

**Department of Human Nutrition, Food and Animal Sciences**  
College of Tropical Agriculture and Human Resources  
University of Hawaii at Manoa

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Graduate Committee Chair: Dr. Michael Dunn

## Dr. James R. Carpenter

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### Research Areas of Interest

- Ruminant Nutrition & Physiology (effects dietary and environmental stressors on performance)
- Evaluation of Forages and By-products for Ruminant Feedstuffs
- Optimization of Fiber and Protein Utilization for Growth and Lactation
- Marine Mammal Nutrition and Digestive Physiology (Prey Composition and Utilization)
- Plant/Animal Interactions Under Various Grazing Management Systems
- Nutritional and Physiological Interactions During Growth and Lactation

### Selected Recent Publications

- Mathews, B.W., J.R. **Carpenter**, and L.E. Sollenberger. 2009. *In vitro* digestibility and chemical composition of Kikuyugrass as influenced by silicon, liming, and genotype. Soil Science and Plant Analysis (In Press)
- Yamamoto, K.S, J.R. **Carpenter**, S. Atkinson, L. Polasek and H Zaleski. 2009. Validation of acid insoluble ash (AIA) as an internal biomarker for digestibility studies in Harbor seals (*Phoca vitulina*). Proceeding, Western Section, American Society of Animal Sciences Vol. 60:199-203.
- Buck, K., J.R. **Carpenter**, B.W. Mathews. 2008. Use of the net carbohydrate and protein system (CNCPS) for predicting beef cattle cow-calf production in Hawaii. Proceedings Western Section American Society of Animal Science, Vol 59:179-183.
- **Carpenter**, J.R, B.W. Mathews, and L.S. Sollenberger. 2008. *In vitro* digestibility and chemical composition of kikuyugrass as influenced by soil silicon, liming, and genotype. Proceedings Western Section American Society of Animal Science, Vol 59:184-190.
- Mathews, B.W. and J.R. **Carpenter**. 2008. Fertilization, aeration and sewage biosolids on kikuyugrass pasture productivity. Fertilization, aeration, and sewage biosolid effects on kikuyugrass pasture productivity. Soil Crop Sci. Soc. of Fla. Proc. 66: (In Press)
- Buck, K., J.R. **Carpenter**, M.S. Thorne, B.W. Mathews. 2007. *In situ* rates of insoluble macro-mineral release from alfalfa, and tropical grasses, and relationships with dry matter disappearance. Proceedings, Western Section American Society of Animal Science, Vol 58:378-382.
- West, K.L., O.T. Oftedal, J.R. **Carpenter**, J.C. Sweeney and B.J. Krames. 2007. Effect of stage of lactation and concurrent pregnancy on milk composition in bottlenose dolphins, *Tursiops truncatus*. J.of Zoology. (on line pub).
- Bleakney, K, J.R. **Carpenter** and S. Atkinson. 2005. Rate of passage and assimilation efficiency of herring diets containing different fat levels in harbor seals. Chapter 5 In: Synopsis of Research on Steller Sea Lions: 2001-2005. (T.R. Loughlin, D.G. Calkins and S. Atkinson, editors), Alaska SeaLife Center. p.31- 42.
- **Carpenter**, J.R., C.L. Morishige and B. Rasco. 2005. Chapter 6 - Utilization of near infrared spectroscopy (NIRs) and dry matter to predict the nutrient composition of Pacific herring. In: Synopsis of Research on Steller Sea Lions: 2001-2005 (T.R. Loughlin, D.G. Calkins and S. Atkinson, editors), Alaska SeaLife Center. p. 43-58.
- Mathews, B.W., J.R. **Carpenter**, L.E. Sollenberger, and S. Tang. 2005. Phosphorus in Hawaiian kikuyugrass pastures and potential phosphorus release to water. J. Environ. Qual. 34:1214-1223.
- Hanna, W.W., C.J. Chaparro, B.W. Mathews, J.C. Burns, L.E. Sollenberger and J.R. **Carpenter**. 2004. Chapter 14 - Perennial *Pennisetums*. In Warm-season (C<sub>4</sub>) Grasses (L.E. Moser and L.E. Solenberger, editors). Agronomy Monograph. No. 45. ASA, Madison, WI pp. 503-535.

## **Dr. Joannie Dobbs, CNS**

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### **Research Areas**

My research interests are varied: both human and wildlife nutrition. Presently, my nutrition interests are primarily focused on humans and driven by a quote by McCance and Widdowson (1940). *“A knowledge of the chemical composition of foods is the first essential in dietary treatment of disease or in any quantitative study of human nutrition.”*

- Integrity of food composition data as it relates to today’s foods and evaluation of food intake data
- Misuse of nutrient composition information, especially on the internet
- Bioavailability of nutrients – specifically using a Caco-2 cell culture system to compare the amount of iron being absorbed from different foods
- Functionality of nutrients and sub-clinical manifestations of nutrient deficiencies – specifically iron
- Evaluation of standard medical practice blood tests to evaluate iron deficiencies
- The relationship of nutrient deficiencies to the increasing incidence of autism

### **Selected Recent Publications**

- Chaparro, M.P., Zaghoul, S.S., Holck, P. and **Dobbs, J** (In Press). Food insecurity prevalence among college students at the University of Hawai’i at Manoa. Public Health Nutrition.
- Lai, J.F., **Dobbs, J.**, Dunn, M.A., Tauyan, S., and Titchenal, C.A. (In Press). Inconsistent values for iron content complicate recommending clams as an iron source. Journal of Food Composition and Analysis.
- Titchenal, C.A. and **Dobbs, J.C.** 2007. A system to assess the quality of food sources of calcium. Journal of Food Composition and Analysis 20:717-7
- **Dobbs, J.C.** & Titchenal, C.A. 2006. Vegetable and plant parts as legal dietary supplements. In: Y. H. Hui, ed. Handbook of Food Science Technology and Engineering. Boca Raton, CRC/Taylor & Francis. pp. 99-1 to 99-13.
- Titchenal, C.A. & **Dobbs, J.C.** 2004. Nutritional Value of Vegetables. In: Y. H. Hui, ed. Handbook of Vegetable Preservation and Processing. New York, Marcell Dekker. pp. 23 – 37
- **Dobbs, J.C.** & Titchenal, C.A. 2004. Vegetables as a food ingredients, including nutraceutical. In: Y. H. Hui, ed. Handbook of Vegetable Preservation and Processing. New York, Marcell Dekker. pp. 479 - 497.
- Benson, P.C.; Plug, I.; **Dobbs, J.C.** 2004. An analysis of bones and other materials collected by Cape Vultures at the Kransberg and Blouberg colonies, Limpopo Province, South Africa Ostrich - Journal of African Ornithology, Volume 75, Number 3, pp. 118-132(15)

