

Date: June, 2001

CURRICULUM VITAE  
Wade Vincent Welshons

PRESENT POSITION AND ADDRESS:

Office: Associate Professor                      Phone: 573-882-3347  
Dept. Vet. Biomed. Sci.                      FAX: [573] 884-6890  
E102 Vet. Med.                              Email: WelshonsW@missouri.edu  
Univ. Missouri-Columbia  
Columbia, MO 65211-5120

EDUCATION:

<u>Degree/Training</u>	<u>Conferring Institution</u>	<u>Field</u>	<u>Year</u>
B.A. cum laude	Yale University	Biology	1973
Ph.D.	Harvard University	Anatomy	1981
Postdoctoral	University of Wisconsin	Biochemistry, Human Oncology	

PROFESSIONAL EXPERIENCE AND ACADEMIC APPOINTMENTS:

9-73 to 8-76    NSF Predoctoral Fellow, Department of Anatomy, Harvard University  
9-76 to 8-80    Predoctoral Trainee with David W. Hamilton, Dept. Anatomy, Harvard University  
9-76 to 2-77    Teaching Fellow, Department of Biology, Harvard University  
9-77 to 9-80    Fellow, Dept. Anatomy, University of Minnesota, and Traveling Scholar, Harvard University  
9-80 to 3-84    NIH Postdoctoral Fellow with Jack Gorski, Dept. Biochemistry, University of Wisconsin-Madison  
4-84 to 1-87    Project Associate with V. Craig Jordan and Deputy Director, Steroid Receptor Laboratory, Dept. Human Oncology, University of Wisconsin-Madison  
1-87 to 8-87    Research Associate with Thomas F.J. Martin, Dept. Zoology, Univ. Wisconsin-Madison  
9-87 to 8-94    Assistant Professor of Veterinary Biomedical Sciences, University of Missouri-Columbia  
9-94 to ...     Associate Professor of Veterinary Biomedical Sciences, University of Missouri-Columbia

AWARDS AND HONORS:

NSF Predoctoral Fellowship, 1973-76  
NIH Individual National Research Service Award, 1980-82  
Honorary Member of the National Society of Phi Zeta, 1994

PROFESSIONAL ORGANIZATIONS AND SERVICE:

American Association for the Advancement of Science, 1972 to present  
American Association of Veterinary Anatomists, 1990 to present  
Endocrine Society, full member, 1987 to present

EDITORIAL BOARDS:

Endocrine, 1995 to present

MANUSCRIPT REVIEW FOR JOURNALS:

Advances in Modern Environmental Toxicology  
American Journal of Pathology  
American Journal of Physiology: Endocrinology and Metabolism  
American Journal of Physiology  
American Journal of Veterinary Research  
Biochemistry  
Biology of Reproduction  
Breast Cancer Research and Treatment  
Cancer Research  
Diabetes  
Ecological Applications  
Endocrine  
Endocrinology  
Environmental Health Perspectives  
European Journal of Cancer & Clinical Oncology  
FASEB Journal  
Hormone and Metabolic Research  
Human Reproduction Update  
In Vitro Cellular & Developmental Biology  
Journal of the American Veterinary Medical Association  
Journal of Chromatography B  
Journal of Pharmacology and Experimental Therapeutics  
Molecular Endocrinology  
Molecular and Cellular Neurosciences  
Proc. Natl. Acad. Sci. (USA)  
Theriogenology  
Toxicological Sciences  
World Resources Institute

GRANT REVIEW COMMITTEES:

NIH Biochemical Endocrinology study section, ad hoc reviewer for 10/95  
U.S. Army Breast Cancer Program, Endocrinology study section member, 9/96  
U.S. Army Breast Cancer Program, Endocrinology study section member, 9/97  
U.S. Army Breast Cancer Program, Endocrinology study section member, 9/98  
Research Management Group Committee, Duke University, 1999-

ad hoc reviewer:

Arkansas Science and Technology Authority  
March of Dimes Birth Defects Foundation  
MIT Sea Grant Program  
National Science Foundation (NSF)  
North Carolina Biotechnology Center, Academic Research Initiation Grants Program

United States Department of Agriculture, National Research Initiative Competitive Grants Program  
(USDA NRICGP)  
University of Missouri Research Board

TEACHING EXPERIENCE:Undergraduate:

<u>Course Title</u>	<u>Institution</u>	<u>Credit Hr</u>	<u>% of Course</u>	<u>Formal Lecture</u>	<u>Contact Hr Lab</u>	<u>Dates</u>
Cell Biology	Harvard, Biol	4			72	Fall, 1976
Reprod. Biol.	UMC, Biol Sci 335	3	4%	2		Feb, 1996
Reprod. Biol.	UMC, Biol Sci 335	3	4%	2		Jan, 1997

Professional:

<u>Course Title</u>	<u>Institution</u>	<u>Credit Hr</u>	<u>% of Course</u>	<u>Formal Lecture</u>	<u>Contact Hr Lab*</u>	<u>Dates</u>
Gross Human Anatomy (Medical)	Univ Minn, Anat			1	lab	Fall 1977
Dental Microscopic Anatomy	Univ Minn, Anat			1	lab	Fall 1978
Gross Human Anatomy (Dental)	Univ Minn, Anat			1	lab	Winter 1979
Vet Physiol Chem	UMC, VBmS 224V	5	6%	4	--	Fall 1987
Vet Physiol	UMC, VBmS 221V	6	25%	19	--	Winter 1988
Vet Physiol Chem	UMC, VBmS 224V	5	4%	3	--	Fall 1988
Vet Physiol	UMC, VBmS 221V	6	25%	19	--	Winter 1989
Vet Physiol Chem	UMC, VBmS 224V	5	6%	4	--	Fall 1989
Vet Physiol	UMC, VBmS 221V	6	25%	20	--	Winter 1990
Vet Histol	UMC, VBmS 213V	4	36%	13	26	Fall 1990
Vet Cell Mol Biol	UMC, VBmS 225V	4	9%	6	--	Fall 1990
Vet Physiol	UMC, VBmS 221V	5	3%	2	--	Winter 1991
Vet Histol	UMC, VBmS 213V	4	36%	13	26	Fall 1991
Vet Cell Mol Biol	UMC, VBmS 225V	4	11%	7	--	Fall 1991
Vet Histol	UMC, VBmS 213V	4	36%	13	26	Fall 1992
Vet Cell Mol Biol	UMC, VBmS 225V	4	8%	5	--	Fall 1992
Vet Physiol (VKG injury sub)	UMC, VBmS 221V	5	5%	3	--	Winter 1993
Vet Histol	UMC, VBmS 213V	4	42%	15	30	Fall 1993
Vet Cell Mol Biol	UMC, VBmS 225V	4	8%	5	--	Fall 1993
Vet Histol	UMC, VBmS 213V	4	36%	13	26	Fall 1994
Vet Cell Mol Biol	UMC, VBmS 225V	4	9%	6	--	Fall 1994
Vet Histol	UMC, VBmS 502	4	37%	13	27	Fall 1995
Vet Cell Mol Biol	UMC, VBmS 506	4	11%	6	--	Fall 1995
Vet Histol	UMC, VBmS 502	4	37%	13	27	Fall 1996

