New position: mathematical programming applied to animal health

Project duration
18 to 24 months

The project

The candidate will contribute to a research project aiming at developing a multi criteria sequential bioeconomic optimization model for the cattle herds. The specific task of the candidate will be to develop a cow-calf herd mathematical modelling, using python, especially focused on multi criteria outcomes. The candidate will benefit from the experience of the team in such interdisciplinary approaches (https://veteconomics.envt.fr/dairyhealthsimulator/).

The project aims at building a new mathematical model that describe mechanically the herd dynamics. The cow will be the basic unit of the model, and the herd will be based on a group of cow. The behavior of the animal will be modelled with initial risks, relative risk of diseases if exposure, change in risk if treatment.

The final model will look for solution that helps to reduce antimicrobial use or to improve biosecurity without impairing farm income. It will consider simultaneous various constraints such as farmer labor, animal welfare and market and climatic risk.

Your profile

Applicants should have recently earned a **master degree in mathematical programming** or equivalent. The preferred candidate has demonstrated her or his potential to conduct high-quality research. The successful applicant is expected to have experience in Python language. An experience in applying to agriculture is welcome but not mandatory. No knowledge in animal health is required. Close interactions with economist scientist are planned.

Your benefits

The researcher will be part of an international team specialized in mathematical programming, artificial intelligence and economics of animal health. He/she will benefit from our agile management system and will have the opportunity to participate in many research activities (seminar series, conferences) and attend executive education sessions. Salary will be commensurate to experience, and benefits (health and vacations) follow French regulations. Senior faculty members will provide guidance to navigate in academic environment and entrepreneurship. The candidate will have the opportunity to participate in meetings involving renowned experts in economics and animal health worldwide.

Our group

We are an enthusiastic group of researchers dedicated to the improvement of livestock and farmers well-being. We use innovative analytical tools to address modern challenges of economics of animal health:
- Assessing human decision-making with empirical and data-driven work
- Evaluating the effects of public policies in the animal health sector, at micro and macroeconomic scales
- Working transdisciplinary by combining computer science, systems approaches, epidemiology and economics.
- Understanding epidemic dynamics, using modelling and computer simulation of complex animal and human interactions

We are based on the gorgeous campus of the National Veterinary School of Toulouse. Our research team is integrated to The French National Research Institute for Agriculture, Food, and the Environment (INRAE), which is a public research establishment under the dual authority of the Ministry of Agriculture and the Ministry of Research. The institute is among the world leaders in agricultural and food sciences, in plant and animal sciences, INRAE's main goal is to be a key player in the transitions necessary to address major global challenges.

Find more:

http://www.envt.fr/

https://veteconomics.envt.fr/

https://medpopbov.envt.fr/

Interested?

We look forward to receiving your online application in a single pdf with the following documents: a letter of motivation, your CV, university transcripts, two academic references.
Please send the documents to:
guillaume.lhermie@envt.fr didier.raboisson@envt.fr

Application close: 31 February 2021 or until completion of the position. *The selection process will start before dead line. We consequently invite candidates not to wait for application closure for at least first contacts.*

The position is ideally planned to start early 2021. This is subject to changes, due to the international Covid-19 situations, and we will be comprehensive with constraints that apply to international candidates.

Our reference: 2021-ModelCowCalf