

**Penelope Jagessar Chaffer** is a multi award winning documentary filmmaker and writer.

She is the first black, female director to be nominated for a British Academy Award. Born in London, of Trinidadian parentage, she started her career at the BBC, before moving to Channel 4.

Her first British Academy Award Nomination came for her debut film, “Me and My Dad” which followed Penelope back to Trinidad as she confronted her father, a former high flying magistrate (the youngest magistrate in the British Commonwealth) who was sent to prison for bribery and corruption. The Times called it “a unique record of dignity and regret” and likened it to “something Tolstoy would have written.” She has directed several other well received pieces of work including “Shakespeare’s Stories” for the BBC, which was nominated for a BAFTA in 2006.

She has won over 10 awards for her work with the BBC and Channel 4, including 5 gold national and international Promax awards and is a double BAFTA, Royal Television Society and Grierson (British Documentary Awards) nominee. A documentary auteur, her films display a singularly unique perspective on the world we live in, with The Observer newspaper calling her work “a joy to watch.”

Penelope is an author for Toxipedia (the wiki site for toxic chemicals, environmental health and toxicology,) contributes to several blogs and writes for publications around the world.

She lives in New York City with her son and husband.

## Cynthia Corbitt, PhD – Biographical Sketch

Department of Biology, University of Louisville, 139 Life Sciences, Louisville KY 40292  
Office: 502-852-3915; Fax: 502-852-0725; email: [cynthia.corbitt@louisville.edu](mailto:cynthia.corbitt@louisville.edu)

### EDUCATION

- Ph.D. in biology (neurobiology), December 1997, University of Alaska Fairbanks (UAF)
- B.S. in biology, May 1991, The University of Texas at Arlington

### PROFESSIONAL EXPERIENCE

- Associate Professor, University of Louisville (2008 – present)
- Assistant Professor, University of Louisville (July, 2002 – 2008)
- Research Scientist, Tulane University (July, 2000 – June, 2002)
- NIH-NRSA Postdoctoral Fellow, Tulane University (January, 2000 – December, 2000)
- NIH-NRSA Postdoctoral Fellow, Tufts University (December, 1997 – December, 1999)
- Graduate Research Assistant, UAF (May, 1992 – August, 1996)
- Graduate Teaching Assistant, UAF (August, 1992 – May, 1995)

### PEER-REVIEWED PUBLICATIONS (last 4 years)

- Satre, D, Y-H Kim, and **C Corbitt\***. Androgen receptor location in the Dark-eyed Junco using a probe for *in situ* hybridization histochemistry generated from zebra finch cDNA. *Submitted*.
- Woods, J, P Deviche, and **C Corbitt\***. Opioid receptor densities analyzed across seasons in the POM and VTA of the Dark-eyed Junco, *Junco hyemalis*. *Journal of Chemical Neuroanatomy* (2010), doi:10.1016/j.jchemneu.2010.05.002.
- Zimmermann, MC, SL Tilghman, SM Boué, VA Salvo, S Elliott, KY Williams, EV Skripnikova, H Ashe, F Payton-Stewart, L Vanhoy-Rhodes, JP Fonseca, **C Corbitt**, BM Collins- Burow, MH Howell, M Lacey, BY Shih, C Carter-Wientjes, TE Cleveland, JA McLachlan, TE Wiese, BS Beckman, ME Burow (2010) Glyceollin I, a novel antiestrogenic phytoalexin isolated from activated soy. *Journal of Pharmacology and Experimental Therapeutics* 332:35-45.
- Satre, D, MS Reichert, and **C Corbitt\*** (2009) The effects of vinclozolin, an anti-androgen, on affiliative behavior in the Dark-eyed Junco (*Junco hyemalis*). *Environmental Research* 109:400-404.
- Rougier, GW, and **C Corbitt** (2008) Book Review, Platypus, Fourth Edition. *J Mammalian Evolution*. 15:289-290.
- Corbitt, C\***, DA Satre, LA Adamson, GA Cobbs, GE Bentley (2007) Dietary phytoestrogens and photoperiodic response in male Dark-eyed Juncos (*Junco hyemalis*). *General and Comparative Endocrinology* 154:16-21.
- Rougier, GW, A Garrido, L Gaetano, P Puerta, **C Corbitt**, and M Novacek (2007) First Jurassic triconodont from South America. *American Museum Novitates* 3580:17pp.
- Corbitt, C\*** and M Carpenter (2006) The nervous system game: A motor-kinesthetic activity introduces the principles of nervous system function. *Science & Children*, 43(6):26-29.
- Salvo VA, SM Boué, JP Fonseca, S Elliott, **C Corbitt**, BM Collins-Burow, TJ Curiel, BY Shih, C Carter-Wientjes, CE Wood, P Erhardt, B Beckman, JA McLachlan, TE Cleveland, and ME Burow (2006) Anti-estrogenic glyceollins suppress human breast and ovarian carcinoma tumorigenesis. *Clinical Cancer Research* 12(23):7159-7164.

- Ottinger, MA, **C Corbitt**, R Hoffman, N Thompson, E Russek-Cohen and P Deviche (2006) Reproductive aging in Japanese quail, *Coturnix japonica* is associated with changes in central opioid receptors. *Brain Research*, 1126:167-175. doi: 10.1016/j.brainres.2006.08.110.
- Dhananjayan, MR, P Erhardt, and **C Corbitt**. (2006) Simultaneous determination of vinclozolin and detection of its degradation products in mouse plasma, serum and urine, and from rabbit bile, by high-performance liquid chromatography. *Journal of Chromatography A*, 1115(1/2):8-18.

### **SYNERGISTIC ACTIVITIES**

- "K-12 Initiative" participant, UAF, 1996-1997 (my introduction to graduate student involvement in K-12 science education)
- Mentor in NIH program to introduce minority high school students to research, 1996-97
- Earth Quest instructor (biological education program for rural AK Native students), 1996
- "Hands-on Neuroscience Activities" workshop participant, SFN, 1998
- SPRITE mentor (program for minority undergraduates to do research at Tulane), 2000
- "Brain Day" participant, Louisiana Children's Museum, 2000
- Attendance and participation in the 10<sup>th</sup> Annual Institute on Teaching and Mentoring, sponsored by the Compact for Faculty Diversity, Oct 2003
- Short Course for High School Students, Society for Neuroscience Annual Meeting, 2004
- Developed and presented workshop on grant writing for graduate students, 2004, 2007
- Presented workshop on biomedical ethics for graduate students, 2005
- Attendance and participation at the Carnegie Initiative on the Doctorate Convening: Developing Effective Teachers, Palo Alto, CA, July 2005
- Attendance and participation in Delphi Center Teaching and Learning programs, Spring 2006 (Using Rubrics; Using Blackboard); Fall 2006 (Assessment); Spring 2008 (Active Learning Strategies for Lecture-Based Teachers); Fall 2010 (Everyday Examples of Engineering Concepts)
- Participant in "Frontiers in Physiology: Inquiry Methods for the Classroom", K-12 teacher workshop, December 2006
- Attendance/participation, Foundation for Critical Thinking conference, Berkeley, July 2007
- Attendance and presentation at the National Science Teachers Association annual meeting, Boston, 3/08, sponsored by the Society for Neuroscience
- Attendance and participation in "Teaching Neuroscience for Long-Term Learning" workshop (3 hrs), Annual Society for Neuroscience meeting, November 2008
- Participant in "Scientists Who Wear Nail Polish", STEM initiative for girls, 2008
- Paper reviewer for KY regional Junior Science and Humanities Symposium, Feb 2008, 2009
- Science education visits to K-12 classrooms, ongoing
- Science Fair judge: Alaska Statewide High School Science Symposium, New Orleans Science Fair, St. Francis of Assisi School science fair (Louisville), duPont Manual HS Regional Science Fair (Louisville), Kentucky Junior Academy of Science finals
- Member, American Physiological Society Local Site Team for teacher ed, 12/06 – present
- Member, Kentucky Academy of Science Committee on Science Education, 2007 – present

### **COURSES TAUGHT (last 3 years)**

Biology Honors Seminar, Endocrinology, Behavioral Endocrinology

## eHORMONE BIO

### DAWN DeDEAUX

Artist Dawn DeDeaux has exhibited throughout the country including the Whitney Museum of American Art, Armand Hammer Museum in Los Angeles, Baltimore Museum for Contemporary Art, and the Aldrich Museum of Contemporary Art, to name a few. She is recipient of the Rome Prize as the McKnight Foundation Visiting Southern Artist at the American Academy in Rome and was selected to represent the best of southern contemporary art at the 1996 Olympics that premiered her fully immersive media environment *The Face of God*. She is a featured artist in the upcoming international biennial *Prospect 2*. DeDeaux is currently working in association with the Tulane / Xavier Center for Bioenvironmental Research on *Project Mutants* - an illuminated water-sensing, floating sculpture series that will be launch into the Mississippi River, coastal wetlands and eventually the open sea to monitor chemicals and hormones in waterways. The sculptures offer a 'face' to an invisible threat and will prompt a coordinated public education campaign.

DeDeaux is the founding editor of *Arts Quarterly* (1976-1984) for the New Orleans Museum of Art and a co-founder of the New Orleans Contemporary Arts Center. As an educator she established a comprehensive arts program for a 6000 inmate prison facility (Orleans Parish Prison) and has served as Artist in Residence at institutions such as Maryland Institute College of Arts and the Visualization Laboratory at Texas AM Graduate School of Architecture engaged in the development of virtual space.

DeDeaux is represented by Arthur Roger Gallery currently exhibiting her media sculpture *ONE DROP* - an unedited thirty minute microscopic view of a small glass of water that reveals an interconnected world minutely small and endlessly vast. It offers reflection on the duality of nature and the fragility of existence. The gallery is located at 432 Julia Street, New Orleans, LA 70130, Monday through Saturday, 10am to 5pm.

Dawn DeDEAUX  
editiondedeaux  
[dawndedeaux1@aol.com](mailto:dawndedeaux1@aol.com)

## **Speaker's Bio**

### **Rodney R Dietert, PhD**

Rodney is Professor of Immunotoxicology in the Department of Microbiology and Immunology at Cornell University, Ithaca, NY. At Cornell, he directed both the Institute for Comparative and Environmental Toxicology (1992-97), and the Cornell Program on Breast Cancer and Environmental Risk Factors (2000-2004). He also held the title "Senior Fellow" in the Cornell Center for the Environment. Rodney has served or is presently serving on: the EPA's Air Quality Criteria for the Environment for Lead, the National Toxicology Program's Panel on Immunotoxicology Criteria, The WHO's panel on Harmonization of Immunotoxicology Criteria for Risk Assessment, and the EPA's Scientific Advisory Board on Trichloroethylene. Rodney is also Vice President for the Immunotoxicology Specialty Section of the Society of Toxicology. During Rodney's 33 years as a Cornell professor and researcher, he has authored more than 290 publications concerning health risks with a focus on the developing immune system. He is the editor of *Immunotoxicity Testing* (Humana/Springer), the new *Molecular and Integrative Toxicology* (Springer) book series and coauthor of *Strategies for Protecting Your Child's Immune System* (World Scientific Publications).

Allyse Ferrara is an Associate Professor of Biological Sciences at Nicholls State University. She received her bachelor's degree from Hiram College, master's degree from Tennessee Technological University and her doctorate in fisheries management from Auburn University where she studied the life histories of and developed recommendations for the conservation and management of three species of gar with emphasis on alligator gar. Prior to employment at Nicholls State, she held two post-doctoral positions at Auburn University and Clemson University. Her current research projects include food habits, characterization and quantification of gonad development, and aquaculture production of gar, beach and dune restoration, and production of native plants for restoration projects.

**Prof. Paul Alain Galand (PhD, Agrégé)**  
**Biographical sketch**

**Academic career**

Paul Galand is Honorary Research Director of the Belgian FNRS (Foundation for Scientific Research)-

He earned a **doctoral degree in zoology** from the Faculty of Sciences, Free University of Brussels (ULB) in 1964, for research he performed while at the Department of Radiobiology at the Belgian Nuclear Center.

Dr. Galand then pursued his career at the Faculty of Medicine- ULB, under continuous fellowship from the Belgian-FNRS-(up to the level of "Research Director"), as **Head of the Biology Unit at the Institute of Interdisciplinary Research** and as **Director of the Laboratory for Cytology and Experimental Oncology** - both at the Faculty of Medicine - ULB.

He is the author of more than 175 full papers in international, refereed journals, dealing with estrogen action on uterus cell proliferation and cell death and related biochemical parameters – such as cyclic GMP response and other non-genomic responses and the process of malignant progression in experimental liver carcinogenesis and the modulation by estrogen of this process.

- A thesis based on the ensemble of his work in the field of estrogen action earned him in 1988 the title of "**Agrégé en Sciences, domain: Cell Biology** (equivalent to a **PhD**), from the Faculty of Sciences-ULB.

**Science popularization**

Prof. Galand is known by the public at large in Belgium for his participation - since 1964 - as **Scientific advisor and Commenter TV prime time** series on the Belgian TV (RTB-F Télévision) called "**Le Jardin extraordinaire**" (the *Extraordinary Garden*), dealing with nature, animal behavior and wildlife.

He has published several **articles and books** in French, aimed at popularizing science, among which an essay on key *environmental* and *societal* issues. "Dernières Nouvelles du Chaînon manquant" – 1999, and , between 2001 and 2003, 4 volumes on animal behavior ,( parental care, reproductive strategies , survival, animal senses,...) .

**Associations**

: Member of the Board of the **WWF-Belgium** since 1983 where he served as President from 2002 to 2006 and now as vice-president. He exerted a 4 years mandate as Trustee of the Board of WWF-International. .

- Member of the Scientific Committee of **Greenfacts**

**Other activities**

- Tour leader and scientific guide of travels around the world , with small groups of amateur naturalists.