Vet Cell Biol	UMC, VBmS 506	4	11%	6	--	Fall 1996
Vet Histol	UMC, VBmS 502	4	37%	13	27	Fall 1997
Vet Cell Biol	UMC, VBmS 506	4	13%	7	--	Fall 1997
Vet Histol	UMC, VBmS 502	4	46%	16	29	Fall 1998
Vet Cell Biol	UMC, VBmS 506	4	16%	9	--	Fall 1998
Vet Histol	UMC, VBmS 502	4	46%	16	30	Fall 1999
Vet Cell Biol	UMC, VBmS 506	4	15%	9	--	Fall 1999
Vet Histol	UMC, VBmS 502	4	46%	17	30	Fall 2000
Vet Cell Biol	UMC, VBmS 506	4	15%	9	--	Fall 2000

Graduate:

<u>Course Title</u>	<u>Institution</u>	<u>Credit Hr</u>	<u>% of Course</u>	<u>Formal Lecture</u>	<u>Contact Hr Lab</u>	<u>Dates</u>
Endocrinology of Cancer	Univ Wisc	2	20%	5	--	Fall 1984
Endocrinology of Cancer	Univ Wisc	2	20%	5	--	Fall 1985
Vet Physiol Chem	UMC, VBmS 300	5	6%	4	--	Fall 1987
Vet Physiol	UMC, VBmS 421	6	25%	19	--	Winter 1988
Problems	UMC, VBmS 400	2	100%	18	--	Winter 1988
Adv Repr Phys Domestic Anim	UMC, An Sci 434	3	10%	3	--	Fall 1988
Meth Anim. Exp.	UMC, LAM 475	1	10%	2	--	Fall 1988
Vet Physiol Chem	UMC, VBmS 300	5	4%	3	--	Fall 1988
Vet Physiol	UMC, VBmS 421	6	25%	20	--	Winter 1989
Reprod. Neuroendocrinology	UMC, Anat 405	3	5%	1.5	--	Mar 1989
Vet Physiol Chem	UMC, VBmS 300	5	6%	4	--	Fall 1989
Vet Physiol	UMC, VBmS 421	6	25%	19	--	Winter 1990
Vet Cell Mol Biol	UMC, VBmS 300	4	9%	6	--	Fall 1990
Vet Physiol	UMC, VBmS 421	5	3%	2	--	Winter 1991
Vet Cell Mol Biol	UMC, VBmS 300	4	11%	7	--	Fall 1991
Membrane Struct. Funct.	UMC, VBmS 405	3	5%	2	--	Winter 1992
Vet Cell Mol Biol	UMC, VBmS 300	4	8%	5	--	Fall 1992
Vet Physiol (VKG injury sub)	UMC, VBmS 421	5	5%	3	--	Winter 1993
Princ Drug Act II - Recep Pharm	UMC, Pharm 432	3	7%	3	--	Winter 1993
Vet Cell Mol Biol	UMC, VBmS 300	4	8%	5	--	Fall 1993
Membrane Struct. Funct.	UMC, VBmS 405	3	8%	2	--	Winter 1994
Vet Cell Mol Biol	UMC, VBmS 225V	4	9%	6	--	Fall 1994
Membrane Struct. Funct.	UMC, VBmS 405	3	8%	2	--	Winter 1995
Vet Cell Mol Biol	UMC, VBmS 506	4	11%	6	--	Fall 1995
Membrane Struct. Funct.	UMC, VBmS 405	3	8%	3	--	Winter 1996
Vet Histol	UMC, VBmS 302	4	37%	13	27	Fall 1996
Vet Cell Biol	UMC, VBmS 333	4	11%	6	--	Fall 1996

Membrane Struct. Funct. Problems	UMC, VBmS 405	3	8%	3	--	Winter 1997
	UMC, VBmS 400	2	100%	18	--	Fall 1997
Vet Histol	UMC, VBmS 302	4	37%	13	27	Fall 1997
Vet Cell Biol	UMC, VBmS 333	4	13%	7	--	Fall 1997
Membrane Struct. Funct. Problems	UMC, VBmS 405	3	8%	3	--	Winter 1998
	UMC, VBmS 400	2	100%	18	--	Fall 1998
Vet Histol	UMC, VBmS 302	4	46%	16	29	Fall 1998
Vet Cell Biol	UMC, VBmS 333	4	16%	9	--	Fall 1998
Membrane Struct. Funct.	UMC, VBmS 405	3	8%	3	--	Winter 1999
Vet Histol	UMC, VBmS 302	4	46%	16	30	Fall 1999
Vet Internal Med-Oncology	UMC, VMS 417	2	5%	1	--	Fall 1999
Vet Cell Biol	UMC, VBmS 333	4	15%	9	--	Fall 1999
Vet Histol	UMC, VBmS 302	4	46%	17	30	Fall 2000
Vet Cell Biol	UMC, VBmS 333	4	15%	9	--	Fall 2000

Graduate Students:

<u>Name</u>	<u>Degree</u>	<u>Institution</u>	<u>Advisor or Committee Member</u>	<u>Dates</u>
Dan Nonneman	MS	UMC, VBmS	Committee	1988 to 1989
Monica Montano	PhD	UMC, Biol Sci	Co-Advisor	1989 to 1991
Patricia Farrar	PhD	UMC, Vet Path	Committee	1989 to 1991
Kim Simerl Swisher	MS	UMC, Anim Sci	Committee	1990
Ivis Forrester	PhD	UMC, Nutrition	Committee	1990
Doug West	MS	UMC, VBmS	Committee	1990
Aaron Goff	MS	UMC, VBmS	Committee	1990 to 1991
Wen-Hui Yeh	PhD	UMC, Biochem	Committee	1990 to 1991
Tom Shannon	PhD	UMC, VBmS	Committee	1990 to 1993
Rebecca Keller	PhD	UMC, VBmS	Committee	1990 to 1996
Edward M. Curran	PhD	UMC, VBmS	Advisor	1990 to 1998
Charles Fraga	MS	UMC, VBmS	Committee	1991 to 1993
Melody Stallings-Mann	PhD	UMC, Anim Sci	Committee	1991 to 1994
Carrie Waters	PhD	UMC, VBmS	Committee	1994 to 1997
Brian Morin	PhD	UMC, Physiol	Committee	1995 to 1999
Stacey Wilson	PhD	UMC, Anim Sci	Committee	1995 to 1997
Michelle Garcia	MS	UMC, Anim Sci	Committee	1996 to 1997
Douglas Laux	MS	UMC, Biochem	Committee	1997
Brian Phillips	MS	UMC, Biochem	Committee	1997 to ...
Kembra Howdeshell	PhD	UMC, Biol Sci	Committee	1997 to ...
Rachel Ruhlen	PhD	UMC, Biol Sci	Committee	1998 to ...
Olga Bolden	PhD	UMC, Anim Sci	Committee	1998 to ...
Xiaohui Yuan	PhD	UMC, Biochem	Committee	1999 to ...
Kailiang Jai	PhD	UMC, Biochem	Committee	1999 to 2000
Pete Ansell	PhD	UMC, Biochem	Committee	2000 to ...

