

NAU-UC Davis
One Health Food Safety Symposium
University of California, Davis
April 14 – 16, 2015



SYMPOSIUM PROGRAM

April 14 – Tuesday

1043 Gladys Valley Hall

- 9:00 a.m. Welcome by **Michael Lairmore**, Dean, School of Veterinary Medicine, UC Davis
- 9:20 a.m. Welcome by **Kang Tu**, Associate Dean, College of Food Science and Technology, Nanjing Agricultural University (NAU)
- 9:35 a.m. Welcome by **Rob Atwill**, Director, Western Institute for Food Safety and Security, (WIFSS), UC Davis
- 9:50 a.m. BREAK
- 10:00 a.m. **Elizabeth Mitcham**, Center Director, UC Davis Postharvest Technology Center
Postharvest Biology and Technology at UC Davis and Around the World
- 10:50 a.m. **Kang Tu**, Associate Dean, College of Food Science and Technology, NAU
Postharvest Storage and Processing
- 11:50 a.m. LUNCH: Discussion – Educational Exchange for Graduate Students
NAU (Tu, Rui, Yang, Liu, Lu, Bie) and UC Davis (Mitcham, Barile, McCowan, Stull)
- 1:15 p.m. **Daniela Barile**, Assistant Professor, Department of Food Science & Technology, UC Davis
Novel Tools to Evaluate Bioactive Compounds in Dairy Products
- 2:00 p.m. **Xin Rui**, Lecturer, College of Food Science and Technology, NAU
Exploiting Chinese Traditional Fermented Dairy Foods
- 2:45 p.m. BREAK
- 3:00 p.m. **Brenda McCowan**, Director, McCowan Animal Behavior Laboratory for Welfare and Conservation
Carolyn Stull, Extension Specialist, School of Veterinary Medicine, UC Davis
The Science Behind Animal Welfare: Approaches, Metrics and Interactions
- 3:50 p.m. **Xiaojing Yang**, Professor, Animal Physiology and Biochemistry, College of Veterinary Medicine, NAU
Studying the Welfare of Pigs
- 4:30 p.m. ADJOURN
- 5:00 p.m. RECEPTION
Valley Hall
Lobby
SVM Faculty and NAU guests

April 15 – Wednesday*1043 Gladys Valley Hall*

- 8:30 a.m. **Lark Coffey**, Assistant Professor, Department of Pathology, Microbiology and Immunology, School of Veterinary Medicine, UC Davis
Metagenomics Approaches to Enhance Virus Discovery and Detection in Agricultural Animals
- 9:15 a.m. **Fei Liu**, Professor, College of Veterinary Medicine, NAU
Single-Molecule Study of RNA Metabolism and Development of Biosensors
- 10:00 a.m. BREAK
- 10:30 a.m. **Michael Mienaltowski**, Assistant Professor, Department of Animal Science, UC Davis
Role of Collagen in Meat Tenderness
- 11:15 a.m. BREAK
- 11:50 a.m. LUNCH: Discussion – Educational Exchange for Graduate Students
NAU (Tu, Rui, Yang, Liu, Lu, Bie) and UC Davis (Coffey, Mienaltowski, Zhou, Atwill, Li, Pandey)
- 1:30 p.m. **Huaijun Zhou**, Associate Professor, Department of Animal Science, UC Davis
Microbiome Associated with Salmonella Colonization Resistance in Chickens using 16S RNA Sequencing
- 2:15 p.m. **Rob Atwill**, Director, Western Institute for Food Safety and Security (WIFSS), UC Davis
Clarifying the Role of Irrigation Water and Animal Intrusion on Produce Food Safety
- 3:00 p.m. BREAK
- 3:15 p.m. **Junhe Lu**, Professor, College of Resources and Environmental Science, NAU
Transformation of Halide in Sulfate Based Oxidation Processes
- 4:00 p.m. **Xunde Li**, Research Scientist, Atwill Water & Foodborne Zoonotic Disease Laboratory, UC Davis
Detection of Foodborne Bacteria and Protozoa: Water and Vegetables
- 4:45 p.m. **Xiaomei Bie**, Professor, Food Microbiology and Biotechnology, NAU
Mining and Evaluation of New Specific Targets and Rapid Molecular Detection of Salmonella in Food
- 5:30 p.m. ADJOURN

