

## PTX Newsletter – Fall 2015

### Support for the Annual PTX Fall Symposium provided by

- The David and Dana Loury Foundation
- Frederick Meyers, Vice Dean  
School of Medicine
- Isaac Pessah, Associate Dean of Research  
School of Veterinary Medicine
- NIGMS-funded Training Program in Pharmacology



### PTX Executive Committee Members, 2015-2016 academic year

**Pam Lein, Chair**, Molecular Biosciences, SVM

**Jim Angelastro, Chair, CEP Committee**, Molecular Biosciences, SVM

**Xinbin Chen, Chair, Membership Committee**, Surgical and Radiological Sciences, SVM

**Kermit Carraway, Chair, Admissions Committee**, Biochemistry and Molecular Medicine, SOM

**Angie Gelli**, Pharmacology, SOM

**Birgit Puschner**, Molecular Biosciences, SVM

**Heike Wulff**, Pharmacology, SOM

### PTX Admissions Committee, 2014-2015 academic year

**Chair:** **Kermit Carraway**, Biochemistry and Molecular Medicine, SOM, Cancer Center

**Faculty:** **Jason Eiserich**, Pulmonary and Critical Care, SOM

**Nilesh Gaikwad**, Environmental Toxicology, CAES

**Mary Horne**, Pharmacology, SOM

**Heather Knych**, Molecular Biosciences, SVM

**Manuel Navedo**, Pharmacology, SOM

**Aiming Yu**, Biochemistry and Molecular Medicine, SOM

**Students:** **Brandon Brown**, PhD candidate, lab of Heike Wulff

**Michelle Guignet**, PhD candidate, lab of Pamela Lein

**Tamara Kadir**, PhD candidate, lab of Kent Pinkerton

**Sean Kodani**, PhD candidate, lab of Bruce Hammock

**Sunjay Sethi**, PhD candidate, lab of Pamela Lein

**Frances Shaffo**, PhD candidate, lab of Pamela Lein

**Kim Truong**, PhD candidate, lab of Isaac Pessah

### PTX Curriculum and Educational Policy (CEP) Committee, 2015-2016 academic year

**Chair:** **Jim Angelastro**, Molecular Bioscience, SVM

**Faculty:** **Rick Harper**, Pulmonary & Critical Care, SOM

**Birgit Puschner**, Molecular Biosciences, SVM

**Aiming Yu**, Biochemistry and Molecular Medicine, SOM

**Students:** **Olivia Buonarati**, PhD candidate, lab of Johannes Hell

**Kyla Walter**, PhD candidate, lab of Birgit Puschner

### PTX Membership Committee, 2015-2016 academic year

**Chair:** **Xinbin Chen**, Surgical and Radiological Sciences, SVM

**Faculty:** **Manuel Navedo**, Pharmacology, SOM

**Andrew Whitehead**, Environmental Toxicology, CAES

### **PTX Graduate Advisors, 2015-2016 academic year**

**Kermit Carraway**, Biochemistry and Molecular Medicine, SOM

**Angie Gelli**, Pharmacology, SOM

**Rick Harper**, Pulmonary & Critical Care, SOM

**Paul Henderson**, Hematology and Oncology, SOM

**Mary Horne**, Pharmacology, SOM

**Heather Knych**, Molecular Biosciences, SVM

**Jerry Last, Master Advisor**, Pulmonary and Critical Care, SOM,

**Pam Lein**, Molecular Biosciences, SVM

**Lisa Miller**, Anatomy, Physiology and Cell Biology, SVM

**Kent Pinkerton**, Pediatrics, SOM & Anatomy/Physiology and Cell Biology, SVM

**Birgit Puschner**, Molecular Biosciences, SVM

**Heike Wulff**, Pharmacology, SOM

### **Instructors of Record for PTX Core Courses, 2014-2015**

**PTX 201:** **Heather Knych**, Molecular Biosciences, SVM

**Birgit Puschner**, Molecular Biosciences, SVM

**PTX 202:** **James Angelastro**, Molecular Biosciences, SVM

**Jason Eiserich**, Pulmonary and Critical Care, SOM

**PTX 203:** **Robert Berman**, Neurosurgery, SOM

**Angie Gelli**, Pharmacology, SOM

### **New PTX faculty**

**Bruce Draper**, Associate Professor, Molecular and Cellular Biology, CBS

**Eleonora Grandi**, Assistant Professor, Pharmacology, SOM

**Angela Haczku**, Professor, Pulmonary, Critical Care and Sleep Medicine, SOM

**Nicholas Kenyon**, Professor and Chief, Pulmonary, Critical Care and Sleep Medicine, SOM

**Da Zhi Liu**, Assistant Researcher, Neurology and the M.I.N.D. Institute, SOM

**Jon T. Sack**, Assistant Professor, Physiology and Membrane Biology, SOM

**Sara M. Thomasy**, Associate Professor, Surgical and Radiological Sciences, SVM

### **PTX Website Team, 2014-2015 academic year**

**Brandon Brown**, PhD candidate, lab of Heike Wulff

**Chen (Samantha) Feng**, PhD candidate, lab of Kit Lam

**Sucheta Mukherjee**, PhD candidate, lab of Wolf-Dietrich Heyer

**Chuong Nguyen**, PhD candidate, lab of Roslyn Rivkah Isseroff

**Denise Trans**, PhD candidate, lab of Paul Henderson

**Kim Truong**, PhD candidate, lab of Isaac Pessah

**Ray Zhang**, PhD candidate, lab of Isaac Pessah

### **PTX Seminar Series Committee, 2014-2015 academic year**

*\*The 2014-2015 seminar series was supported by the David and Dana Loury Foundation Seminar Series*

