Opportunity Title: USDA-ARS Postdoctoral Fellowship in Genomic Basis for Regulation of Gastrointestinal Nutrient Use in High and Low Efficiency Dairy Cattle
Opportunity Reference Code: USDA-ARS-NE-2024-0011

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-NE-2024-0011

How to Apply ***Connect with ORISE...on the GO!*** Download the new ORISE GO mobile app in the Apple App Store or Google Play Store to help you stay engaged, connected, and informed during your ORISE experience and beyond!

A complete application consists of:

- An application
- Transcript(s) – For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. Click here for detailed information about acceptable transcripts.
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional recommendations
- A copy of an abstract or reprint of an article

All documents must be in English or include an official English translation.

Application Deadline 3/1/2024 3:00:00 PM Eastern Time Zone

Description ***Applications are reviewed on a rolling-basis.**

ARS Office/Lab and Location: A research opportunity is currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), located in Beltsville, Maryland.

The Agricultural Research Service (ARS) is the U.S. Department of Agriculture's chief scientific in-house research agency with a mission to find solutions to agricultural problems that affect Americans every day from field to table. ARS will deliver cutting-edge, scientific tools and innovative solutions for American farmers, producers, industry, and communities to support the nourishment and well-being of all people; sustain our nation's agroecosystems and natural resources; and ensure the economic competitiveness and excellence of our agriculture. The vision of the agency is to provide global leadership in agricultural discoveries through scientific excellence.

Research Project: This research project will focus on development of bioinformatics and genomics tools to characterize the structure and function of the bovine genome and then application of those datasets to accelerate genetic improvement and discover genetic variation affecting economically important traits. Specifically, AGIL develops accurate genetic prediction methods to improve dairy cattle production. To improve feed efficiency and reduce methane emissions of dairy cattle through genetic selection and management, dairy cows have been defined phenotypically for feed efficiency and a database of their genetic and production information, including enteric methane emissions, is being compiled for extensive analysis. Cows selected based on efficiency will be euthanized and the participant will help help assess important tissues for size, cell density,

metabolic activity and genomically using transcriptomics, epigenomics and proteomics, in addition to assessing for gut function, disease resistance, and feed efficiency of dairy calves. The participant will learn and apply state-of-the-art molecular technologies and bioinformatics tools.

Learning Objectives: The participant will develop skills in integrating data collected from the whole animal, tissue, and cellular level with genomic mechanisms controlling the responses by using state-of-the-art molecular technologies and bioinformatic tools.

Mentor(s): The mentor for this opportunity is Ransom Baldwin (ransom.baldwin@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: January 29, 2024. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for two years, but may be renewed upon recommendation of ARS and is contingent on the availability of funds.

Level of Participation: The appointment is full time.

Participant Stipend: The participant will receive a monthly stipend commensurate with educational level and experience.

Citizenship Requirements: This opportunity is available to U.S. citizens, Lawful Permanent Residents (LPR), and foreign nationals. Non-U.S. citizen applicants should refer to the Guidelines for Non-U.S. Citizens Details page of the program website for information about the valid immigration statuses that are acceptable for program participation.

ORISE Information: This program, administered by ORAU through its contract with the U.S. Department of Energy (DOE) to manage the Oak Ridge Institute for Science and Education (ORISE), was established through an interagency agreement between DOE and ARS. Participants do not become employees of USDA, ARS, DOE or the program administrator, and there are no employment-related benefits. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE.

Questions: Please visit our Program Website. After reading, if you have additional questions about the application process, please email ORISE.ARS.Northeast@orau.org and include the reference code for this opportunity.

Qualifications The qualified candidate should have received a doctorate degree in one of the relevant fields (genetics, bioinformatics, computational biology, statistics, computer science, or a closely related field). Degree must have been received within the past four years.

Preferred skills:

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- Knowledge and understanding of genome assembly, population genetics, statistical genetics, complex trait mapping, and high throughput sequencing genome
- Programming proficiency in R, Python, Perl, C/C++, Java, and SAS are highly desirable
- Preference will be given to candidates with a strong publication record, evidence of substantial research productivity, and ability to communicate scientific information successfully

Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 48 month(s).
- **Discipline(s):**
  - **Communications and Graphics Design** (2 👁)
  - **Computer, Information, and Data Sciences** (17 👁)
  - **Earth and Geosciences** (21 👁)
  - **Engineering** (27 👁)
  - **Environmental and Marine Sciences** (14 👁)
  - **Life Health and Medical Sciences** (14 👁)
  - **Mathematics and Statistics** (2 👁)
  - **Physics** (16 👁)