April 16 – Thursday*Tour of Laboratories and Discussion with Faculty*

- 8:30 – 10:00 a.m. **Rob Atwill** and **Xunde Li**, WIFSS
4th Floor East VM3B Tour of Atwill Water & Foodborne Zoonotic Disease Laboratory
- 10:30 – 12:00 p.m. **Rich Breitmeyer**, Director, California Animal Health and Food Safety Laboratory (CAHFS)
CAHFS **Bob Poppenga**, Professor of Clinical Diagnostic Toxicology, CAHFS
 Beate Crossley, Associate Professor of Clinical Diagnostic Virology, CAHFS
 Tour of California Animal Health and Food Safety Laboratory
- 12:00 p.m. LUNCH: Discussion – Importance of a Diagnostic Laboratory System
CAHFS Maddy Rm NAU (Tu, Rui, Yang, Liu, Lu, Bie) and UC Davis (Breitmeyer, Poppenga, Crossley)
- 1:15 – 2:45 p.m. **Glenn Young**, Professor, Department of Food Science & Technology, UC Davis
RMI Tour of Robert Mondavi Institute
- 3:15 p.m. **Caleb Sehnert**, Meat Lab Manager, UC Davis Meat Lab
Meat Lab Tour of the Meat Science Laboratory in the Harold Cole Facility
- 4:30 p.m. Symposium Summary
1043 Valley NAU and UC Davis Symposium Participants

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Speaker Bios

Michael Lairmore

Dr. Michael Lairmore is Dean of the School of Veterinary Medicine and oversees all teaching, research and service activities, personnel, facilities and funding resources. Dean Lairmore's goals include building mission-focused programs that will continue to provide outstanding education for society-ready veterinarians and produce innovative research findings to address important problems ranging from clinical veterinary medicine to public health.

Kang Tu,

Dr. Kang Tu is Associate Dean in the College of Food Science and Technology, Nanjing Agricultural University (NAU). Dr. Tu is a professor in food science and technology and he received his Master in Agricultural Science and Doctor Degree in Applied Biological Science from Katholieke University Leuven, Belgium. Dr. Tu's research field is in the postharvest technology such as non-destructive testing of agricultural products, postharvest treatment and storage of fruits.

Rob Atwill

Dr. Rob Atwill is Director of the Western Institute for Food Safety and Security, and Director of Veterinary Medicine Extension. He is a professor of epidemiology and medical ecology in the Department of Population Health and Reproduction, School of Veterinary Medicine, UC Davis. His academic program focuses on identifying strategies for minimizing microbial contamination of food and water.

Elizabeth Jeanne Mitcham (Beth)

Dr. Beth Mitcham is a Cooperative Extension Specialist and Pomologist. She is the Director of the Postharvest Technology Center at UC Davis, and Director of Horticulture Collaborative Research Support Programs (CRSP). The focus of her research and extension program is the postharvest biology and technology of fruits, especially apples, pears, cherries, strawberries, mangos, blueberries, and raspberries, as well as almonds and walnuts. In addition to studies on harvest maturity, storage conditions and flavor quality, her program focuses on regulation of fruit ripening in pears, and cellular regulation of calcium deficiency disorders in tomato and apple.

Kang Tu,

Dr. Kang Tu is Associate Dean in the College of Food Science and Technology, Nanjing Agricultural University (NAU). Dr. Tu is a professor in food science and technology and he received his Master in Agricultural Science and Doctor Degree in Applied Biological Science from Katholieke University Leuven, Belgium. Dr. Tu's research field is in the postharvest technology such as non-destructive testing of agricultural products, postharvest treatment and storage of fruits.

Daniela Barile

Dr. Daniela Barile is Assistant Professor and Chemist, in the Department of Food Science & Technology, UC Davis. Her areas of interest include the study of complex carbohydrates in foods by using advanced mass spectrometry. She discovered that dairy by-products are a potentially excellent source of these unique molecules previously only found in human milk.

Xin Rui

Dr. Rui is a lecturer in the College of Food Science and Technology at Nanjing Agricultural University. Dr. Rui received her M.Sc. from the China Agricultural University and her Ph.D. in Bioresource Engineering from McGill University in Montreal, Quebec, Canada. Her research interests are in legume based functional foods development, lactic acid bacteria exploitation from traditional Chinese foods, and conversion of functional compounds (i.e., bioactive peptides, isoflavones) via lactic acid bacteria fermentation in legume based foodstuffs.

Brenda McCowan

Dr. Brenda is Director of the McCowan Animal Behavior Laboratory for Welfare & Conservation, and a Professor in the Department of Population, Health and Reproduction in the School of Veterinary Medicine at UC Davis. Her area of specialization is on behavioral biology and ecology with an emphasis on both the basic and applied aspects of animal behavior and communication for enhancing wildlife health and conservation, captive exotic species management, and domesticated animal production, health and well-being.