**Students:** **Karan Agrawal**, PhD candidate, lab of John Newman

**Olivia Buonarati**, PhD candidate, lab of Johannes Hell

**Sarah Carratt**, PhD candidate, lab of Laura Van Winkle

**Chen (Samantha) Feng**, PhD candidate, lab of Kit Lam

**Cameron Flayer**, PhD candidate, lab of Angela Haczku

**Michelle Guignet**, PhD candidate, lab Pam Lein

**Michelle Kossack**, PhD candidate, lab of Bruce Draper

**Maria Paz Prada**, PhD candidate, lab of Manuel Navedo

**Esther Patchin**, PhD candidate, lab of Kent Pinkerton

**Frances Shaffo**, PhD candidate, lab of Pam Lein

**Kyla Walter**, PhD candidate, lab of Birgit Puschner

## PTX Graduates in 2014-2015

### PhD Degree Program

- Donald Anderson, PhD** [Major Professor: Laura Van Winkle, Anatomy, Physiology and Cell Biology, SVM]  
Dissertation title: *Small Particles in the Respiratory System: Deposition, Retention and Clearance*  
Current position: Postdoctoral Fellow, Laboratory of Dr Andrej Holian, Center for Health Sciences, University of Montana, Missoula, MT
- Christopher Barnhart, PhD** [Major Professor: Pamela Lein, Molecular Biosciences, SVM]  
Dissertation title: *In Vivo Evidence of Ryanodine Receptor-Dependent Mechanisms of the Developmental Neurotoxicity of 2,2',3,5',6-Pentachlorobiphenyl*  
Current position: Postdoctoral Fellow, Laboratory of Michael Aschner, Albert Einstein College of Medicine, Bronx, New York
- Sandra Chang, PhD** [Major Professor: Richard W Harper, Pulmonary & Critical Care, SOM]  
Dissertation title: *Examination of the Role of Dual Oxidase-Generated Hydrogen Peroxide in the Mouse Lung*  
Current position: Scientist, Toxicology- Preclinical Research, Ethicon, Johnson & Johnson, Somerville, NJ.
- Samuel Chung, PhD** [Major Professor: Tzipora Goldkorn, Pulmonary & Critical Care, SOM]  
Dissertation title: *The Dual Roles of Src in Smoking-Induced Lung Injury and Lung Cancer: Regulation of nSMase2 and EGFR Function in the Tobacco Smoke-exposed Airway Epithelium*  
Current position: Postdoctoral Fellow, Laboratory of Tzipora Goldkorn, UC Davis
- Jocelyn Claude** [Major Professor: Kent Pinkerton, Pediatrics, SOM]  
Dissertation title: *Effects of Perinatal Environmental Tobacco Smoke (ETS) on Viral Infection and Susceptibility in Neonatal Mice*  
Current position: Intern, Office of Environmental Health Hazard Assessment, California EPA
- Carley Corado** [Major Professor: Heather Knych, Molecular Biosciences, SVM]  
Dissertation title: *An Exploration of Genetic Variation in Cytochrome P450, 2D50 and the Resulting Effects on the Metabolism of Selected Pharmaceuticals in Thoroughbred Horses*  
Current position: Research Associate II, Pharmacology and Toxicology Program, BioMarin Pharmaceutical, Novato, CA
- Zhijian (James) Duan** [Major Professor: Hongwu Chen, Biochemistry and Molecular Medicine, SOM]  
Dissertation title: *Molecular Mechanisms of Epigenetic Coregulator ANCCA Function in Tumorigenesis and Drug Resistance*  
Current position: Postdoctoral Fellow, Laboratory of Aiming Yu, Biochemistry and Molecular Medicine, UC Davis
- Wei He** [Major Professor: Matthew Coleman, Department of Radiation Oncology, SOM]  
Dissertation title: *Cell free de novo synthesis of human receptor tyrosine kinase ERBB2 supported by water-soluble nanolipoprotein particles (NLPs)*  
Current position: Postdoctoral Fellow at Lawrence Livermore National Laboratory
- Krista Callinan Hoffman** [Major Professor: Swee Teh, Anatomy, Physiology and Cell Biology, SVM]  
Dissertation title: *The Toxicant Mixing Pot: Testing for Effects and Interactions among Stressors Common to the Modern Aquatic Environment*  
Current position: Environmental Scientist, California Department of Water Resources
- Inderpreet Kaur** [Major Professor: Elva Diaz, Pharmacology, SOM]  
Dissertation title: *Mechanism of SynDIG Regulation of Synaptic Targeting of AMPARs*  
Current position: Postdoctoral Fellow, Laboratory of Leigh Griffiths, UC Davis School of Veterinary Medicine

## PTX Graduates in 2014-2015

### PhD Degree Program

**Emir Leal Leon** [Major Professor: Michael Rogawski, Neurology, SOM]

Dissertation title: Tetramine, A Cage Convulsant with Potential for Terrorism: Block of Human Recombinant  $\alpha 1\beta 3\gamma 2$  GABA<sub>A</sub> Receptors

