

PHD RESEARCH PROJECT OPPORTUNITY

An exciting PhD research opportunity is available within FutureDairy and the Dairy Research Foundation at the University of Sydney!

Title: Remote sensing of animal function

Primary Supervisor: Associate Professor Sergio C. (Yani) Garcia

Additional Supervisor(s): Dr Md Rafiq Islam; Dr Kendra Kerrisk; Dr Ajantha Horadagoda; Dr Pietro Celi

Research Location: Dairy Research Foundation- MC Franklin Lab, Faculty of Veterinary Science, Camden, The University of Sydney.

Project Summary:

Using the latest technologies available for remote sensing of animal function (e.g. internal probes) this PhD opportunity will develop a research program with the overall goal of improving animal health, efficiency of animal production and/or dairy farmers lifestyle.

Project Synopsis:

New technologies are constantly being developed to improve animal production and farms' efficiency. Some recent developments include internal devices (probes) that are introduced into the animal via mouth of rumen fistula and are kept in the rumen for relative long period of times. The concept is to monitor some internal parameters (e.g. rumen pH, temperature, pressure, heart rate, rumen motion, etc.) that will give an indication of the health and reproduction status of the animal.

Our ultimate goal is to develop new systems that will assist the farmer in achieving a more efficient management of the herd. The successful candidate will develop a program of work to test one or more devices and determine their applicability and limitations for practical use on farm.

The research will potentially combine the use of rumen fistulated cows with modelling and field work with intact animals.

Keywords: Dairy system, rumen function, remote sensing, fistulated cows, rumen nutrition, precision farming

Additional Information/resources:

- The above opportunity also provides a framework to further develop more specific areas or research such as the impact of forage-based diets on rumen function; rumen microbiology; dynamic modelling or rumen function; rumen physiology; etc.
- Currently there are 3 PhD students in related projects (forage evaluation; CFS and rumen effect of forage diets)
- We have a vast experience using fistulated ruminants (both cattle and sheep). Our Lab also provides facilities to carry out plant tissue and soil analyses. Recently we have acquired a top of the range brand new GC-MS that will enhance the range of the analyses that we can do including testing of pollutants, contaminants in soil, plant and animal samples, etc. This equipment can also be used to study specific aspects of rumen fermentation (e.g. volatile fatty acids).
- FutureDairy offers 2 full PhD scholarships of ~\$30,000/yr each in the Feedbase area plus another 2 PhD scholarships in the Precision Farming and Automatic Milking areas.
- The scholarships are targeted at Australian and New Zealand citizens or Australian permanent residents who hold either an Honours or an MSc degree in Agriculture or related area. International students are also eligible to apply provided they have additional financial support to cover international tuition fees (~\$27,000/year).

Interested?

- Please send CV and a statement relating your skills/interests specific to this project to:

Associate Professor Yani Garcia

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- Overseas applicants, please clearly indicate availability of funds and/or institutional support to cover international tuition fees at The University of Sydney.
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