**hobbies**

Paul Galand's hobbies include cartoon drawing, photography and oil painting. He practices tennis, ski and holds a “paddi” for open water scuba diving

---

---

## BIOGRAPHICAL SKETCH

---

NAME	POSITION TITLE		
Jan-Åke Gustafsson	Professor		
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
Karolinska Institutet, Sweden	PhD	1968	Chemistry
Karolinska Institutet, Sweden	MD	1971	Medicine

### A. Positions and Honors.

#### Positions

1971	Associate Professor in Chemistry, Karolinska Institutet
1976	Professor of Chemistry, Karolinska Institutet
1978	Professor of Chemistry, University of Gothenburg
1979	Professor of Medical Nutrition and Chairman of the Dept. of Medical Nutrition, Huddinge University Hospital, Karolinska Institutet
2006-2008	Professor of Medical Nutrition and Chairman of the Dept. of Biosciences and Nutrition, Karolinska Institutet
2009-Present	Robert A Welch Professor at the University of Houston, Director of Center for Nuclear Receptors and Cell Signaling

#### Administrative/Research Positions

1985	Director of the Center for Biotechnology, Huddinge University Hospital, Karolinska Institutet
1987	Founder of KaroBio AB (a Swedish campus-situated biotechnology company)
2004-present	Coordinator for the EU-funded CASCADE Network of Excellence
2009-present	Director of the Texas –Indiana Virtual STAR Center on Developmental Toxicity

#### Honors and prizes (selected)

2009	Eric K. Fernström Prize
2008	International Member American Philosophical Society
2005	Descartes Research Prize for excellence in scientific collaborative research
2005	2nd Ernst Knobil Memorial Lecture, San Diego, USA
2004	Bristol-Meyers Squibb/Mead Johnson Award for Nutrition Research
2003	FEBS Lectureship Datta Award
2002	Commandeur dans l'Ordre des Palmes Académiques
2002	Foreign Honorary Member of the US National Academy of Sciences
2002	Chairman of the Nobel Assembly of the Karolinska Institutet
2002	Fred Conrad Koch Award (Endocrine Society USA)
2001	The AF Group Prize for the creation of Novum Research Park

### B. Selected peer-reviewed publications (selected out of over 1300 peer-reviewed publications)

1. G.G.J.M. Kuiper, E. Enmark, M. Peltö-Huikko, S. Nilsson, and **J.-Å. Gustafsson**: Cloning of a novel estrogen receptor expressed in rat prostate and ovary. Proc.Natl.Acad.Sci. USA, 93, 5925-5930, 1996.
2. C.-Y. Lin, A. Ström, S. L. Kong, S. Kietz, J. S. Thomsen, J. B. S. Tee, V. B. Vega, L. D. Miller, J. Smeds, J. Bergh, **J.-Å. Gustafsson**, and E. T. Liu (2007): Inhibitory effects of estrogen receptor beta on specific hormone-responsive gene expression and association with disease outcome in primary breast cancer. Breast Cancer Res., 9:R25, 1-11



3. Fan X, Kim HJ, Warner M, **Gustafsson J-Å.** (2007) Estrogen receptor beta is essential for sprouting of nociceptive primary afferents and for morphogenesis and maintenance of the dorsal horn interneurons. *Proc Natl Acad Sci U S A.* 104(34):13696-701.
  4. Imamov O, Yakimchuk K, Morani A, Schwend T, Wada-Hiraike O, Razumov S, Warner M, **Gustafsson J-Å** (2007). Estrogen receptor beta-deficient female mice develop a bladder phenotype resembling human interstitial cystitis. *Proc Natl Acad Sci U S A.* 104:9806-9.
  5. Williams C, Edvardsson K, Lewandowski SA, Strom A, **Gustafsson J-Å** (2008). A genome-wide study of the repressive effects of estrogen receptor beta on estrogen receptor alpha signaling in breast cancer cells. *Oncogene.* 7;27(7):1019-32
  6. Kim HJ, Fan X, Gabbi C, Yakimchuk K, Parini P, Warner M, **Gustafsson J-Å.** (2008) Liver X receptor beta (LXRbeta): a link between beta-sitosterol and amyotrophic lateral sclerosis-Parkinson's dementia. *Proc Natl Acad Sci U S A.* 105(6):2094-9.
  7. Sugiyama N, Andersson S, Lathe R, Fan X, Alonso-Magdalena P, Schwend T, Nalvarte I, Warner M, **Gustafsson J-Å.** (2009) Spatiotemporal dynamics of the expression of estrogen receptors in the postnatal mouse brain. *Mol Psychiatry.* 2009 14(2):223-32, 117
  8. Kim HJ, Andersson LC, Bouton D, Warner M, **Gustafsson J-Å** (2009) Stromal growth and epithelial cell proliferation in ventral prostates of liver X receptor knockout mice. *Proc Natl Acad Sci U S A.* 13;106(2):558-63.
  9. Williams C, Helguero L, Edvardsson K, Haldosén LA, **Gustafsson J-Å.** Gene expression in murine mammary epithelial stem cell-like cells shows similarities to human breast cancer gene expression. *Breast Cancer Res.* 2009 May 8;11(3):R26.
  10. Jakobsson T, Venter N, Toresson G, Damdimopoulos AE, Ehrlund A, Lou X, Sanyal S, Steffensen KR, **Gustafsson J-Å,** Treuter E. GPS2 Is Required for Cholesterol Efflux by Triggering Histone Demethylation, LXR Recruitment, and Coregulator Assembly at the ABCG1 Locus. *Mol Cell.* 2009 May 14;34(4):510-518.
  11. N. Sugiyama, S. Andersson, R. Lathe, X. Fan, P. Alonso-Magdalena, T. Schwend, I. Nalvarte, M. Warner and **J-Å. Gustafsson:** Spatiotemporal dynamics of the expression of estrogen receptors in the postnatal mouse brain. *Mol. Psychiatry,* 14, 223-232, 2009.
  12. P. Alonso-Magdalena, C. Brössner, A. Reiner, G. Cheng, N. Sugiyama, M. Warner, and **J-Å. Gustafsson:** A role for epithelial-mesenchymal transition in the etiology of benign prostatic hyperplasia. *Proc. Natl. Acad. Sci. USA,* 106, 2859-2863, 2009.
  13. J. Hartman, K. Edvardsson, K. Lindberg, C. Zhao, C. Williams, A. Ström and **J-Å. Gustafsson:** Tumor repressive functions of estrogen receptor  $\beta$  in SW480 colon cancer cells. *Cancer Res.,* 15, 6100-6106, 2009.
  14. P. Sacchetti, K. M. Sousa, A. C. Hall, I. Liste, K. R. Steffensen, S. Theofilopoulos, C. L. Parish, C. Hazenberg, L. Åhrlund Richter, O. Hovatta, **J-Å. Gustafsson** and E. Arenas: Liver X receptors and oxysterols promote ventral midbrain neurogenesis in vivo and in human embryonic stem cells. *Cell Stem Cell,* 5, 409-419, 2009.
  15. E.J. Villablanca, L. Raccosta, D. Zhou, R. Fontana, D. Maggioni, A. Negro, F. Sanvito, M. Ponzoni, B. Valentini, M. Bregni, A. Prinetti, K. R. Steffensen, S. Sonnino, **J-Å. Gustafsson,** C. Doglioni, C. Bordignon, C. Traversari and V. Russo: Tumor-mediated liver X receptor- $\alpha$  activation inhibits CC chemokine receptor-7 expression on dendritic cells and dampens antitumor responses. *Nature Medicine,* 16, 98-106, 2010.
  16. N. Gustafsson, C. Zhao, **J-Å. Gustafsson,** and K. Dahlman-Wright: RBCK1 drives breast cancer cell proliferation by promoting transcription of estrogen receptor  $\alpha$  and cyclin B1. *Cancer Res.,* 70, 1265-1274, 2010.
  17. X. Fan, C. Gabbi, H.-J. Kim, G. Cheng, L. C. Andersson, M. Warner, and **J-Å. Gustafsson:** Gonadotropin-positive pituitary tumors accompanied by ovarian tumors in aging female ER $\beta$ <sup>-/-</sup> mice. *Proc. Natl. Acad. Sci. USA,* 107, 6453-6458, 2010.
  18. I. Nalvarte, T. Schwend and **J-Å. Gustafsson:** Proteomic analysis of the estrogen receptor alpha receptosome. *Mol. Cell Proteomics* 9.7, 1411-1422, 2010.
  19. C. Zhao, H. Gao, Z. Papoutsis, S. Jaffrey, **J-Å. Gustafsson** and K. Dahlman-Wright: Genome-wide mapping of estrogen receptor  $\beta$  binding regions reveals extensive cross talk with AP-1. *Cancer Res.* 70, 5174-5183, 2010.
  20. P. Müller, J. D. Crofts, B. S. Newman, L. C. Bridgewater, C.-Y. Lin, **J-Å. Gustafsson** and A. Ström: SOX9 mediates the retinoic acid-induced HES-1 gene expression in human breast cancer cells. *Breast Cancer Res. Treat.,* 120, 317-326, 2010.
-

21. N. Sugiyama, R.P.A. Barros, M. Warner and **J.-Å. Gustafsson**: ER $\beta$ : recent understanding of estrogen signaling. Trends Endocrinol Metab. 2010, in press.
22. J. Hartman and **J.-Å. Gustafsson**: Perspective: Estrogen receptors in colorectal cancer: Goalkeepers, strikers or bystanders? Cancer Prev. Res. 8, 897-899, 2010.
23. C. G. Thomas, A. Strom, K. Lindberg, and **J.-Å. Gustafsson**: Estrogen receptor beta decreases survival of p53-defective cancer cells after DNA damage by impairing G<sub>2</sub>/M checkpoint signaling. Breast Cancer Res. Treat., 2010, in press.
24. C. Gabbi, H.-J. Kim, R. Barros, M. Korach-André, M. Warner, and **J.-Å. Gustafsson**: Estrogen-dependent gallbladder carcinogenesis in LXR $\beta$ <sup>-</sup> female mice. Proc. Natl. Acad. Sci. USA, 14763-14768, 2010.

### C. Research support (Current Grants)

Agency: US-EPA  
 Title: "The Texas-Indiana Virtual STAR Center; Data-Generating *in vitro* and *in silico* Models of Developmental Toxicity in Embryonic Stem Cells and Zebrafish"  
 P.I., Center Director: Jan-Åke Gustafsson, M.D., Ph.D., Professor  
 Direct costs: \$ 1,107,900 (our part)  
 Project Period: 11/01/2009-10/31/2012

Agency: Swedish Research Council  
 Title: "The oxysterol receptors LXR $\alpha$  and LXR $\beta$  in pathophysiology and molecular mechanisms of metabolic, autoimmune and neurodegenerative disorders"  
 P.I.: Jan-Åke Gustafsson, M.D., Ph.D., Professor  
 Direct costs per year: SEK 1,700,000/ \$240,452  
 Total costs for project period: SEK 5,100,000/ \$721,358  
 Project period: 01/01/2008 – 12/31/2010

Agency: Swedish Cancer Society  
 Title: "Estrogen receptor beta and estrogen related forms of cancer"  
 P.I.: Jan-Åke Gustafsson, M.D., Ph.D., Professor  
 Direct costs per year: SEK 2,000,000/ \$283,006  
 Total costs for project period: SEK 6,000,000/ \$849,017  
 Project period: 01/01/2007 – 12/31/2009

Agency: EU  
 Title: CASCADE "Chemicals as contaminants in the food chain: An NOE for research, risk assessment and education"  
 P.I.: Jan-Åke Gustafsson, M.D., Ph.D., Professor  
 Direct costs per year: EUR 195,810:80/ \$265,030  
 Total costs for project period: EUR 979,054/ \$1,325,150 (our part)  
 Project Period: 02/01/2004 – 01/31/2009

Agency: EU  
 Title: CRESCENDO "Consortium for Research into Nuclear Receptors in Development and Aging"  
 P.I.: Barbara Demeneix, Ph.D., D.Sc., Professor  
 Role on Project: Partner  
 Direct costs per year: EUR 99,240/ \$181,804  
 Total costs for the project period: EUR 496,200/ \$909,020 (our part)  
 Project Period: 03/01/2006 – 02/28/2011

---

## Endocrine disruption of amphibian metamorphosis

Caren C. Helbing

Department of Biochemistry and Microbiology, University of Victoria, Victoria, British Columbia

Dr. Caren Helbing is an Associate Professor and Michael Smith Foundation for Health Research Scholar in Biochemistry at the University of Victoria. Dr. Helbing received a B.Sc. (Hons) in Biological Sciences from the University of Windsor in 1988 and a Ph.D. in Zoology from the University of Western Ontario in 1994. After postdoctoral work in cancer biology at the University of Calgary in the Department of Medical Biochemistry, she became a faculty member in 1999. She is the recipient of the early career award for applied ecological research in 2002 from the Society for Environmental Toxicology and Chemistry for her contributions in the development of molecular tools for the use of amphibians as environmental sentinel species for the detection of disruptors of thyroid hormone action. She has collaborated with scientists around the world to develop molecular assays for determining the health status of a wide range of wildlife and laboratory species and also actively publishes work in the cancer field.

Richard Judson, Ph.D.  
National Center for Computational Toxicology  
Office of Research&Development  
U.S. Environmental Protection Agency  
Research Triangle Park, NC 27711

room: B130I    mail code: B205-01  
phone: 919.541.3085  
cell: 919-449-7514  
fax: 919.541-1194  
[judson.richard@epa.gov](mailto:judson.richard@epa.gov)

Bio:

Dr. Judson is with the EPA National Center for Computational Toxicology where he is developing databases and computer applications to model and predict toxicological effects of environmental chemicals. He is a member of the EPA ToxCast team where he leads the bioinformatics efforts. His team has developed the ACToR (Aggregated Computational Toxicology Resource) database and application which is compiling all publicly available data on environmental chemicals. He has authored research publications in areas including computational biology and chemistry, bioinformatics, genomics, human genetics, toxicology and applied mathematics. Prior to joining the EPA, Dr. Judson was founder of GAMA BioConsulting, a bioinformatics consulting company. From 1999-2006, Dr. Judson was Senior Vice President and Chief Scientific Officer with Genaissance Pharmaceuticals. Previously, he held research positions at CuraGen from 1997-1998 and Sandia National Laboratories from 1990-1996. Dr. Judson has a BA in Chemistry and Chemical Physics from Rice University and an MA and PhD in Chemistry from Princeton University.

## Biographical Sketch – Paul L. Klerks, University of Louisiana at Lafayette

### (a) Professional Preparation

University of Utrecht, Netherlands	Ecology	B.S., 1977
University of Utrecht, Netherlands	Biological Toxicology	M.S., 1981
SUNY / Stony Brook University	Ecology and Evolution	Ph.D., 1987
Chesapeake Biological Laboratory	Trace metals / oysters	1987-1989
University of Toledo	Lake Erie water quality / exotics	1989-1991

### (b) Appointments

1992-present Assistant- and Associate Professor of Biology, University of Louisiana at Lafayette.

### (c) Publications (total of 59)

#### *Most closely related to the proposed project*

- Klerks, P.L., D.L. Felder, K. Strasser, and P.W. Swarzenski. 2007. Effects of ghost shrimp on zinc and cadmium in sediments from Tampa Bay, FL. *Mar. Chem.* **104**:17-26.
- Nyman, J.A., P.L. Klerks, and S. Bhattacharyya. 2007. Effects of chemical additives on hydrocarbon disappearance and biodegradation in freshwater marsh microcosms. *Environ. Pollut.* **149**: 227-238.
- Klerks, P.L., J.A. Nyman, and S. Bhattacharyya. 2004. Relationship between hydrocarbon measurements and toxicity to a chironomid, fish larva and daphnid for oils and oil spill chemical treatments in laboratory freshwater marsh microcosms. *Environ. Pollut.* **129**: 345-353.
- Bhattacharyya, S., P.L. Klerks and J.A. Nyman. 2003. Toxicity to freshwater organisms from oils and oil spill chemical treatments in laboratory microcosms. *Environ. Pollut.* **122**: 205-215.
- Klerks, P.L., P.C. Fraleigh and J.E. Lawniczak. 1997. Effects of the exotic zebra mussel on metal cycling in Lake Erie. *Can. J. Fish. Aquat. Sci.* **54**: 1630-1638.