Current position: Professor and Researcher, Level B, School of Biological and Chemical Sciences of the Universidad Autonoma de Sinaloa, Mexico

**Monica Pombo** [Major Professor: Fern Tablin, Anatomy, Physiology and Cell Biology, SVM]

Dissertation title: *The Human Platelet Aryl Hydrocarbon Receptor :Non-genomic Signaling and its Crosstalk with Platelet Activation Pathways*

Current position: Intern, Office of Environmental Health Hazard Assessment, California EPA

**Dora Cedano Prieto** [Major Professor: Yoshikazu Takada, Dermatology, SOM]

Dissertation title: Characterization of the Role of Integrins in Insulin Like Growth Factor 1 and 2 (IGF1 and IGF2) Intracellular Signaling In Cancer

Current position: Professor and Researcher, Level B, School of Biological and Chemical Sciences of the Universidad Autonoma de Sinaloa, Mexico

**Rona Silva** [Major Professor: Kent Pinkerton, Pediatrics, SOM & Anatomy/Physiology and Cell Biology, SVM]

Dissertation title: *Respiratory Effects of High Aspect Ratio Nanomaterials: The Role of Dose, and Particle Characteristics*

Current position: Associate Toxicologist, Air Toxicology and Risk Assessment Section, Office of Environmental Health Hazard Assessment (OEHHA), California EPA

**Chelsea Snyder** [Major Professor: Martin Privalsky, Microbiology and Molecular Genetics, CBS]

Dissertation title: *Regulation of Corepressor Alternative mRNA Splicing by Hormonal and Metabolic Signaling*

Current position: Research Scientist I, Gilead Sciences, Foster City, CA

**Marianna Stamou** [Major Professor: Pamela Lein, Molecular Biosciences, SVM]

Dissertation title: *Mechanism(s) by Which Environmental Factors Modulate Neuronal Connectivity to Increase Risk of Neurodevelopmental Disorders*

Current position: Postdoctoral Fellow, Laboratory of Shana Sturla, Laboratory of Food and Nutrition Toxicology, ETH, Zurich, Switzerland

### MS Degree Program

**Katherine Dang** [Major Professor: Birgit Puschner, Molecular Biosciences, SVM]

Dissertation title: *Determination of Polychlorinated Biphenyls and Polybrominated Diphenyl Ethers in Commercial Cows' Milk from California, U.S.*

Current position: Matriculated in M.S. Program in Clinical Research, University of California, San Francisco

**Timothy Daraitis** [Major Professor: Paul Allen, Molecular Biosciences, SVM]

Current position: Applying to medical schools

**Adrian Green** [Major Professor: Michele La Merrill, Environmental Toxicology, CAES]

Dissertation title: *Perinatal Exposure to the Flame Retardant Triphenyl Phosphate Increases the Rate of Onset of Type 2 Diabetes and Adipose Accumulation inUCD-T2DM Rats.*

Current position: Matriculated in the Toxicology PhD Program at North Carolina State University, Raleigh, NC

## **PTX Graduates in 2014-2015**

### **MS Degree Program**

**Tomoko Ishikawa** [Major Professor: Michele La Merrill, Environmental Toxicology, CAES]

Dissertation title: *Effects of DDT Exposure on Energy Metabolism and Mammary Tumor Development in Rodent Models*

Current position: Interviewing for jobs

**Ashneel Krishna** [Major Professor: Pamela Lein, Molecular Biosciences, SVM]

Current position: Unknown

**Scott Wagner** [Major Professor: Swee Teh, Anatomy, Physiology and Cell Biology, SVM]

Dissertation title: *Developmental Effects of Fipronil on Japanese Medaka (*Oryzias latipes*) Embryos*

Current position: Environmental Scientist, Surface Water Protection Program, Department of Pesticide Regulation, California Environmental Protection Agency, Sacramento, CA

## **Incoming PTX students (Fall of 2015)**

### **PhD Program**

#### **Katie Bradshaw**

Katie received her BS in Chemistry from Cal State Channel Islands in 2008 and her MS in Forensic Sciences at UC Davis in 2010. She is returning to UCD to study toxicant mechanisms in human health.

#### **Xiyuan Cheng**

Xiyuan received her BS Pharmacy in China in 1998, and has experience in neural regeneration and drug screening. She is interested in neuropharmacology, nerve-immune interactions and drug discovery.

#### **Nicholas Ellinwood**

Nicholas received his BS in neuroscience from UCLA in 2009, and MPH with emphasis in applied biostatistics at University of Colorado Denver in 2015. He is interested in neuropharmacology, genetic and developmental pharmacology.

#### **Zachary Goecker**

Zachary received his BS in Forensic Biology in 2013 from San Jose State, and Master's in Forensic Chemistry in 2014 from Penn State. He is interested in environmental toxicants and gene and environmental interactions.

#### **Briana Hamamoto**

Briana received her BS in Animal Science from UC Davis in 2014. She is interested in veterinary analgesic pharmacology.

#### **Kayla Horton**

Kayla received her BS in Cell and Molecular Biology from Cal State Sacramento in 2013, and Master's in Stem Cell Research from CSUS in 2015 while doing research in a UCD lab. She is interested in respiratory pharmacology and neuropharmacology.