Carolyn Stull

Dr. Carolyn Stull is a Lecturer and Specialist in Cooperative Extension and in the Department of Population, Health & Reproduction in the School of Veterinary Medicine. Her research focus is on animal welfare and wellbeing, and protection, with a stress in agricultural species. Her objective is to assess the well-being of agricultural animals in various environments, commercial systems, or the application of management practices. Her approach is to develop research plans that focus on the well-being of agricultural animals in commercial systems in California and assess alternative systems.

Xiaojing Yang

Dr. Xiaojing Yang is a professor in Animal Physiology and Biochemistry at the College of Veterinary Medicine, Nanjing Agricultural University. She has working experience in Germany. Dr. Yang's research interest is regulation of growth, metabolism and meat quality in pigs. In recent years research has focused on the welfare problem in pigs. Dr. Yang and her group have published over 30 papers in Epigenetics, Amino acids, J Animal Science, Meat science et al SCI journals. She is the secretary-general of Chinese Association for Animal Physiology and Biochemistry. She is also a member of the Chinese Association for Physiological Sciences (CAPS).

Lark Coffey

Dr. Lark Coffey is Assistant Professor in the Department of Pathology, Microbiology and Immunology in the School of Veterinary Medicine at UC Davis. Dr. Coffey's current research is focused on the evolution and transmission dynamics of arboviruses, with an emphasis in understanding mechanisms of cross - species transfers mediated by modifications in host range, altered virus - host interactions, or changing ecology and environments.

Fei Liu

Dr. Liu is a professor in the College of Veterinary Medicine, Nanjing Agricultural University. Dr. Liu was a postdoctoral scholar in the Department of Chemistry, University of California, Berkeley, in Berkeley, California, USA. Dr. Liu earned a PhD in Biochemistry/Biophysics from Case Western Reserve University, Cleveland, Ohio, USA. Dr. Liu received a Bachelor of Science Degree from the University of Science and Technology of China, Hefei, Anhui, China. Dr. Liu's research interest is in RNA metabolism in virus infection using modern biological and single-molecule techniques, and research on biosensors.

Michael Mienaltowski

Dr. Michael Mienaltowski is assistant professor in the Department of Animal Science and is a veterinarian who specializes in molecular and applied physiology. Dr. Mienaltowski completed his D.V.M. at Michigan State University and his Ph.D. in veterinary science at the University of Kentucky. His research interest is in equine and livestock physiology, musculoskeletal biology, functional genomics, development, maturation, and repair of tendons and other connective tissues, extracellular matrix/niche organization, tissue engineering.

Huaijun Zhou

Dr. Huaijun Zhou is an associate professor in the Department of Animal Science. He specializes in immunology and genetics. Zhou completed his Ph.D. in immunogenetics and molecular genetics at Iowa State University. His research interests are in animal disease, genetic resistance, poultry (chicken), genomics, bioinformatics, bacterial and viral pathogens, understanding pathogen virulence in poultry, identifying host and pathogen genes that are involved in the interaction between animals and pathogens.

Rob Atwill

Dr. Rob Atwill is Director of the Western Institute for Food Safety and Security, and Director of Veterinary Medicine Extension. He is a professor of epidemiology and medical ecology in the Department of Population Health and Reproduction, School of Veterinary Medicine, UC Davis. His academic program focuses on identifying strategies for minimizing microbial contamination of food and water.

Junhe Lu,

Dr. Lu is a professor in environmental chemistry at the College of Resources & Environmental Science, Nanjing Agricultural University. Dr. Lu received his PhD from University of Washington. He worked as a postdoctoral researcher for three years at Department of Crop & Soil Sciences, University of Georgia before joining NAU. Dr. Lu's research focuses on the transformation of emerging contaminants in natural and engineering systems, advanced water treatment and remediation technologies.

Xunde Li

Dr. Xunde Li is a research microbiologist who works on food and waterborne pathogens in the Atwill Water and Foodborne Zoonotic Disease Laboratory at WIFSS. His research focuses on survival and transmission of zoonotic pathogens, molecular epidemiology of protozoal pathogens and dynamics of antibiotic resistant bacteria in animal production systems.

Xiaomei Bie,

Dr. Bie is a professor in Food Microbiology and Biotechnology, at Nanjing Agricultural University. Dr. Bie received a Master of Science Degree in Food Science from Sheyang Agricultural University, Shenyang. She earned a PhD in Food Science from Nanjing Agricultural University. Dr. Bie's research focus is on natural antimicrobial peptides and foodborne pathogens such as the molecular characterization of *Salmonella* and multiplex PCR assays.