Postdoctoral Fellows, Residents, Interns:

<u>Name</u>	<u>Degree</u>	<u>Institution</u>	<u>Advisor or Committee Member</u>	<u>Dates</u>
Julia A. Taylor	Ph.D.	Univ. Keele (UK)	Advisor	9-90 to 5-95
Catherine A. Richter	Ph.D.	Univ. Missouri	Co-Advisor	9-00 to ...

EXTENSION:

<u>Group</u>	<u>Title</u>	<u>Contact Hr</u>
Columbia area Junior High School Sciences class	tour of lab, demonstration; organized through Lynn Laughlin; 2-5-91	2 hrs

RESEARCH ACTIVITIES:Research Funding:Title, PI or Co-I, Agency, Total amount, % Time effort, Inclusive dates

1. Behavior of estrogen receptor transferred into cells, NSF Predoctoral Fellowship, \$12,300, 100%, 9-73 to 8-76.
2. Nuclear translocation of transferred estrogen receptor, F32 HD06008, NIH Postdoctoral Fellowship (Individual NRSA), \$37,420, 100%, 11-80 to 10-82.
3. Localization of steroid hormone receptors using cytochalasin-induced enucleation, IN-35X-11, PI, ACS Institutional Research Grant, \$2150, 10-83 to 6-84.
4. Turnover of steroid receptors in enucleated MCF-7 cells, MOV-1-26, PI, CVM COR, \$2111, 5%, 7-88 to 5-89.
5. Cell enucleation to study steroid receptor turnover, BR 3415, PI, UMC Res. Council, \$7500, (equipment), 7-88 to 6-89.
6. Regulation of the synthesis and turnover of estrogen and progesterone receptors, VMFC-0018, PI, UMC F21C, \$72,600, 10%, annual recurring.
7. Prenatal effects on reproductive aging, Co-I (PI: F.S. vom Saal), UMC F21C Pilot Proj., \$4920, 9-88 to 8-89.
8. Detection and isolation of dietary estrogens in animal feeds suspected of causing hyperestrogenism in swine and cattle, MO-00860, PI, CVM Anim. Health Form. Funds, \$25,000, 5%, 1-89 to 12-90.
9. Special Equipment, scintillation counter upgrade, PI, UMC F21C, \$3950, (equipment), 5-89.
10. Lithium-stimulated proliferation and phosphatidyl inositol metabolites, MOV-1-38, PI, CVM COR, \$2803, 5%, 7-89 to 5-91.
11. Sex differences in brain uptake of steroids, Co-I (PI: F.S. vom Saal), UMC F21C Pilot Proj., \$4985, 5-90 to 4-91.
12. Regulation of steroid receptor turnover in cancer cells, R29 CA50354, PI, NIH, \$484,857, 50%, 8-90 to 7-95 (extended to 7-97).
13. Aging of the male reproductive system, DCB 9004806, Co-PI (PI: F.S. vom Saal), NSF, \$150,000, 5%, 9-90 to 8-92.
14. NIH Small Instrumentation Grant, DHHS 1-S15-CA55976-01, PI, NIH, \$5,000, 8-91 to 7-92.
15. Phosphatidylinositol metabolites as signals for proliferation in MCF-7 cells, MOV-1-62, PI, CVM COR, \$4,000, 5%, 7-92 to 6-93.

16. Effects of estrogen on prostate function during aging, R01-AG08496, Co-I (PI: F.S. vom Saal), NIH, \$543,000, 5%, 4-93 to 3-96.
17. Characterization of a hormone-independent, receptor-negative cell line isolated from MCF-7 human breast cancer cells and relation to tumor progression, MOV-1-69, PI, CVM COR, \$4,000, 5%, 7-93 to 6-94.
18. NIH Small Instrumentation Grant, DHHS 1-S15-HL51352-01, PI, NIH, \$6,334, 8-93 to 7-94.
19. Estrogenic actions of methoxychlor in urogenital sinus of fetal rats, Co-I (PI: F.S. vom Saal), UMC F21C Pilot Proj., \$5000, 11-93 to 10-94.
20. Identification of a novel, non-nuclear form of estrogen receptors in MCF-7 human breast cancer cells, MOV-1-74, PI, CVM COR, \$4,000, 2%, 7-94 to 6-95.
21. Proliferative signaling mechanisms in MCF-7 human breast cancer cells: the potential role of the *ras*-dependent MAP kinase signaling cascade, MOV-1-66, PI, CVM COR, \$3,844, 2%, 7-94 to 6-95.
22. Regulation of estrogen receptors and estrogen responsiveness in human breast cancer cells, MO-VMFC0018, PI, University of Missouri AES, \$103,200 annual, 10%, 3-1-95 to 2-28-00.
23. Characterization and localization of ovine luteal progesterone receptors, 9510851-1, Co-PI (PI: M.F. Smith), USDA NRI, \$134,000, 5%, 9-1-95 to 8-31-97 (extended 8-31-99).
24. The role of estradiol in the etiology of prostate cancer: Prostate cancer in estrogen receptor-minus mice, Co-I (PI: D.B. Lubahn), Ellis Fischel Pilot Project, \$30,000, 5%, 1-1-96 to 12-31-97.
25. Estrogen effects on breast tumor growth in estrogen receptor-minus mice, DAMD17-96-1-6055, Co-PI (PI: D.B. Lubahn), U.S. Army Breast Cancer Research Program, \$149,995 (\$51,350 1st year direct), 5%, 8-15-96 to 9-15-00.
26. Effects of endocrine disruptors on offspring, R01-ES08293, NIH, Co-PI (PI: F.S. vom Saal), \$619,984 (\$102,065 1st year direct), 5%, 7-15-96 to 6-30-00 (extended 6-30-01).
27. Environmental estrogen receptors in ER- mice, R01-ES08272, NIH, Co-PI (PI: D.B. Lubahn), \$434,782 (\$100,000 1st year direct), 5%, 8-1-96 to 7-31-00.
28. Prediction *in vitro* of the bioactivity of potential xenoestrogens in humans and animals, CMA7112, Chemical Manufacturers Association, PI, \$134,938 (\$92,430 1 year direct), 10%, 1-1-97 to 1-31-99.
29. Experimental assessment of environmental estrogens, FDA-222-97-2009(c), Office of Women's Health (OWH)/FDA, PI, \$120,000 (\$87,989 1 year direct), 7%, 9-26-97 to 1-31-99.
30. Methoxychlor and environmental "estrogen" receptors in ER-minus mice, R 825295, EPA, Co-PI (PI: D.B. Lubahn), \$190,000 (\$65,000 1st year direct), 7%, 2-10-97 to 2-9-99.
31. Breast cancer associated estrogen receptors: Catechol estrogen receptors in ER-minus mice, DAMD17-97-1-7171, US Army Breast Cancer Research Program, Co-PI (PI: D.B. Lubahn), \$300,000 (\$68,493 1st year direct), 10%, 9-1-97 to 10-1-00 (extended 10-1-01).
32. Do soy isoflavones provide protection against prostate cancer via a classical estrogen receptor-alpha (ER-alpha) independent mechanism? Comparison of ER-alpha-wild-type/TRAMP and double transgenic ER-alpha-knock-out/TRAMP mice, DAMD17-98-1-8529, US Army Prostate Cancer Research Program, Co-PI (PI: D.B. Lubahn), \$470,996 (\$125,000 1st year direct), 10%, 10-1-98 to 3-30-01.
33. Affinity column isolation of ligands for receptors of the steroid (nuclear) receptor superfamily: Estrogen receptor alpha, MOV-1-101, PI, CVM COR, \$6,000, 5%, 7-1-99 to 6-30-01.