#### *Other relevant publications*

- Martin, S.B., A.T. Hitch, K.M. Purcell, P.L. Klerks & P.L. Leberg. 2009. Life history variation along a salinity gradient in coastal marshes. *Aquat. Biol.* **8**: 15-28.
- Purcell, K.M., A.T. Hitch, P.L. Klerks & P.L. Leberg. 2008. Adaptation as a potential response to sea-level rise: A genetic basis for salinity tolerance in populations of a coastal marsh fish. *Evolut. Applic.* **1**: 155-160.
- Millward, R.N. and P.L. Klerks. 2002. Contaminant-adaptation and community tolerance in ecological risk assessment: Introduction. *Human Ecol. Risk. Assessm.* **8**: 921-932.
- Mitra, S., P.L. Klerks, T.S. Bianchi, J. Means and K.R. Carman. 2000. Effects of estuarine organic matter biogeochemistry on the bioaccumulation of PAHs by two epibenthic species. *Estuaries* **23**: 864-876.
- Klerks, P.L. and P.C. Fraleigh. 1997. Uptake of nickel and zinc by the zebra mussel *Dreissena polymorpha*. *Arch. Environ. Contam. Toxicol.* **32**: 191-197.

Klerks, P.L., P.C. Fraleigh and J.E. Lawniczak. 1996. Effects of zebra mussels (*Dreissena polymorpha*) on seston levels and sediment deposition in western Lake Erie. *Can. J. Fish. Aquat. Sci.* **53**: 2284-2291.

**(d) Synergistic Activities**

Past Associate Editor for *Environmental Toxicology and Chemistry*, and reviewer of manuscripts for 25 other journals.

Principal Investigator or Co-PI for various Louisiana Board of Regents equipment grants for enhancing education and research at the University of Louisiana at Lafayette.

Principal Investigator for several Louisiana Board of Regents Graduate Fellowship Program grants aimed at recruitment of superior doctoral students into the Biology Department's Ph.D. program in Environmental and Evolutionary Biology.

Chair of university's Institutional Biosafety Committee, and past member of Institutional Review Board.

Panelist on EPA and CalFed grant proposal review panels, and ad-hoc reviewer for 5 other programs.

**(e) Collaborators & Other Affiliations**

*Collaborators and Co-Editors*

Darryl Felder, University of Louisiana at Lafayette. Paul Leberg, University of Louisiana at Lafayette. Karen Strasser, Ferris State University (MI). Peter Swarzenksi, U.S. Geological Survey (St. Petersburg, FL). Andy Nyman, Louisiana State University. Frédéric Silvestre (Université de Namur, Belgium). Rod Millward, deceased.

*Graduate and Postdoctoral Advisors*

Jeffrey Levinton, State University of New York at Stony Brook. Guritno Roesijadi, (Chesapeake Biological Lab - currently at Pacific Northwest National Laboratory (Department of Energy)). Peter Fraleigh, deceased.

*Thesis Advisor and Postgraduate-Scholar Sponsor*

Thesis advisor (past) to: Sandra Lentz (Marathon Oil), Casey Moreau (Baker Hughes Inteq), Jonathan R. Deeds (U.S. Food and Drug Administration), Gabe Adams (DOE / DynMcDermott Petroleum Operations Co.), Darrell L. Venable (current affiliation unknown), Solange S. Lewis (University of Idaho), Sucharita Bhattacharyya (Johnson & Johnson), Jaquelyn Craig-Matuszewski (USGS, Ann Arbor, MI), Anne Pesacreta (Marcus Guidry & Associates, Lafayette, LA), Giridhar Athrey (University of Louisiana at Lafayette), Margo Blaha (PetroAlgae), Cathleen Doyle (Ohio State University). Thesis advisor (current) to Sarah Vogt.

Dissertation advisor (past) to: Curt Elderkin (The College of New Jersey), Lingtian Xie (North Carolina State University). Dissertation advisor (current) to: Joseph Adeyemi, Emmanuel Blankston, Latonya Carrier, Andrew Oguma.

Postdoctoral scholars sponsored: Kirsten Heimann, James Cook University (Australia).

Total # of graduate students advised and postdoctoral scholars sponsored: 20.

## BIOGRAPHICAL SKETCH

Gerald A. LeBlanc, Ph.D.

Dr. LeBlanc is a Professor and Head of the Department of Environmental & Molecular Toxicology, North Carolina State University. Dr. LeBlanc maintains an active research program in environmental endocrine toxicology. This research involves elucidating processes that contribute to the endocrine regulation of reproduction and development and their disruption by environmental agents. Dr. LeBlanc's research also has been instrumental in developing modeling approaches for evaluating the toxicity of complex chemical mixtures. Dr. LeBlanc has published over 130 research articles and 16 text book chapters. He has served on numerous federal and international science advisory committees, panels, and boards, including serving as a member of the USEPA Endocrine Disruptors Methods Validation Sub-committee, chairman of the USEPA Endocrine Disruptors Methods Validation Advisory Committee, and currently serving as a permanent member of the FIFRA-USEPA Science Advisory Panel. He also has served as session chair and keynote speaker for several national and international scientific symposia, and as an Associate Editor or Editorial Board Member for several scientific journals.

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME De-Kun Li	POSITION TITLE Research Scientist III		
eRA COMMONS USER NAME DEKUNLI			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Shanghai Medical University, Shanghai, China	MD	1977-1982	Medicine
Shanghai Medical University, Shanghai, China	MPH	1982-1985	Occupational Epidemiology
University of Washington, Seattle, WA	PhD	1986-1993	Epidemiology
University of Washington, Seattle, WA	Postdoctoral	1993-1994	Environmental & Molecular Epidemiology

### B. Positions and Honors

#### Research and Professional Experience

1986 Shanghai Institute of Planned Parenthood Research, Department of Epidemiology and Toxicology

1986-1993 Research Associate, Fred Hutchinson Cancer Research Center, Seattle, WA

1989-1991 Teaching Assistant, University of Washington, Department of Epidemiology, Seattle, WA

1993-2004 Investigator I-II, Division of Research, Kaiser Foundation Research Institute, Kaiser Permanente, Oakland, CA

2004-Present Investigator III, Division of Research, Kaiser Foundation Research Institute, Kaiser Permanente, Oakland, CA

2005-Present Lecturer, Stanford University, Department of Health Research and Policy

#### Professional Services

*Associate Editor:* American Journal of Epidemiology

*Member:* Public Policy Committee, American College of Epidemiology

*Member:* Federal AD HOC Review committee: Special Review Panel for Program Center grant: Perinatal Emphasis Research Centers, 1994

*Member:* NIOSH Review Committee for OH-00-006 (R21) Program, 2000

*Member:* NIOSH Special Emphasis Panel Review for RFA (Endocrine Disrupters: Epidemiological Approaches)

*Invited panel member:* National Academy of Science U.S.-China Roundtable on Collaboration of Biomedical Research, 2007

NIEHS study section, 2009

*Member:* Advisory Committee for Children's Environmental Health and Disease Prevention Research Center at Dartmouth, September, 2010-2012

#### Invited Speaker:

Department of Epidemiology, UCLA, June, 2007

Department of Human Genetics, UCLA, March 2008

Department of Environmental Health, University of Washington, April 2008.

National SIDS Foundation annual meeting, March, 2009

UCSF Residency Program, April, 2009

50<sup>th</sup> Anniversary of Teratology Society, June 2010

### C. Selected Peer-Reviewed Publications (Selected from 56 peer-reviewed publications)

- Li DK, Daling JR. Maternal smoking, low birthweight, and ethnicity in relation to sudden infant death syndrome. *Am J Epidemiol* 1991;134:958-64.



2. Li DK. Maternal history of subfertility and the risk of congenital urinary tract anomalies in offspring. *Epidemiology* 1999;10:80-2.
3. Li DK. Changing paternity and the risk of preterm delivery in the subsequent pregnancy. *Epidemiology* 1999;10:148-52.
4. Li DK, Wi S. Changing paternity and the risk of preeclampsia/eclampsia in the subsequent pregnancy. *Am J Epidemiol* 2000;151:57-62.
5. Li DK, Odouli R, Wi S, Janevic T, Golditch I, Bracken D, Senior R, Rankin R. A population-based prospective cohort study of personal exposure to magnetic fields during pregnancy and the risk of spontaneous abortion. *Epidemiology* 2002;13:9-20.
6. Li DK, Liu L, Odouli R. Exposure to non-steroidal anti-inflammatory drugs during pregnancy and risk of miscarriage: population based cohort study. *BMJ*. 2003 Aug 16;327(7411):368. PMID: PMC175811
7. Li DK, Odouli R, Liu L, Vinson M, Trachtenberg E. Transmission of parentally shared human leukocyte antigen alleles and the risk of preterm delivery. *Obstet Gynecol*. 2004;104(3):594-600.
8. Li DK, Willinger M, Petitti DB, Odouli R, Liu L, Hoffman HJ. Use of a dummy (pacifier) during sleep and risk of sudden infant death syndrome (SIDS): population based case-control study. *BMJ*. 2006;332:18-22. PMID: PMC1325127
9. Weng X, Odouli R, Li DK. Maternal caffeine consumption during pregnancy and the risk of miscarriage: a prospective cohort study. *Am J Obstet Gynecol*. 2008;198(3):279.e1-8.
10. Coleman-Phox K, Odouli R, Li DK. Use of a Fan during Sleep and the Risk of Sudden Infant Death Syndrome. *Arch Pediatr Adolesc Med*. 2008 Oct;162(10):963-8.
11. Li DK, Yan B, Li Z, Gao E, Miao M, Gong D, Weng X, Ferber JR, Yuan W. Exposure to magnetic fields and the risk of poor sperm quality. *Reprod Toxicol* 2009;29:86-92.
12. Li D, Liu L, Odouli R. Presence of depressive symptoms during early pregnancy and the risk of preterm delivery: A prospective cohort study. *Hum Reprod* 2009;24:146-153.
13. Li D, Zhou Z, Qing D, He Y, Wu T, Miao M, Wang J, Weng X, Ferber JR, Herrinton LJ, Zhu Q, Gao E, Checkoway H, Yuan W. Occupational exposure to bisphenol-A (BPA) and the risk of self-reported male sexual dysfunction. *Hum Reprod* 2010;25(2):519-27.
14. Li DK, Yan B, Li Z, Gao E, Miao M, Gong D, Weng X, Ferber JR, Yuan W. Exposure to magnetic fields and the risk of poor sperm quality. *Reprod Toxicol* 2010;29:86-92.
15. Li DK, Zhou Z, Miao M, He Y, Qing D, Wu T, Wang J, Weng X, Ferber J, Herrinton L, Zhu Q, Gao E, Yuan W. Relationship between Urine Bisphenol-A (BPA) Level and Declining Male Sexual Function. *J Androl*. 2010 May 13. [Epub ahead of print]
16. Li DK, Zhou Z, Miao M, He Y, Wang J, Ferber JR, Herrinton LJ, Gao E, Yuan W. Urine Bisphenol-A (BPA) Level in Relation to Semen Quality. *Fertility & Sterility*, in press.

## **A. Research Support**

### **Ongoing Research Support**

115-9327

R01 OH007580 (Li)

9/30/03 – 9/29/10

CDC/NIOSH

### **Exposure to Bisphenol A & Reproductive Effect in Humans**

This study will evaluate the reproductive effects of BPA in settings where there have been high levels of exposure. The study will also investigate effects in multiple human generations.

115-9313

R01 HD43063 (Li)

2/1/04 – 1/31/11

NICHHD

### **Prenatal NSAID Use and Miscarriage**

To examine the risk of spontaneous abortion associated with prenatal NSAID use.

115-9307

R01 ES012226 (Li)

2/1/05 – 12/31/10

NIEHS

### **Prenatal MF Exposure & Miscarriage Risk among Women**

The major goal of this project is to conduct a population-based prospective cohort study among susceptible and non-susceptible pregnant women.

115-9928 (Li) 9/25/08 – 9/24/10

FDA Contract HHSF223200510008C, COA #10

**Medication Use in Pregnancy and Birth Outcomes**

To establish a monitoring system to examine the effect of medication use during pregnancy on the risk of adverse pregnancy outcomes.

115-9651 (Ray/Li) 4/1/09 – 2/28/11

AHRQ #5 U18 HS016974/Vanderbilt University

**Vanderbilt Center for Education/Research on Therapeutics (CERT) - Fetal Risks of Immunosuppressive Drugs in Autoimmune Disease**

The major goal of this study is to examine whether exposure to biologics medication during pregnancy increases the risk of adverse birth outcomes.

(Selby/Schaefer) 1/1/05 - 12/31/06

Wayne & Gladys Valley Foundation

**Center for Applied Genetic Epidemiology**

To conduct a membership survey and design a computerized disease registry.

**Completed Research Support**

115-9033 2/1/09 – 7/31/10

HRSA #R40MC11266

**Prenatal and Early Life Predictors of Pediatric Onset Inflammatory Bowel Disease**

Please see title.

115-9973 5/1/07 – 4/30/10

HHS290-2005-0033-I-TO3-WA1 (Li)

AHRQ/Harvard Pilgrim Health Care

**Research on the Effects of Drug Exposure in Pregnancy**

The major goal of this project is to determine whether use of ACE inhibitors during the first trimester of pregnancy increases the risk of birth defects.

## BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME <b>Bert W. O'Malley, M.D.</b>	POSITION TITLE <b>Thomas C. Thompson Distinguished Service Professor and Chairman</b>
eRA COMMONS USER NAME (credential, e.g., agency login) <b>BERTWO</b>	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
University of Pittsburgh, Pittsburgh, PA	B.S.	1959	Pre-med
University of Pittsburgh, Pittsburgh, PA	M.D.	1963	Internal Medicine
Duke University, Durham, North Carolina	Inter/Res.	1963-1965	Endocrinology
Karolinska Institute, Stockholm, Sweden	M.D.	05/29/84	Honorary
The National University of Ireland	D.Sc.	03/21/85	Honorary
University of Maryland	D.Sc.	05/25/01	Honorary
University of Pittsburgh	D.Sc.	04/25/09	Honorary
University of Athens	D. Honoris Causa	May, 2010	Honorary

### A. Personal Statement

My career and expertise has been directed to elucidation of the 'molecular mechanisms of steroid hormone action. I am a recognized expert in nuclear receptors and coactivators in terms of their discovery and translational biology to diseases with genetic, oncogenic and metabolic consequences.

