of application and will receive an email with a link to submit their letter. Reference letters must be received by December 11, 2017. Please submit an application consisting of a cover letter, current CV, 3-page research statement, and the names and contact information for 3 references by December 4, 2017. For full consideration, applications must be complete including reference letters by December 11, 2017. No mail-in applications or letters will be accepted.

Posting Details

Posting Detail Information

Working Title Postdoctoral Researcher in Disease Ecology Modeling
Research Yes
Professional Position
Posting Number 201700923AP
Position Type Admin Professional/ Research Professional
Number of Vacancies
Work Hours/Week 40
Proposed Annual 55000-60000
Salary Range

Desired Start Date 01/16/2017

Position End Date (if temporary)

Open Posting Date

Open Until Filled Yes

12/04/2017

To ensure full consideration, applications must be received by 11:59pm (MT) on

In the Webb lab, we study how the interplay between ecological and evolutionary mechanisms affects the dynamics and persistence of ecological systems using a variety of quantitative techniques, including dynamical systems, simulation, Bayesian hierarchical modeling, and applied statistics. Examples of general questions we are currently addressing include:

What mechanisms predict the rates and patterns of disease transmission in livestock systems?
How do spatial processes affect disease spread?
How can data from multiple biological scales be combined to predict disease transmission?

Description of Work Unit

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Position Summary

We seek an outstanding individual to contribute to research in the lab of Dr. Colleen Webb at Colorado State University in collaboration with the USDA APHIS Center for Epidemiology and Animal Health (CEAH) with the potential to directly impact management of disease outbreaks in livestock settings. In this project, we use data from livestock systems and disease outbreaks to inform a model of livestock shipments at the U.S. national scale (the United States Animal Movement Model USAMM) and a model of livestock disease outbreaks (the United States Disease Outbreak Simulation USDOS). The Postdoctoral Fellow is needed to help transition these two models from their academic development to actual usage by the United States Department of Agriculture (USDA). This work is important to provide accurate risk assessments and emergency response preparedness for the livestock industry, and the management implications of the project bring project members into regular interaction with both government agencies and academia.

The core responsibilities of the position include working with USDA collaborators to identify a case study, likely with foot and mouth disease (FMD) in cattle, to structure transition of USAMM and USDOS for more general use by CEAH staff. In addition to the subject matter work on the FMD case study, the project will also involve developing a detailed transition plan including a pipeline for pre- and post-processing of model results appropriate for use by CEAH staff, developing training materials and documentation. The postdoc will produce high quality, peer-reviewed publications of results from the case study and also present results at conferences and to stakeholders. Additional opportunities include participating in projects to support risk analysis and risk identification with CEAH collaborators. This is a unique opportunity to develop models for direct application in disease management of livestock systems.

We look for candidates with strong quantitative skills, proven time and project-management skills, ability to work in a team environment and excellent communication skills.

The position is for one year with potential for renewal with satisfactory performance. Salary is
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commensurate with experience. For questions about this position, please contact Tanya Dewey at tdewey@rams.colostate.edu

Required Job Qualifications

- Ph.D. by the time of job start in biology, ecology and evolution, statistics, or another appropriate field.
- Significant experience with quantitative methods.

Preferred Job Qualifications

- Experience with disease ecology, ecological modeling or advanced statistics.
- Documented ability to bring projects to completion, especially as publications in peer-reviewed journals.
- Evidence of intellectual leadership.
- Excellent quantitative skills, proficiency in programming languages (e.g., R, C++, Matlab), and ability to communicate computational needs to information technology support staff.
- Familiarity with diverse data analysis frameworks, especially spatio-temporal dynamic simulation models and/or Bayesian hierarchical models.
- Experience working collaboratively in a group setting.
- Experience working with non-governmental organizations, government agencies, or industry.
- Excellent communication skills in English, both written and oral.