34. Mechanisms of estrogen responsiveness in human breast cancer cells, MO-VMFC0018, PI, University of Missouri AES, \$111,650 annual, 10%, 3-2-00 to 2-28-05.

Active in 2001:

26, 31, 32, 33, 34

Pending:

- A. Developmental Toxicity of Environmental Chemicals, NIH, Co-I (PI: F.S. vom Saal), \$1,812,500 total/\$1,250,000 direct (\$362,500 1st year total/\$250,000 1st year direct), 5%, 12-1-01 to 11-30-06.
- B. An In Vitro Robotics Assay for Estrogenic Activity, NIH (SBIR to NIEHS), On-site Scientific Director (PI: C. Yang), \$90,994 total/\$61,317 direct, 10%, 1-1-02 to 6-30-02.
- C. Plastic Baby Products Without Estrogenic Activity, NIH (SBIR to NIEHS), Collaborator (PI: C. Yang), \$107,776 total/\$72,625 direct, 5%, 1-1-02 to 6-30-02.
- D. Food Antioxidants that are Free of Estrogenic Activity, NIH (SBIR to FDA), Collaborator (PI: C. Yang), \$108,000 total/\$72,000 direct, 5%, 1-1-02 to 6-30-02.
- E. Integrated training in environmental hormone research, NIH, Co-I (PI: S. Swan), \$1,089,838 total/\$1,047,600 direct (\$115,306 1st year total/\$110,504 1st year direct), 5%, 6-1-02 to 5-31-07.
- F. Effect of Soy Formula on Endocrine Function in Infants, USDA, Co-I (PI: L.S. Hillman), \$175,000 (\$75,000 1 year direct), 5%, 6-1-01 to 5-31-03.

Other:

Preliminary Invention Disclosure 93UMC016, University of Missouri, 9-30-92, "Cytotoxicity selective for human breast cancer cells," W.V. Welshons and G.E. Rottinghaus.

Narrative: Estrogens regulate a variety of cellular and developmental responses, through interaction of the hormone with specific receptors of the nuclear receptor superfamily. After binding an estrogen, the receptor-estrogen complex mediates changes in transcription in the nucleus of the cell that lead to specific hormonal responses. Dr. Welshons' lab studies the mechanisms by which estrogens regulate the synthesis and degradation of the estrogen receptor protein and message in estrogen-responsive MCF-7 human breast cancer cells, mechanisms of estrogen-stimulated proliferation, and the progression of breast cancer cells from hormone dependence to hormone independence. In addition, his lab studies estrogen action in fetal development, its relationship to environmental xenoestrogen exposure, and the mechanisms and prediction of environmental endocrine disruptor effects on the development of the reproductive tract. One current focus in this is how the physiology of delivery of environmental estrogens can substantially increase the impact of selected environmental estrogens on fetal development, relative to weak activity in the adult. This work on circulating xenobiotic estrogens studied in tissue culture models, tested in animal models in collaboration with F.S. vom Saal also at this institution, contributes to the national regulatory process for the evaluation of endocrine disruption by synthetic chemicals.

BIBLIOGRAPHY:

Refereed Publications:

1. Winneker, R.C., Welshons, W.V. and Parsons, J.A., 1981. Estrogen receptor-like macromolecule in MtTW15 rat pituitary tumors: effects of antiestrogens. *Molec. Cell. Endocr.* 23: 333-344.

2. Gorski, J., Welshons, W. and Sakai, D., 1984. Remodeling the estrogen receptor model. *Molec. Cell. Endocr.* 36: 11-15.
3. Welshons, W.V., Lieberman, M.E. and Gorski, J., 1984. Nuclear localization of unoccupied oestrogen receptors. *Nature* 307: 747-749.
4. Jordan, V.C., Tate, A.C., Lyman, S.D., Gosden, B., Wolf, M.F., Bain, R.R. and Welshons, W.V., 1985. Rat uterine growth and induction of progesterone receptor without estrogen receptor translocation. *Endocrinology* 116: 1845-1857.
5. Welshons, W.V., Krummel, B.M. and Gorski, J., 1985. Nuclear localization of unoccupied receptors for glucocorticoids, estrogens and progesterone in GH3 cells. *Endocrinology* 117: 2140-2147.
6. Welshons, W.V., Murphy, C.S., Koch, R., Calaf, G. and Jordan, V.C., 1987. Stimulation of breast cancer cells *in vitro* by the environmental estrogen enterolactone and the phytoestrogen equol. *Breast Cancer Res. Treat.* 10: 169-175.
7. Welshons, W.V. and Jordan, V.C., 1987. Adaptation of estrogen-dependent MCF-7 cells to low estrogen (phenol red-free) culture. *Eur. J. Cancer Clin. Oncol.* 23: 1935-1939.
8. Jordan, V.C., Wolf, M.F., Mirecki, D.M., Whitford, D.A. and Welshons, W.V., 1988. Hormone receptor assays: Clinical usefulness in the management of carcinoma of the breast. *CRC Critical Reviews in Clinical Laboratory Sciences* 26: 97-152.
9. Welshons, W.V., Wolf, M.F., Murphy, C.S. and Jordan, V.C., 1988. Estrogenic activity of phenol red. *Molec. Cell. Endocr.* 57: 169-178.
10. Welshons, W.V., Cormier, E.M., Wolf, M.F., Williams, P.O., Jr. and Jordan, V.C., 1988. Estrogen receptor distribution in human breast cancer cell lines using cell enucleation. *Endocrinology* 122: 2379-2386.
11. Welshons, W.V., Rottinghaus, G.E., Nonneman, D.J., Dolan-Timpe, M. and Ross, P.F., 1990. A sensitive bioassay for detection of dietary estrogens in animal feeds. *J. Vet. Diag. Invest.* 2: 268-273.
12. Grady, L.H., Nonneman, D.J., Rottinghaus, G.E. and Welshons, W.V., 1991. pH-Dependent cytotoxicity of contaminants of phenol red for MCF-7 breast cancer cells. *Endocrinology* 129: 3321-3330.
13. Welshons, W.V., Grady, L.H., Engler, K.S. and Judy, B.M., 1992. Control of proliferation of MCF-7 breast cancer cells in a commercial preparation of charcoal-stripped adult bovine serum. *Breast Cancer Res. Treat.* 23: 97-104.
14. Nonneman, D.J., Ganjam, V.K., Welshons, W.V. and vom Saal, F.S., 1992. Intrauterine position effects on steroid metabolism and steroid receptors of reproductive organs in male mice. *Biol. Reprod.* 47: 723-729.
15. Ganjam, V.K., Goff, A.L., Nonneman, D.J., West, D.A., Sweeny, C.L., Wilson, D.A., Dawson, L. and Welshons, W.V., 1991 (publ 1992). Regional distribution of androgen receptors and 5 $\alpha$ -reductase in the equine epididymis. *Proc. Fifth Internat. Symp. Equine Reprod.*, ed. J. Wade, W.R. Allen, P.D. Rosedale and I.W. Rowlands. *J. Reprod. Fert., Suppl* 44: 670-671.
16. Moffatt, R.J., Zollers, W.G., Jr., Welshons, W.V., Keiborz, K.R., Garverick, H.A. and Smith, M.F., 1993. Basis of norgestomet action as a progestin in cattle. *Domestic Animal Endocrinol.* 10: 21-30.
17. Welshons, W.V., Grady, L.H., Judy, B.M., Jordan, V.C. and Preziosi, D.E., 1993. Subcellular compartmentalization of MCF-7 estrogen receptor synthesis and degradation. *Molec. Cell. Endocrinol.* 94: 183-194.
18. Welshons, W.V. and Judy, B.M., 1995. Nuclear *vs.* translocating steroid receptor models and the excluded middle. *Endocrine* 3: 1-4.
19. Mann, F.A., Nonneman, D.J., Pope, E.R., Boothe, H.W., Welshons, W.V. and Ganjam, V.K., 1995.

