Welcome to New IFT Faculty

Dr. Robin Fuchs-Young came to TAMU in 2012 from the University of Texas M.D. Anderson Cancer Center in Smithville. She is a professor in the TAMHSC College of Medicine’s Department of Molecular and Cellular Medicine studying the impact of early life exposures on breast cancer. In addition, she is involved in outreach programs and has developed a K-12 Summer Institute to train teachers and provide curricular materials in environmental health science.

Dr. Michael Honeycutt is the Director of the Toxicology Division for the Texas Commission on Environmental Quality (TCEQ), and he has an adjunct faculty appointment Environmental and Occupational Health in the TAMHSC School of Rural Public Health. His group at TCEQ oversees reviews of human health risk and air quality. He is also instrumental in providing information to state and federal legislatures, serving as a liaison to the public, and numerous other tasks which maintain the safety of Texas citizens.

Dr. Jun-yuan Ji is an assistant professor in the TAMHSC College of Medicine’s Department of Molecular and Cellular Medicine. His research utilizes Drosophila and cultured human cancer cell line models to elucidate the molecular and genetic regulatory circuits controlling cell proliferation, primarily through CDK8. He hopes to determine how dysregulation of CDK8-Cyclin C contributes to tumorigenesis and other diseases.

Dr. Emile Schweikert is a professor and former head of the Department of Chemistry, and directs the Center for Chemical Characterization and Analysis. His scientific areas of interest include methodologies for the characterization and localization of femto- to attomole quantities of atoms and molecules on surfaces. Dr. Schweikert is well known for his work on applications of mass spectrometry and his instrument modifications can be applied to samples of biological interest and environmental contaminants.

Dr. Alexei Sokolov is a professor of Physics and member of the Institute of Quantum Physics with expertise in laser physics, nonlinear optics, ultrafast science and spectroscopy. His research centers around applications of molecular coherence to quantum optics, ultrafast laser science and technology, and also applications of quantum coherence in medical, biological and defense-oriented areas. He was the 2011 recipient of the JoAnn Treat Research Excellence Award.
New Students

N. Roberto Fuentes, Jr. joined the program and Dr. Robert Chapkin’s laboratory in the Spring 2013 semester. He earned a BS in biology from TAMU-Corpus Christi, and a Louis Stokes Alliance for Minority Participation Bridge to the Doctorate Fellowship.

Matthew Nemec, MS, joined Dr. Susanne Talcott’s lab in the Spring 2013 semester. He’s from Ohio and has earned a BA in zoology from Miami University, and an MS in toxicology from San Diego State University.

Graduates

Sharon Epps, MS, completed her degree with Dr. Harvey in August 2013 and now works as a research technician in another laboratory at TAMU.

Kelly Scribner, PhD, completed her degree with Dr. Porter in August 2013 and works as a toxicologist for the Center for Toxicology and Environmental Health (CTEH) in Little Rock, AR.

Sandeep Sreevalsan, PhD, completed his degree with Dr. Safe in August 2013 and is working as a postdoctoral research fellow at TAMU.

Student Representatives

Toxicology Student Rep and CVM Graduate Student Association officer – Kristal Rychlik
TAMU Graduate Student Council Rep – Samantha Francis Stuart

Awards

Many graduate students and postdoctoral fellows from the Toxicology Program participated in the 2013 CVM Graduate Student Association/Postdoc Association Research Symposium was held on February 21, 2013. Three Toxicology trainees received awards:

- Vijayalekshmi Nair (Safe) – 2nd Place, Outstanding Graduate Student Poster
- Kelly Scribner (Porter) – High Impact Research Achievement, First Author Publication Award
- Katie Zychowski (Phillips) – High Impact Research Achievement, First Author Publication Award

The College of Veterinary Medicine and Biomedical Sciences held its annual Convocation on April 5, 2013. Congratulations to the Toxicology students and faculty who received awards!