## Dr. Michael A. Dunn

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### Research Areas

- I have broad interests in nutritional biochemistry and metabolism and most of my research has focused on aspects of vitamin and mineral metabolism. Recently that focus has been on aspects of aluminum toxicity and iron metabolism related to health issues such as Alzheimer's disease and preventing iron deficiency.
- Aluminum toxicity can occur in several situations such as renal failure patients who may not be able to excrete ingested aluminum, or in individuals who over consume or are overexposed to aluminum containing pharmaceuticals for long periods. Toxicity symptoms include dementia and hypochromic anemia. The biochemical mechanisms for these symptoms are not well understood, but may be related to disturbances in iron metabolism. My research is trying to understand the effects of aluminum on iron metabolism that cause oxidative stress in aluminum-exposed cells. The goal is to better understand how aluminum can cause dementias, including Alzheimer's disease.
- Iron deficiency is one of the most common nutrient deficiencies in the USA and worldwide. One of the major causes of iron deficiency is that the iron in many foods, especially plant-based foods, is not well absorbed by the body. I have a project that is ranking foods on the basis of their potential to supply absorbable iron to the body. We are using a Caco-2 cell culture based assay system to compare the absorbability (bioavailability) of iron from different foods. We hope to identify new foods that can be recommended as good sources of iron and alert consumers to currently recommended foods that are not good sources of iron.

### Selected Recent Publications

- Lai, J.F., Dobbs, J., **Dunn, M.A.**, Tauyan, S., and Titchenal, C.A. (In Press). Inconsistent values for iron content complicate recommending clams as an iron source. *Journal of Food Composition and Analysis*.
- Miyasaka, S.C., N.V. Hue, and **M.A. Dunn**. *Aluminum*. 2007. In: A.V. Barker and D.J. Pilbeam (eds), *Handbook of Plant Nutrition*, CRC press, Boca Raton, FL. Pp 439-496.
- Zafar, T.A., D. Teegarden, C. Ashendel, **M.A. Dunn** and C. M. Weaver. 2004. Aluminum negatively impacts calcium utilization and bone in calcium-deficient rats. *Nutrition Research* 24:243-259.
- Cox, K.A. and **M.A. Dunn**. 2001. Aluminum toxicity alters the regulation of calbindin-D28k protein and mRNA expression in chick intestine. *J. Nutr.* 131:2007-13.
- Han, J., J. Han and **M.A. Dunn**. 2000. Effect of dietary aluminum on tissue non-heme iron and ferritin levels in the chick. *Toxicology* 142(2):97-109.

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### Research Areas

- Adipose tissue development and adipocyte differentiation
- Fat reduction in animals
- Growth and development of meat producing animals

### Selected Recent Publications

- Brandebourg, T.D. and **C.Y. Hu**. 2005. Isomer-specific regulation of differentiating pig preadipocytes by conjugated linoleic acids. *J. Anim. Sci.* 83:2096-2105.
- Brandebourg, T.D. and **C.Y. Hu**. 2005. Regulation of differentiating preadipocytes by retinoic acid. *J. Anim. Sci.* 83:98-107.
- Lien, T.F., C.P. Wu, B.J. Wang, M.S. Shiao, T.Y. Shiao, B.H. Lin, J.J. Lu, and **C.Y. Hu**. 2001. Effect of supplemental levels of chromium picolinate on the growth performance, serum traits, carcass characteristics and lipid metabolism of growing-finishing pigs. *Anim. Sci.* 72:289-296.
- Brodie, A.E., V.A. Manning, K.R. Ferguson, D.E. Jewell and **C.Y. Hu**. 1999. Conjugated linoleic acid inhibits differentiation of pre- and post-confluent 3T3-L1 adipocytes but inhibits cell proliferation only in preconfluent cells. *J. Nutr.* 129:602-606.
- Crawford, D.R., P. Leahy, **C.Y. Hu**, A. Chaudhry, R. Gronostajski, G. Grossman, J. Woods, P. Hakimi, W.J. Roesler and R.W. Hanson. 1998. Nuclear factor I regulates expression of the gene for phosphoenolpyruvate carboxykinase (GTP). *J. Biol. Chem.* 273:13387-13390.
- Chen, C. L., A. E. Brodie and **C. Y. Hu**. 1997. CCAAT/enhancer-binding protein  $\beta$  is not affected by TCDD inhibition of 3T3-L1 preadipocyte differentiation. *Obesity Res.* 5:146-152.
- Brodie, A.E., V.A. Azarenko and **C.Y. Hu**. 1997. Inhibition of increases of transcription factor mRNAs during differentiation of primary rat adipocytes by in vivo 2,3,7,8 tetrachlorodibenzo-p-dioxin (tcdd) treatment. *Tox. Lett.* 90:91-95.
- Suryawan, A. and **C. Y. Hu**. 1997. Effect of retinoic acid on differentiation of cultured pig preadipocytes. *J. Anim. Sci.* 75:112-117.
- Suryawan, A. and **C. Y. Hu**. 1997. Insulin and hydrocortisone, but not triiodothyronine, are required for the differentiation of pig preadipocytes in primary culture. *J. Anim. Sci.* 75:105-111.

**Dr. Alvin S. Huang 黃士安 博士**

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**Research Areas**

- Development of value-added food products: Hawaii is one of the only two states in the U.S. have abundant tropical crops. I have analyzed a number of unique Hawaii crops, such as taro, purple sweet-potato, kava, guava, vanilla, and sweet peppers in terms of their nutrient compositions and functional properties. Based on the findings, value-added food products can be developed to suit consumers needs.
- Hawaii foods website: Another outcome of the nutrient analysis of Hawaii crops is the establishment of a specific website to publish the data and make them available to the consumers. In conjunction with the Center of the Family, we have been providing new nutrient data to this website and to make it more user-friendly.
- Hawaii tea project: Although tea is not a native plant in Hawaii, but recent introduction of tea planting on the elevated volcano areas in the Big Island has demonstrated its economic potential in Hawaii. I have joined the on-going project as a food technologist to focus on the development of unique tea processing and quality measurements based on the tea plants in Hawaii.