#### **Dung Nguyen**

Dung received his BS in Pharmaceutical Chemistry from UC Davis in 2014. He is interested in mechanisms of drug and toxicant action.

## **Incoming PTX students (Fall of 2015)**

### **PhD Program**

#### **Samantha O'Dwyer**

Samantha graduated from University of Vermont in 2013 with a BA in Biology, and has since been working in a vascular pharmacology lab. She is interested in clinical pharmacology and toxicology.

#### **Deborah Park**

Deborah received her BS in Neurobiology, Physiology and Behavior from UC Davis in 2013, and has been working in a neuropharmacology lab. She would like to further pursue her interests in neuropharmacology and toxicology.

#### **Brandon Pressley**

Brandon received his BS in Pharmaceutical Chemistry from UC Davis in 2014. He is interested in clinical pharmacology and neuropharmacology.

#### **Simon Vu**

Simon received his BS from UC Davis in 2012, and is interested in clinical pharmacology, cancer biology and neuropharmacology.

## **Incoming PTX Students**

### **MS Program**

#### **Harpreet Brar**

Harpreet received her BS in Biology in 2014 from the University of Wisconsin Madison, and has been working on pancreatic beta cell function and diabetes. She is interested in disease mechanisms and therapeutics.

#### **Xiaojun Deng**

Xiaojun (Nicole) received her BS in Pharmaceutical Chemistry from UC Davis in 2014. She is interested in cancer biology and drug development.

#### **Chun Kiu Hui**

Chun Kiu received his BS in Biochemistry and Molecular Biology from UC Davis in 2015. He is interested in developmental and neuro pharmacology and toxicology.

## **Number of students in the PTX Program** (including incoming students)

<b>PhD</b>	68
<b>MS</b>	10
<b>Total</b>	78

## Publications by PTX Graduate Students in 2014-2015

PTX students identified in **bold black font**; PTX faculty identified in **bold blue font**

- Anderson DS, Silva RM**, Lee D, Edwards PC, Sharmah A, Guo T, **Pinkerton KE, Van Winkle LS** (2015) Persistence of silver nanoparticles in the rat lung: influence of dose, size and chemical composition. *Nanotoxicology* 9:591-602.
- Anderson DS, Patchin ES, Silva RM**, Uyeminami DL, Sharmah A, Guo T, Das GK, Brown JM, Shannahan J, Gordon T, Chen LC, **Pinkerton KE, Van Winkle LS** (2015) Influence of particle size on persistence and clearance of aerosolized silver nanoparticles in the rat lung. *Toxicol Sci.* 144(2):366-81.
- Davidson RA, **Anderson DS, Van Winkle LS, Pinkerton KE**, Guo T (2015) Evolution of silver nanoparticles in the rat lung investigated by X-ray absorption spectroscopy. *J Phys Chem A.* 119(2):281-9.
- Van Winkle LS**, Bein K, **Anderson D, Pinkerton KE**, Tablin F, Wilson D, Wexler AS. (2015) Biological dose response to PM2.5: effect of particle extraction method on platelet and lung responses. *Toxicol Sci* 143(2):349-59.
- Liu R, Shih TC, Deng X, **Anwar L**, Ahadi S, Kumaresan P, **Lam KS** (2015) Design, synthesis, and application of OB2C combinatorial peptide and peptidomimetic libraries. In: *Peptide Libraries: Methods and Protocols, Methods in Molecular Biology*. Vol. 1248. New York: Springer, pp 3-22.
- Wu X, **Barnhart CD, Lein PJ**, Lehmler HJ (2015) Hepatic metabolism affects the atropselective disposition of 2,2',3,3',6,6'-hexachlorobiphenyl (PCB 136) in mice. *Env Sci Tech* 48(1): 616-25.
- Barnhart CD**, Yang D, **Lein PJ** (2015) Using the Morris water maze to assess spatial learning and memory in weanling mice. *PLoS ONE* 10(4):e0124521. doi: 10.1371/journal.pone.0124521.
- Kania-Korwel I, **Barnhart CD, Lein PJ**, Lehmler HJ (2015) Effect of pregnancy on the disposition of 2,2',3,5',6-pentachlorobiphenyl (PCB 95) atropisomers and their hydroxylated metabolites in female mice. *Crit Rev Toxicol* (in press).
- Coleman N, Nguyen HM, Cao Z, **Brown BM**, Jenkins DP, Zolkowska D, Chen YJ, Tanaka BS, Goldin AL, **Rogawski MA, Pessah IN, Wulff H** (2015) The riluzole derivative 2-amino-6-trifluoromethylthio-benzothiazole (SKA-19), a mixed KCa2 activator and NaV blocker, is a potent novel anticonvulsant. *Neurotherapeutics* 12:234-249. *PMC4322077*
- Oliván-Viguera A, Valero MS, Coleman N, **Brown BM**, Laría C, Murillo MD, Gálvez JA, Díaz-de-Villegas MD, **Wulff H**, Badorrey R, Köhler R (2015) A novel pan-negative-gating modulator of KCa2/3 channels, the fluoro-dibenzoate, RA-2, inhibits EDH-type relaxation in coronary artery and produces bradycardia *in vivo*. *Molecular Pharmacology* 87:338-348.
- Carratt SA**, Ramirez MG (2015) A preliminary study of *Argiope argentata* as indicators of southern California metal contamination. *Arachnology* 16 (9), 320–324.
- Simion C, **Cedano-Prieto ME, Sweeney C** (2014) The LRIG family: enigmatic regulators of growth factor receptor signaling. *Endocr Relat Cancer* 21(6):R431-43.
- Lesiak A, Zhu M, **Chen H**, Appleyard SM, Impey S, **Lein PJ\***, Wayman GA (2014) The environmental neurotoxicant PCB 95 promotes synaptogenesis via ryanodine receptor-dependent miR132 upregulation. *J Neurosci* 34(3): 717-25. \*Corresponding author. *This article was selected as the editor's highlight.*
- Yang D, Kania-Korwel I, Ghogha A, **Chen H, Stamou M**, Bose DD, **Pessah IN**, Lehmler HJ, **Lein PJ** (2014) PCB136 atropselectively alters morphometric and functional parameters of neuronal connectivity in cultured rat hippocampal neurons via ryanodine receptor-dependent mechanisms. *Toxicol Sci* 138(2):379-392. *This article was selected as the editor's highlight for this issue.*
- Harrill JA\*, **Chen H\***, Streifel K, Yang D, Mundy WR, **Lein PJ** (2015) Ontogeny of biochemical, morphological and functional parameters of synaptogenesis in primary cultures of rat hippocampal and cortical cells. *Molec Brain* 8(1):10. <http://www.molecularbrain.com/content/8/1/10>. \*Co-First Authors.
- Chapman CAR, **Chen H, Stamou M**, Biener J, Biener MM, **Lein PJ**, Seker E (2015) Nanoporous gold as a neural interface coating: effects of topography, surface chemistry and feature size. *ACS Applied Materials & Interfaces* 7(13): 7093-7100.
- Corado CR**, McKemie DS, Young A, **Knynch HK** (2015). Evidence for polymorphism in the cytochrome P450 2D gene in horses. *J Vet Pharmacol Therap* (In Press).

