

Curriculum Vitae
Jessica M. Weems, Ph.D.

EDUCATION

University of California, San Diego

La Jolla, CA

Certification in Clinical Research, June 2012

Program of Study: Clinical Research Enhancement Through Supplemental Training (CREST)

University of Utah

Salt Lake City, UT

Ph.D., August 2010

Department: Pharmacology and Toxicology

Dissertation: 3-Methylindole-Induced DNA Damage and Mutagenesis in Primary Normal Human Bronchial Epithelial Cells

University of California, San Diego

La Jolla, CA

Bachelor of Science, June 2002

Major: General Biology

Minor: Psychology

HONORS AND AWARDS

- Cancer Therapeutics Training Program Fellowship Recipient, UCSD Moores Cancer Center, June 2010
- Wolf Prize in Teaching, First Runner-Up, University of Utah College of Pharmacy, May 2010
- Higher Education Teaching Specialist Designation, University of Utah Center for Teaching and Learning Excellence, February 2010
- University of Utah Graduate Student Travel Award, April 2009
- Carl C. Smith Award for Meritorious Research, Honorary Mention, Mechanisms Specialty Section of the Society of Toxicology (SOT), March 2009
- Graduate Student Travel Award, SOT, March 2009
- Student Platform Presentation Award, Second Prize, Mountain West Society of Toxicology (MWSOT), October 2008
- Graduate Student Travel Award, MWSOT, September 2006
- Student Platform Presentation Award, Second Prize, Western Pharmacology Society (WPS), February 2005
- Provost's Honors, John Muir College, UCSD, 2001 – 2002

PROFESSIONAL EXPERIENCE

Trident University International

Cypress, CA

Faculty, Department of Health and Human Services, August 2014 - Present

I am responsible for teaching several sessions of undergraduate-level online-based biology and anatomy courses.

Arbor Scientia/The Neuroscience Education Institute

Carlsbad, CA

Medical Writer, September 2012 - July 2014

I served as a technical scientific writer who was responsible for curriculum and lecture development for continuing medical education and adult education courses, with a focus on neurobiology, mental health, and psychiatric disease-state educational materials. In addition, I hosted key opinion leader advisory board panels, as well as created interactive learning activities, case studies, videos, apps, pamphlets, journal articles, and reports that were utilized for disease-state education at scientific conferences and private dinner meetings for medical professionals and researchers.

RESEARCH EXPERIENCE

University of California, San Diego

La Jolla, CA

Department of Pharmacology

Dr. Robert H. Tukey Laboratory

Postdoctoral Fellow, February 2012 - September 2012

I developed a project in the lab that was focused on elucidating the underlying mechanisms driving the toxicity of the anticancer drug irinotecan. I evaluated irinotecan metabolism and clearance in both mice expressing the humanized form of the uridine diphosphate glucuronosyltransferase transporter (UGT1A1*1) and those expressing the human polymorphism implicated in irinotecan-mediated toxicity (UGT1A1*28).

University of California, San Diego

La Jolla, CA

Department of Pathology

Dr. Richard Klemke Laboratory

Postdoctoral Fellow, August 2010 - February 2012

I developed two ongoing research projects in the lab. The first project focused on the testing and characterization of the anticancer properties of 20 structural analogs of the repositioned antifungal agent ciclopirox olamine (CPX) in collaboration with the pharmaceutical company BioTheryx, Inc. The second project focused on determining the mechanism of action of the parent compound (CPX) in the treatment of both triple negative breast cancer and pancreatic cancer, which led to the discovery of a novel druggable protein complex.

University of Utah

Salt Lake City, UT

Department of Pharmacology and Toxicology

Dr. Garold S. Yost Laboratory

Graduate Student Researcher, June 2005 – August 2010

My dissertation research focused on characterizing the relative potency of the highly selective pneumotoxicant 3-methylindole (3MI), which has been shown to be present in cigarette smoke, to induce mutagenic and pro-apoptotic processes in cultured human lung cells. Lung expressed human cytochrome P450 enzymes have been shown to catalyze the metabolism of 3MI to several toxic intermediates. My work demonstrated that:

- exposure to low concentrations (0.1 to 10 μM) of 3MI induces extensive cytochrome P450-dependent DNA damage and p53 nuclear localization
- exposure to low concentrations of 3MI induces the expression of the cytochrome P450 enzymes responsible for 3MI metabolism at both the protein and RNA levels
- apoptosis is initiated only after exposure to high concentrations (25 μM and above) of 3MI

- low concentrations of 3MI induce microbial mutagenesis

University of California, San Diego
La Jolla, CA

Department of Pharmacology

Dr. Joan Heller-Brown Laboratory

Research Assistant, December 2002 – June 2005

Examined invasion and migration of astrocytoma cells in relation to brain cancer. Studied the effects of stretch on aortic smooth muscle cells in relation to hypertension. Performed bioengineering mechanical stretch assays, human and mammalian cell and tissue culture, tritium labeled thymidine incorporation, western blotting, and immunofluorescence microscopy.