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#### Proceedings:

Welshons, W.V., 1998. Persistent organic pollutants (POPs) and endocrine disruption. In: Proceedings of the Subregional Awareness Raising Workshop on Persistent Organic Pollutants (POPs), Cartagena, Colombia, pp. 129-134.

Welshons, W.V., Nagel, S.C., Thayer, K.A., Judy, B.M. and vom Saal, F.S., 1998. Bisphenol A: an oestrogenic hazard from food can linings and dental sealants? In: IBC Conference Proceedings, 3rd IBC UK Conference on Endocrine Disrupters.

#### OTHER SCHOLARLY ACTIVITY:

##### Invited Presentations:

1. Seminar, Department of Human Oncology, University of Wisconsin, Madison, WI: "Localization of steroid receptors using cell enucleation", October 3, 1984.
2. Invited speaker, Third Meadow Brook Conference on the Molecular Mechanism of Steroid Hormone Action, Rochester, MI: "Biochemical evidence for the exclusive nuclear localization of the estrogen receptor", September 16, 1985.
3. Grand Rounds, Department of Human Oncology, University of Wisconsin, Madison, WI: "Changing perspectives on the subcellular distribution of the steroid receptors", October 2, 1985.
4. Seminar, Laboratory of Human Reproduction and Reproductive Biology, Harvard Medical School, Boston, MA: "Nuclear location of unoccupied steroid receptors using cell enucleation", October 4, 1985.
5. Seminar, Regional Primate Research Center, University of Wisconsin, Madison, WI: "Nuclear localization of steroid receptors using cell enucleation", March 7, 1986.

6. Seminar, Department of Pharmacology, Stanford University, Stanford, CA: "Subcellular distribution of steroid receptors", September 25, 1986.
7. Seminar, Department of Veterinary Biomedical Sciences, University of Missouri-Columbia, Columbia, MO: "Nuclear location of steroid hormone receptors", January 22, 1987.
8. Speaker, MO-KAN Reproductive Biology Workshop, Columbia, MO: "Estrogen receptor turnover using cell enucleation", June 18, 1988.
9. Seminar, Department of Veterinary Biomedical Sciences, University of Missouri-Columbia, Columbia, MO: "Estrogen action in MCF-7 cells", October 13, 1988.
10. Seminar, Reproductive Biology, University of Missouri-Columbia, Columbia, MO: "Estrogen-stimulated growth in tissue culture to characterize dietary estrogens", November 2, 1988.
11. Seminar, Department of Veterinary Biomedical Sciences, University of Missouri-Columbia, Columbia, MO: "Steady-state changes in phosphoinositides associated with proliferation stimulated by lithium, epidermal growth factor and estrogen", October 19, 1989.
12. Interdisciplinary Summer Seminar, University of Missouri-Columbia, Columbia, MO: "Steady-state changes in phosphoinositides associated with proliferation of estrogen-dependent MCF-7 cells", July 11, 1990.
13. Seminar, Department of Physiology, University of Missouri-Columbia, Columbia, MO: "Estrogenic activity and pH-dependent toxicity of contaminants of phenol red for hormone-dependent human breast cancer cells," December 5, 1990.
14. Seminar, Department of Anatomy and Neurobiology, University of Missouri-Columbia, Columbia, MO: "Specific pH-dependent toxicity, as well as estrogenic activity, of contaminants of phenol red for hormone-dependent human breast cancer cells," February 8, 1991.
15. Seminar, Animal Reproductive Biology Cluster, Department of Animal Sciences, University of Missouri-Columbia, Columbia, MO: "Estrogen-dependent proliferation and dietary estrogens", April 19, 1991.
16. Seminar, Department of Veterinary Biomedical Sciences, University of Missouri-Columbia, Columbia, MO: "Estrogen receptor dynamics in MCF-7 human breast cancer cells", May 7, 1992.
17. Seminar, Department of Pharmacology, University of Missouri-Columbia, Columbia, MO: "Estrogen receptor dynamics in MCF-7 human breast cancer cells: Identification of a cytoplasmic pre-receptor?", November 3, 1992.
18. Seminar, Department of Nutrition, University of Missouri-Columbia, Columbia, MO: "Cytoplasmic estrogen receptors in MCF-7 human breast cancer cells positioned for nongenomic steroid actions", November 4, 1993.
19. Seminar, Reproductive Physiology Cluster, University of Missouri-Columbia, Columbia, MO: "Localization of estrogen receptors in human breast cancer cells: A subpopulation of receptors positioned for nongenomic steroid actions", December 15, 1993.
20. Seminar, Department of Physiology, Saint Louis University, Saint Louis, MO: "Steroid receptor localization and non-nuclear, nongenomic estrogen receptors in MCF-7 human breast cancer cells", October 25, 1994.
21. Seminar, Department of Veterinary Biomedical Sciences, University of Missouri-Columbia, Columbia, MO: "Non-nuclear estrogen receptors in MCF-7 human breast cancer cells and relation to nongenomic steroid responses", December 1, 1994.
22. Seminar, Department of Human Biological Chemistry and Genetics, The University of Texas Medical Branch, Galveston, TX: "Non-nuclear estrogen receptors in MCF-7 human breast cancer cells: A subpopulation of receptors positioned for nongenomic steroid actions", September 21, 1995.