**Selected Recent Publications**

- **S. Huang** and A. Valiere. 2007. The retention of folates in broccoli and beta-carotene in Japanese cucumber at purchase point and after a fourteen day chill storage. Proceedings of the 10<sup>th</sup> Asian Congress of Nutrition, pp. 104-108, Taipei, Taiwan.
- M.Z. Mager, M. Miura, and **A.S. Huang**. 2007. Hawaii Cooks with Taro. Mutual Publishing, Honolulu, Hawaii.
- S. Jun, L. J. Cox and **A. S. Huang**. 2006. Using the flexible retort pouch to add value to agricultural products. Food Safety and Technology, FST-18, Cooperative Extension Services, CTAHR, University of Hawaii at Manoa, Honolulu, Hawaii.
- L. Englberger, J. Schien, **A.S. Huang** and M. Fitzgeald 2006. Carotenoid and vitamin content of *karat* and other Micronesian banana cultivars. International J. of Food Sc. and Nutrition. 57: 399-418.
- A.C. Brown, A. Shovic, P. Holck and **A.S. Huang**. 2005. A non-diary probiotic (*poi*) influences on changing the gastrointestinal tracts' microflora environment. Altern. Ther. Health Med. 11: 58-64.

## Dr. Wayne T. Iwaoka

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### Research Areas

- Critical skills development in the classroom
- Assessment of skills development in the classroom
- Analytical methodology development for antioxidant compounds in native Hawaiian plants
- Component analysis of *Camelia Sinensis* grown in Hawaii

### Selected Recent Publications

- **Iwaoka, W.T.** and Crosetti, L. 2008. Using journals to help students learn subject matter content, develop and practice critical reasoning skills, and reflect on personal values in food science and human nutrition classes. *Journal of Food Science Education*, 7 (2), 19 – 29.
- Kartika, Henny, Li, Qingxiao, Nakamoto, Stuart, Wall, Marisa, and **Iwaoka, Wayne T.** 2007. Major Phenolic Acids and Total Antioxidant Activity in Mamaki Leaves, *Pipturus albidus*. *Journal of Food Science*, **72** (9), 696-701.
- **Iwaoka, Wayne T.** and Li, Qing X. 2007. Chapter (16). Toxicants (revised and updated). In *Food Chemistry: Principles and Application*. 2<sup>nd</sup> Edition. Ed Y.H. Hui, Science Technology System. West Sacramento, CA.
- **Iwaoka, Wayne**. 2002. Chapter 8. Popcorn. In *Food Chemistry Workbook I*. Eds. J. S. Smith and G.L. Christen Science Technology System. West Sacramento, CA
- Shimojo, R.Y., and **Iwaoka, Wayne. T.** 2000. A rapid hemolysis assay for the detection of sodium channel-specific marine toxins. *Toxicology*. 154, 1 – 7.
- **Iwaoka, Wayne T.** and Brewer, Susan. 2000. Chapter 15. Toxicants. In *Food Chemistry: Principles and Application*. Eds. G. L. Christian and J. S. Smith. Science Technology Systems. Sacramento, CA

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### Research Areas

- Novel food processing techniques: ohmic heating, selective far infrared (FIR) heating, pulsed UV light treatment and high pressure processing.
- Nanotechnology, carbon nanotubes (CNT) application: CNTs can be applied not only to special surface treatment but also biosensing in food industries, i.e. CNT modified electrode.
- Biosensors: SPR biosensor for detection of pathogens such as *Salmonella* and *Listeria* in eggs, meat, juice, and milk. Fiber optic fluorescence based biosensors will be applied to monitor pathogens in food and health sectors.
- FTIR spectroscopy: Measurement of sugars and sweeteners in dairy and other liquid type foods, kavalactones in kava juices, and microbial detection in liquid foods.
- Food packaging: Development of retort pouches for beef products to be value added.

### Selected Recent Publications

- Jun Wang, **Soojin Jun**, and Qing X Li, 2009, Rapid Analysis of Melamine Content in Powdered and Liquid Milk Using Fourier Transform Infrared Spectroscopy, Food Science and Biotechnology (In Press)
- Jun Wang, **Soojin Jun**, H.C. Bittenbender, Loren Gautz, and Qing X. Li, 2009, Fourier Transform Infrared Spectroscopy for Kona Coffee Authentication, Journal of Food Science 74(5): C385-C391
- Sudhir K. Sastry, **Soojin Jun**, Romel Somavat, Chaminda Samaranyake, Ahmed Yousef, and Ram B. Pandita, 2009, Heating and Sterilization Technology for Long-duration Space Missions Transport Processes in a Reusable Package, Interdisciplinary Transport Phenomena: Ann. N.Y. Acad. Sci. 1161: 562–569
- Kathiravan Krishnamurthy, **Soojin Jun**, Joseph Irudayaraj, and Ali Demirci. 2008. Efficacy of Infrared Heat Treatment for Inactivation of *Staphylococcus aureus* in Milk, Journal of Food Process Engineering 31(6): 798-816
- Harpreet Kaur Khurana, **Soojin Jun**, Il Kyu Cho, and Qing X. Li. 2008. Rapid Determination of Sugars in Commercial Fruit Yogurts and Yogurt Drinks using Fourier Transform Infrared Spectroscopy and Multivariate Analysis, Applied Agriculture in Engineering 24(5): 631-636
- Harpreet Kaur Khurana, Jae Yong Shim, **Soojin Jun**, Il Kyu Cho and Qing X. Li. 2008. Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy coupled with Multivariate Analysis for Measurement of Acesulfame-K in Diet Foods, Journal of Food Science 73(5): c426-c431
- Harpreet Kaur Khurana, Il Kyu Cho, **Soojin Jun**, Jae Yong Shim, and Qing X. Li. 2008. Application of Multi Bounce Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy and Chemometrics for Rapid Determination of Aspartame in Soft Drinks, Journal of Agriculture and Food Chemistry 56: 778-789
- Kathiravan Krishnamurthy, Harpreet Kaur Khurana, **Soojin Jun**, Joseph Irudayaraj and Ali Demirci. 2008. Infrared Heating in Food Processing: An Overview, Comprehensive Reviews in Food Science and Food Safety 7(1):2-13
- Pandit R.B., R. Somavat, **Soojin Jun**, B. Heskitt, and S. Sastry. 2007. Development of a light weight ohmic food warming unit for a Mars exploration vehicle. World of Food Science. Volume 2: Food and Space

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### Research Areas

Research activities in my laboratory have been directed towards exploring potential methods of improving animal growth performance and carcass composition based on our current understanding of the molecular mechanisms of action of growth regulation. Recent works are mostly related to myostatin, a potent negative regulator of skeletal muscle growth.

- Understanding of the mechanisms of action of myostatin in regulating skeletal muscle development and growth.
- Production of recombinant proteins interacting with myostatin, including myostatin prodomain, extracellular domain of activin type IIB receptors and investigation of myostatin suppressing activity of those molecules in vitro and in vivo system.

In addition, we have been investigated the meat quality characteristics of locally produced, forage-finished beef, as well as exploring innovative ways to improve the marketability of low-value cuts of the forage-finished carcasses.