- Chung S**, Vu S, Filosto S, **Goldkorn T** (2015) Src regulates cigarette smoke-induced ceramide generation via neutral sphingomyelinase 2 in the airway epithelium. *Am J Respir Cell Mol Biol* 52(6):738-48.
- Lin YP, Chen XP, **Dang K**, **Puschner B** (2015) Polychlorinated biphenyls and polybrominated diphenyl ethers in commercial cows' milk from California. *Food Additives and Contaminants Part B* (under review).
- Wikoff WR, Hanash S, **DeFelice B**, Miyamoto S, Barnett M, Zhao Y, Goodman G, Feng Z, Gandara D, **Fiehn O**, Taguchi A (2015) Diacetylspermine is a novel prediagnostic serum biomarker for non-small-cell lung cancer and has additive performance with pro-surfactant protein B. *J Clin Oncol* [Epub ahead of print].
- Wikoff WR, Grapov D, Fahrman JF, **DeFelice B**, Rom WN, Pass HI, Kim K, Nguyen U, Taylor SL, Gandara DR, Kelly K, **Fiehn O**, Miyamoto S (2015) Metabolomic markers of altered nucleotide metabolism in early stage adenocarcinoma. *Cancer Prevention Research*, 8 (5), 410-418.
- Fahrman JF, Kim K, **DeFelice BC**, Taylor SL, Gandara DR, Yoneda KY, Cooke DT, **Fiehn O**, Kelly K, Miyamoto S (2015) Investigation of metabolomic blood biomarkers for detection of adenocarcinoma lung cancer. *Cancer Epidemiol Biomarkers Prev* [Epub ahead of print].
- Walcott S, **Docken S**, Harris SP (2015) Effects of cardiac myosin binding protein-C on actin motility are explained with a drag-activation-competition model. *Biophys Journal* 108(1):10-3.
- Wang Y, Stokes A, **Duan Z**, Hui J, Xu Y, Chen Y, **Chen H**, **Lam K**, Zhou C (2015) Lrp6 modulates Ret signaling in renal development and cystic dysplasia. *J Am Soc Neph* (In press).
- Zou X, **Duan Z**, Wang J, Sokolov A, Xu J, Chen CZ, Li J, **Chen H** (2014) Kinesin family deregulation coordinated by bromodomain protein ANCCA and histone methyltransferase MLL for breast cancer cell growth, survival, and tamoxifen resistance. *Mol Cancer Res* 12(4):539-49.
- Jeffryes JG, Colastani RL, **Elbadawi-Sidhu M**, Kind T, Niehaus TD, Broadbelt LJ, Hanson AD, **Fiehn O**, Tyo KE, Henry CS (2015) MINEs: open access databases of computationally predicted enzyme promiscuity products for untargeted metabolomics. *J Cheminform* 7:44. doi: 10.1186/s13321-015-0087-1.
- Niehaus TD, Gerdes S, Hodge-Hanson K, Zhukov A, Cooper AJL, **ElBadawi-Sidhu M**, **Fiehn O**, Downs DM, Hanson AD (2015) Genomic and experimental evidence for multiple metabolic functions in the RidA/YjgF/YER057c/UK114 (Rid) protein family. *BMC Genomics*. 16:382. doi: 10.1186/s12864.
- He W**, Scharadin T, Saldana M, Gellner M, Hoang-Phou S, Takamishi C, Hura GL, Tainer JA, **Carraway III KA**, **Henderson PT**, **Coleman MA** (2015) Cell-free expression of functional receptor tyrosine kinases. In Press *Nature/Scientific Reports*. 5:12896.
- Ishikawa T**, Graham J, Stanhope K, **Havel P**, **La Merrill M** (2015) Effect of DDT exposure on lipids and energy balance in obese Sprague-Dawley rats before and after weight loss. *Tox Reports* (In press).
- Jilek JL**, Sant KE, Cho KH, Reed MS, Pohl J, Hansen JM, Harris C (2015). Ethanol attenuates histiotrophic nutrition pathways and alters the redox environment and thiol proteome during rat organogenesis. *Toxicol Sci* (In press).
- Wang WP, Ho PY, Li MM, Chen QX, Addepalli B, Tu MJ, Limbach PA, Li MM, Wu WJ, **Jilek JL**, Qiu JX, Zhang HJ, Li T, Wun T, DeVere White R, **Lam KS**, **Yu AM** (2015) Bioengineering novel chimeric microRNA-34a for prodrug cancer therapy: High-yield expression and purification, and structural and functional characterization. *J Pharmacol Exp Ther* 354(2):131-141.
- Madl AK, **Kadir T**, **Pinkerton KE** (2015). Particle Toxicities. Reference Module in Biomedical Sciences. Elsevier. 4-May-15 doi: 10.1016/B978-0-12-801238-3.02084-5.
- Bettaieb A, Jiang JX, Sasaki Y, Chao TI, **Kiss Z**, Chen X, Tian J, Katsuyama M, Yabe-Nishimura C, Xi Y, Szyndralewicz C, Schröder K, Shah A, Brandes RP, Haj FG, Török N (2015) Hepatocyte nicotinamide adenine dinucleotide phosphate reduced oxidase 4 regulates stress signaling, fibrosis, and insulin sensitivity during development of steatohepatitis in mice *J. Gastroenterol* 149:468-480.
- Serizawa N, Tian J, Fukada H, Baghy K, Scott F, Chen X, **Kiss Z**, Olson K, Hsu D, Liu FT, Török N, Zhao B, Jiang JX (2015) Galectin 3 regulates HCC cell invasion by RhoA and MLCK activation *Nature: Laboratory Investigation*, 0023-6837/15.
- Kitamura S**, Morisseau C, Inceoglu B, Kamita SG, De Nicola GR, Nyegue M, **Hammock BD** (2015) Potent natural soluble epoxide hydrolase inhibitors from *Pentadiplandra brazzeana* baillon: synthesis, quantification and measurement of biological activities *in vitro* and *in vivo*. *PLoS ONE* 10(2): e0117438.
- Chai X, Guo Y, Jiang M, Hu B, Li Z, Fan J, Deng M, Billiar TR, **Kucera HR**, **Gaikwad NW**, Xu M, Lu P, Yan J, Fu H, Liu Y, Yu L, Huang M, Zeng S, Xie W (2015) Oestrogen sulfotransferase ablation sensitizes mice to sepsis, *Nature Communications* 6:7979.