### B. Positions and Honors

1973-present Tom Thompson Professor & Chairman, Dept. of Molecular and Cellular Biology and Director of the Baylor Center for Reproductive Biology, Baylor College of Medicine, Houston, TX  
Professor of Medicine, Neuroscience and OB/GYN, BCM, Houston, TX

2003-present Associate Director for Basic Science, Dan L. Duncan Cancer Center, BCM, Houston, TX

1969-1973 Professor and Occupant of Lucius Birch Chair and Director of the Reproductive Biology Center, Vanderbilt University School of Medicine, Nashville, TN

1967-1969 Head, Molecular Biology Section, Endocrine Branch, NCI, NIH, Bethesda, MD

1965-1967 Clinical Associate, NCI, NIH, Bethesda, MD

1963-1965 Clinical Training in Internal Medicine, Dr. E.A. Stead, Duke University Hospital, Durham, NC

A.E.D., P.B.K., A.O.A. (Honor Societies); Ernst Oppenheimer Award, American Endocrine Society, 1975; Gregory Pincus Memorial Medal, 1975; Lila Gruber Cancer Award, 1977; Distinguished Achievement in Modern Medicine Award, 1978; Borden Award, Association of American Medical Colleges, 1978; Dickson Prize in Medicine, 1979; Philip S. Hench Award, 1981 - University of Pittsburgh; Axel Munthe Award in Reproductive Biology, 1982 - Capri, Italy; British Endocrine Society Medal, 1983; Distinguished Service Professor, Baylor College of Medicine, 1985; Bicentennial Medallion of Distinction, University of Pittsburgh, 1987; Fred Conrad Koch Medal (Endocrine Society), 1988; D.R. Edwards Medal (Cardiff, Wales), 1989; Duke University Distinguished Alumni Award, 1991; Eastman Kodak Award (N.A.C.B.) 1992; Doisy Lects. Biochem. (University of Illinois) 1993; Election to Fellow of A.A.A.S., 1995; William L. McGuire Memorial Lecture Award (University of Texas HSC, San Antonio) 1995; Baylor College of Medicine Distinguished Faculty Award, 1996; Fellow, American Academy of Microbiology, 1997; Sterling LCS (Boston), 1997; University of Maryland 2<sup>nd</sup> Annual Pharmacology Award, 1998; Eight-SB-BJR Educator Awards, 1998-99, 2001-02, 2003-04; Endocrine Transatlantic Medalist, U.K. Society for Endocrinology, Belfast, Ireland, 2001; Rodbell Award, NIH/NIEHS, 2001; Antonio Feltrinelli International Prize for Biology 2001; International Brinker Award in Breast Cancer Research 2001; Induction into the Royal Academy of Medicine (IRE) 2003; George W. Beadle Award 2003; Solomon Berson L. Ad. (Amer. Phy. Soc., 2004); The Academy of Medicine, Engineering and Sciences of Texas, 2004; Pioneer Award, Woods Hole, 2005; Biolink Scientist of the Year Award, 2006; Vanderbilt Distinguished Medical Award, 2006; Bowman Distinguished Geneticist Award (Texas), 2006; Pasarow Award in Cancer Research, 2006; Carl G. Hartman Award for Reproductive Research (SSR: 2007); Pink Ribbon Hero Award for Cancer Research, 2007; Legacy Laureate, University of Pittsburgh, 2007; National Medal of Science (Sept., 2008); Fulbright and Jaworski LLP Faculty Excellence Award for Teaching and Evaluation, 2009; Women in Endocrinology Mentor Award, Endocrine Society, 2009; Steven C. Beering Award, Indiana University School Medicine (March, 2009); Allan Munck Prize, Dartmouth Medical School, 2009; 2010 Robert H. Williams Distinguished Leadership Award, Endocrine Society

#### C. Selected Peer-Reviewed Publications

1. Oñate, S.A., S.Y. Tsai, M.-J. Tsai and **B.W. O'Malley**. Sequence and characterization of a coactivator for the steroid hormone receptor superfamily. *Science* 270:1354-1357, 1995. PMID: 7481822
2. Xu, J., Qui, Y., F.J. DeMayo, S.Y. Tsai, M.-J. Tsai, and **B.W. O'Malley**. Disruption of the Steroid Receptor Coactivator 1 (SRC-1) Gene in Mice Results in A Syndrome of Partial Hormone Resistance. *Science* 279:1922-1925, 1998. PMID: 9506940
3. Lanz, R.B., N.J. McKenna, S.A. Onate, U. Albrecht, J. Wong, S.Y. Tsai, M.-J. Tsai and **B.W. O'Malley**. A novel steroid receptor coactivator, SRA, functions as an RNA & is associated with SRC-1. *Cell* 97:17-27, 1999. PMID: 10199399
4. Liu, Z. J. Wong, S.Y. Tsai, M.-J. Tsai and **B.W. O'Malley**. Steroid receptor coactivator-1 (SRC-1) enhances ligand-dependent and receptor-dependent cell free transcription of chromatin. *Proc. Natl. Acad. Sci. USA* 96:9485-9490, 1999 *PMC22235*
5. Nawaz, Z., D.M. Lonard, C.L. Smith, E. Lev-Lehman, S.Y. Tsai, M.-J. Tsai and **B.W. O'Malley**. The Angelman syndrome-associated protein, E6-AP, is a coactivator for the nuclear hormone receptor superfamily. *Mol. Cell Biol.* 19:1182-1189, 1999. *PMC116047*
6. Lonard, D., Z. Nawaz, C.L. Smith & **B.W. O'Malley**. The 26S proteasome is required for estrogen receptor- $\alpha$  and coactivator turn-over & for efficient estrogen receptor- $\alpha$  transcriptional activity. *Mol. Cell.* 5:939-948, 2000. PMID: 10911988
7. Xu, J., L. Liao, G. Ning, H. Yoshida-Komiya, C. Deng and **B.W. O'Malley**. The coactivator SRC-3 (p/CIP/RAC3/AIB1/ACTR/TRAM-1) is required for normal growth, puberty, reproductive function and mammary gland development. *Proc. Natl. Acad. Sci.* 97: 6379-6384, 2000. *PMC18611*
8. Auboeuf, D., A. Hönic, S.M. Berget, and **B.W. O'Malley**. Coordinate regulation of transcription and splicing by steroid receptor coregulators. *Science* 298:416-419, 2002. PMID: 12376702
9. McKenna, N.J. and **B.W. O'Malley**. Review : Combinatorial control of gene expression by nuclear receptors and coregulators. *Cell* 108:466-474, 2002. PMID: 11909518
10. Picard, F., M. Gehin, J.-S. Annicotte, S. Rocchi, M.-F. Champy, **B.W. O'Malley**, P. Chambon and J. Auwerx. SRC-1 and TIF2 control energy balance between white and brown adipose tissues. *Cell* 111:931-941, 2002. PMID: 12507421

11. Wu, R.-C., J. Qin, Y. Hashimoto, J. Wong, J. Xu, S.Y. Tsai, M.-J. Tsai and **B.W. O'Malley**. Regulation of SRC-3 (pCIP/ACTR/AIB-1/RAC-3/TRAM-1) coactivator activity by I $\kappa$ B kinase. *Molecular and Cellular Biology*. 22:3549-3561, 2002. *PMC133790*
12. Li, X., J. Wong, S.Y. Tsai, M.-J. Tsai and **B.W. O'Malley**. Progesterone and glucocorticoid receptors recruit distinct coactivator complexes and promote distinct patterns of local chromatin modification. *Molecular and Cellular Biology* 23:3763-3773, 2003. *PMC155204*
13. Wu, R.-C., J. Qin, P. Yi, J. Wong, S.Y. Tsai, M.-J. Tsai and **B.W. O'Malley**. Selective phosphorylations of the SRC-3/AIB1 coactivator integrate genomic responses to multiple cellular signaling pathways. *Mol. Cell* 15:1-20, 2004. PMID: 15383283
14. Dowhan, D.H., E.P. Hong, D. Auboeuf, A.P. Dennis, M.M. Wilson, S.M. Berget and **B.W. O'Malley**. Steroid hormone receptor coactivation and alternative RNA splicing by U2AF65-related proteins CAPER $\alpha$  and CAPER $\beta$ . *Mol. Cell*. 17:1-20, 2005. PMID: 15694343
15. Park, K.-J., S. Prajapati, G. Krishnan, **B.W. O'Malley**, U. Yamamoto and R.B. Gaynor. Formation of an IKK $\alpha$  dependent transcription complex is required for estrogen receptor mediated gene activation. *Mol Cell*. 18(1):71-82, 2005. PMID: 15808510
16. Yi, P., R.C. Wu, J. Sanquist, J. Wong, S.Y. Tsai, M.-J. Tsai, A.R. Means, , and **B.W. O'Malley**. Peptidyl-prolyl isomerase 1 (Pin1) serves as a coactivator of steroid receptor by regulating the activity of phosphorylated steroid receptor coactivator 3 (SRC-3/AIB1). *Molecular and Cellular Biology*. 21: 9687-99, 2005. *PMC1265806*
17. Auboeuf D, Dowhan DH, Duterte M, Martin N, Berget SM, and **B.W. O'Malley**. A subset of nuclear receptor coregulators act as coupling proteins during synthesis and maturation of RNA transcripts. *Molecular and Cellular Biology*. 25: 5307-16, 2005. *PMC1156981*
18. Lonard, D., and **B.W. O'Malley**. The expanding cosmos of nuclear receptor coactivators. *CELL*. 5: 411-414, 2006. PMID: 16678083
19. Coste, A., M.C. Antal, S. Chan, P. Kastner, M. Mark, **B.W. O'Malley** and J. Auwerx. Absence of the steroid receptor coactivator-3 induces B-cell lymphoma. *EMBO*. May 4 issue, 2006. *PMCID: PMC1478181*
20. Hatchell EC, Colley SM, Beveridge DJ, Epis MR, Wilce JA, Wilce CJ, MacDonald L, Golding JL, Lanz RB, **O'Malley BW**, and P.J.Leedman. SLIRP, a small SRA-binding protein, is a nuclear receptor corepressor. *Mol. Cell*. 22(5):657-68, 2006. PMID: 16762838
21. Li,X, Lonard,DM, Jung,SY, Malovannaya,A, Feng,Q, Qin J, Tsai SY, Tsai MJ, and **B.W. O'Malley**. The SRC-3/AIB1 coactivator is degraded in a ubiquitin- and ATP-independent manner by the REG $\gamma$  proteasome. *CELL*. 124: 381-392, 2006. PMID: 16439211
22. **O'Malley, B.W.** Evolution of the Coregulator Master Genes: Genes that code for 'little molecules with big goals'. *Science* 313:1749-50, 2006. PMID: 16990541
23. Yu, C., S. Wang, Q. Feng. J. Xu and **B.W. O'Malley**. An essential function of the SRC-3 coactivator in suppression of cytokine mRNA translation and inflammatory response. *Molecular Cell*. 25, 765-778, 2007. *PMC1864954*
24. Meng, Q., Rayala, S., Gururaj, A.E., Talukder, A. **O'Malley, B.W.**, and Kumar, R. Signaling-dependent and coordinated regulation of transcription, splicing, and translation resides in a single coregulator, PCBP1. *Proc. Natl. Acad. Sciences, USA*. 104(14):5866-5871, 2007. *PMC1851583*
25. Li X., L. Amazit, W.Long, D. M.Lonard, J. J. Monaco and **B. W. O'Malley**. Ubiquitin- and ATP-independent Proteolytic turnover of p21 by the REG $\gamma$ -proteasome pathway. *Molecular Cell* 26:831-842, 2007. PMID: 17588518
26. Loehberg, C.R., T. Thompson, M.B. Kastan, D.G. Edwards, F.S. Kittrell, D. Medina, O.M. Conneely and **B.W. O'Malley**. ATM and p53 are potential mediators of Chloroquine-induced resistance to mammary carcinogenesis. *Cancer Research* *Cancer Res*. 67(24):12026-33, 2007. PMID: 18089834
27. Lonard, D.M., R.B. Lanz and **B.W. O'Malley**. Nuclear Receptor Coregulators and Human Disease. *Endocrine Rev*. 28(5):575-587, 2007. PMID: 17609497
28. Lonard, D.M. and **B.W. O'Malley**. Nuclear receptor coregulators: Judges, juries and executioners of cellular regulation. *Molecular Cell* 27:691-700, 2007. PMID: 17803935
29. **O'Malley B.W.** Coregulators: from whence came these "master genes". *Mol. Endo*. 21(5):1009-13, 2007. PMID: 17284664
30. Wu, R.-C., Q. Feng, D.M. Lonard and **B.W. O'Malley**. SRC-3 Coactivator Functional Lifetime Is Regulated by a Phospho-Dependent Ubiquitin Time Clock. *Cell*, 29:1-16, 2007. PMID: 17574025

31. Lonard, D.M., and B.W. O'Malley SRC-3 Transcription-coupled activation, degradation and the ubiquitin clock: Is there enough coactivator to go around in cells? *Science Signaling (STKE)* 2008 Apr 1;1(13):pe16. PMID: 18385039
32. Yi, P., Q. Feng, L. Amazit, D.M. Lonard, S.Y. Tsai, M.-J. Tsai and **B.W. O'Malley**. Atypical protein kinase C regulates dual pathways for degradation of the oncogenic coactivator SRC-3/AIB1. *Molecular Cell* 29:465-478, 2008. *PMC2293272*
33. Chopra, A.R., J.-F. Louet, P. Saha, J. An, F. DeMayo, J. Xu, B. York, S. Karpen, M. Finegold, D. Moore, L. Chan, C. Newgard and **B.W. O'Malley**. Absence of the SRC-2 Coactivator Results in a Glycogenopathy Resembling Von Gierke's Disease. *Science* 322:1395-1399, 2008. PMID: 19039140
34. Long, W., P. Yi, L. Amazit, H.L. LaMarca, F. Ashcroft, R. Kumar, M.A. Mancini, S.Y. Tsai, M.-J. Tsai and B.W. O'Malley. SRC-3 $\Delta$ 4 mediates the interaction of EGFR with FAK to promote cell migration. *Molecular Cell* 37(3), 321-332, 2010.

D. Research Support

**R01 HD07857-36/40 (O'Malley)** 05/01/77 - 04/30/12

NIH "Sex Hormone Receptor Components & Cell Genome"

The major goals are: To continue studies of transcriptional regulation by sex hormone receptors and their related family members and develop new transgenic models to dissect receptor/coactivator actions in vivo.

**R01 HD08188-35/36 (O'Malley)** 09/01/74 – 02/28/14

NIH "Reproductive Hormones: Biological and Molecular Actions"

The major goals of this project are: Characterization of the interaction of hPR and hER with general cellular transcription coactivators in reproductive tissues.

**U19 DK62434-06/10 (O'Malley)** 08/15/02 - 07/31/12

NIDDK & National Inst. on Aging - Resource B & B Project 1 "A Functional Atlas for Orphan Nuclear Receptors"  
To provide centralized scientific & administrative management, financial control services & clerical & materials management support to all Projects & Cores and to identify specific co-activator protein complexes in HeLa cells.

**U54 HD07495-34/35 (O'Malley)** 06/01/78 - 03/31/14

NIH Center: Core A / "Center for Reproductive Biology Research"

The Center provides funds for four research projects and maintains four core laboratories and investigators.

**T32 HD07165-29/32 (O'Malley)** (Students and Fellows) 07/01/79 - 04/30/11

NIH "Training Grant - Reproductive Biology: Regulatory Mechanisms"

**P01 DK59820-07/10 (O'Malley)** 08/01/01 – 07/31/11

NIH, NIDDK "Genetic and Metabolic Fingerprints of Coactivators"

Project 2: *In Vivo* Analysis of Receptor Preferences for Individual Coactivators

Develop and use animal models to dissect the effects of SRC family members on the pharmacology of SERMs relative to different combinations or amounts of SRC family members in target tissues.

