

# Experts visit New Zealand

by Dennis Scott, President, NZVA Industry Branch

Recently, the NZVA Industry Branch was incredibly lucky in having the opportunity to host world-renowned veterinary pharmacology specialist Jim Riviere and his equally prominent wife Nancy Monteiro-Riviere.

**THIS FRIENDLY AND** engaging couple are both at Kansas State University, where Jim's role is "MacDonald Endowed Chair, University Distinguished Professor, Kansas Bioscience Eminent Scholar, Director Institute of Computational Comparative Medicine" and Nancy's position is stated as "Regents Distinguished and University Distinguished Professor, Toxicology". She is Director of the Nanotechnology Innovation Center at Kansas University and is also on the editorial board of nine different scientific publications.

Nancy's research expertise is in the toxicity and membrane penetration of topically applied drugs, chemicals and nanomaterials. She is currently assessing the cytotoxicity of engineered nanomaterials.

Jim's background is also with nanomaterials and pharmacokinetics and recently he has been deeply involved in mathematical studies predicting tissue residues of drugs and chemicals in food-producing animals to protect human food safety.

They are both first-class presenters, lucidly explaining potentially difficult and challenging topics and keeping us mere mortals spellbound, despite the

complexity of the subjects.

Nancy's talk, "Comparative Anatomical Factors Affecting Topical Delivery", outlined challenges in transdermal medication techniques.

Anatomical factors that can influence dermal absorption ranged from species differences to site of application and also covered age, biotransformation, blood flow, whether sebaceous or sweat glands were present, hair follicles, skin thickness and lipid content. In addition, differences between in vitro and in vivo testing were noted.

She went on to discuss nanotechnology, making a complex subject understandable. This seemed a hard act to follow, but Jim was used to this scenario and gave two talks.

The first concerned pharmacometrics, the science of interpreting and describing pharmacology in a quantitative fashion. While that definition may sound a little vague, the basics were relating pharmacokinetics to a population basis and the many variables involved. For an industry and regulatory audience, the ramifications for residue assessments in food animals were clear.



Nancy Monteiro-Riviere and Jim Riviere.

Jim not only made this subject relevant to the practitioner in the field, but also gave an extra talk about the Food Animal Residue Avoidance Databank (FARAD) programme, a US government-funded organisation to help veterinarians calculate

withholding periods for off-label medications.

FARAD is run through four major US universities and works with the Food and Drug Administration, food producers, veterinarians, pharmaceutical companies and universities, among others, to deliver safe food that is free from residues.

Access is free to those who enrol, and they have even developed an app for android phones whereby a practitioner can put in a drug and dose and have a reliable estimate of withholding period. This is worked on US maximum residue levels and limits of detection, but a Kiwi vet could nonetheless find the system useful.

They were fascinating presentations, and both Jim and Nancy should be on the radar for future veterinary conferences in New Zealand. ▽

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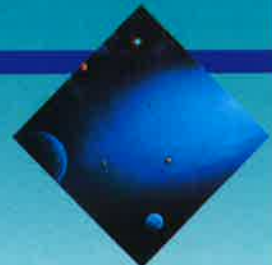
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