- Bettaieb A, Hosein E, **Kucera H, Gaikwad N**, Haj F (2015) Decreased adiposity and enhanced glucose tolerance in shikonin-treated mice. *Obesity* (in press).
- Lee BH, Zheng J** (2015) Proton block of proton-activated TRPV1 current. *J Gen Physiol* 146(2):147-159.
- Ma L\*, **Lee BH\***, Clifton H, Schaefer S, **Zheng J** (2015) Nicotinic acid is a common regulator of heat-sensing TRPV1-4 ion channels. *Sci Rep* 5:8906; DOI:10.1038/srep08906. \*Co-First Authors
- Murphy SR**, Oslund KL, Hyde DM, **Miller LA, Van Winkle LS**, Schelegle ES (2014) Ozone-induced airway epithelial cell death, the neurokinin-1 receptor pathway, and the postnatal developing lung. *Am J Physiol Lung Cell Mol Physiol*. 307(6):L471-81.
- Jenkins SS\*, **Mukherjee S\***, **Heyer WD** (2015) DNA Repair by Homologous Recombination. *Encyclopedia of Cell Biology* (in press). \* Co-First Authors
- Nieves-Cintrón M, Nystoriak MA, **Prada MP**, Johnson K, Fayer W, Dell'Acqua ML, Scott JD, **Navedo MF** (2015) Selective downregulation of K<sub>v</sub>2.1 function contributes to enhanced arterial tone during diabetes. *Journal of Biological Chemistry* 290: 7918-7929.
- Silva R**, Doudrick K, Franzi L, **TeeSy C, Anderson D**, Wu Z, Mitra S, Vu V, Dutrow G, Evans J, Westerhoff P, **Van Winkle L**, Raabe O, **Pinkerton K** (2014) Instillation versus inhalation of multi-walled carbon nanotubes: Exposure-related health effects, clearance, and the role of particle characteristics. *ACS Nano* 8(9):8911-31.
- Silva RM**, Xu J, Saiki C, **Anderson DS**, Franzi LM, Vulpe CD, Gilbert B, **Van Winkle LS, Pinkerton KE**. (2014) Short versus long silver nanowires: a comparison of in vivo pulmonary effects post instillation. *Part Fibre Toxicol* 11:52.
- Silva RM, Anderson DS**, Franzi LM, Peake JL, Edwards PC, **Van Winkle LS, Pinkerton KE**. (2015) Pulmonary effects of silver nanoparticle size, coating, and dose over time upon intratracheal instillation. *Toxicol Sci* 144(1):151-62.
- Stamou M**, Wu X, Kania-Korwel I, Lehmler H-J, **Lein PJ** (2014) Cytochrome P450 mRNA expression in the rodent brain: species-, sex- and region-dependent differences. *Drug Metab Dispos* 42(2):239-44.