## BIOGRAPHICAL SKETCH

NAME Edward F. Orlando		POSITION TITLE	
eRA COMMONS USER NAME eorlando		Assistant Professor of Reproductive Biology	
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Florida	BS [Cum laude]	1987	Construction Management
University of Florida	MS [Mentor: Guillette]	1997	Reproductive Biology
University of Florida	PhD [Mentor: Guillette]	2001	Reproductive Biology
National Institutes of Basic Biology, Okazaki, JP	Postdoctoral Training [Mentor: Iguchi]	2004	Molecular Reproductive Biology

### A. Positions and Honors.

#### Positions and Employment

2000-2005 Assistant Professor, St. Mary's College of Maryland, Biology Department  
 2005-2008 Assistant Professor, Florida Atlantic University, Biological Sciences Department  
 2008-present Assistant Professor, University of Maryland, Animal & Avian Sciences Department

#### Other Experience and Professional Memberships

2004-2006 USEPA Endocrine Disruptor Methods Validation Advisory Committee member  
 2005 USEPA STAR grant review panel member for 2005-STAR-H1  
 2006 USEPA STAR grant review panel member for EPA-G2006-STAR-M1 (declined for conflict of interest)  
 2006-2007 Mid-Atlantic Regional Water Quality Program speaker and panel member for program on Endocrine Disruptors and the Chesapeake Bay

#### Honors

1999-2000 USEPA-STEP PhD Research Fellowship  
 2004 NSF-Japanese Society for the Promotion of Science International Research Fellowship  
 2007-2008 Environmental Health Science Communication Fellowship

### B. Peer-Reviewed Publications (14 of 39 total in chronological order).

**EF Orlando**, ND Denslow, LC Folmar, and LJ Guillette, Jr. A comparison of the reproductive physiology of largemouth bass, *Micropterus salmoides*, collected from the Escambia and Blackwater Rivers in Florida. *Environmental Health Perspectives* 107(3) 199-204 (1999).

**EF Orlando** and LJ Guillette, Jr. A reexamination of variation associated with environmentally stressed organisms. *Human Reproduction Update* 7(3): 265-72 (2001).

**EF Orlando**, GA Binczik, KJ Kroll, LJ Guillette, Jr. The contaminant-associated stress response and its relationship to plasma stress and sex steroid concentrations in the Florida gar, *Lepisosteus platyrhincus*. *Environmental Sciences: an International Journal of Environmental Physiology and Toxicology* 9 (4): 1-14 (2002).

**EF Orlando**, WP Davis, LJ Guillette, Jr. Aromatase activity in the ovary and brain of the mosquitofish, *Gambusia holbrooki*, exposed to paper mill effluent. *Environmental Health Perspectives* 110 (Supplement 3): 429-433 (2002).

**EF Orlando**, GA Binczik, L Ford, P Thomas, and LJ Guillette, Jr. Reproductive seasonality of the male Florida gar, *Lepisosteus platyrhincus*. *General and Comparative Endocrinology* 131(3) 365-371 (2003).

**EF Orlando**, GA Binczik, J Gates, LE Gray Jr., M Horton, AS Kolok, C Lambright, and LJ Guillette, Jr. Endocrine disrupting effects of cattle feedlot effluent on a sentinel species, the fathead minnow. *Environmental Health Perspectives* 112: 353-358 (2004).

**EF Orlando**, Y Katsu, S Miyagawa, and T. Iguchi. Cloning and differential expression of the estrogen receptor and aromatase genes in the self-fertilizing hermaphrodite and male mangrove rivulus, *Kryptolebias marmoratus*. *Journal of Molecular Endocrinology* 37: 353 - 365 (2006).

**EF Orlando** and LJ Guillette, Jr. Sexual dimorphic responses in wildlife exposed to endocrine disrupting chemicals. *Environmental Research* 104(1): 163-173 (2006).

A Kanamori, A Yamamura, S Koshihara, Jae-Seong Lee, **EF Orlando**, and H. Hori. Methyltestosterone efficiently induces male development in the self-fertilizing hermaphrodite fish, *Kryptolebias marmoratus*. *Genesis: the Journal of Genetics and Development* 44: 495 - 503 (2006).

**EF Orlando**, GA Binczik, ND Denslow, and LJ Guillette, Jr. Reproductive seasonality of the female Florida Gar, *Lepisosteus platyrhincus*. *General and Comparative Endocrinology* 151(3): 318-324 (2007).

**EF Orlando**, DE Bass, LM Caltabiano, WP Davis, LE Gray, Jr. and LJ Guillette, Jr. Altered development and reproduction in mosquitofish exposed to paper mill effluent in the Fenholloway River, Florida USA. *Aquatic Toxicology* 84(4): 399 - 405 (2007).

K Watanabe, K Jensen, **EF Orlando**, and GT Ankley. What is Normal? A characterization of the values and variability in apical reproductive parameter data of the fathead minnow, *Pimephales promelas*. *Comparative Biochemistry and Physiology* 146(3): 348-356 (2007).

N Garcia-Reyero, DL Villeneuve, KJ Kroll, L Liu, **EF Orlando**, KH Watanabe, MS Sepúlveda, GT Ankley, and ND Denslow. Expression signatures for a model androgen and antiandrogen in the fathead minnow (*Pimephales promelas*) ovary. *Environmental Science and Technology* 43(7): 2614-9 (2009).

SM Johns, MD Kane, ND Denslow, KH Watanabe, **EF Orlando**, DL Villeneuve, GT Ankley, and MS Sepúlveda. Characterization of ontogenetic changes in gene expression in the fathead minnow (*Pimephales promelas*). *Environmental Toxicology and Chemistry* 28(4): 873-80 (2009).

### **C. Research Support.**

US EPA - STAR Grant/Coop. Agreement Denslow (PI) 08/2004 - 07/2008  
 “Systems biology modeling of the fathead minnow and zebrafish brain-pituitary-gonadal responses to exposure to endocrine disrupting chemicals”

Role: Co-PI.

Goal: Using fathead minnows and zebrafish, we tested the hypothesis that systems biology approaches can be used effectively to demonstrate that the brain-pituitary-gonadal axis response is reasonably predictable and can be modeled using test chemicals to predict the effects of unknown compounds and simple mixtures

Maryland Sea Grant Program Development Grant Orlando (PI) 09/2004 - 09/2005  
 “Nutrients and sex steroid concentration in tributaries to the Chesapeake Bay downstream of poultry farms”

Role: PI.

Goal: To test the hypothesis that nitrate and phosphate concentration are correlated with sex steroid hormone concentrations in streams draining poultry farms in the Chesapeake Bay watershed.

European Union Economic Community Grant Guillette (PI) 11/1998 - 05/2000  
 “Possible endocrine disrupting effects of cattle feedlot effluent on a sentinel fish species”

Role: Co-PI.

Goal: To test the hypothesis that fish exposed to feedlot effluent would have altered reproduction and development.



## **Biosketch: Catherine Propper, Ph.D., Professor**

### a. Professional Preparation:

A.B., Zoology, University of California, Berkeley, 1982.  
Student, Organization for Tropical Studies, Tropical Biology in Costa Rica, 1983.  
Ph.D., Zoology, Oregon State University, Corvallis, Oregon, 1989.

### b. Appointments:

2002-present: Professor, Dept. Bio. Sci., Northern Arizona Univ.  
1996-2002: Associate Professor, Dept. Bio. Sci., Northern Arizona Univ.  
1991-1996: Assistant Professor, Dept. Biological Sciences, NAU  
1989-1990: NIMH postdoctoral fellow at U. Colorado, Boulder (Mentor: Dr. Richard E. Jones).  
1987-1988: NIMH predoctoral fellow at Oregon State Univ., Corvallis (Mentor: Dr. F.L. Moore).  
1986-1987: Teaching Assistant, Oregon State University, Corvallis.  
1985-1986: Research Assistant, Oregon State University, Corvallis.  
1982-1985: Teaching Assistant, Oregon State University, Corvallis.

### c.i. 5 Publications Most Closely Related to Proposed Project:

Quanrud and Propper. 2010. Efficacy of Wastewater Treatment Processes in eliminating environmental contaminants and the impact of exposure to these compounds on biological systems. White Paper under review by The Nature Conservancy.  
Raymond-Whish, S., Mayer, L.P., O'Neal, T., Martinez, A. Sellers, M.A. Christian, P.J., Marion, S.L., Begay, C., Propper, C.R., Hoyer, P.B., Dyer, C.A. 2007. Drinking water with uranium below US EPA water standard causes estrogen receptor dependent responses in female mice. *Env. Health Perspect.* 115(12):1711-6  
Propper, C.R. 2005. The Study of Endocrine-Disrupting Compounds: Past Approaches and New Directions. *Int. Comp. Biol.* 45(1): 194-200.  
Orchinik, M. and Propper, C.R. 2005. Hormone Action on Receptors. In: D.O. Norris and J.A. Carr (Eds.), *Endocrine Disruption: Biological Basis for Health Effects in Wildlife and Humans*, Oxford University Press, 448 pages.  
Mayer, L.P., Dyer, C.D. and Propper, C.R. 2003. Exposure to 4-tert-octylphenol accelerates sexual differentiation and disrupts expression of Steroidogenic Factor 1 (SF-1) in developing bullfrogs. *Env. Health Persp.* 111(4):557-61.

### c.ii. 5 Other Significant Publications:

Propper, C.R. 2010. Testicular Structure and Control of Sperm Development in Amphibians. In press In: *Hormones and Reproduction in Vertebrates*. Elsevier.  
Park, D., Minor, M.D., and Propper, C.R.. 2004. Toxic response of endosulfan to breeding and non-breeding female mosquitofish. *Journal of Environmental Biology* 25(2): 119-124.  
Park, D. and Propper, C.R. 2002. Endosulfan affects male pheromonal detection and production in the red-spotted newt. *Bull. of Env. Contamin. Toxicol.* 69(4):609-16.  
Park, D, Hempleman, S.C., and Propper, C.R. 2001. Disrupted amphibian pheromone systems in red-spotted newts: A potential causal factor in population declines. *Env. Health Perspect.* 109: 669-674.  
Sullivan, B.K., Propper, C.R., Demlong, M.J., and Harvey L.H. 1996. A natural hermaphroditic toad (*Bufo microscaphus* X *B. woodhousii*). *Copeia* 1996: 470-472.

#### d. Synergistic Activities:

1. Development of a course: Debates in Science of Public Policy Importance. Objective: To give students a better understanding of the complexities of issues that involve both science and politics.
2. Development of a joint University Interactive Television (IITV) course: Reproductive Endocrinology Journal Club. Held jointly over television with endocrinologists from the University of Arizona. Developed jointly with Dr. Cheryl Dyer.
3. Development of IITV course: Environmental Endocrine Disruptors. Held jointly with the UA (Drs. Hoyer and Dyer and ASU (Drs. Orchinik and Deviche)
4. Development of IITV Endocrine Journal Club with Drs. Deviche and Orchinik at Arizona State University. Held each semester.
5. Faculty Development Coordinator for Minority Student Development Award from NIH to NAU 2001-2007. Organized and coordinated workshops and seminars for Faculty to improve mentoring activities for students from underrepresented backgrounds.
6. Research Investigator on Minority Student Development Award from NIH to our University. I have trained several minority undergraduate students and one Native American Master's student on this award.
7. Mentor for Northern Arizona University's NSF-sponsored Research Experiences for Undergraduates in Neuroscience and Behavior. I have trained 7 students from this award. Several have gone on to professional or graduate programs.
8. Mentor for Science Foundation Arizona k-12 Summer Teacher Program.
9. Use of Web-based materials for Vertebrate Zoology and Animal Physiology courses to better understand, physiological processes, cladistics and evolution.
10. Co-founder of the Center for Applied Research in Environmental Endocrinology.
11. Steering Committee Member of NAU's SABRE: Strategic Alliance for Bioscience Research & Education
12. Student mentor for UMEB program.
13. NAU Executive Committee member for the former Statewide Arizona Water Institute, a Tri-University Collaborative effort to improve water quality and usage in Arizona.

#### e. Collaborators:

Beckstrom-Sternberg, Steven: NAU, TGEN  
Dyer, Cheryl: Northern Arizona University  
Mayer, Loretta: Northern Arizona University  
Flikkema, Paul: Northern Arizona University  
Helbing, Caren: University of Victoria, B.C.  
Quanrud, David: University of Arizona  
Vail, Timothy: Northern Arizona University  
Deviche, Pierre, Arizona State University

Graduate Students and Post-docs Advised in the last 9 years: Ms. Loretta Mayer, M.S., 1997, Ph.D., 2000 (Post-doc Associate, U of A); Dr. Daesik Park, Ph.D., 2001 (Post-doc Associate MSU); Ms. Lisa Rania-Gibbons, M.S., 1998 (Ph.D. candidate, Univ. Miami, FL.), Ms. Stefanie Overstreet, M.S., 2001 (Ph.D. student, NAU), Ms. Kimberly Westmoreland, M.S, 2004. Ms. Angela Schwendiman, M.S. 2005, current Ph.D. student. Ms. Priyanka Shah, M.S. 2008, Ms. Maureen Maloney, M.S. 2008, Ms. Stephanie Wolff, current M.S., Mr. Robert Miranda, Current Ph.D., Ms. Melanie Schroer, current Ph.D., Dr. Brian Searcy, 2005-2008.  
I have also acted as research advisor to more than 50 undergraduates since 1991.

#### Graduate and Post-doctoral Advisors

Frank L. Moore, Oregon State University: Doctoral Advisor  
Richard E. Jones, University of Colorado: Post-doctoral Advisor.

## **Stewart M. Rhind**

### **Macaulay Land Use Research Institute, Aberdeen, Scotland**

Stewart Rhind is a BSc graduate in Zoology (1974) from Aberdeen University. For his PhD (1978) he began his research at the Rowett Research Institute into the relationships between nutritional state (food intake and body condition) and reproductive function in sheep, work which was continued at the Macaulay Land Use Research Institute. This led to investigations of fetal programming effects on adult reproduction and a DSc (2007). To date he has over 125 refereed publications.

Work on nutritional programming of the fetus led, in turn, to investigations of non-nutritional stressors (endocrine disrupting compounds (EDCs)) on fetal development. He has focussed on establishing the patterns of tissue accumulation of EDCs in adult and fetal, animal and human tissue, and the factors that may alter rates of accumulation. In order to address these issues, a simple, a large animal model has been established, involving sheep exposed to pastures fertilised with either sewage sludge (a waste product known to contain large amounts of anthropogenic pollutants) or inorganic fertiliser. He collaborates with many other scientists who bring a wide range of specialist techniques to bear on investigation of the physiological consequences of exposure to these pollutants.

**Dr. Eric V. Stabb**  
Associate Professor  
Department of Microbiology  
University of Georgia  
828 Biological Sciences  
Athens, GA 30602  
(706)-542-2414, estabb@uga.edu

### **Education**

- 1990-1997 University of Wisconsin-Madison  
Ph.D. in Bacteriology
- 1986-1990 University of Wisconsin-Madison  
B.S. with distinction in Molecular Biology and Philosophy

### **Professional Experience**

- 2007-present Associate Professor, Department of Microbiology, University of Georgia (UGA). Focus: The bioluminescent marine bacterium *Vibrio fischeri*. Research topics include symbiotic interactions of *V. fischeri* with *Euprymna scolopes*, inter- and intraspecies signaling, regulation and role of bioluminescence, *V. fischeri* plasmids and genomics, and application of genetic techniques in this and other marine bacteria.
- 2001-2007 Assistant Professor, Department of Microbiology, UGA
- 1997-2001 Postdoctoral Fellow with Professor Edward Ruby, Kewalo Marine Laboratory, University of Hawai'i. Focus: *Vibrio fischeri*-*Euprymna scolopes* symbiotic interactions.
- 1991-1997 Research Assistant with Professor Jo Handelsman. Elucidated mechanisms of resistance to zwittermicin A in *Escherichia coli*, and described populations of genetically diverse zwittermicin A-producing *Bacillus* strains found in soils and on plant roots.
- 1988-1990 Undergraduate projects with Professor Timothy Donohue. Focus: Maturation of c-type cytochromes. Developed and used molecular genetic tools in *Rhodobacter sphaeroides*.