Illumina, Inc.

San Diego, CA

Molecular Biology Lab

Undergraduate Student Intern, October 2000 – December 2002

Performed biochemical assays, including DNA extraction and purification, subcloning, gel electrophoresis, yeast and bacterial cell culture, restriction enzyme digests, and cDNA library preparation, in addition to general lab maintenance.

PUBLICATIONS

Kelber JA, Reno T, Kaushal S, Metildi C, Wright T, Stoletov K, **Weems JM**, Park FD, Mose E, Wang Y, Hoffman RM, Lowy AM, Bouvet M, Klemke RL

Kras Induces a Src/PEAK1/ErbB2 Kinase Amplification Loop That Drives Metastatic Growth and Therapy Resistance in Pancreatic Cancer

Cancer Research, 2012, 72 (10), 2554-64.

Weems JM, Lamb JG, D'Agostino J, Ding X, Yost GS

Potent Mutagenicity of 3-Methylindole Requires Pulmonary Cytochrome P450-Mediated Bioactivation: A Comparison to the Prototype Cigarette Smoke Mutagens B(a)P and NNK

Chemical Research in Toxicology, 2010, 23 (11), 1682-90.

Weems JM, Yost GS

3-Methylindole Metabolites Induce Lung CYP1A1 and CYP2F1 Enzymes by AhR and Non-AhR Mechanisms, Respectively

Chemical Research in Toxicology, 2010, 23 (3), 696-704.

Weems JM, Cutler NS, Moore C, Nichols WK, Martin D, Makin E, Lamb JG, Yost GS

3-Methylindole is Mutagenic and a Possible Pulmonary Carcinogen

Toxicological Sciences, 2009, 112 (1), 59-67.

Haga JH, Kaunas R, Radeff-Huang J, **Weems JM**, Estrada KD, Chien S, Brown JH, Seasholtz TM

Pulsatile Equibiaxial Stretch Inhibits Thrombin-Induced RhoA and NF- κ B Activation

Biochemical and Biophysical Research Communications, 2008, 372 (1): 216-20.

Seasholtz TM, Radeff-Huang J, Sagi SA, Matteo R, **Weems JM**, Cohen AS, Feramisco JR, Brown JH

Rho-Mediated Cytoskeletal Rearrangement in Response to LPA is Functionally Antagonized by Rac1 and PIP2

Journal of Neurochemistry, 2004, 91 (2): 501-12.

CONFERENCE PRESENTATIONS

Jessica M. Weems, Theresa A. Reno, Richard L. Klemke

Ciclopirox Olamine (CPX) Inhibits Breast Cancer Cell Proliferation by Blocking the Formation of a PEAK1-Src-eIF5a Protein Complex, Poster Presentation, American Association for Cancer Research (AACR), April 2012

Jessica M. Weems, Richard L. Klemke

Ciclopirox Olamine Alters PEAK1-Mediated Cytoskeletal Organization and Invasion of Metastatic Cancer Cells, Poster Presentation, AACR, April 2011

Jessica M. Weems, Garold S. Yost

3-Methylindole is as Mutagenic as the Prototype Cigarette Smoke Mutagens B(a)P and NNK, Poster Presentation, AACR - Chemistry in Cancer Research Working Group, February 2011

Jessica M. Weems, John G. Lamb, Garold S. Yost

Potent Mutagenicity of 3-Methylindole Requires Pulmonary Cytochrome P450-Mediated Bioactivation: A Comparison to the Prototype Cigarette Smoke Mutagens B(a)P and NNK, Poster Presentation, SOT, March 2010

Jessica M. Weems, N. Shane Cutler, Garold S. Yost

3-Methylindole-Mediated DNA Damage and Cytochrome P450 Induction in Primary Normal Human Bronchial Epithelial Cells, Poster Presentation, AACR, April 2009

Jessica M. Weems, Garold S. Yost

3-Methylindole-Mediated DNA Damage and Cytochrome P450 Induction in Primary Normal Human Bronchial Epithelial Cells, Platform Presentation, SOT, March 2009

Jessica M. Weems, N. Shane Cutler, Garold S. Yost

3-Methylindole-Mediated DNA Damage and Cytochrome P450 Induction in Primary Normal Human Bronchial Epithelial Cells, Platform Presentation, MWSOT, October 2008

Jessica M. Weems, Garold S. Yost

3-Methylindole-Induced DNA Damage in Primary Normal Human Bronchial Epithelial Cells, Platform Presentation, SOT, March 2008

Jessica M. Weems, N. Shane Cutler, Garold S. Yost

3-Methylindole-Induced DNA Damage in Primary Normal Human Bronchial Epithelial Cells, Poster Presentation, MWSOT, September 2007