### PTX graduate student honors in 2014-2015

#### **Karan Agrawal** [John Newman]

- Sciex Travel award, The Metabolomics Society Annual Meeting, June 2015
- NIH Training Program in Biomolecular Technology T32 Fellowship, 2015-2016

#### **Sara Boles** [Andrew Whitehead]

- Jarena White Fellowship, 2014-2015

#### **Brandon Brown** [Heike Wulff]

- NHLBI Cardiovascular Science T32 Fellowship, 2014-2015

#### **Olivia Buonarati** [Johannes Hell]

- NINDS NRSA F31 Predoctoral Fellowship, 2013 – 2016

#### **Sarah Carratt** [Laura Van Winkle]

- NIEHS T32 Fellowship, 2014-2016
- Superfund Basic Sciences Research Fellowship, 2014-2015
- UC Davis & Humanities Graduate Research Award, 2015-2016
- UC Davis Grad Slam Finalist, 2015
- Superfund Annual Meeting Best Poster Presentation Award, 2015
- Invited Speaker, Loyola Marymount University Department of Biology

#### **Steffen Docken** [Colleen Clancy]

- UCD-LLNL Joint Graduate Mentorship Award, 2015

#### **Samantha Faber** [Michael Denison]

- NIEHS T32 Fellowship, 2014-2016
- Superfund Basic Sciences Research Fellowship, 2014-2015

#### **Samantha (Chun) Feng** [Kit Lam]

- Predoctoral Fellowship, Keller Pathways Fellowship Program, UC Davis Child Institute, 2015-2016
- Patent, "Site-specific covalent chemical ligation to monoclonal and polyclonal immunoglobulin". Inventors: Diana Lac, Chun (Samantha) Feng, Gaurav Bhardwaj and Kit S. Lam; UC Ref: 2015-138-1.

**Samantha Francis Stuart** [Crystal Ripplinger]

- NIGMS IMSD Fellowship, 2014-2015
- NIGMS Pharmacology T32 Fellowship, 2015-2016

**Michelle Guignet** [Pam Lein]

- NIGMS Pharmacology T32 Fellowship, 2014-2016
- Dana and David Loury Foundation Fellowship, 2015-2018

**Peter Henderson** [Johannes Hell]

- American Heart Association Predoctoral Fellowship, 2014-2016

**Brad Hobson** [Pam Lein]

- ARCS (Achievement Rewards for Scientists) Scholar, 2014-2016
- Dana and David Loury Foundation Fellowship, 2014-2016

**Hyun Tae Hwang** [Anne Knowlton]

- Graduate Studies Travel Award, 2015-2016

**Yuqian Jiang** [Xinbin Chen]

- UC Davis & Humanities Graduate Research Award, 2015-2016

**Skye Kelty** [Laura Van Winkle]

- Floyd and Mary Schwall Fellowship in Medical Research, 2014-2016

**Seiya Kitamura** [Bruce Hammock]

- Travel Grant, ACS Division of Medicinal Chemistry/Pfizer, 2015
- GSA Travel Award, Spring 2015

**Sean Kodani** [Bruce Hammock]

- Superfund Basic Sciences Research Fellowship, 2013-2014
- NIGMS Pharmacology T32 Fellowship, 2014-2016

**Michelle Kossack** [Bruce Draper]

- NIEHS T32 Fellowship, 2015-2016

**Bo Hyun Lee** [Jie Zheng]

- 2015 Poster Award, Biophysical Society Annual Meeting, Baltimore, MD

**Monica Maier** [Ron Tjeerdema]

- Marion Miller Memorial Fellowship, 2015

**Caroline (Carly) Moore** [Birgit Puschner]

- American College of Toxicology North American Graduate Fellowship, 2014-2016

**Sucheta Rinti Mukherjee** [Wolf-Dietrich Heyer]

- NIGMS Pharmacology T32 Fellowship, 2013-2015
- Graduate Studies Travel Award, 2014-2015
- College of Biological Sciences Dean's Mentorship Award, 2015

**Chuong Nguyen** [Rivkah Isseroff]

- NIGMS Pharmacology T32 Predoctoral Fellowship, 2013-2014
- CIRM Stem Cell T32 Predoctoral Fellowship, 2014-2015

**Esther Patchin** [Kent Pinkerton]

- NHLBI Cardiovascular Science T32 Fellowship, 2013-2015

**Maria Paz Prada** [Manuel Navedo]

- NIGMS Pharmacology T32 Fellowship, 2014-2016

**Sunjay Sethi** [Pam Lein]

- Floyd and Mary Schwall Fellowship in Medical Research, 2014-2016

**Frances Shaffo** [Pam Lein]

- CCRBM NHBLI Lung Biology T32 Fellowship, 2013-2016
- 2015 Northern California SOT Graduate Student Achievement Award
- Freedland Fellowship, 2014-2015