- Sandeep Sreevalsan – George T. Edds Award
- Nicole Mitchell – George T. Edds Award
- Kelly Scribner – Texas A&M Auxiliary Graduate Student Award
- Dr. Louise Abbott – John H. Milliff Teaching Award
- Dr. Les Dees – CVM Research Leader Award
- Drs. Murl Bailey and Ann Kier – Bridges Teaching & Service Awards
- Drs. Scott Dindot and Beiyan Zhou – Outstanding Scientific Achievement Awards

Nivedita Banerjee (Talcott) won 3rd Place Oral Presentation at the Nutrition Science and Graduate Association Research Symposium.

Congratulations to Wei “Eddie” Ying, a BIMS student in Dr. Zhou’s lab who received a prestigious American Heart Association Pre-Doctoral Award to support his research on chronic health conditions that often accompany obesity, and microRNA strands that are thought to indirectly lead to metabolic syndrome. He hopes to eventually develop therapies to decreases the prevalence of metabolic syndrome.
Meeting Participation

Kelly Scribner (Porter) presented a seminar entitled “SIM2s Inhibits DCIS Progression by Regulating Senescent-dependent Metabolic Equilibrium,” at Baylor College of Medicine, Houston, TX, in February.

Charlotte Rambo (Pillai) gave an oral presentation at the WEF Disinfection and Public Health Conference held in Indianapolis, Feb 24-26, 2013. She presented “Application of High Energy Electron Beam and Chemical Oxidants to Destroy Endocrine Disrupting Compounds and Inactivate (Pathogenic) Microorganisms in Wastewater Effluent and Biosolids.”

At TAMU Student Research Week (SRW) in March 2013, Vijayalekshmi Nair (Safe) received 1st Place for her poster presentation, “Metformin Causes Degradation of Fatty Acid Synthase and PI3 Kinase Signaling Proteins in Pancreatic Cancer Cells through Downregulation of Specificity Protein (Sp) Transcription Factors.” Chandni Praveen (Pillai) also presented a poster entitled “eBeam Irradiated Vaccines – The Next Generation Vaccine Platform.”

Kirthiram Sivakumar, a student in Dr. Banu’s lab presented his work at the 19th Annual Texas Forum for Reproductive Sciences in Houston in April 2013. His presentation was “Edaravone, a free radical scavenger, mitigates hexavalent chromium (CrVI)-induced apoptosis of granulosa cells and follicular atresia in the ovary”.

Nivedita Banerjee (Talcott) participated in Experimental Biology 2013, held in Boston, MA, April 20-24, where she gave two platform presentations: “Pomegranate Polyphenols Suppress Colorectal Aberrant Crypt Foci (ACF) and Inflammation: Possible role of miR126 in vitro and in vivo,” and “Pomegranate Polyphenolics reduce inflammation in Intestinal Colitis - Potential Involvement of the miR-145/p70S6K/HIF1α Pathway.”

Charlotte Rambo (Pillai) was an organizer for the National Center for Electron Beam Radiation (NCEBR) 2013 Annual Hands-On Workshop in E-Beam and X-Ray Irradiation Technologies which was held April 14-19 on the TAMU campus.

Shruti Gandhy, a GSBS MD/PhD student in Dr. Safe’s Houston lab, won 1st Place Poster Presentation at the Graduate Student Organization (GSO) Conference held at the TAMHSC Institute of Biosciences and Technology, Houston, Texas. Her presentation was entitled “Specificity protein (Sp) 1 transcription factor modulates long noncoding RNA expression in liver cancer cells”.

SOT 2013

The 52nd Annual Meeting of the Society of Toxicology was held in San Antonio, TX, March 10-14, 2013. TAMU was well-represented by a group of 26 students, faculty and staff who presented 29 abstracts. Dr. Amelia Romoser co-chaired and presented a portion of the program for a Regional Interest Session focused on risk factors that influence the rate of liver cancer in the San Antonio area. Kim Daniel and Samantha Francis Stuart both worked in the Undergraduate Education Program hosted by the Committee on Diversity Initiatives. This is a detailed program focused on recruiting new students into toxicology. Underserved students are selected to attend the program, and are presented information about toxicology, applying to graduate school, a career panel and a recruiting session with toxicology program directors. Samantha served as a peer mentor to a group of students, while Kim worked on program logistics and co-chaired the program director session.