Diversity Statement

Reflecting departmental and institutional values, candidates are expected to have the ability to advance the Department’s commitment to diversity and inclusion.

Essential Duties

Job Duty Category Case Study

Together with CEAH colleagues, finalize case study (likely on FMD control) and use it to transition USAMM and USDOS to CEAH environment.

a. Develop and investigate case study questions using USAMM and USDOS.

b. Test USAMM and USDOS code in R and C++ to ensure they run on USDA computing infrastructure. Both models have been developed in multiple computing environments, but the postdoc will need to identify and resolve any code incompatibilities with the USDA computing systems.

c. Develop a transition plan for USAMM and USDOS with a formal pipeline for code with instructions for pre- and post-processing of USAMM/USDOS runs using R.

d. Support other risk analysis and risk identification work by CEAH analysts using USAMM and USDOS.

Percentage Of Time 70

Job Duty Category Develop Training Materials and Documentation

Duty/Responsibility

Develop training materials and documentation for USAMM and USDOS.

a. Meet with CEAH staff to informally assess internal capacity and expertise and develop training plan.

b. Develop documentation for USAMM and USDOS end-users from current academic...
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documentation from Doxygen.
c. Develop training materials for CEAH staff on use of USAMM and USDOS.

**Percentage Of Time** 15

**Job Duty Category** Presentation of Results

Presentation of results (preparation and publication of manuscripts, regular communication, presentation at conferences).

**Duty/Responsibility** Complete manuscripts (as first author) on estimating force of infection and resource selection functions and see them through the publication process. Orally present results at least 1 conference or departmental seminar per year.

**Percentage Of Time** 10

**Job Duty Category** Communication

Regular communication of progress with supervisor.

**Duty/Responsibility** Provide information on progress with supervisors at regular meetings and participate in weekly lab group meetings at CSU. Complete required progress reports for the funding agency.

**Percentage Of Time** 5

**Application Details**

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**Conditions of Employment** Pre-employment Criminal Background Check (required for new hires), Travel - will be minimal, but may include professional meetings and opportunities to speak to interest groups and animal health collaborators.

**Search Contact** Tanya Dewey, tdewey@rams.colostate.edu

**EEO Statement** Colorado State University is committed to providing an environment that is free from discrimination and harassment based on race, age, creed, color, religion, national origin or ancestry, sex, gender, disability, veteran status, genetic information, sexual orientation, gender identity or expression, or pregnancy and will not discharge or in any other manner discriminate against employees or applicants because they have inquired about, discussed, or disclosed their own pay or the pay of another employee or applicant. Colorado State University is an equal opportunity/affirmative action employer fully committed to achieving a diverse workforce and complies with all Federal and Colorado State laws, regulations, and executive orders regarding non-discrimination and affirmative action. The Office of Equal Opportunity is located in 101 Student Services.
The Title IX Coordinator is the Executive Director of the Office of Support and Safety Assessment, 123 Student Services Building, Fort Collins, CO 80523 -2026, (970) 491-7407.

The Section 504 and ADA Coordinator is the Associate Vice President for Human Capital, Office of Equal Opportunity, 101 Student Services Building, Fort Collins, CO 80523-0160, (970) 491-5836.

Background Check Policy Statement

Colorado State University (CSU) strives to provide a safe study, work, and living environment for its faculty, staff, volunteers and students. To support this environment and comply with applicable laws and regulations, CSU conducts background checks. The type of background check conducted varies by position and can include, but is not limited to, criminal (felony and misdemeanor) history, sex offender registry, motor vehicle history, financial history, and/or education verification. Background checks will be conducted when required by law or contract and when, in the discretion of the university, it is reasonable and prudent to do so.

References Requested

References Requested

Minimum Requested 3
Maximum Requested 3

Supplemental Questions

Required fields are indicated with an asterisk (*).

Applicant Documents

Required Documents

1. Curriculum Vitae
2. Cover Letter
3. Statement of Research Philosophy

Optional Documents

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