Jessica M. Weems, N. Shane Cutler, William K. Nichols, Garold S. Yost

3-Methylindole Induced Human Lung Cell DNA Damage and p53 Nuclear Localization, Platform Presentation, MWSOT, September 2006

Jessica M. Weems, Christopher D. Pond, Chris M. Ireland, Louis R. Barrows

Effects of Neoamphimedine, a Top2 Directed Poison, on Activation of ATM, H2AX, and p53, Poster Presentation, American Society of Pharmacognosy, October 2006

Jessica M. Weems, N. Shane Cutler, William K. Nichols, Garold S. Yost

3-Methylindole-Induced DNA Damage Leads to Cytotoxicity and p53 Nuclear Localization, Platform Presentation, SOT, March 2005

Jessica M. Weems, Jason H. Haga, Joan Heller Brown, Tammy M. Seasholtz
Inhibition of Thrombin Stimulated RhoA Activation in Vascular Smooth Muscle Cells by Pulsatile Stretch-Induced NO Release, Platform and Poster Presentations, WPS, February 2005

TEACHING EXPERIENCE

- Anatomy and Physiology I, ANT250_I
 - May Fastrac Session 2016
 - February Fastrac Session 2016
- Stress and the Human Body, ANT100
 - January Fastrac Session 2017
 - May Fastrac Session 2016
 - April Fastrac Session 2016
 - March Fastrac Session 2016
 - February Fastrac Session 2016
 - January Fastrac Session 2016
 - November Fastrac Session 2015
 - October Fastrac Session 2015
 - September Fastrac Session 2015
 - August Fastrac Session 2015
 - July Fastrac Session 2015
 - May Session and May Fastrac Session 2015
 - Spring Session 2015
 - February Session 2015
 - November Session 2014
- Introduction to Biology, BIO101
 - February Fastrac Session 2016
 - October Fastrac Session 2015
 - August Fastrac Session 2015
 - May Session 2015
 - February Session 2015
 - Winter Session 2015
 - November Session 2014
 - Fall Session 2014
 - August Session 2014
 - Summer Session 2014
 - November Session 2013
- Pharmacology, PHTX 5221:
 - Spring Semester 2010, Antimalarial Drugs Lecture
 - Spring Semester 2009, Antimalarial Drugs Lecture
 - Spring Semester 2008, Antimalarial Drugs Lecture
- Cyber Pedagogy, UGS 6510, Fall Semester 2009, Cancer Pharmacology Online Course
- Teaching in Higher Education, UGS 6000, Fall Semester 2009:
 - Skin Cancer Basics Microteaching Lecture
 - Antimalarial Drugs Lecture
- Biomedical Basis of Disease, PHTX 5121, Spring Semester 2009, Cancer Pathophysiology Part I Lecture
- University of Utah Center for Teaching and Learning Excellence Fall Microteaching Sessions, Fall 2008, Skin Cancer Basics Microteaching Lecture

- Developments in Biochemical Toxicology, PHTX 6710:
 - Spring Semester 2009, Aryl Hydrocarbon Receptor Agonists
 - Spring Semester 2008, Role of p53 in the Suntan and Hyperpigmentation Responses
 - Fall Semester 2007, Effects of Caffeine on Human Colon Cancer Cellular Responses
 - Spring Semester 2007, Nicotine-Induced Cellular Proliferation
 - Fall Semester 2006, UVB-Induced Inflammation and Tumor Development
 - Spring Semester 2006, Antiangiogenic Activity of Xanthohumol
 - Fall Semester 2005, Effects of Methylmercury on Rat Brain Function and Development
- Summer Science Camp Counselor, Soille San Diego Hebrew Day School, Summer 2000
- America Reads Tutor, San Diego Unified School District, Fall 1999 - Summer 2000

TEACHING-RELATED POSITIONS AND COMMUNITY OUTREACH

- SOT Continuing Education Course Volunteer, 2010
- Salt Lake City School District Science Fair Judge, 2009 and 2010
- Summer Undergraduate Research Fellowship (SURF) student supervisor, 2009
- Juan Diego Catholic High School Summer Student Intern supervisor, 2009
- Women in Cancer Research Working Group Member, 2009 - present
- Women in Toxicology Special Interest Group Member, 2009 - present
- Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) student outreach participant, 2008
- Welcome Weekend Coordinator, 2007 - 2009
- Student Representative to the Graduate Training Committee, 2007 - 2008
- Student Advisory Committee Representative, 2007 - 2008
- Volunteer Camp Counselor, The Camp Laurel Foundation, 1999

PROFESSIONAL SOCIETY MEMBERSHIPS

American Association for the Advancement of Science (AAAS), Member since 2007

AACR, Associate Member since 2009

SOT, Member since 2009

American Medical Writers Association (AMWA), Member since 2012

SPECIAL SKILLS

Written and spoken proficiency in Spanish.