### **Awards and Honors**

- 2009 Finalist, UGA Graduate School Outstanding Mentoring Award
- 2008 Accepted UGA Embracing Diversity Award on behalf of Microbiology Department
- 2004 National Science Foundation (NSF) CAREER award
- 1999-2001 National Institutes of Health, Postdoctoral National Research Service Award
- 1996 Gamma Sigma Delta inductee
- 1991-1996 Howard Hughes Medical Institute Predoctoral Fellow
- 1991 NSF Predoctoral Fellowship (awarded but declined)
- 1990-1991 National Institutes of Health Molecular and Cellular Biology Training Grant Fellow
- 1989 Phi Beta Kappa inductee
- 1988 NSF Research Experience For Undergraduates Award

### **Memberships**

- American Society for Microbiology
- International Symbiosis Society
- American Association for the Advancement of Science

### **Professional Service (highlights)**

- President, UGA Franklin College of Arts and Sciences Faculty Senate, 2009-2010
- Editorial board, *Applied and Environmental Microbiology* (2005-2010)
- Grant Review Panelist, National Institutes of Health, 2008 and 2009
- Grant Review Panelist, National Science Foundation, 2006 and 2009
- Contributing Member, Faculty of 1000, Cellular Microbiology and Pathogenesis, 2005-2010
- *ad hoc* reviewer for twenty-one journals
- *ad hoc* reviewer, NSF (2004-2010): eight programs
- *ad hoc* reviewer, INSERM (French National Institute for Medical Research)-2009, US-Israel Binational Science Foundation-2006, and the Singapore National Medical Research Council-2006

**Select Journal Publications (reverse chronological order)**

- Lyell, N.L., A.K. Dunn, J.L. Bose, and **E.V. Stabb**. 2010. Bright mutants of *Vibrio fischeri* ES114 reveal conditions and regulators that control bioluminescence and expression of the *lux* operon. *Journal of Bacteriology* (in press)
- Dunn, A.K., A.K. Karr, Y. Wang, A.R. Batton, E.G. Ruby, **E.V. Stabb**. 2010. The alternative oxidase (AOX) gene in *Vibrio fischeri* is controlled by NsrR and upregulated in response to nitric oxide stress. *Molecular Microbiology* (in press)
- Septer, A.N., J.L. Bose, A.K. Dunn, and **E.V. Stabb**. 2010. FNR-mediated regulation of bioluminescence and anaerobic respiration in the light-organ symbiont *Vibrio fischeri*. *FEMS Microbiology Lett.* 306: 72-81
- Mandel, M.J., M.S. Wollenberg, **E.V. Stabb**, K.L. Visick, and E.G. Ruby. 2009. A single regulatory gene is sufficient to alter bacterial host range. *Nature* 458: 215-218
- Troll, J.V., D.M. Adin, A.M. Wier, N. Paquette, N. Silverman, W.E. Goldman, F.J. Stadermann, **E.V. Stabb**, and M.J. McFall-Ngai. 2009. Peptidoglycan induces loss of a nuclear peptidoglycan recognition protein during host tissue development in a beneficial animal-bacterial symbiosis. *Cellular Microbiology*. 11:1114-1127
- Adin, D.M., J.T. Engle, W.E. Goldman, M.J. McFall-Ngai, and **E.V. Stabb**. 2009. Mutations in *ampG* and lytic transglycosylase genes affect the net release of peptidoglycan monomers from *Vibrio fischeri*. *Journal of Bacteriology* 191:2012-2022
- Lyell, N.L., A.K. Dunn, J.L. Bose, S.L. Vescovi, and **E.V. Stabb**. 2008. Effective mutagenesis of *Vibrio fischeri* using hyperactive mini-Tn5 derivatives. *Applied and Environ. Microbiology* 74:7059-7063
- Dunn, A.K. and **E.V. Stabb**. 2008. Genetic analysis of trimethylamine *N*-oxide reductases in the light-organ symbiont *Vibrio fischeri* ES114. *Journal of Bacteriology* 190:5814-5823
- Adin, D.M., K.L. Visick, and **E.V. Stabb**. 2008. Identification of a cellobiose utilization gene cluster with cryptic  $\beta$ -galactosidase activity in *Vibrio fischeri*. *Applied and Environmental Microbiology* 74:4059-4069.
- Bose, J.L., C.S. Rosenberg, and **E.V. Stabb**. 2008. Effects of *luxCDABEG* induction in *Vibrio fischeri*: Enhancement of symbiotic colonization and conditional attenuation of growth in culture. *Archives of Microbiology*. 190:169-183
- Adin, D.M., N.J. Phillips, B.W. Gibson, M.A. Apicella, E.G. Ruby, M.J. McFall-Ngai, D.B. Hall, and **E.V. Stabb**. 2008. Characterization of *htrB* and *msbB* mutants of the light organ symbiont *Vibrio fischeri*. *Applied and Environmental Microbiology* 74:633-644
- Bose, J.L., U. Kim, W. Bartkowski, R.P. Gunsalus, A.M. Overley, Noreen L. Lyell, K.L. Visick, and **E.V. Stabb**. 2007. Bioluminescence in *Vibrio fischeri* is controlled by the redox-responsive regulator ArcA. *Molecular Microbiology* 65:538-553
- Walker, E.L., J.L. Bose, and **E.V. Stabb**. 2006. Photolyase confers resistance to UV light but does not contribute to the symbiotic benefit of bioluminescence in *Vibrio fischeri* ES114. *Applied and Environmental Microbiology* 72:6600-6606
- Dunn, A.K., D.S. Millikan, D.M. Adin, J.L. Bose, and **E.V. Stabb**. 2006. New *rfp*- and pES213-derived tools for analyzing symbiotic *Vibrio fischeri* reveal patterns of infection and *lux* expression *in situ*. *Applied and Environmental Microbiology* 72:802-810
- Dunn, A.K. and **E.V. Stabb**. 2005. Culture-independent characterization of the microbiota of the antlion *Myrmeleon mobilis* (Neuroptera: Myrmeleontidae). *Applied and Environmental Microbiol.* 71:8784-8794
- Koropatnick, T.A., J.T. Engle, M.A. Apicella, **E.V. Stabb**, W.E. Goldman, and M. J. McFall-Ngai. 2004. Microbial factor-mediated development in a host-bacterial mutualism. *Science* 306: 1186-1188

**Select Reviews and Book Chapters (reverse chronological order)**

- Stabb, E.V.** and D.S. Millikan. 2009. Is the *Vibrio fischeri*-*Euprymna scolopes* symbiosis a defensive mutualism? In J.F. White, Jr. and M.S. Torres (eds.), *Defensive Mutualism in Microbial Symbiosis*. Taylor and Francis, Boca Raton, pp. 85-98
- Stabb, E.V.**, A. Schaefer, J.L. Bose, and E.G. Ruby. 2008. Quorum Signaling and Symbiosis in the Marine Luminous Bacterium *Vibrio fischeri*, In S. C. Winans and B. L. Bassler (eds.), *Chemical Communication Among Microbes*. ASM Press, Washington, D.C., pp. 233-250
- Dunn, A.K. and **E.V. Stabb**. 2007. Beyond quorum sensing: the complexities of prokaryotic parliamentary procedures. *Analytical and Bioanalytical Chemistry*. 387:391-398
- Cloud-Hansen, K.A., S.B. Peterson, **E.V. Stabb**, W.E. Goldman, M.J. McFall-Ngai, and J. Handelsman. 2006. Breaching the Great Wall: Peptidoglycan and Microbial Interactions. *Nat Rev Microbiol* 4:710-716
- Stabb, E.V.** 2006. The *Vibrio fischeri*-*Euprymna scolopes* light organ symbiosis. In F. L. Thompson, B. Austin and J. Swings (eds.), *The biology of Vibrios*. ASM Press, Washington D.C., pp. 204-218
- Stabb, E.V.** 2005. Shedding light on the bioluminescence "paradox". *ASM News* 71:223-229

**Paul Straight's Biographical Information:**

Dr. Straight received a bachelor's degree in Biochemistry from Lewis & Clark College Portland, Oregon. Following undergraduate training, he spent a few years at the University of California, San Francisco and the University of Virginia in the laboratory of Judith White, pursuing research related to mechanisms of fusion between mammalian germ cells and muscle precursors. His graduate degree was earned at the University of Colorado, Boulder in Molecular, Cellular and Developmental Biology.

The focus of Dr. Straight's Ph.D. research was the regulation of spindle dynamics and spindle pole duplication in yeast, which couple meiosis with spore formation. Inspired by the connection between environmental cues and cellular development, he pursued postdoctoral research in bacterial development and metabolism at Harvard Medical School and the Broad Institute in Cambridge, MA. Dr. Straight is currently an Assistant Professor of Biochemistry and Biophysics at Texas A&M University.

**Caz Taylor**

**Talk: Impacts of the Deepwater Horizon oil spill on Blue Crabs**

I am a population ecologist, broadly interested in how density-dependence and large-scale spatial processes affect population dynamics. My PhD was from UC Davis 2004 and I had an NSF postdoctoral fellowship in Bioinformatics before joining the Tulane Ecology and Evolutionary Biology department in 2009. I work, or have worked, on invasive plants, migratory birds and marine organisms. Most of my work has involved species that inhabit, migrate through, or invade coastal wetland habitats. I work at the interface of theoretical and empirical ecology. In my lab, we work on mathematical and computational models but we also collect field data and conduct field experiments in order to apply the models to real species.

## BIOGRAPHICAL SKETCH

NAME <b>Laura N. Vandenberg</b>	POSITION TITLE Postdoctoral Fellow		
eRA COMMONS USER NAME			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Cornell University, Ithaca, NY	B.S.	1999-2003	Biology- Genetics & Development
Tufts University School of Medicine, Boston, MA	Ph.D.	2003-2007	Cell, Molecular & Developmental Biology
The Forsyth Institute, Boston MA	Postdoc	2007-2008	Developmental Biology
Tufts University, Medford MA	Postdoc	2008-	Developmental Biology

### A. POSITIONS & HONORS

Assistant Laboratory Technician, Cornell University	2001-2003
Postdoctoral Fellow, The Forsyth Institute	2007-2008
Research Associate in Developmental Biology, Harvard School of Dental Medicine	2008
Postdoctoral Fellow, Tufts University	2008-

### PROFESSIONAL MEMBERSHIPS & ACTIVITIES

Member, The Endocrine Society	2006-2008
Senior Advisory Council Member, Coalition for a Safe & Healthy Connecticut	2008-
Member, Society for Developmental Biology	2008-
Invited member, German Umweltbundesamt Panel, BPA assessment	2009
Invited member, German Federal Institute for Risk Assessment	2009
Ad hoc Reviewer (Environmental Research, Toxicology & Applied Pharmacology, Reproductive Toxicology, Human & Experimental Toxicology, Environmental Health Perspectives, Archives of Environmental Contamination & Toxicology, Environmental Health)	

### HONORS

Howard Hughes Research Scholar, Cornell University	2002-2003
Graduation <i>Magna Cum Laude</i> , with <i>Distinction in Research</i> , Cornell University	2003
Sackler School Dean's Fellowship in Cancer Research, Tufts University	2005-2006
Outstanding Trainee Award, Gordon Research Conference	2006
Endocrine Society Travel Grant	2007
Top 20 Downloaded Citations & Top 10 Cited Manuscripts, <i>Reproductive Toxicology</i>	2007-2008

### TEACHING & MENTORING EXPERIENCE

Great Neck Breast Cancer Coalition High School Mentoring Program	2005
Boston Latin High School Science Mentoring Program	2006
Board of Directors, Massachusetts Odyssey of the Mind	2008-
Instructor, Tufts University, Experiments in Cell Biology	2010



## B. SELECTED PEER-REVIEWED PUBLICATIONS

1. Rubin BS, Lenkowski JR, Schaeberle CM, **Vandenberg LN**, Ronsheim PM, and Soto AM. Evidence of altered brain sexual differentiation in mice exposed perinatally to low, environmentally relevant levels of bisphenol A. *Endocrinology* 147: 3681-3691, 2006.
2. **Vandenberg LN**, Wadia PR, Schaeberle CM, Rubin BS, Sonnenschein C, and Soto AM. The mammary gland response to estradiol: monotonic at the cellular level, non-monotonic at the tissue-level of organization? *Journal of Steroid Biochemistry and Molecular Biology* 101: 263-274, 2006.
3. **Vandenberg LN**, Maffini MV, Wadia PR, Sonnenschein C, Rubin BS, and Soto AM. Exposure to environmentally relevant doses of the xenoestrogen bisphenol-A alters development of the fetal mouse mammary gland. *Endocrinology* 148: 116-127, 2007.
4. Wadia PR, **Vandenberg LN**, Schaeberle CM, Rubin BS, Sonnenschein C, and Soto AM. Perinatal bisphenol-A exposure increases estrogen sensitivity of the mammary gland in diverse mouse strains. *Environmental Health Perspectives* 115: 592-598, 2007.
5. **Vandenberg LN**, Hauser R, Marcus M, Olea N, Welshons WV. Human exposure to bisphenol A (BPA). *Reproductive Toxicology* 24: 139-177, 2007.
6. vom Saal FS, Akingbemi BT, Belcher SM, Birnbaum LS, Crain DA, Eriksen M, Farabollini F, Guillette LJ Jr, Hauser R, Heindel JJ, Ho SM, Hunt PA, Iguchi T, Jobling S, Kanno J, Keri RA, Knudsen KE, Laufer H, Leblanc GA, Marcus M, McLachlan JA, Myers JP, Nadal A, Newbold RR, Olea N, Prins GS, Richter CA, Rubin BS, Sonnenschein C, Soto AM, Talsness CE, Vandenberg JG, **Vandenberg LN**, Walser-Kuntz DR, Watson CS, Welshons WV, Wetherill Y, Zoeller RT. Chapel Hill bisphenol A expert panel consensus statement: Integration of mechanisms, effects in animals and potential to impact human health at current levels of exposure. *Reproductive Toxicology* 24: 131-138, 2007.
7. **Vandenberg LN**, Maffini MV, Schaeberle CM, Ucci AA, Sonnenschein C, Rubin BS, and Soto AM. Perinatal exposure to the xenoestrogen bisphenol-A induces mammary intraductal hyperplasias in adult CD-1 mice. *Reproductive Toxicology* 26: 210-9, 2008.
8. Soto AM, **Vandenberg LN**, Maffini MV, Sonnenschein C. Does breast cancer start in the womb? *Basic and Clinical Pharmacology & Toxicology*, 102: 125-33, 2008.
9. **Vandenberg LN**, Maffini MV, Sonnenschein C, Rubin BS, Soto AM. Bisphenol-A and the great divide: a review of controversies in the field of endocrine disruption. *Endocrine Reviews* 30: 75-95, 2009.
10. Myers JP, vom Saal FS, Akingbemi BT, Arizono K, Belcher S, Colborn T, Chahoud I, Crain DA, Farabollini F, Guillette LJ Jr., Hassold T, Ho S-M, Hunt PA, Iguchi T, Jobling S, Kanno J, Laufer H, Marcus M, McLachlan JA, Nadal A, Oehlmann J, Olea N, Palanza P, Parmigiani S, Rubin BS, Schoenfelder G, Sonnenschein C, Soto AM, Talsness CE, Taylor JA, **Vandenberg LN**, Vandenberg JG, Vogel S, Watson CS, Welshons WV, Zoeller RT. Why public health agencies cannot depend upon 'Good Laboratory Practices' as a criterion for selecting data: the case of bisphenol-A. *Environmental Health Perspectives* 117:309-15, 2010.
11. vom Saal FS, Akingbemi BT, Belcher SM, Crain DA, Crews D, Guidice LC, Hunt PA, LERANTH C, Myers JP, Nadal A, Olea N, Padmanabhan V, Rosenfeld CS, Schneyer A, Schoenfelder G, Sonnenschein S, Soto AM, Stahlhut RW, Swan SH, **Vandenberg LN**, Wang HS, Watson CS, Welshons WV, Zoeller RT. Flawed experimental design reveals the need for guidelines requiring appropriate positive controls in endocrine disruption research. *Toxicol Sci* 115 (2): 612-3, 2010.
12. **Vandenberg LN**, Chahoud I, Padmanabhan V, Paumgarten FJR, Schoenfelder G. One database should be used by regulatory agencies to assess human exposure levels and safety of bisphenol A. *Environmental Health Perspectives* 118: 1051-4, 2010.
13. **Vandenberg LN**, Chahoud I, Heindel JJ, Padmanabhan V, Paumgarten F, Schoenfelder G. Urine, Serum and Tissue Biomonitoring Studies Indicate Widespread Exposure to Bisphenol A. *Environmental Health Perspectives* 118: 1055-70, 2010.