### Selected Recent Publications

- N.K. Bobbili, **Y.S. Kim**, M.A. Dunn, J. Yang and A.Ong. 2008. Effects of maternal immunization against myostatin on postnatal growth and skeletal muscle mass of offspring in mice. *Food and Agricultural Immunology* 19:93-106.
- **Y.S. Kim**, N.K. Bobbili, Y.K. Lee, H.J. Jin and M. Dunn. 2007. Production of a polyclonal antibody against unprocessed chicken myostatin and the effects of in-ovo administration of the antibody on post-hatch broiler growth and muscle mass. *Poultry Science* 86:1196-1205.
- S.B. Lee, **Y.S. Kim** and H.J. Jin. 2007. Characterization and expression pattern of myostatin in the rockfish, *Sebastes schlegeli*. *Journal of Fisheries Science and Technology* 10:60-67.
- **Y.S. Kim**, N.K. Bobilli, K.S. Paek and H.J. Jin. 2006. Production of a monoclonal anti-myostatin antibody and the effects of in ovo administration of the antibody on post-hatch broiler growth and muscle mass. *Poultry Science* 85:1062-1071.
- **Y.S. Kim**, S.W. Kim, M.A. Weaver and C.Y. Lee. 2005. Increasing the pig market weight: world trend, expected consequences and practical considerations (invited review). *Asian Australian Journal of Animal Science* 18(4):590-600.

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### Research Interest

- Heat stress – methods of alleviating heat stress, methods of quantifying heat stress in dairy and beef cattle.
- Physiology – reproductive physiology with keen interests in maternal recognition of pregnancy and embryonic development and survival in the first trimester.
- Anti-oxidants in the reproductive process.
- Miscellaneous projects as needed to address problems local industry and consumers face e.g. milk quality, animal growth, feeds, etc.

### Selected Recent Publication

- Hillman, P.E., K.G. Gebremedhin, S.T. Willard, C.N. Lee and A.D. Kennedy. 2009. Continuous measurements of vaginal temperature of female cattle using a data logger encased in a plastic anchor. *Applied Engineering in Agriculture, ASABE*, 25(2):291-296.
- Gebremedhin, K.G., P.E. Hillman, C.N. Lee, R.J. Collier, S.T. Willard, J. Arthington, and T.M. Brown-Brandl. 2009. Sweating rates of dairy cows and beef heifers in hot conditions. *Transactions of ASABE* 51(6): 2167-2178.
- Hongfei, He, Jin dong, **Chin Nyeon Lee** and Yong Li. 2009. Molecular analysis of spoilage-related bacteria in pasteurized milk during refrigeration by PCR and denaturing gradient gel electrophoresis. *J. Food Protection*. 72:49-54.
- Hillman, P.E., **C.N. Lee** and S.T. Willard. 2005. Thermoregulatory responses associated with lying and standing in heat-stressed dairy cows. *Trans. ASAE* 48(2):795-801.
- Ryuzo Yanagimachi, Haruo Katayose, Gary Killian, **Chin N. Lee**, Douglas T. Carrell and Thomas T.F. Huang. 1993. Moderate heat treatment increases the penetrability of zona pellucida of salt-stored mammalian oocyte by spermatozoa. *Zygote* 1:345.
- **C.N. Lee** and G.M. Toyama. 1991. Ovipositing response of *Musca sorbens* Wiedemann (Diptera: Muscidae) elicited by odors from digestive residues of ground corn in feces of dairy cows. *Environ. Entomol.* 20(5):1447.

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**Research Areas**

- Genetic fingerprinting of microbial communities in food
- Microbial survival and virulence during food processing
- Rapid detection of foodborne pathogens
- Probiotics and functional food
- Predictive microbiology

**Selected Recent Publications**

- He, H.F., Dong, J., Lee, C.N., and **Li, Y.** 2009. Molecular analysis of spoilage-related bacteria in pasteurized milk during refrigeration by polymerase chain reaction and denaturing gradient gel electrophoresis. *Journal of Food Protection* 72:572-577
- Wang L.X., **Li Y.**, and Mustapha, A. 2009. Detection of viable *Escherichia coli* O157:H7 by ethidium monoazide real-time PCR. *Journal of Applied Microbiology* (in press)
- Kandukuru, P., Huang, A.S., Dong, J., Bittenbender, H.C., and **Li, Y.** 2009. Rapid identification of bacterial isolates from aqueous kava (*Piper methysticum*) extracts by polymerase chain reaction and DNA sequencing. *Letters in Applied Microbiology* (in press)
- Zhu, S.S., Liu, X.L., Liu, P.F., **Li, Y.**, Li, J.Q., Wang, H.M., and Si, N.G. 2007. Flumorph is a novel fungicide that disrupts microfilament organization in *Phytophthora melonis*. *Phytopathology* 97: 643-649
- Wang L.X., **Li Y.**, and Mustapha, A. 2007. Rapid and simultaneous quantitation of *Escherichia coli* O157:H7, *Salmonella*, and *Shigella* in ground beef using real-time multiplex PCR and IMS. *Journal of Food Protection* 70:1366-1372
- Fu, C.J., Carter, J.N., **Li, Y.**, Porter, J.H., and Kerley, M.S. 2006. Comparison of agar plate and real-time PCR on enumeration of *Lactobacillus*, *Clostridia*, and total anaerobic bacteria in dog feces and the feasibility of bacterial DNA as a total rumen bacterial marker. *Letters in Applied Microbiology* 42:490-494
- Mustapha, A. and **Li, Y.** 2006. Molecular Detection of Foodborne Bacterial Pathogens. In: J.H. Maurer (ed), *PCR Methods in Foods*, pp. 69-90, Springer, New York
- **Li, Y.**, Zhuang, S., and Mustapha, A. 2005. Application of a multiplex PCR for the simultaneous detection of *Escherichia coli* O157:H7, *Salmonella* and *Shigella* in raw and ready-to-eat meat products. *Meat Science* 71:402-406
- **Li, Y.** and Mustapha, A. 2004. Development of a polymerase chain reaction assay to detect enteric bacteria in ground beef. *Food Microbiology* 21:369-375
- **Li, Y.** and Mustapha, A. 2004. Simultaneous detection of *Escherichia coli* O157:H7, *Salmonella*, and *Shigella* in apple cider and produce by a multiplex PCR. *Journal of Food Protection* 67:27-33
- **Li, Y.** and Mustapha, A. 2002. Evaluation of four template preparation methods for polymerase chain reaction-based detection of *Salmonella* in ground beef and chicken. *Letters in Applied Microbiology* 35:508-512

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### Research Areas

- *Development of Sex Reversal Technology in Aquaculture Important Freshwater Prawns and Marine Shrimp.* Over 90% of the \$5 billion shrimp and prawn industry have female-superior sexual dimorphism: females are bigger. If all-females could be used instead of mix sexes, a 20-30% increase in production could result. Such all-females could be created by sex reversing female broodstock to “neomales” (genetic females using the male sex-determining hormone that has been cloned from its gene isolation, and biosynthesized. Neomales (genetic females) mated with normal females create all-female culture populations.
- *Assessment of the Aquaculture Potential of Native Hawaiian Lobsters and Shrimp as Sustainable Co-culture Crops in Commercial Fish Sea Cages.* Aquaculture in submerged, “open ocean”, sea cages has world-wide importance as a promising new aquaculture technology. Currently these systems have comprised only monocultures of a primary fish crop but they could readily support invertebrate (lobsters and shrimp etc.) species if a “co-culture” technology was available. This would help mitigate sea cage environmental impact with a biological solution and provide valuable second crops that advantage a positive economy of scale of existing sea cage infrastructure.