Nivedita Banerjee received Honorable Mention in the Molecular Biology Specialty Section for her presentation. Nicole Mitchell and Vijayalekshmi Nair each received travel awards through the CVM Graduate Student Association, and all the Toxicology students received travel support from the Toxicology program. Abstracts are listed on pages 4-5.
SOT’13 Presentations

Mechanisms Underlying Anti-Inflammatory Effects of Selective Diindolylmethane Compounds Using RAW264.7 Cells. M.F. Afzali1, G.P. Dooley2, S.H. Safe2, W.H. Hanneman1 and M.E. Legare1. 1Center for Environmental Medicine, Environmental and Radiological Health Sciences, Colorado State University, Fort Collins, CO; 2Center for Environmental and Genetic Medicine, Institute of Biosciences and Technology, Texas A&M Health Sciences, Houston, TX.

Ellagitannins and Anthocyanins Constituents of Pomegranate Suppress Colorectal Aberrant Crypt Foci (ACF) and Inflammation: Possible Role of miR126. N. Banerjee1,2, H. Kim2 and S. U. Mertens-Talcott1,2,3. 1Toxicology, Texas A&M University, College Station, TX; 2Institution of Biosciences and Technology, Texas A&M University, College Station, TX; 3Veterinary Physiology & Pharmacology, Texas A&M University, College Station, TX.

Assessment of Environmental, Dietary, and Biological Risk Factors Impacting Liver Cancer Incidence in Texas. E.D. Bruce1,2 and A. Romoser3. 1Institute of Biomedical Sciences, Baylor University, Waco, TX; 2Institute of Ecological, Earth, and Environmental Science, Baylor University, Waco, TX; 3Toxicology, Texas A&M University, College Station, TX.

Celastrol Decreases Specificity Proteins (Sp) and Fibroblast Growth Factor Receptor-3 (FGFR3) in Bladder Cancer Cells. G. Chadalapaka1, I.D. Jutooru1 and S.H. Safe1,2. 1Department of Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX; 2CEGM, Institute of Biosciences & Technology, Houston, TX.

A Lay Health Worker-Based Intervention for Reducing Families’ Environmental Exposures. L. Cizmas1, J. Ross1, R. Rincon2, H. Tamez2, A. Ginez2, R. Perales2, C. Miller2 and T. McDonald1. 1Texas A&M Health Science Center School of Rural Public Health, Texas A&M University, College Station, TX; 2South Texas Environmental Education and Research Program, University of Texas Health Science Center, San Antonio, San Antonio, TX.

Regulation of Glutathione Synthesis in Cadmium-Treated Cultured Choroid Plexus. S. Francis Stuart, K. Xue2, A. Marroquin-Cardona1, K.A. Brown1, S.E. Elmore1, S. Lin2, L. Tang2, J. Wang2 and T.D. Phillips3. 1Department of Nutrition and Food Science, Texas A&M University, College Station, TX; 2CEGM, Institute of Biosciences & Technology, Houston, TX; 3Department of Environmental Health Sciences, University of Georgia, Athens, GA.

Specificity Protein (Sp) 1 Transcription Factor Modulates Long Noncoding RNA Expression in Liver Cancer Cells. S. Gandhy1,2 and S. H. Safe1,2. 1College of Medicine, Texas A&M College of Medicine Health Sciences Center, Houston, TX; 2Institute of Biosciences and Technology, Texas A&M College of Medicine Health Sciences Center, Houston, TX.

Ring-Substituted Analogs of 3,3’-Diindolylmethane (DLM) Induce Apoptosis and Necrosis in Androgen-Dependent and -Independent Prostate Cancer Cells. A. Goldberg1, V.I. Titorenko2, A. Beach2, S.H. Safe1,2,3,4 and T. Sanderson1. 1Toxicology, INRS, Laval, QC, Canada; 2Biological, Concordia University, Montréal, QC, Canada; 3Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX; 4Institute for Bioscience and Technology, Houston, TX.