## C. RESEARCH SUPPORT

NRSA Postdoctoral Fellowship  
1F32GM087107-01  
Role: Principal Investigator  
Funding period: 2009-2011

**BIOGRAPHICAL SKETCH**

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Thomas E. Wiese		POSITION TITLE Assistant Professor of Biochemistry	
eRA COMMONS USER NAME			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
The University of Michigan – Flint, Flint, MI	B.S.	1979-84	Biology
Wayne State University, Detroit, MI	Ph.D.	1987-95	Biochemistry
University of North Carolina at Chapel Hill and US EPA, RTP, NC	Post. Doc.	1995-98	Molecular Toxicology

**NOTE: The Biographical Sketch may not exceed four pages. Items A and B (together) may not exceed two of the four-page limit. Follow the formats and instructions on the attached sample.**

**A. Positions and Honors.** List in chronological order previous positions, concluding with your present position. List any honors. Include present membership on any Federal Government public advisory committee.

**Positions**

- 2009-present Associate Professor, Division of Basic Pharmaceutical Sciences, College of Pharmacy, Xavier University of Louisiana, New Orleans, LA.
- 2003-2009 Assistant Professor, tenured 2006, Division of Basic Pharmaceutical Sciences, College of Pharmacy, Xavier University of Louisiana, New Orleans, LA.
- 1998-2003 Assistant Professor, State of Louisiana Joint faculty Appointment Program Professor in both the Division of Basic Pharmaceutical Sciences, College of Pharmacy, Xavier University of Louisiana and the Department of Environmental Health Sciences, School of Public Health and Tropical Medicine, Tulane University, New Orleans, LA.
- 1995-98 Postdoctoral Research Fellow, Curriculum in Toxicology, University of North Carolina School of Medicine, Chapel Hill, NC and Reproductive Toxicology Division, National Health and Environmental Effects Research Laboratory, US EPA, RTP, NC.
- 1994-95 Chemistry Instructor, Department of Chemistry, The University of Detroit-Mercy, Detroit MI
- 1987-95 Graduate Student/Assistant, Dept. of Biochemistry, Wayne State University School of Medicine, Detroit, MI
- 1985-87 Senior Technician, Analytical Laboratory, Research Division, Chem-Trend Inc, Howell, MI.

Member: American Chemical Society, Society of Environmental Toxicology and Chemistry, Endocrine Society  
QSAR and Modeling Society, American Association of Colleges of Pharmacy  
Associate Member, Tulane Cancer Center  
Xavier Associate Director. Louisiana Cancer Research Consortium (LCRC)  
Adjunct Faculty: Department of Biochemistry, Tulane University School of Medicine; Department of Environmental Health Sciences, Tulane School of Public Health and Tropical Medicine  
Investigator, Tulane-Xavier Center for Bioenvironmental Research  
Treasurer and Member, Board of Directors, The RainTree Initiative

**Honors**

Recipient of National Research Service Award (1992-1994), Training Program in Biology of Cancer, T32-CA09531-08, National Cancer Institute.

Recipient of National Research Service Award (1991-1992), Pharmacology Science Training Program, CT32-GM08164, National Institute of General Medicine.

Eagle Scout (1978)

**B. Selected peer-reviewed publications (in chronological order).** Do not include publications submitted or in preparation.

1. Wiese, T.E., Kral, L.G., Dennis, K.E., Butler, W.B., Brooks, S.C. (1992) **Optimization of estrogen growth response in MCF-7 cells.** *In Vitro Cellular & Developmental Biology* **28A**:9-10, pp 595-602
2. VanderKuur, J.A., Wiese, T., Brooks, S.C. (1993) **Influence of estrogen structure on nuclear binding and progesterone receptor induction by the receptor complex.** *Biochemistry* **32**:27, pp 7002-7008
3. Horwitz, J.P., Massova, I., Wiese, T.E., Wozniak, A.J., Corbett, T.H., Sebolt-Leopold, J.S., Capps, D.B., Leopold, W.R. (1993) **Comparative molecular field analysis of *in vitro* growth inhibition of L1210 and HCT-8 cells by some pyrazoloacridines.** *J Med Chem* **36**:23, pp 3511-6
4. Horwitz, J.P., Massova, I., Wiese, T.E., Besler, B.H., Corbett, T.H. (1994) **Comparative molecular field analysis of the antitumor activity of 9H-thioxanthen-9-one derivatives against pancreatic ductal carcinoma 03 [published erratum appears in J Med Chem 1994 Sep 16;37(19):3196].** *J Med Chem* **37**:6, pp 781-6
5. Wiese, T.E., Brooks, S.C. (1994) **Molecular modeling of steroidal estrogens: Novel conformations and their role in biological activity.** *J Steroid Biochem Mol Biol* **50**:1-2, pp 61-73
6. Wiese, T.E., Dukes, D., Brooks, S.C. (1995) **A molecular modeling analysis of diethylstilbestrol conformations and their similarity to estradiol-17beta.** *Steroids* **60**:12, pp 802-808
7. Waller, C.L., Oprea, T.I., Chae, K., Park, H.-K., Korach, K.S., Laws, S.C., Wiese, T.E., Kelce, W.R., Gray, L.E. (1996) **Ligand-based identification of environmental estrogens.** *Chem Res Toxicol* **9**, pp 1240-1248
8. Gray, L.E., Kelce, W.R., Wiese, T., Tyl, R., Gaido, K., Cook, J., Klinefelter, G., Desaulniers, D., Wilson, E., Zacharewski, T., Waller, C., Foster, P., Laskey, J., Reel, J., Giesy, J., Laws, S., McLachlan, J., Breslin, W., Cooper, R., Di Giulio, R., Johnson, R., Purdy, R., Mihaich, E., Safe, S., Sonnenschein, C., Welshons, W., Miller, R., McMaster, S., Colborn, T. (1997) **Endocrine screening methods workshop report: Detection of estrogenic and androgenic hormonal and antihormonal activity for chemicals that act via receptor or steroidogenic enzyme mechanisms.** *Reprod Toxicol* **11**:5, pp 719-750
9. Wiese, T.E., Polin, L.A., Palomino, E., Brooks, S.C. (1997) **Induction of the estrogen specific mitogenic response of MCF-7 cells by selected analogues of estradiol-17β: A 3D QSAR study.** *J Med Chem* **40**:22, pp 3659-3669
10. Bolger, R., Nestich, S., Wiese, T., Ervin, K., Checovich, W. (1998) **Rapid screening of environmental chemicals for estrogen receptor binding capacity.** *Environ Health Perspect* **106**:9, pp 551-557
11. Walker, C., Ahmed, S.A., Brown, T., Ho, S.M., Hodges, L., Lucier, G., Russo, J., Weigel, N., Weise, T., Vandenberg, J. (1999) **Species, interindividual, and tissue specificity in endocrine signaling.** *Environmental Health Perspectives* **107**, pp 619-624
12. Burow, M.E., Boue, S.M., Collins-Burow, B.M., Melnik, L.I., Duong, B.N., Carter-Wientjes, C.H., Li, S.F., Wiese, T.E., Cleveland, T.E., McLachlan, J.A. (2001) **Phytochemical glyceollins, isolated from soy, mediate antihormonal effects through estrogen receptor alpha and beta.** *J Clin Endo Metab* **86**:4, pp 1750-1758
13. Rubin, V.N., Ruenitz, P.C., Boyd, J.F., Boudinot, D., Wiese, T.E. (2002) **Characterization of SERM activity in two triarylethylene oxybutyric acids.** *Biochemical Pharmacology* **63**, pp 1517-1525

14. Coleman, K.P., Toscano, W.A., Wiese, T.E. (2003) **QSAR Models of the in vitro Estrogen Activity of Bisphenol A Analogs**. *Quantitative Structure-Activity Relationships* **22**, pp 78-88
15. Boue, S.M., Wiese, T.E., Nehls, S., Burow, M.E., Elliott, S., Carter-Wientjes, C.H., Shih, B.Y., McLachlan, J.A., Cleveland, T.E. (2003) **Evaluation of the estrogenic effects of legume extracts containing phytoestrogens**. *Journal of Agricultural & Food Chemistry* **51**:8, pp 2193-9
18. Boué SM, Tilghman SL, Elliot S, Zimmerman C, Williams K, Payton-Stewart F, Miraflor A, Carter-Wientjes CH, Shih BY, Wiese T, Cleveland E, McLachlan J, Burow ME (In Press) **Identification of the potent phytoestrogen glycinol in elicited soybean (Glycine max)**. *Endocrinology*,
19. Zhou C, Nitschke AM, Xiong W, Zhang Q, Tang Y, Bloch M, Elliott S, Zhu Y, Bazzone L, Yu D, Weldon CB, Schiff R, McLachlan JA, Beckman BS, Wiese TE, Nephew KP, Shan B, Burow ME, Wang G (In Press) **Proteomic analysis of tumor necrosis factor- $\alpha$  resistant human breast cancer cells reveals a MEK5/Erk5-mediated epithelial-mesenchymal transition phenotype**. *Breast Cancer Research*,

**C. Research Support.** List selected ongoing or completed (during the last three years) research projects (federal and non-federal support). Begin with the projects that are most relevant to the research proposed in this application. Briefly indicate the overall goals of the projects and your role (e.g. PI, Co-Investigator, Consultant) in the research project. Do not list award amounts or percent effort in projects.

### Ongoing Research Support

#### Active

59-6435-2-0021 (T. Wiese sub-Project PI) 10/1/03 – 4/30/10 10%

USDA \$170,000 “Defining the Hormone Activity of Plant Extracts and Dietary Supplements”, component of a USDA cooperative agreement with the Tulane-Xavier CBR. This project examines the hormone activity of dietary supplements used to treat post-menopausal symptoms.

W81XWH-04-1-0557 BC030300 (PI: Wiese) 4/19/04 – 5/18/09 10% in kind

DOD MCMR-RML-S \$1,680,544

“Developing Breast Cancer Program at Xavier; Genomic and Proteomic Analysis of Signaling Pathways Involved in Xenohormone and MEK5 Regulation of Breast Cancer”

This grant supports a comprehensive program to develop breast cancer research infrastructure and pilot projects at Xavier that will lead to long term, self sustaining research programs in collaboration with the Tulane Cancer Center.

W81XWH-04-1-0557 BC030300 (PI: Wiese) 4/19/04 – 5/18/09 10%

DOD MCMR-RML-S \$523,906

“Interactions of estrogen and progestin active environmental chemicals on Breast Cancer cell proliferation, survival and gene expression”, one of two research projects in “Developing Breast Cancer Program at Xavier; Genomic and Proteomic Analysis of Signaling Pathways Involved in Xenohormone and MEK5 Regulation of Breast Cancer” (see above).

PO 434628 (PI: Wiese) 6/1/04 – 9/30/09 10%

Shaw Environmental Inc. \$175,160

“Estrogen and Androgen Activity Determinations of Water Samples using the MVLN and MDA-kb2 Assays”

This contract involves using reporter gene assays in stably transfected cells to evaluate the estrogen and androgen activity of hormones in extracts of water samples that have been treated by various remediation techniques in ongoing studies at the US EPA in Cincinnati, OH.

P20 CA118767-01 (PI: Kennedy, Manager: Wiese) 9/30/05 – 9/29/09 10%

NIH NCI \$835,095

**“Planning Grant Minority Institution/Cancer Center Collaboration”**

This grant establishes a comprehensive planning process to develop collaborative initiatives in Cancer Education and Cancer Research with the Tulane Cancer Center that will lead to future self sustaining, collaborative programs at Xavier that address Health Disparities and Cancer.’

Sub-Contract (PI: Wiese) 2/1/08 – 9/31/09 5%  
Tulane/Sewerage and Water Board of New Orleans \$16,000

**“Estrogen Activity Determinations of Waste Water Samples”**

This grant is a subcontract from collaborators at Tulane University School of Public Health and Tropical Medicine who have a cooperative agreement with the Sewerage and Water Board of New Orleans: “Proposal to use ferrate for polishing step for wastewater reuse”. In this project, I am using bioassays developed in my lab to evaluate the activity of estrogenic compounds from extracts of sewerage effluent treated various ways in an effort to use the sewerage effluent for enhancing wetland development.

N00014-06-1-1136 (T. Wiese sub-Project PI) 5/1/08 – 4/30/9 5%

ONR \$50,633 "Defining the Estrogen Regulated Gene Induction Profiles of Bisphenol A and Bisphenol A Analogues", component of the Tulane-Xavier CBR program project: “Biosensors for Defense Applications”. This project is developing the basic science technology required in the next generation of Navy biosensors.

**Pending**

(PI: D’Amour, Cell and Molecular Core Director: Wiese) Submitted January 2009

RCMI at Xavier University: Center for Cancer Research

National Institute of Health (NIH) National Center for Research Resources

The long term goal of Xavier’s RCMI proposal is to enhance Xavier’s research capabilities and competitiveness in a focused biomedical area. Based on Xavier’s existing research strength and faculty profile, the area of cancer research has been identified as having the greatest potential to advance Xavier’s strategic plan to improve research competitiveness.

