PhD opportunity on machine learning and porcine reproductive and respiratory syndrome virus (PRRSv) epidemiology

An exciting **USDA-NIFA-PhD funded position** is offered at the Department of Population Health and Pathobiology at North Carolina State University College of Veterinary Medicine, is now open.

This research aims the development of new machine learning algorithms to predict the risk of porcine reproductive and respiratory syndrome virus (PRRSv) spread and further introduction to promote informed and targeted disease management and prevention.

This PhD project is research and extension integrated:

a) **Research (80%)** includes the selection and validation of machine-learning algorithms to calculate the predicted risk of PRRSv introduction, and to generate ranked lists by relevance of each biosecurity measure for each farm (Machado et al., 2015, 2019).
b) **Extension (20%)** includes the promotion of the use of PRRSv risk of introduction in disease management and prevention through producer-oriented extension and by building online reporting system for data sharing and reporting.

Candidates must provide advanced skills in epidemiology or quantitative discipline (ecology, epidemiology, applied mathematics, physics, statistics) (master level or equivalent) and scientific writing. Shortlisted candidates will be invited for interview (by distance if overseas).

The position is based within Dr. Gustavo Machado laboratory at NCSU with collaboration from Iowa State University Dr. Daniel Linhares and Dr. Derald J Holtkamp.

Applications shall include:

1) a cover letter of no more than two pages that highlights your research interests, interest in graduate school, interest in infectious diseases, and why we should consider your application
2) curriculum vitae
3) unofficial transcripts
4) sample of scientific writing (e.g., a manuscript in preparation, an undergraduate thesis, published manuscript as the first author)
5) contact information for 3 references who can explain your research skills and interests. References will only be contacted after applicants are notified.

If you have questions specific to the positions please contact Gustavo Machado at gmachad@ncsu.edu

Ref.

Machado, G., et al. 2015: What variables are important in predicting bovine viral diarrhea virus? A random forest approach. *Vet. Res.*DOI: 10.1186/s13567-015-0219-7.

Machado, G., et al. 2019: Identifying outbreaks of Porcine Epidemic Diarrhea virus through animal movements and spatial neighborhoods. *Sci. Rep.* DOI: DOI:10.1038/s41598-018-36934-8.