The Symbiosis of Mentoring: Getting the Most out of the Mentor-Mentee Relationship. B. Hannas1, N.J. Walker2, S.H. Safe2, E.W. Carney4 and O. Olivero5. 1Reproductive Toxicology Branch, US EPA, Research Triangle Park, NC; 2NTP, NIEHS, Research Triangle Park, NC; 3Molecular & Cellular Medicine, Texas A&M University, College Station, TX; 4The Dow Chemical Company, Midland, MI; 5Laboratory of Cancer Biology & Genetics, National Cancer Institute, Bethesda, MD.

Aryl Hydrocarbon Receptor (AhR)-Active Pharmaceuticals Are Selective AhR Modulators in Triple Negative Breast Cancer Cell Lines. U. Jin1, S. Lee1 and S. H. Safe1,2. 1CEGM, Institute of Biosciences & Technology, Houston, TX; 2NTP, Texas A&M University, College Station, TX.

HOTTIP, a lncRNA, Exhibits Pro-Oncogenic Activity in Pancreatic Cancer. I.D. Jutooru1, G. Chadalapaka1, K. Kim2 and S.H. Safe1,2. 1TAMU, College Station, TX; 2IBT, Texas A&M Health Science Center, Houston, TX.

Mango Polyphenolics Reduce Inflammation in Intestinal Colitis—Potential Involvement of the miR-126/P13K/AKT/mTOR Pathway In Vitro and In Vivo. H. Kim1, N. Banerjee1,2, S. Talcott1 and S.U. Mertens-Talcott1,2. 1Department of Nutrition and Food Science, Texas A&M University, College Station, TX; 2Interdisciplinary Program of Toxicology, Texas A&M University, College Station, TX.

Structure-Dependent Effect of Diindolylmethane Derivatives on Inactivation of the Oncogenic NR4A1/NR4A2 Receptor in Colon Cancer Cells. X. Li1, S. Lee2 and S. H. Safe1,2,3. 1College of Medicine, Texas A&M Health Science Center, College Station, TX; 2Institute of Biosciences & Technology, Texas A&M Health Science Center, College Station, TX; 3Department of Environmental Health Sciences, University of Georgia, Athens, GA.

Dietary Inclusion of Montmorillonite Clay Mitigates Bioavailability of Aflatoxin, Fumonisin and Aflatoxin/Fumonisin Mixtures in Fischer 344 Rats. N.J. Mitchell1, K. Xue2, A. Marroquin-Cardona1, K.A. Brown1, S.E. Elmore1, S. Lin2, L. Tang2, J. Wang2 and T.D. Phillips3. 1College of Veterinary Medicine, Texas A&M University, College Station, TX; 2Department of Environmental Health Sciences, University of Georgia, Athens, GA.

Plum Consumption Modulate Gut Microbiota and Obesity in Zucker Rats. G. Noratto1, J. Garcia-Mazcorro2, H. Martino3, D. Byrne4, M. Markel3, J. Suchodolski5, J. Steiner2 and S. U. Mertens-Talcott6. 1School of Food Science, Washington State University, Pullman, WA; 2Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma de Nuevo León, Mexico; 3RENOVATE, Institute of Biosciences of of Sciences & Technology, Madison, WI; 4Samsung Biotechnology Institute, Suwon, South Korea; 5Iowa State University, Ames, IA; 6CEGM, Institute of Biosciences & Technology, Houston, TX.
Modulation of Cocarcinogenic Effect of Aflatoxin B1 and Fumonisin B1 in a Short-Term Bioassay by Uniform Particle Size NovaSil Clay. L. Tang¹, G. Qian¹, S. Lin¹, Z. Yang¹, M. Kang¹, N.J. Mitchell², J. Su¹, W. Gelderblom¹, R. Riley⁴, T. Phillips² and J. Wang¹.¹University of Georgia, Athens, GA; 2Texas A&M University, College Station, TX; 3Medical Research Council, Tygerberg, South Africa; 4USDA ARS, Athens, GA.

Environmental Factors in Neurodegenerative Diseases. E. Tiffany-Castiglioni¹ and A. G. Kanthasamy².¹Veterinary Integrative Biosciences, Texas A&M University, College Station, TX; ²Biomedical Sciences, Iowa State University, Ames, IA.