(PI: Stevens, coPI Wiese) Submitted April 2009 20% in kind

DOD Breast Cancer HBCU/MSI Partnership

Successful completion of these specific aims will develop competitive and successful BC researchers at XU. In addition, these researchers will develop the background and skills in pathway specific cancer biology approaches necessary to become independently funded BC researchers. It is fully expected that a true partnership will develop between XU and Tulane Cancer Center through which lead compounds will be identified at XU and validated with TU mentoring.

(T. Wiese sub-Project PI) Submitted April 2009 5%

ONR "Defining the Gene Induction and Methylation Profiles of Breast Cancer Cells Exposed to Aluminum Oxide/Carbon Nanotubes", component of the Tulane-Xavier CBR program project: “Biosensors for Defense Applications”. This project is developing the basic science technology required in the next generation of Navy biosensors.

**BIOGRAPHICAL SKETCH**

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME XU, WEI		POSITION TITLE	
eRA COMMONS USER NAME WXU130		Assistant Professor	
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Beijing University, Beijing, China	B.S.	1987-1991	Chemistry
Institute of Biophysics, Academia Sinica, Beijing, China	M.S.	1991-1994	Biophysics
University of Iowa, Iowa City, IA	Ph.D.	1994-1999	Biochemistry
The Salk Institute for Biological Sciences, La Jolla, CA	Postdoc	1999-2005	

**A. Positions and Honors:**

Assistant Professor, McArdle Laboratory for Cancer Research, University of Wisconsin-Madison, Madison, WI 2005-present

**Honors**

David and Lucille Packard Scholarship, Keystone Symposium, 2002; FASEB MARC Program Travel Award, 2003; Endocrine Society Travel Award, 2003; Ophan Brothers Travel Award, Nuclear Receptor Keystone Meeting, 2004; Shaw Scientist Award, 2008; Marko's family breast cancer award, 2010.

**Professional Affiliations**

American Association for Cancer Research (AACR); American Association for Arts and Sciences; Endocrinology Society

**Professional Service**

Member, Post-doctoral Fellowship Review Committee, Susan Komen Breast Cancer Foundation, November 2005  
Member, Investigator Initiated Grant Review Committee, Susan Komen Breast Cancer Foundation, January 2008  
Member, Idea and Synergistic Award Review Committee, Department of Defense, August 2006  
Member, Pre- and Post-doctoral Fellowship Review Committee, Department of Defense, May 2009  
Florida Department of Health Review Committee, March 2008, 2009, 2010  
Breast Cancer Campaign/UK Grant Review Committee, September 2008  
Reviewer for Lilly Endocrine Scholars Award, Endocrinology Society, 2009, 2010  
Editorial Board Member, PPAR Research  
Editorial Board Member, *Current BioData Epigenetic Regulators*  
Editorial Board Member, *Chemical Research in Toxicology*

**B. Selected Publications:**

Lam, Y. A., Xu, W., DeMartino, G. N., and Cohen, R. E. Editing of Ubiquitin Conjugates by an Isopeptidase in the 26S Proteasome. *Nature*, **385**: 737-740, 1997.  
Xu, W., Chen, H., Du, K., Asahara, H., Tini, M., Emerson, B. M., Montminy, M., and Evans, R. M. A Transcriptional Switch Mediated by Cofactor Methylation. *Science*, **294**: 2507-2511, 2001.  
Demarest, S. J., Martinez-Yamout, M., Chung, J., Chen, H., Xu, W., Dyson, H. J., Evans, R. M., and Wright, P. E. Mutual Synergistic Folding in Recruitment of CBP/p300 by p160 Nuclear Receptor Coactivators. *Nature*, **415**: 549-553, 2002.  
Louie, M. C., Yang, H. Q., Ma, A.-H., Xu, W., Zou, J. X., Kung, H.-J., and Chen, H.-W. Androgen-induced Recruitment of RNA Polymerase II to a Nuclear Receptor- p160 Coactivator Complex. *Proc. Natl. Acad. Sci., U.S.A.*, **100**: 2226-2230, 2003.

Xu, Wei

Selected publications: (continued)

- Xu, W., Cho, H., and Evans, R. M. Acetylation and Methylation in Nuclear Receptor Gene Activation. *Methods Enzymol.*, **364**: 205-223, 2003.
- Xu, W., Cho, H., Kadam, S., Banayo, E. M., Anderson, S., Yates III, J. R., Emerson, B. M., and Evans, R. M. A Methylation-Mediator Complex in Hormone Signaling. *Genes Dev.*, **18**: 144-156, 2004.
- Xu, W. Nuclear Receptor Coactivators: the Key to Unlock Chromatin. *Biochem. Cell Biol.*, **83**: 418-428, 2005.
- Yao, T., Song, L., Xu, W., DeMartino, G. N., Florens, L., Swanson, S. K., Washburn, M. P., Conaway, R. C., Conaway, J. W., and Cohen, R. E. Proteasome Recruitment and Activation of the Uch37 Deubiquitinating Enzyme by Adrm1. *Nat. Cell Biol.*, **8**: 994-1002, 2006.
- Higashimoto, K., Kuhn, P., Desai, D., Cheng, X., and Xu, W. Phosphorylation-mediated Inactivation of Coactivator-associated Arginine Methyltransferase 1. *Proc. Natl. Acad. Sci., USA*, **104**: 12318-12323, 2007.
- Powell, E., Kuhn, P., and Xu, W. Nuclear Receptor Cofactors in PPAR $\gamma$ -mediated Adipogenesis and Adipocyte Energy Metabolism. Invited Review, *PPAR Res.*, Vol. 2007, Article 53843, 11 pages
- Zhu, Y., Zhu, Y., Xu, W. (2008) EzArray: a web-based highly automated Affymetrix expression array data management and analysis system *BMC Bioinformatics*, 9:46
- Powell, E. and Xu, W. (2008) Intermolecular interactions identify ligand-selective activity of estrogen receptor  $\alpha$ / $\beta$  dimers. *Proc. Natl. Acad. Sci., USA*, **105**: 19012-19017, 2008
- Nofsinger, R. R., Li, P., Hong, S.-H., Jonker, J. W., Barish, G. D., Ying, H., Cheng, S.-y., LeBlanc, M., Xu, W., Pei, L., Kang, Y.-J., Nelson, M., Downes, M., Yu, R. T., Olefsky, J. M., Lee, C.-H., and Evans, R. M. SMRT Repression of Nuclear Receptors Controls the Adipogenic Set Point and Metabolic Homeostasis. *Proc. Natl. Acad. Sci. USA*, **105**: 20021-20026, 2008
- Kuhn, P., Xu, W. Nuclear receptor coregulators and beyond. (2009) *Progress in Molecular Biology and Translational Science*, Volume 87, 297-340
- Kuhn, P., Xu, Q., Cline, E., Zhang, D., Ge, Y. and Xu, W. (2009) Delineating Anopheles Gambiae Coactivator Associated Arginine Methyltransferase 1 (AgCARM1) Automethylation Using Top-Down High Resolution Tandem Mass Spectrometry. *Protein Science*, Volume 18:1272-1280.
- Huang, S. X., Powell, E., Rajski, S.R., Zhao, L., Jiang, C., Duan, Y., Xu, W., Shen, B. (2010) Discovery and total synthesis of a novel estrogen receptor heterodimerizing actinopolymorphol A from *Actinopolymorpha rutilus*. *Organic Letter*, **12**: 3525-3527.
- Powell E., Wang Y., Shapiro D.J., Xu, W. (2010) Differential requirements of Hsp90 and DNA for the formation of estrogen receptor homodimers and heterodimers. *J. Biological Chemistry*, **285**: 16125-16134.
- Powell, E., Huang, S. X., Xu, Y., Rajski, S. R., Wang, Y., Peters, N., Guo, S., Xu, E., Hoffmann, M., Shen, B., and Xu, W. (2010) Identification and Characterization of a Novel Estrogenic Ligand Actinopolymorphol A. *Biochemical Pharmacology*, **80**:1221-1229.
- Shanle, E., Xu, W. (2010) Selectively targeting estrogen receptors for cancer treatment. *Advanced Drug Delivery Reviews*, in press.

### C. Research Support

Completed:

**Elsa U. Pardee Foundation**, Epigenetic control of estrogen receptor (ER)-regulated transcription in breast cancer by CARM1, 12/14/06 to 12/31/07, \$123,685 total costs.

**Graduate School, University of Wisconsin-Madison**, Exploring Natural Estrogenic Compounds for Breast Cancer Prevention and Treatment, July 1<sup>st</sup>, 2007 to June 30<sup>th</sup>, 2008, \$28,647 total costs.

**Susan Komen Foundation**, Regulation of ER Transcriptional Potential by the Chromatin Architectural Factor, HMGB1, 5/1/06 to 4/30/09, \$249,695 total costs (~66,500 DC annually).

### ACTIVE

5 R01 CA125387-02 (Xu)

4/1/08 to 3/31/13

3.6 calendar

NIH/NCI

\$207,500 DC

Transcriptional Regulation of Estrogen Receptor (ER) by CARM1

The aims of this project are: (1) to test the hypothesis that histone methylation and chromatin remodeling activity can be decoupled in the differential regulation of ER-target genes; (2) to test the hypothesis that

Xu, Wei

Selected publications: (continued)

CARM1 phosphorylation alters the biological function of ER and identify upstream signal pathways and kinases that are involved in CARM1 phosphorylation and inactivation; and (3) to determine the downstream cellular events following CARM1-mediated arginine methylation.

(Xu) 7/1/08 to 6/30/13 0.6 calendar  
**Greater Milwaukee Foundation** \$40,000 DC

Toward Understanding Epigenetic Routes to Endocrine Resistance in Breast Cancer

The aims of this work are: (1) to analyze the global gene expression in MCF7 cells during dynamic regulation of CARM1 expression; and (2) to determine genome-wide histone H3R2&17 methylation and nucleosome positioning in MCF7-tet on-CARM1shRNA lines.

PI Burkard, co-PI Xu 4/1/09 to 3/31/11 0.6 calendar

**University of Wisconsin Paul P. Carbone Comprehensive Cancer Center Investigator-Initiated Trial Application** \$25,000 DC

Personalized therapy of breast cancer for older-aged women via ER $\beta$  and REST.

The aims of this project are: (1) to evaluate gene expression in response to ER $\beta$  activation in breast cancer cell lines. (2) to identify expression of ER $\beta$  targets in clinical samples.

1R03MH089442-01 (Xu) 10/1/09 to 09/30/11 0.6 calendar  
**NIH** \$25,000 DC

Identification of ERalpha/ERbeta Heterodimer-specific Ligands by HTS

The aims of this work are: (1) Compiling estrogenic compounds using luciferase reporter assay in an ERE-Luc stably expression breast cancer cell line. (2) Identify ER $\alpha$ / $\beta$  heterodimer specific agonists using high throughput BRET assays.

PENDING

1 R21 CA149398-01 (Xu) 10/1/10 to 9/30/12 1.8 calendar  
**NIH/NCI** \$137,500 DC requested

Targeting Estrogen Receptor Beta in Triple-Negative Breast Cancer

The aims of this proposal are: (1) to optimize natural compounds as ER $\beta$ -selective therapeutics; (2) to define therapeutic properties of ER $\beta$ -selective ligands in model systems; and (3) to identify ER $\beta$ -specific effectors in breast cancer.

Investigated initiated Award (Xu) 10/1/10 to 9/30/12 0.6 calendar  
**AICR** \$75,000 DC requested

Dietary Modulation of Breast Cancer Risk

The aims of this proposal are: (1) Test the hypothesis that activating ER $\alpha$ / $\beta$  with selective dietary phytoestrogens can reverse the oncogenic phenotype in model systems. (2) Identification of ER $\alpha$ / $\beta$ -specific target genes in breast cancer cells. We will identify ER $\alpha$ / $\beta$ -target genes by two methods: gene expression microarray and chromatin immunoprecipitation (ChIP) coupled with the genomic microarray (ChIP-on-chip).

1 R01 ES019900-01(Xu) 4/1/11 to 3/30/15 2.4 calendar  
**NIH/NIEHS**

\$250,000 DC/yr requested

Endocrine Disruptors Modulate Breast Cancer by Targeting Estrogen Receptor Beta (ER $\beta$ )

The aims of the proposal are: (1) Identify EDCs from a Tox21 Chemical Library using Two-Tiered HTS Screens; (2) Examine the Hypothesis that EDCs Binding to AHR Leads to Functional Perturbation of ER $\beta$ ; and (3) Assess Biological Response of EDCs and the Underlying Mechanism in Model Cell Lines.

Patent:

Polyclonal Antibodies to CARM1, WARF: P08238US (licensed)

Treatments for Post-menopausal Symptoms, WARF: 039USP1, Provisional Application Filed, 2009



## Bio sketch / Daniel ZALKO

Institut National de la Recherche Agronomique

**INRA UMR 1089 - Xénobiotiques – INRA  
F-31027, Toulouse, France**

Ranked the number one agricultural institute in Europe and number two in the world, the *National Institute of Agricultural Research* (INRA) carries out mission-oriented research for better food and nutrition, preservation of the environment and competitive, sustainable agricultural practices. Evaluating, preventing and controlling chemical risks throughout the food chain and the environment are part of INRA's priorities.

The *Xenobiotics Laboratory (INRA UMR 1089)* is part of the INRA toxicology centre of Toulouse ("TOXALIM") and has developed an expertise in the identification, detection and toxicological significance of a broad range of metabolites produced from biotransformation. A special focus is given to the different pathways of mammalian metabolism (including humans) by which endocrine disruptors are converted to toxicologically more active compounds. The relative importance of these pathways is compared on the basis of in various *in vitro/in vivo* approaches.

*Dr Daniel Zalko*, DVM (Veterinary Medicine), PhD in Toxicology, has a 15 year experience in the field of metabolism, devoted to the knowledge of the fate of food contaminants. His major areas of interest are: (1) The transfer of pollutants to humans via the food chain and the consequences of this contamination for human health; (2) The study of the biotransformation pathways of chemicals in connection with toxicity and detoxication, and (3) The study of the relationships between the metabolic fate of chemicals and endocrine disruption.

D. Zalko is specialized in the characterization of the metabolic pathways of xenobiotics and their relationship with the potential toxicity or bio-activation. His research has been focused on endocrine disruptors (EDC) and on the development of predictive inter-species *in vitro* models for metabolic studies. Major families of chemicals of interest for the team include BFR (Brominated Flame Retardants) and bisphenols (BPA and analogues), with studies demonstrating (1) the trans-placental passage of BPA, and dioxin-like BFR such as Deca-BDE; (2) the presence of bioactive metabolites in tissues, at the level of specific targets such as the ovaries and adrenals (Deca-BDE), the testis (DEHP) and developing fetuses themselves (BPA); and (3) the biological activity of (EDC) at the level of Nuclear Receptors (BPA analogues). Current projects include the development of novel tools to study EDC (nuclear receptor based affinity columns, allowing to trap bioactive chemicals and their metabolites of interest), as well as the development of NMR and LC-HRMS "omics" studies, with a focus on the disruption of the metabolome by selected EDC.

Dr Zalko is involved has participated or led several projects related to the bioactivation of xenobiotics. He leads the UMR 1089 "MeX" (Metabolism of xenobiotics) team, which consist of 8 scientists and engineers. He has published 40 original articles, 2 book chapters, and currently supervises 4 PhD students or post-docs.