### Selected Recent Publications

- **Malecha, S. R.**, P. Mather, D. Hurwood. 2009. *Genetics*. Ch. 16. in *Freshwater Prawn Culture*. 2<sup>nd</sup> edition. M. B. New and W.C. Valenti (eds.). Blackwell Science, Oxford, England. . (in press)
- Tamaru C.S., L S. Yamasaki, **S. Malecha**, D. Vincent. 2009. Feminization of commercial swordtails, *Xiphophorus helleri*, by dietary administration of 17 $\beta$ -Estradiol: direct evidence of a polygenic mechanism for sex determination. *Journal of the World Aquaculture Society* (in press)
- Caesar, J. R. de Oliveira, B. Zhao, **S. Malecha**, H. Ako and J. Yang. 2006. Morphological and biochemical changes in the muscle of the marine shrimp *Litopenaeus vannamei* during the molt cycle *Aquaculture* 261(2): 688-694
- **Malecha S.** and P. S. Sun. 2004. Methods of isolating the androgenic sex hormone from crustacean and marine shrimp and methods of use. Patent no. 6,740,794 B1 issued May 25, 2004.
- Karplus, I., **S. R. Malecha** and A. Sagi. 2000. Biology and Management of Size Variation. In: *Freshwater Prawn Culture*. M. B. New and W.C. Valenti (eds.). Blackwell Science, Oxford, England. .
- Sun P. S., T. M. Weatherby, M. F. Dunlap, K. L. Arakaki, D. T. Zacarias and **S. R Malecha**. 2000. Developmental changes in the structure and protein profile of the androgenic gland of the prawn *Macrobrachium rosenbergii*. *Aquaculture International*. 8:327

## **Stuart T. Nakamoto, PhD, MBA**

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### **Applied Research and Extension**

- Marketing of perishable products; adding value (via form, location, time, ownership, information); direct marketing
- New crops, products, and markets: tea, blueberry, ohelo, tropical fruit, papayas, mamaki, Ka'u coffee, potted nursery plants, processed foods.
- Risk management education, including development and adoption of marketing and management tools for agribusiness: recordkeeping, crop insurance, cost of production & break even analyses, risk management outreach for socially disadvantaged growers
- Economic analyses for agr. issues.

### **Selected Recent Products**

- Nakamoto, S.T. 2009. Introduction to AGR-Lite workshops( forunderserved growers program)
- Yamasaki, Milton, Randall Hamasaki, Dwight Sato, Stuart T. Nakamoto. March 2008. In-ground procedure for rooting tea cuttings. College of Tropical Agr. and Human Resources, University of Hawaii at Manoa. SCM-23, 4 p.
- Lobo, Ramiro, Larry Lev and Stuart T. Nakamoto. 2008. A Market Driven Enterprise Screening Guide. in Niche Markets: Assessment and Strategy Development for Agriculture, K. Curtis (ed.), Western Extension Marketing Committee,. <http://ag.arizona.edu/arec/wemc/nichemarkets.html> Also as February 2008. A Market Driven Enterprise Screening Guide. University of California Agriculture and Natural Resources, Small Farm Program Preliminary Publication. 16 pp.
- Nakamoto, S.T., S. Swift, T. Teegerstrom, and R. Tronstad. 2008. "Crop Records". College of Tropical Agriculture and Human Resources, University of Hawaii at Manoa and The University of Arizona Cooperative Extension. Organized recordkeeping templates.
- Nakamoto, Stuart T., Trent Teegerstrom, Russell. Tronstad, Ursula Schuh and Andrew Kawabata 2006. "Nursery Break-Even Price and Profit Estimator". College of Tropical Agriculture and Human Resources, University of Hawaii at Manoa. Spreadsheet for Excel.
- Tronstad, Russell, Ramiro Lobo, Wendy Umberger, Stuart T. Nakamoto, Kynda R. Curtis, Larry Lev, DeeVon Bailey, Ruby Ward and Chris Bastian (authors listed by institution—senior authorship not assigned). 2005. Certification and Labeling Considerations for Agricultural Producers, Western Extension Marketing Committee. Cooperative Extension, The University of Arizona. Publication 1372. Also at <http://cals.arizona.edu/arec/wemc/certification.html>
- Nakamoto, S.T. 2003. Nalo Farms: Servicing High-End Restaurants in Tronstad, Russell (ed), Western Profiles of Innovative Agricultural Marketing, Western Extension Marketing Committee. Cooperative Extension, The University of Arizona. Publication AZ1325. Also at <http://cals.arizona.edu/arec/wemc/wemc.html> and at <http://attra.ncat.org/attra-pub/PDF/sellingtorestaurants.pdf>

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### **Research Areas**

- Nutritional influences on body size and composition of diverse populations
- Nutritional influences on development of bone of diverse populations
- Nutritional assessment of diverse populations
- Multilevel determinants of nutritional status of diverse populations

