

# Team Science in Animal Science

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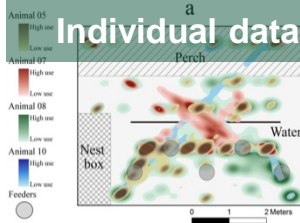
## Research

...from basic biology to production, with agricultural,  
biomedical and environmental relevance.

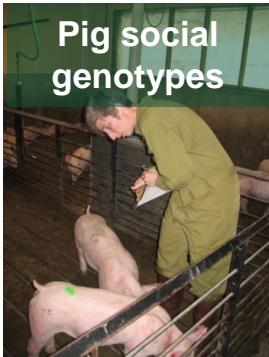


# I am multidisciplinary in my research and teaching

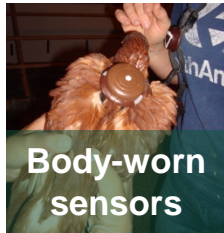
Laying hens in aviaries



Pig social genotypes



Body-worn sensors

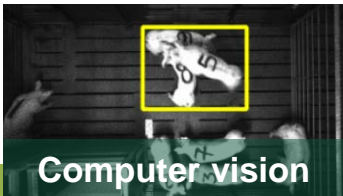


Precision farming



FS18-ANS-805-730 - Animal Welfare Assessment

Computer vision



Intercollegiate welfare assessment competition



Face-to-face applied ethology course



## Analogy to...

**TRANSLATIONAL MEDICINE** = “The process of turning observations in the lab, clinic, and community into interventions that improve the health of individuals and populations.”

...  
po

**NATURAL RESOURCES SCIENCE** = “The process of turning observations in the field or lab, or computer model output into interventions that improve the health of animal or plant

**ANIMAL WELFARE SCIENCE** = “The process of turning observations in the *barn, lab or home*, or computer model output, into interventions that improve the *welfare of animals in production, research or living with humans*.”

... “results in changes in management, decision-making, or policies of *animal production* with objective of having positive impact on *animal ‘welfare’* or *‘quality of life’* as well as *human-animal interactions*.”



## Reasons I work in teams across disciplines?

- Animal welfare is multidisciplinary by definition
- There is so much I don't know and won't have time to learn
- Complex problems need multifaceted perspectives to comprehend and solve them
- Students need exposure to and training in how to work in teams to be successful in the future





## Teams for Teaching

- **Online graduate course in animal welfare**
  - Built by a team of ethologists and IT personnel
  - Content from experts in animal ethics, law, standards, ethology, physiology, immunology, neuroscience, and economics
- **Bioethics teaching tools for animal science/vet med instructors**
  - Created by a team of ethologists, philosophers, and animal ethicists
- **Intercollegiate Animal Welfare Assessment**
  - Created by a team of ethologists and welfare scientists
  - Organized by a team of welfare scientists and veterinarians



## Teams for Research

- **Evaluate sustainability of laying hen housing**
  - >25 scientists, 3 universities: environmental engineering, animal science, veterinary medicine, economics, human health, food safety
- **Using sensors to capture laying hen behavior**
  - 6 scientists, 4 universities, 2 countries: ethology, computer science, electrical engineering, physiology
- **Relating pig social phenotypes to underlying genotypes using automated detection of behavior**
  - >12 scientists, 4 universities, 3 countries: Ethology, genetics, statistics, computer science, precision farming, agricultural and biosystems engineering, economics, social science
- **Student attitudes toward animal production**
  - 6 faculty: Animal science, community sustainability, animal ethics/philosophy

