Postdoctoral Research Associate in Oat Genomics

Overview:

The oat breeding program at South Dakota State University (SDSU) is focused on developing new and improved oat varieties for use as forage, feed, and food. The SDSU oat program has developed varieties which are grown in multiple states across the Northern Plains of the US, as well as abroad. The breeding program itself works closely with the oat milling industry, including General Mills, a major global food company whose oat breeding program is located at SDSU to develop oat varieties with improved milling and nutritional characteristics. The SDSU Agronomy, Horticulture, and Plant Science Department is looking for a post-doctoral research associate to lead research related to the successful implementation of genomic selection into SDSU oat breeding program to increase the speed and accuracy of our breeding mission. In addition, the researcher will act to network with major food companies, and collaborate with the USDA genotyping lab in Fargo as well as with the international oat research community to advance the techniques and methodologies available throughout the oat breeding and milling communities.

Role:

- Support oat breeding through the implementation of genomic selection and advanced phenotypic trait analyses into SDSU oat breeding program.
- Work closely with the USDA genotyping lab in Fargo, and other groups in the oat community to genotype breeding lines, process and develop marker sets, develop models using previously collected genotyping and phenotyping data for key traits, apply novel analysis approaches to enhance prediction accuracy and simulate cross progenies and predict their performance within the necessary timeframe of breeding operations.
- Evaluate strategies to improve genomic prediction models, build and maintain best practices of model development and data dissemination within the SDSU program and external collaborators.
- Advance research program through university mentoring and extension opportunities.
- Assist in developing proposals to federal agencies for the continued advancement of the SDSU oat breeding program.
- Communicate results through presentation at conferences and scholarly publications.

Required qualifications:

- Ph.D. in bioinformatics, computational genomics, molecular plant breeding, or related discipline.
- Expertise with statistical models and applications to genetics and plant breeding.
- Experience in data analysis platforms (R, python, etc), computational infrastructure (cloud computing, linux environments, databases, etc), and reproducible science (version control, scripting, workflow languages).
- Experience in conducting genomic selection analyses.

- Ability to work independently.
- Effective written communication skills.
- Effective verbal communication and interpersonal skills.
- Demonstrated ability to work in a collaborative research environment.
- Demonstrated organizational and time management skills.
- Valid driver's license and willingness to travel.

Salary: Commensurate with experience.

Duration: yearly contract with opportunity to renew for 3 years.

Benefits:
South Dakota State University offers a wide range of benefits including medical, dental, and flexible benefits, retirement plans, compensation packages, paid holidays, and vacation leave. Employees also have access to internal and state-sponsored training as well as reduced tuition for state-supported courses at all State of South Dakota academic institutions.

Location: Brookings, SD.
Brookings is home of South Dakota State University and approximately 24,000 residents and is located 60 miles north of Sioux Falls, 200 miles west of Minneapolis, and 230 miles north of Omaha. Brookings is an ideal community for families and young professionals. It is a safe and vibrant city with a relatively low cost of living.

The Brookings Public School District educates approximately 3,300 K-12 students and ranks among the state's highest academic achieving school districts. The district includes three elementary schools, an intermediate school for fourth and fifth grade, one middle school and a high school.

The city also boasts an abundance of attractions, including the Children's Museum of South Dakota, Dakota Nature Park, South Dakota Art Museum, McCrory Gardens, South Dakota Agricultural Heritage Museum, Outdoor Adventure Center and the Brookings Summer Arts Festival.

How to apply:
Send resume (with the name and contact info of three references) and a cover letter to Melanie Caffe-Treml (melanie.caffe@sdstate.edu) by **September 30th 2020**. Clearly state how you meet the required qualifications.