23. Invited Speaker, Third International Conference on Phytoestrogens, Little Rock, AR: "Enhanced estrogenic activity of phytoestrogens and other estrogen xenobiotics in human serum", December 5, 1995.
24. Seminar, Department of Veterinary Biomedical Sciences, University of Missouri-Columbia, Columbia, MO: "Enhanced activity of environmental estrogens in human serum", February 8, 1996.
25. Invited Participant, Toxicology Study Selection and Review Committee on Effects of Endocrine Disrupting Chemicals on Fertility and Reproductive Tract Cancers, National Center for Toxicological Research, Jefferson, AR, May 21, 1996.
26. Invited Participant, Endocrine Screening Testing Methodology Workshop, Nicholas School of the Environment, Duke University, Durham, NC, July 15-16, 1996.
27. Invited Speaker, Invited Participant, Health Effects of Contemporary-Use Pesticides: The Wildlife/Human Connection (Third Pesticide Wingspread Work Session), Wingspread Conference Center, Racine, WI: "Sensitivity of the fetal rodent prostate to xenoestrogens, and development of assays *in vitro* to predict estrogenic activity in animals", September 27-29, 1996.
28. Invited Speaker, Chemical Manufacturers Association, Arlington, VA: "Prediction *in vitro* of the bioactivity of potential xenoestrogens in animals and humans", October 10, 1996.
29. Invited Speaker, International Society of Regulatory Toxicology and Pharmacology conference on Assessing the Risks of Adverse Endocrine-Mediated Effects, Research Triangle Park, NC: "Dose-response issues", January 13, 1997.
30. Invited Participant, Endocrine Disruptor Workshop, Smithsonian Institution, Washington, DC, January 23-24, 1997. (Smithsonian Institution, UN Environ. Program, White House OSTP, and US EPA)
31. Invited Speaker, Umwelt-Akademie Conference on Infertility - To What Extent Do Pollutants Threaten Our Future?, Stuttgart, Germany: "Developmental effects of low-dose xenoestrogens and assays *in vitro* to predict them", March 18, 1997.
32. Invited Speaker, IBC Second International Environmental Congress on Endocrine Disruptors, Washington, DC: "Developmental effects of low-dose estrogens, and *in vitro* assay systems to predict them", May 6, 1997.
33. Chairman and Opening Speaker, IBC UK Second International Conference on Hormone Mimicking and Disrupting Substances in the Environment: Endocrine Disruptors in the Environment, London, UK: "Human Reproductive Health, Endocrine Disrupting Effects and the Significance of Hormone Disrupting Substances: An Overview", May 20, 1997.
34. Seminar, Dalton Cardiovascular Research Center, University of Missouri-Columbia, Columbia, MO: "Significance of estrogenic endocrine disruptors in animals and humans", July 14, 1997.
35. Invited Speaker, Symposium on Phytoestrogen Research Methods: Chemistry, Analysis and Biological Properties, Tucson, AZ: "Protein binding interactions - Approaches to quantifying "free" and "bound" fractions of genistein and other xenobiotic estrogens in serum", September 22, 1997.
36. Invited Speaker, NIH Endocrine Disruptor Conference, The Community Health Project, Bethesda, MD: "Environmental estrogen action", October 23, 1997.
37. Reproductive Physiology Seminar, Dept. Animal Sciences, University of Missouri-Columbia, Columbia, MO: "Estrogen action and fetal serum", November 19, 1997.
38. Invited Speaker and Commonwealth representative, United Nations Environment Programme Subregional Workshop on Persistent Organic Pollutants (POPs), Bangkok, Thailand: "Endocrine Disruption at Environmentally Relevant Exposures", November 26, 1997.

39. Invited Speaker and Commonweal representative, United Nations Environment Programme Subregional Workshop on Persistent Organic Pollutants (POPs), Cartagena, Colombia: "POPs and Endocrine Disruption", January 27, 1998.
40. Invited Speaker, IBC Third International Environmental Congress on Endocrine Disruptors, Washington, DC: "Low dose issues in endocrine disruption", April 14, 1998.
41. Invited Participant, NIEHS Workshop on Characterizing the Effects of Endocrine Disruptors on Human Health at Environmental Exposure Levels, Raleigh, NC, May 11-13, 1998.
42. Invited Speaker, IBC UK Third International Conference on Endocrine Disruptors in the Environment, London, UK: "Bisphenol A: An oestrogenic hazard from food can linings and dental sealants?", May 14, 1998.
43. Invited Speaker, Gordon Research Conference on Endocrine Disruptors, Plymouth State College, Plymouth, NH: "Natural and xenoestrogen action - How the fetus is reached", July 15, 1998.
44. Invited Speaker, Gordon Research Conference on DNA Alterations in Transformed Cells, Colby-Sawyer College, NH: "Fetal exposure to estrogenic endocrine disruptors and risk factors for hormone-dependent cancers", August 13, 1998.
45. Panelist, Workshop on Funding for Research in Basic and Applied Biological Sciences, University of Missouri-Columbia, Columbia, MO, October 29, 1998.
46. Seminar, Department of Veterinary Biomedical Sciences, University of Missouri-Columbia, Columbia, MO: "Endocrine disruption by bisphenol A", November 12, 1998.
47. Session Chairman (Endocrine Disruption in Humans) and Invited Speaker, The 4th International IBC Conference on Endocrine Disruptors in the Environment, London, UK: "Endocrine disrupting substances in plastics and the risk to human health at low doses", May 12, 1999.
48. Invited Speaker, Seminars in Environmental Toxicology: Toxicology of Plastic Materials, Institute of Pharmacology, Zurich University, Zurich, Switzerland: "Endocrine disruption by bisphenol A in the developing organism", May 20, 1999.
49. Invited Speaker, Office on Women's Health Workshop on Silicone Implants and Children's Health, "Bisphenol A (BPA) and estrogenic endocrine disruption - fetal exposure via the mother, at levels of current human exposures, leads to permanent effects on rodent offspring", Washington, DC, Feb 8, 2000.
50. Main Speaker, 9th Workshop of the Training Program in Environmental Health, Center in Urban Environmental Health, Johns Hopkins University, Baltimore, MD, "Biological Activity of Bisphenol A in Mice at Levels of Current Human Exposure", March 8, 2000.
51. Seminar, Department of Veterinary Biosciences, College of Veterinary Medicine, University of Illinois Urbana-Champaign, Urbana, IL: "Low dose effects of bisphenol A: Why this environmental estrogen is weak in the adult yet strong in the fetus", Sept 29, 2000.
52. Invited Speaker, Endocrine Disruptors Low Dose Peer Review, NIEHS, Research Triangle Park, NC, "Physiological Dose Range", Oct 10, 2000.
53. Seminar, Department of Veterinary Biomedical Sciences, University of Missouri-Columbia, Columbia, MO: "Why the environmental estrogen bisphenol A is weak in the adult yet strong in the fetus", Nov 2, 2000.
54. Invited Speaker, Bisphenol A: Low Dose Effects - High Dose Effects, Max-Planck-Gesellschaft, Berlin, Germany: "Low dose effects of environmental estrogens: Why bisphenol A is weak in the adult yet strong in the

fetus", Nov 19, 2000.

55. Invited Speaker, Symposium on Chemicals in the Environmental: Hazards for Human Development, University of California, Irvine, CA: "Fetal effects of the environmental estrogen bisphenol A in mice at levels of current human exposure", Dec 2, 2000.

56. Invited Speaker, 2001 Congress on In Vitro Biology, St. Louis, MO: "In vitro assessment of endocrine disruptors: Activity of the environmental estrogen bisphenol A at levels of current human exposure", June 18, 2001.