### **Selected Recent Publications**

- Murphy SP, Martin CL, Davison N, Cheung, Cheung L W-K, Au DL, **Novotny R.** A Comparison of Two Systems for Entering and Assessing Dietary Data for a Research Study. *J Am Diet Assoc.* 2009;109:905-908.
- Martin CL, Murphy SP, **Novotny R.** The contribution of dietary supplements to nutrient adequacy among children in Hawaii. *J Am Diet Assoc* 2008 Nov;108(11):1874-80.
- Paulino YC, Coleman P, Davison NH, Lee SK, Camacho TB, Tenorio LF, Murphy SP, **Novotny R.** Nutritional characteristics and body mass index of children in the Commonwealth of the Northern Mariana Islands. *J Am Diet Assoc.* 2008 Dec;108(12):2100-4
- Shepherd J, Malkov S, Fan B, Laidevant A, **Novotny R,** Maskarinec G. Breast density assessment in adolescent girls using DXA: a feasibility study. *Cancer Epi Bio Prev* 2008 Jul;17(7):1709-13.
- Martin CL, Murphy SP, Leon Guerrero RT, Davison N, Jung YO, **Novotny R.** The Pacific Tracker (PacTrac): Development of a Dietary Assessment Instrument for the Pacific. *J Food CompAnal* 2008;21:S103-S108.
- Walker MD, **Novotny R,** Bilezikian JP, Weaver CM. Race and Diet Interactions in the Acquisition, Maintenance, and Loss of Bone *J. Nutr.* 2008;138: 1256S-1260S.
- Weaver C, McCabe L, McCabe G, **Novotny R,** Van Loan M, Going S, Matkovic V, Boushey C, Savaiano D. Bone mineral and predictors of bone mass in White, Hispanic, and Asian early pubertal girls. *Calc Tiss Int* 2007 Nov; 81(5):352-63.
- **Novotny R,** Coleman P, Tenorio L, Davison N, Camacho T, Ramirez V, Untalan P, Vijayadeva V. Breastfeeding is associated with lower risk of overweight among children of the Commonwealth of the Northern Marianas Islands *J Am Diet Assoc* 2007; 107(10):1743-6.
- **Novotny R,** Nabokov V, Derauf C, Grove J, Vijayadeva V. Body mass index and waist circumference as indicators of health among Samoan women. *Obesity* 2007; 15(8):1913-7.
- **Novotny R,** Going S, Teegarden D, Van Loan M, McCabe G, McCabe L, Daida YG, Boushey C, and the ACT Research Team. Hispanic and Asian adolescents have higher android/gynoid fat ratio than white adolescents. *Obesity* 2007 Jun; 15(6):1565-70.

## Dr. Anne Caprio Shovic

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### Research Interests

- Dietetics education
- Medical nutrition therapy
- Efficacy of nutrition counseling
- Obesity, current issues and treatments

### Selected Publications

- **Shovic, A.**, *Dietetics Program Student Handbook*, for all interested in the field of dietetics at the University of Hawaii, covering information on careers available in dietetics, how to become a registered dietitian, admission into the dietetics program, class requirements, dietetic internships. The web site receives about 1200 hits a year. (1991 to 2008).
- S. Snee, V. Nerurkar, D. Dooley, J. Efirid, **A. Shovic**, P. Nerurkar, Tomato-Based Recipes Masks Bitterness and Improves Palatability of Anti-Diabetic Asian Vegetable Momordica Charantia (Bitter Melon), (Submitted for publication Fall 2008- in progress).
- **Shovic, A.** et al. "Hawaiian Food Choices for Healthy Living," *Agricultural Development in the American Pacific (ADAP)*, (January 2006.)
- Brown, A.C., **Shovic A.**, Ibrahim, S., Holck, H., Huang, A. A non-dairy probiotic's (poi) influence on changing the gastrointestinal tract's microflora environment. *Alternative Therapies* (Jan/Feb 2005), Vol. 11, #1.
- Ueunten, A. **Shovic, A.** "Improving Albumin Levels in Peritoneal Dialysis Patients", *Journal of Renal Nutrition*, Vol.13, #2, (April 2003), pp 105-108.

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### Research Areas

- Dietary fiber: assessment of physiological effect of manufactured fibers, evaluation of fiber intake in Hawaiian and Pacific Islander diets, is fermentation of fiber necessary for human health, preferred fibers based on gut microbiota
- Prebiotics: physiological relevance of prebiotics in the human gut
- Gut microbiota: influence of race/ethnicity on individual microbial community, role of diet in determining microbial population in the human gut, links between gut microbiota and incidence of chronic disease (Ex: colorectal cancer, inflammatory bowel diseases), determination of an *optimal* gut microbiota for prevention of chronic disease
- Probiotics: Can consumption of probiotics be combined with dietary fibers for optimal gut health

### Selected Recent Publications

- **Stewart M**, Slavin J. Particle size and fraction of wheat bran influences short-chain fatty acid production *in vitro*. *Br. J. Nutr.* 2009 Aug 7:1-4. Epub ahead of print. PMID: 19664297
- **Stewart M**, Savarino V, Slavin, J. Assessment of dietary fiber fermentation: effect of *Lactobacillus reuteri* and reproducibility of short-chain fatty acid concentrations. *Mol. Nutr. Food Res.* 2009. 53:S114-S120.
- **Stewart M**, Timm D, Slavin J. Fructooligosaccharides exhibit more rapid fermentation than long-chain inulin in an *in vitro* fermentation system. *Nutr. Res.* 2008. 28(5): 329-334
- **Stewart M** and Slavin J. Molecular weight of guar gum affects short-chain fatty acid profile *in vitro*. pp 187-197. In *Dietary Fibre: Components and Function*, Eds. H. Salovaara, F. Gates, and M. Tenkanen, 2007. Wanginen Academic Publishers, Netherlands, 345p.
- **Stewart M**, Rushton H, Paredes-Diaz A, Savarino V, and Slavin J. Wheat dextrin, inulin, and partially-hydrolyzed guar gum produce unique short-chain fatty acid concentrations *in vitro*. Abstract published in: *Gastroenterology*. 2007. 132(4, Supplement 2) p A-585, Abstract number T1928.
- Queenan K, **Stewart M**, Smith K, Thomas W, Fulcher G, Slavin J. Concentrated oat  $\beta$ -glucan, a fermentable fiber, lowers serum cholesterol in hypercholesterolemic subjects in a randomized controlled trial. *Nutr J.* 2007 Mar 26;6:6-.
- **Stewart M**, Slavin JL. Molecular weight of guar gum affects short-chain fatty acid profile in model intestinal fermentation. *Mol. Nutr. Food Res.* 2006 50(10):971-6.

## Dr. Ashley M. Stokes, DVM

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### Research Areas

- Evaluation of the Toll-like receptor signaling pathway in horses
- Inflammatory, metabolic and vascular alterations in the pathogenesis of laminitis in horses
- In vivo and ex vivo models of endotoxemia in horses
- Pharmacokinetics and pharmacodynamics of opioids in veterinary species
- MDR1/P-glycoprotein evaluation and modulation to advance opioid use and pain management in veterinary species.