**Chelsea Snyder** [Marty Privalsky]

- Student Travel Award, American College of Toxicology Annual Meeting, Nov 2014

**Kim Truong** [Isaac Pessah]

- NIGMS Pharmacology T32 Predoctoral Fellowship, 2014-2016

**Kyla Walter** [Birgit Puschner]

- Freedland Fellowship, 2014-2015
- NIEHS T32 Fellowship, 2014-2016
- American College of Toxicology North American Graduate Fellowship, 2015-2017

**Ray Zhang** [Isaac Pessah]

- NIEHS T32 Fellowship, 2013-2015

### **PTX Student Involvement in Service Activities in 2014-2015**

**Karan Agrawal** [John Newman]

- PTX seminar series committee

**Brandon Brown** [Heike Wulff]

- PTX website team
- PTX Admissions committee
- PTX CEP committee
- Chancellor's Graduate and Professional Student Advisory Board

**Olivia Buonarati** [Johannes Hell]

- PTX seminar series committee

**Sarah Carratt** [Laura Van Winkle]

- PTX seminar series committee
- UC Davis Postdoctoral Research Symposium Judge
- GSA Ad-hoc Administrative Advisory Selection Committee

**Zhijian (James) Duan** [Hongwu Chen]

- PTX seminar series committee

**Chen (Samantha) Feng** [Kit Lam]

- PTX seminar series
- PTX website team

**Cameron Flayer** [Angela Haczku]

- PTX seminar series committee

**Michelle Guignet** [Pam Lein]

- PTX seminar series committee
- PTX Admissions committee

**Tamara Kadir** [Kent Pinkerton]

- PTX Admissions committee

**Skye Kelty** [Laura Van Winkle]

- UC Davis Picnic Day Booth for ETX Department
- Career Day Speaker at Agua Fria High School
- Executive Leadership Committee Member and Team Captain for American Cancer Society's Relay For Life of Davis

**Sean Kodani** [Bruce Hammock]

- PTX Admissions committee

**Heidi Kucera** [Nilesh Gaikwad]

- Mentor in the AggieMentors program (2014-2015). Mentee (Diana Gomez, Woodland High School student) won **first** place at the AggieMentor fair and went on to compete at the EnvironMentors fair in Washington DC against the top 49 students in the country. At the EnvironMentors fair, Diana **won** the Lalley Wildlife and biodiversity Conservation scholarship.

**Michelle Kossack** [Bruce Draper]

- PTX seminar series committee
- PTX graduate group representative to the Graduate Student Association (GSA), 2014-2015

**Sucheta (Rinti) Mukherjee** [Wolf-Dietrich Heyer]

- PTX Website team

**Chuong Nguyen** [Rosyln Rivkah Isseroff]

- PTX Admission Committee, 2013-2014
- PTX website team
- PTX representative to the Graduate Student Association (2013-present)
- Member, Vice Provost of Global Affairs Recruitment Advisory Committee

**Esther Patchin** [Kent Pinkerton]

- PTX seminar series committee

**Maria Paz Prada** [Manuel Navedo]

- PTX seminar series committee

**Sunjay Sethi** [Pamela Lein]

- PTX Admissions committee

**Frances Shaffo** [Pam Lein]

- PTX seminar series committee
- PTX Admissions committee

**Denise Trans** [Paul Henderson]

- PTX website team

**Kim Truong** [Isaac Pessah]

- PTX website team
- PTX Admissions committee
- PTX graduate group representative to the Graduate Student Association (GSA), 2014-2015

**Kyla Walter** [Birgit Puschner]

- PTX seminar series committee

**Ray Zhang** [Isaac Pessah]

- PTX website team
- PTX CEP committee
- Guest lecturer, Biology 186A, *Cell and Molecular Biology Issues*, California State University, Sacramento
- Graduate Student Representative, Society of Toxicology, Northern California (NorCal) Regional Chapter
- Society of Toxicology, Graduate Student Leadership Committee
- Society of Toxicology Membership Committee, Graduate Student Representative

**PTX Faculty Awards**

**Matthew Coleman, Ph.D.**, Associate Adjunct Professor at the University of California, Davis in the Department of Radiation Oncology SOM, received a 2015 UC MEXUS Small Grant Award: *Development of nano-tools for increasing bioavailability of curcumin for cellular protection against arsenic exposure.*

**Kent Pinkerton, Ph.D.**, Professor and Director, Center for Health and the Environment, was granted guest professorship status (Visiting Professor) at Shandong University in Jinan, China on June 23, 2015.

**News from PTX Alumni**

**Gary D. Novack, Ph.D.** (PharmaLogic Development, Inc.) was invited to speak on “Controlled delivery of glaucoma medications” at the glaucoma subspecialty day of the American Academy of Ophthalmology. Dr. Novack joined the UCD faculty as a Visiting Professor of Pharmacology and Ophthalmology, and the editorial boards of *Eye & Contact Lens* and *Journal of Ocular Pharmacology and Therapeutics*.

**William Slikker, Jr., Ph.D.**, Director, National Center for Toxicological Research, was presented with the **2015 Josef Warkany Lecture** at the 55th Annual Meeting of The Teratology Society. The award recognizes a scientist who has significantly contributed to the field of teratology over their career. Dr. Slikker’s multiple contributions include his work on placental transfer of compounds, fetal metabolism of compounds and the fate of those metabolites, and the long-term effects of perinatal exposures.