#### Meeting Presentations:

1. Welshons, W.V., and Jordan, V.C., 1988. Estrogen receptor dynamics in enucleated MCF-7 cells. 70th Annual Meeting of the Endocrine Society, New Orleans, LA, June 8-11, 1988.
2. Schaberg, K.D. and Welshons, W.V., 1989. Lithium-stimulated growth of MCF-7 breast cancer cells, and steady-state phosphoinositide modifications by lithium and the mitogens epidermal growth factor and estradiol. 71st Annual Endocrine Meetings, Seattle, Washington, June 21-24, 1989.
3. Welshons, W.V., Engler, K.S. and Grady, L.H., 1989. Steady-state phosphoinositide modifications associated with proliferation stimulated by lithium, epidermal growth factor and estradiol in MCF-7 breast cancer cells. 32nd West Central Biochemistry Conference, Lincoln, Nebraska, Oct. 13-14, 1989.
4. Rottinghaus, G.E., Welshons, W.V., Dolan-Timpe, M., Nonneman, D.J. and Ross, P.F., 1989. Detection of dietary estrogens in animal feeds suspected of causing hyperestrogenism in swine and cattle. American Association of Veterinary Laboratory Diagnosticians, Las Vegas, Nevada, Oct. 29-31, 1989.
5. Welshons, W.V. and Grady, L.H., 1990. Regulation of the steady-state level and degradation rates of estrogen receptors in MCF-7 breast cancer cells. 72nd Annual Meeting of the Endocrine Society, Atlanta, GA, June 20-23, 1990.
6. Rottinghaus, G.E., Welshons, W.V., Nonneman, D.J. and Ross, P.F., 1990. A sensitive bioassay for the detection of dietary estrogens in animal feeds. Leo A. Goldblatt Memorial Symposium, 104th Annual Meeting of the Association of Official Analytical Chemists, New Orleans, Louisiana, Sept. 9-13, 1990, abstr. 304.
7. Ganjam, V.K., Goff, A.L., Nonneman, D.J., West, D.A., Sweeney, C.L., Wilson, D.A., Dawson, L., and Welshons, W.V., 1990. Regional distribution of androgen receptors and 5 $\alpha$ -reductase in the equine epididymis. Proceedings of the 5th Int. Symp. Eq. Repro., Deauville, France, July 1-7, 1990.
8. Welshons, W.V., Grady, L.H., Nonneman, D.J. and Rottinghaus, G.E., 1991. Specific pH-dependent toxicity, as well as estrogenic activity, of contaminants of phenol red for hormone-dependent human breast cancer cells. 73rd Annual Meeting of the Endocrine Society, Washington, DC, June 19-22, 1991.
9. Taylor, J.A. and Welshons, W.V., 1992. MCF-7 breast cancer cell proliferation and membrane-associated phospholipase C activity: Implications for mitogenic signalling mechanisms. 74th Annual Meeting of the Endocrine Society, San Antonio, TX, June 24-27, 1992.
10. Welshons, W.V., Judy, B.M., Strnad, R.L. and Grady, L.H., 1993. Cytoplasmic, non-nucleophilic estrogen receptors in cytoplasts from MCF-7 human breast cancer cells. 75th Annual Meeting of the Endocrine Society, Las Vegas, NV, June 9-12, 1993.
11. Welshons, W.V., Judy, B.M., Strnad, R.L. and Grady, L.H., 1994. Non-nuclear estrogen receptors in cytoplasts from MCF-7 human breast cancer cells. Estrogens in the Environment III: Global Health Implications, Washington, DC, January 9-11, 1994.

12. Timms, B.G., Welshons, W.V., Nagel, S.C., Petersen, S.L., Peterson, R.E. and vom Saal, F.S., 1994. Prostate morphogenesis correlates with blood estradiol levels in fetal male and female rats. Estrogens in the Environment III: Global Health Implications, Washington, DC, January 9-11, 1994.
13. Curran, E.M., Judy, B.M., Golomb, M. and Welshons, W.V., 1994. A hormone-independent, estrogen-receptor-negative cell line isolated from MCF-7 human breast cancer cells: relation to tumor progression. 76th Annual Meeting of the Endocrine Society, Anaheim, CA, June 15-18, 1994.
14. Welshons, W.V., Judy, B.M., Strnad, R.L., Grady, L.H. and Curran, E.M., 1994. Non-nuclear estrogen receptors (ER<sub>NN</sub>) in MCF-7 human breast cancer cells. 76th Annual Meeting of the Endocrine Society, Anaheim, CA, June 15-18, 1994.
15. vom Saal, F.S., Palanza, P., Nagel, S.C., Welshons, W.V., Timms, B.G., Peterson, R.E. and Parmigiani, S., 1994. Estrogen xenobiotics: binding relative to estradiol in MCF-7 cells and effects on fetal prostate development and postnatal traits. International Symposium on Human Health and Environment, Salsomaggiore Terme, Italy, September, 1994.
16. vom Saal, F.S., Dahr, M.G., Ganjam, V.K. and Welshons, W.V., 1994. Prostate hyperplasia and increased androgen receptors in adulthood induced by fetal exposure to estradiol in mice. Annual Meeting of the Society for Basic Urologic Research, October, 1994.
17. Nagel, S.C., Taylor, J.A., vom Saal, F.S. and Welshons, W.V., 1995. Relative binding affinity-serum enhanced access assay to predict the estrogenic bioactivity of phytoestrogens and alkylphenols. 77th Annual Meeting of the Endocrine Society, Washington, DC, June 14-17, 1995.
18. Nagel, S.C., Thayer, K.A., Boehler, M., Dhar, M., Morellini, F., Taylor, J.A., vom Saal, F.S. and Welshons, W.V., 1995. An *in vitro* assay to predict the *in vivo* activity of environmental estrogens. 28th Annual Meeting of the Society for the Study of Reproduction, Davis, CA, July 9-12, 1995.
19. Nagel, S.C., Thayer, K.A., Dhar, M., Taylor, J.A., vom Saal, F.S. and Welshons, W.V., 1995. The relative binding affinity-serum modified access (RBA-SMA) assay predicts the bioactivity of xenobiotic estrogens. Third International Conference on Phytoestrogens, Little Rock, AR, December 3-6, 1995.
20. Ruh, M., Taylor, J., Howlett, A. and Welshons, W., 1996. Estrogen receptors fail to respond to cannabinoid agonists. 10th International Congress of Endocrinology, San Francisco, CA, June 12-15, 1996.
21. Judy, B.M., Greene, G.L. and Welshons, W.V., 1996. Characterization of non-nuclear estrogen receptors (ER<sub>NN</sub>) in MCF-7 human breast cancer cells by antibody-binding and sedimentation analysis. 10th International Congress of Endocrinology, San Francisco, CA, June 12-15, 1996.
22. Nagel, S.C., vom Saal, F.S., Sharpe-Timms, K.L. and Welshons, W.V., 1996. Free estradiol in human cord serum measured at less than 0.05% using saturation analysis. 10th International Congress of Endocrinology, San Francisco, CA, June 12-15, 1996.
23. Curran, E.M., Judy, B.M., Golomb, M. and Welshons, W.V., 1996. Regulation of estrogen receptor mRNA by EGF, estradiol and TPA in human breast cancer cells. 10th International Congress of Endocrinology, San Francisco, CA, June 12-15, 1996.
24. Welshons, W.V., International Society of Regulatory Toxicology and Pharmacology meeting on "Assessing the Risks of Adverse Endocrine-Mediated Effects", Research Triangle Park, NC, January 13-14, 1997.
25. Welshons, W.V., Judy, B.M., Nagel, S.C., Taylor, J.A. and vom Saal, F.S., 1997. Estrogen receptor occupancy and response to estradiol and xenoestrogens in MCF-7 cells. Estrogens in the Environment IV, Arlington, VA, July 20-23, 1997.
26. Nagel, S.C., vom Saal, F.S., Sharpe-Timms, K. and Welshons, W.V., 1997. Mechanisms of fetal vulnerability to xenoestrogens. Estrogens in the Environment IV, Arlington, VA, July 20-23, 1997.