### Selected Recent Publications

- Linardi RL, **Stokes AM**, Barker SA, Short C, Hosgood G, Natalini C. Pharmacokinetics of the injectable formulation 1 of methadone hydrochloride® 2 administered orally in horses. *J Vet Pharm Therap*, Accepted December 2008.
- Hanly BK, **Stokes AM**, Bell AM, Johnson J, Keowen ML, Paulsen DB, Sod GA, Moore RM. Serial Equine Lamina Tissue Collection via Biopsy in Conscious Healthy Horses. *Am J Vet Res*, in press June 2009.
- Da Cunha AF, **Stokes AM**, Chirgwin S, Pettifer G, Moore RM. Quantitative expression of the TRPV-1 gene in central and peripheral nervous tissue in horses. *J Appl Res Vet Med*, 6(1), 15-23, 2008.
- Leise BS, Fugler LA, **Stokes AM**, Eades SC, Moore RM. Effects of intramuscular administration of acepromazine on palmar digital blood flow, palmar digital arterial pressure, transverse facial arterial pressure, and packed cell volume in clinically healthy, conscious horses. *Vet Surg* 36 (8), 717-723, 2007.
- Eades SC, **Stokes AM**, Johnson PJ, Leblanc C, Ganjam VK, Buff PR, Moore RM. Serial alterations in digital hemodynamics and endothelin-1 immunoreactivity, platelet-neutrophil aggregation, and concentrations of nitric oxide, insulin, and glucose in blood obtained from horses following carbohydrate overload. *Am J Vet Res*, 68(1), 87-94, 2007.
- **Stokes AM**, Venugopal CS, Hosgood G, Eades SC, Moore RM. Comparison of two endothelin antagonists on in vitro responses of equine palmar digital arterial and venous rings to endothelin-1. *Can J Vet Res*, 70 (3), 197-205, 2006.
- Eades SC, **Stokes AM**, Moore RM. Effects of an endothelin receptor antagonist and nitroglycerine on digital vascular function in horses during the prodromal stages of carbohydrate overload laminitis. *Am J Vet Res*, 67 (7), 1204, 2006.
- Power JH, Burger MJ, **Stokes AM**. Mass, volume, and length relationships in plaice (*Pleuronectes platessa*) juveniles. *J Sea Res*, 57, 230-235, 2006.
- Gilhooly MH, Eades SC, **Stokes AM**, Moore RM. Effects of Topical Nitroglycerine Patches and Ointment on Digital Venous Plasma Nitric Oxide Concentrations and Digital Blood Flow in Healthy Conscious Horses. *Vet Surg* 34, 604-609, 2005.

## Dr. Mark S. Thorne

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### Research Areas

- At a broad level my research focuses on understanding the ecophysiology of tropical and subtropical range and pasture systems as influenced by herbivory. Current projects investigate how the flow of energy, and carbon and nitrogen dynamics, inter- and intra-specific competition, climate, soils, and herbivory interact and influence the distribution of plants across the landscape in range and pasture systems.
- Fireweed (*Senecio madagascariensis* Poiret) is one of more than 1200 species of *Senecio* distributed throughout the world. Many *Senecio* species contain hepatotoxic pyrrolizidine alkaloids (PA) and if grazed can induce irreversible liver damage in livestock. An estimated 800,000 hectares in Hawaii are infested or are at risk of invasion by fireweed. My research on the ecology, physiology and toxicology of this plant focuses on understanding factors that influence its invasiveness, variation and dynamics of PA concentration, and potential toxicity livestock in Hawaii.
- Drought is a common factor that negatively impacts the productivity and stability of rangeland ecosystems worldwide. Understanding the dynamics of drought and how it effects the net primary production of rangeland ecosystems is important as it helps develop programs and plans to manage and mitigate the ecological, economical, cultural impacts of drought. My research on this front involves monitoring the dynamics of precipitation events and net primary production in different tropical and subtropical range ecosystems.

### Selected Recent Publications

- Buck, K., J.R. Carpenter, **M.S. Thorne**. 2007. In situ rates of insoluble Macro-mineral release from alfalfa and tropical grasses, and relationships with dry matter disappearance. Proceedings, Western Section, American Society of Animal Science. 58:378-382.
- Gardner, D.R., **M.S. Thorne**, R.J. Molyneux, J.A. Pfister, and A.A. Seawright. 2006. Pyrrolizidine alkaloids in *Senecio madagascariensis* from Australia and Hawaii and assessment of possible livestock poisoning. Biochemical Systematics and Ecology 34:736-744.
- **Thorne, M.S.**, P.J. Meiman, Q.D. Skinner, M.A. Smith, and J.L. Dodd. 2005. Clipping frequency affects canopy volume and biomass production in planeleaf willow (*Salix planifolia* var. *planifolia* Prush.). Rangeland Ecology and Management 58:41-50.
- **Thorne, M.S.**, M.J. Trlica, W.C. Leininger, R.D. Child, and D.A. Klein. 2005. Soil CO<sub>2</sub> efflux response to soil loss on 2 rangeland ecosystems. Rangeland Ecology and Management 58:27-34.
- Cibils, A.F., D.M. Swift, R.H. Hart, M.J. Trlica, and **M.S. Thorne**. 2005. Gender-specific responses to winter defoliation of greenhouse-grown *Atriplex canescens* clones under contrasting soil moisture regimes. Journal of Arid Environments 61:211-226.
- **Thorne, M.S.**, Q.D. Skinner, M.A. Smith, J.D. Rodgers, W.A. Laycock, and A. S. Cerekci. 2002. Evaluation of a technique for measuring canopy volume of shrubs. J. Range Manage. 55:235-240.

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### Research Areas

Physiology and biochemical regulation of the corpus luteum of domestic animals; maternal recognition of pregnancy in domestic animals; effects of grazing systems on reproductive efficiency; comparative endocrinology of reproduction, animal welfare and well being; human-animal interactions; agricultural, biological and research ethics; sustainable agriculture and food systems policy.