ER Chaperone-Metal Interactions: Links to Protein Folding Disorders. E. Tiffany-Castiglioni and Y. Qian. Veterinary Integrative Biosciences, Texas A&M University, College Station, TX.

Reactive Nitrogen Species Regulate Autophagy through ATM-AMPK-TSC2-Mediated Suppression of mTORC1. D.N. Tripathi¹, R. Chowdhury², L.J. Trudel², G.N. Wogan² and C.L. Walker¹.¹Center for Translational Cancer Research, IBT, Texas A&M HSC, Houston, TX; ²Department of Biological Engineering, Massachusetts Institute of Technology, Cambridge, MA.

Neuroprotective Efficacy and Pharmacokinetics of Novel Para-Phenyl Substituted Diindolylmethanes in a Model of Parkinson’s Disease. B. Trout¹, J.A. Miller¹, R. Hansen¹, S.H. Safe², D. Gustafson¹ and R.B. Tjalkens¹.¹Center of Environmental Medicine, Environmental Radiological and Health Science, Colorado State University, Fort Collins, CO; ²Center for Environmental and Genetic Medicine, Institute of Biosciences & Technology, Texas A&M Health Science Center, Houston, TX.

Metformin Causes Degradation of Fatty Acid Synthase and PI3 Kinase Signaling Proteins in Pancreatic Cancer Cells through Downregulation of Specificity Protein (Sp) Transcription Factors. V. Vasanthakumari¹ and S.H. Safe¹,².¹VTPP, Texas A&M University, College Station, TX; ²IBT, TAMHSC, Houston, TX.

Validation of Cocarcinogenic Effects of Aflatoxin B1 and Fumonisin B1 in a Short-Term Bioassay. J. Wang¹, G. Qian¹, S. Lin¹, L. Tang¹, Z. Yang¹, M. Kang¹, N.J. Mitchell², J. Su¹, W. Gelderblom³, R. Riley¹ and T. Phillips².¹Univ. of Georgia, Athens, GA; ²Texas A&M University, College Station, TX; ³Medical Research Council, Tygerberg, South Africa; 4USDA ARS, Athens, GA.
Featured Research

Dr. Cliff Spiegelman is a Distinguished Professor in the Department of Statistics, and a member of the IFT. He is the only statistician on the Houston Police Department’s Technical Advisory Group, a national team of scientists helping Houston create an independent forensics laboratory. The new lab is focused on the quality of the science to ensure accurate convictions in the criminal justice system. Dr. Spiegelman has a history of work with law enforcement including his collaboration with the FBI to discredit the comparative bullet-lead analysis. This work was featured by the College of Science and the TAMU Times in August 2013.

Dr. Suresh Pillai, is a Professor of Microbiology and a TAES Faculty Fellow, the Director of the National Center for Electron Beam Food Research, and a member of the IFT. He and toxicology graduate student Chandni Praveen in collaboration with others studied how electron-beam pasteurization of raw oysters may reduce the possibility of viral food poisoning. Oysters were dosed with norovirus and hepatitis A virus and subsequently irradiated with low-dose irradiation. The risk of infection following irradiation decreased by 91% for hepatitis A and 26% for norovirus. Pillai predicts that this technology would have significant benefits to health and medical savings due to reduction of foodborne illnesses if it were included as part of a comprehensive food safety plan. This work was featured by today.agrilife.org and the May 3rd TAMU Times.

Dr. Kung-Hui “Bella” Chu is an Associate Professor in Civil Engineering and the Division of Head of Environmental & Water Resources Engineering, as well as a member of the IFT. She is studying estrogen-eating bacteria to improve water quality. An estimated 80 percent of US rivers are contaminated with low levels of estrogen or estrogen-like compounds. Chu and her colleagues are searching for strains of bacteria with estrogen degrading ability that could be used in engineered bioreactors as an efficient and relatively inexpensive way to remove estrogens and prevent adverse health effects. The research was featured in the TAMU Times.