27. Howdeshell, K.L., vom Saal, F.S., Thayer, K.A, Benson, S., Baerwald, C. and Welshons, W.V., 1997. Prenatal exposure to an environmentally relevant dose of bisphenol a accelerates puberty in female mice. Estrogens in the Environment IV, Arlington, VA, July 20-23, 1997.
28. Thayer, K.A, Howdeshell, K.L., vom Saal, F.S., Lubahn, D.B., Buchanan, D., Cooke, P. and Welshons, W.V., 1998. Low dose effects of prenatal exposure to estrogens. Gordon Research Conference on Endocrine Disruptors, Plymouth, NH, July 12-17, 1998.
29. deGraffenried, L.A., Welshons, W.V., Curran, E.M. and Fuqua, S.A., 1999. Transcriptional regulation of the estrogen receptor gene minimal promoter in human cancer cells. 81st Annual Meeting of the Endocrine Society, San Diego, CA, June 12-15, 1999.
30. Ganjam, V.K., Slight, S.H., Hong, G. and Welshons, W.V., 1999. Inhibition of 11 $\beta$ -hydroxysteroid dehydrogenase (11 $\beta$ -HSD) in MCF-7 human breast cancer cells as a sensitive marker for estrogenic endocrine disrupters. 81st Annual Meeting of the Endocrine Society, San Diego, CA, June 12-15, 1999.
31. Lee, A.V., Guler, R.L., Oesterreich, S., deGraffenried, L.A., Fuqua, S.A., Curran, E.M. and Welshons, W.V., 1999. Loss of estrogen receptor in MCF-7 breast cancer cells is associated with reduced IGFR1 and IRS-1 expression, diminished IGF signaling, and a failure to respond mitogenically to IGFs. P81st Annual Meeting of the Endocrine Society, San Diego, CA, June 12-15, 1999.
32. Ruhlen, R.L., Thayer, K.A., Preziosi, D.E., Howdeshell, K.L., vom Saal, F.S. and Welshons, W.V., 1999. Prenatal ethinyl estradiol exposure increases adult prostate size and prostatic androgen receptors in adult male mice. 81st Annual Meeting of the Endocrine Society, San Diego, CA, June 12-15, 1999.
33. Lee, A.V., Guler, B.L., Curran, E. and Welshons, W., 1999. Loss of estrogen receptor (ER) in MCF-7 breast cancer cells results in reduced insulin-like growth factor receptor (IGFR1) and insulin receptor substrate (IRS)-1 expression, diminished IGF signaling, and a failure to respond mitogenically to IGFs. International IGF Meeting, London, UK.
34. Taylor, J.A., Judy, B.M., Rottinghaus, B.A., Blackwell, K.J., Rottinghaus, G.E., Alworth, L.C., vom Saal, F.S. and Welshons, W.V., 1999. Bisphenol A bioaccumulates in the serum of pregnant mice. Symposium on Environmental Hormones: Past, Present, Future, New Orleans, LA, October 18-20, 1999.
35. Howdeshell, K.L., Peterman, P.H., Ruhlen, R.L., Judy, B.M., Welshons W.V. and vom Saal, F.S., 1999. Bisphenol A is released from used polycarbonate rodent cages. Symposium on Environmental Hormones: Past, Present, Future, New Orleans, LA, October 18-20, 1999.
36. Ruhlen, R.L., Thayer K.A., Preziosi, D.E., Howdeshell, K.L., Welshons, W.V., vom Saal, F.S., 1999. Fetal exposure to very low doses of ethinyl estradiol increases prostate size and androgen receptors in CF-1 and CD-1 mice. Symposium on Environmental Hormones: Past, Present, Future, New Orleans, LA, October 18-20, 1999.
37. Bolden-Tiller, O.U., Welshons, W.V., Lucy, M.C. and Smith, M.F., 2000. Progesterone receptor mRNA and protein expression in bovine corpora lutea. 33rd Annual Meeting of the Society for the Study of Reproduction, August, 2000.
38. Yuan, X., Curran, E.M., Judy, B.M., Welshons, W.V. and Lubahn, D.B., 2000. Comparison of *in vitro* ligand-binding and transactivation properties of human ER $\alpha$  and ER $\beta$ . 82nd Annual Meeting of the Endocrine Society, Toronto, Canada, Jun 21-24, 2000.
39. Welshons, W.V., Taylor, J.A., Judy, B.M. and vom Saal, F.S., 2000. Why bisphenol A is weak in the adult yet strong in the fetus. Bisphenol A: Low Dose Effects-High Dose Effects, Berlin, Germany, Nov 18-20, 2000.
40. vom Saal, F.S., Howdeshell, K.L., Ruhlen, R.L., Taylor, J.A., Timms, B.G. and Welshons, W.V., 2000. High sensitivity of the fetal prostate to endogenous and environmental estrogens. Bisphenol A: Low Dose Effects-High Dose Effects, Berlin, Germany, Nov 18-20, 2000.

41. Ganjam, V.K., Alworth, L.C., Howdeshell, K.L., Ruhlen, R.L., Slight, S.H., vom Saal, F.S. and Welshons, W.V., 2001. Fetal programming of 11 $\beta$ -hydroxysteroid dehydrogenase by maternal exposure to estrogen. 83rd Annual Meeting of the Endocrine Society, June 19-24, 2001.

UNIVERSITY SERVICE:

Committee Appointments:

University:

Howard Hughes Medical Institute Assistant Investigator Nominating Committee, 1999

College:

CVM Manuscript Review Committee  
CVM Visiting Lecturers Committee, 1991 to 1996  
CVM Faculty Policy Committee, 1991 to 1993  
CVM Committee on Computers, 1993 to ...  
Scott Oncology Chair search committee, 2000 to ...  
CVM Faculty Policy Committee alternate, 2001 to ...  
CVM Scholarships and Awards Committee, 1999 to ...

Department:

Departmental Seminars, 1990-91  
Physiology/Pharmacology Search Committee, 1990  
Molecular Biologist Search Committee, 1990 to 1991  
RIF Funds Research Advisory Committee (Chairman), 1992 to ...  
Zalk Professor search committee, 2001 to ...  
  
F21C Pilot Projects/Special Equipment Committee, 1988-89  
F21C Fellowships Committee, 1990-92  
F21C Equipment and Mini-Grant Committee, 1992 to ...