### Selected Publications:

- Empey Campora C., J. Dierking, C.S. Tamaru, Y. Hokama, and **D. Vincent**. 2008. Detection of ciguatera toxin in fish tissue using sandwich ELISA and neuroblastoma cell bioassay. *J. Clin. Lab. Anal.* 22(4):246-53.
- Weems, Y.S., P.J. Bridges, R.G. Sasser, L. Ching, B.R. LeaMaster, **D.L. Vincent**, and C.W. Weems, 2002. Effect of mifepristone on pregnancy, pregnancy-specific protein B (PSPB), progesterone, estradiol-17 $\beta$ , prostaglandin F $_{2\alpha}$  (PGF $_{2\alpha}$ ) and prostaglandin E (PGE) in ovariectomized 90-day pregnant ewes. *Prostaglandins and Other Lipid Mediators* 70:195-208.
- Kim, L.M., Y.S. Weems, P.J. Bridges, B.R. LeaMaster, **D.L. Vincent**, and C.W. Weems. 2001. Effects of indomethacin, luteinizing hormone (LH), prostaglandin E (PGE $_2$ ), trilostane, mifepristone, ethamoxytriphetol (MER-25), or pregnancy on secretion of prostaglandin E (PGE), prostaglandin F $_{2\alpha}$  (PGF $_{2\alpha}$ ) by ovine corpora lutea of pregnancy or the estrous cycle. *Prostaglandins and Other Lipid Mediators* 63:189-203
- Weems, Y.S., P.J. Bridges, B.R. LeaMaster, R.G. Sasser, **D.L. Vincent**, and C.W. Weems. 1999. Secretion of progesterone, estradiol-17 $\beta$ , prostaglandins (PG) E (PGE), F $_{2\alpha}$  (PGF $_{2\alpha}$ ) and pregnancy specific protein B (PSPB) by 90 day intact and ovariectomized pregnant ewes. *Prostaglandins* 58:139-148.
- Atkinson, S., C. Combelles, **D. Vincent**, P. Nachtigall, J. Pawloski and M. Breese. 1999. Monitoring of progesterone in captive female false killer whales, *Pseudorca crassidens*. *Gen. Comp. Endocrinol.* 115:323-332.
- Bridges, P.J., Y.S. Weems, L.M. Kim, B.R. LeaMaster, **D.L. Vincent**, and C.W. Weems. 1999. Effect of PGF $_{2\alpha}$ , Indomethacin, tamoxifen or estradiol-17 $\beta$  on prostaglandin E (PGE), PGF $_{2\alpha}$ , and estradiol-17 $\beta$  secretion in 88-90 day pregnant sheep. *Prostaglandins* 58:167-178.
- Bridges, P.J., Y.S. Weems, L.M. Kim, R.G. Sasser, B.R. LeaMaster, **D.L. Vincent**, and C.W. Weems. 1999. Effect of PGF $_{2\alpha}$ , Indomethacin, tamoxifen or estradiol-17 $\beta$  on pregnancy, progesterone and pregnancy specific protein B (PSPB) secretion in 88-90 day pregnant sheep. *Prostaglandins* 58:113-124.

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### Research Areas

My research interests are in the areas of pregnancy establishment, maintenance of pregnancy and hormonal regulation of luteal and placental function and embryonic and fetal growth during pregnancy. These represent research areas where the greatest improvement in production efficiency can be achieved. Establishment and maintenance of pregnancy involves hormonal, paracrine and cytokine signals of embryonic, fetal or maternal origin to maintain function of the corpus luteum and placenta. In sheep and cattle, this involves at least regulation of steroid secretion (progesterone, estradiol-17B), prostaglandins, nitric oxide, endothelin-1 and pregnancy specific protein B secretion and their interaction. These influence implantation, uterine capacity and embryo transfer, and are perturbed by environmental and microbial-induced loss of pregnancy.

### Selected Recent Publications

- Weems, Y. S., Uchima T., Lennon, E., Raney, A., Humphreys, V., Goto, K. and **Weems, C. W.** 2008. Mechanism Whereby Nitric Oxide (NO) is Antiluteolytic Rather Than Being Luteolytic. Prostaglandins and Other Lipid Mediators. 85:33-41.
- Weems, Y. S., L. Kim, V. Humphreys, V. Tsuda, and **C. W. Weems.** 2007. Effect of Luteinizing Hormone (LH), Pregnancy Specific Protein B (PSPB), or Arachidonic Acid (AA) on Ovine Luteal Tissue of the Estrous Cycle and Pregnancy or Placental Secretion of Prostaglandins E<sub>2</sub> (PGE<sub>2</sub>) and F<sub>2a</sub> (PGF<sub>2a</sub>), and Progesterone In Vitro. Prostaglandins and Other Lipid Mediators. 84:163-173.
- Y. S. Weems, L. Kim, V. Humphreys, C. Yin, and **C. W. Weems.** 2007. What Regulates Steroidogenesis by the Ovine Placenta? Prostaglandins and Other Lipid Mediators. 84:54-65.
- **Weems, C. W.**, Y. S. Weems, and R. D. Randel. 2006. Prostaglandins and Reproduction in Female Farm Animals. The Veterinary Journal. 171/172:206-228.
- Y.S. Weems, R.D. Randel, S. Tatman, A. W. Lewis, D. A. Neuendorff and **C.W. Weems.** 2005. /In vivo /Progestin Treatments Inhibit Nitric Oxide and Endothelin-1-Induced Bovine Endometrial Prostaglandin (PG) E (PGE) Secretion /In Vitro/. Prostaglandins and Other Lipid Mediators. 78:276-290.
- Weems, Y. S., E. Lennon, T. Uchima, A. Raney, K. Goto, A. Ong, H. Zaleski, and **C. W. Weems.** 2005. Is Nitric Oxide Luteolytic or Antiluteolytic?. Prostaglandins and Other Lipid Mediators. 78:141-150.
- Weems, Y. S., R. D. Randel, S. Tatman, A. Lewis, D. A. Neuendorff and **C. W. Weems.** 2004. Effects of Estrous Synchronization on Response to Nitric Oxide Donors and Endothelin-1 In Vitro. Prostaglandins and Other Lipid Mediators. 74:45-59.
- Weems, Y. S., R. D. Randel, G. Carstens, T. Welsh, Jr., and **C. W. Weems.** 2004. Do Calcium-Mediated Cellular Signalling Pathways, Prostaglandin E<sub>2</sub> (PGE<sub>2</sub>), Estrogen or Progesterone Receptor Antagonists, or Bacterial Endotoxins Affect Bovine Placental Function? Prostaglandins and Other Lipid Mediators. 73:265-278.

## Dr. Jinzeng Yang 杨金增 博士

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### Research Interests

The long-term goal of my research programs is to enhance animal growth and metabolic efficiency by understanding the fundamental mechanisms of muscle growth and fat deposition. Our research experiences and technical expertise are at gene expression and transgenic animals. My laboratory has been focusing on three research areas:

- Molecular mechanisms of major genes and growth factors that regulate muscle growth and fat deposition in transgenic mice and livestock animals;
- Molecular and novel physiological mechanisms of muscle-adipose tissue interactions on obesity and type II diabetes prevention.
- Identifications of the critical genes of muscle growth in marine aquatic species, and their applications to genetic improvement of growth performance and saline tolerance.

### Recent Publications from Dr. Yang's Lab (2008 to 2009)

- Zhao B, Li EJ, Wall RJ, **Yang J.** 2009. Coordinated patterns of gene expression for adult muscle build-up in transgenic mice expressing myostatin propeptide. *BMC Genomics*. 10:305-315.
- Li Z, Zhao B, Kim YS, Hu CY, **Yang J.** 2009. Administration of a mutated myostatin propeptide to neonatal mice significantly enhances skeletal muscle growth. *Mol. Reprod. Dev.* Published online, September 9, 2009.
- Watanabe S, Zhao B, Ako H, **Yang J.** 2009. Identifications of expressed sequence tags from Pacific threadfin (*Polydactylus sexfilis*) skeletal muscle cDNA library. *Aquaculture Research* Published online, July 22, 2009.
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