*Curriculum Vitae*

**Chad Wilkerson, Ph.D.**

**CONTACT INFORMATION**

**Work Address:**

Owensboro Cancer Research Program

1020 Breckenridge St. Suite 201

Owensboro, KY 42303

(270) 691-5963

Research Email: [chad.wilkerson@ocrp.org](mailto:chad.wilkerson@ocrp.org)

Instructor Email: [dwilkerson0029@kctcs.edu](mailto:dwilkerson0029@kctcs.edu)

**EDUCATION**

May, 1995 B.S. Chemistry

Brescia University, Owensboro, KY

May, 1998 M.S. Biochemistry and Molecular Biology

“Purification of the Testis-Specific H1t/TE Binding Protein”

Department Of Biochemistry and Molecular Biology

Louisiana State University Health Sciences Center, Shreveport, LA

August, 2002 Ph.D. Biochemistry and Molecular Biology

“Characterization of the TE Element of the Testis Specific Histone H1t Gene”

Department of Biochemistry and Molecular Biology

Louisiana State University Health Sciences Center, Shreveport, LA

**MENTORING & TEACHING EXPERIENCE**

1994 Teaching Assistant, Organic Chemistry (Chm301/302), Brescia University

2002- Mentored 16 undergraduate and 9 graduate level students

2005-2009 Team Instructor, Biochemistry and Cell Biology of Nucleic Acids (Bch611),

University of Kentucky, Lexington, KY

2012 Guest Lecture, Title: Understanding the Role of Calcium in Cell Signaling

Dept. of Biology, Kentucky Wesleyan College, Owensboro, KY

2013 Guest Lecture, Title: Role of Calcium Signaling in Leukemia

Dept. of Biology, Kentucky Wesleyan College, Owensboro, KY

2013 Adjunct Professor (Instructor), Anatomy and Physiology I (Bio137), Owensboro Community and Technical College, Owensboro, KY

2014 Adjunct Professor (Instructor), Cellular and Molecular Biology (Biology 3423), Kentucky Wesleyan College, Owensboro, KY

2014 Adjunct Professor (Instructor), Online - Anatomy and Physiology II (Bio139), Owensboro Community and Technical College, Owensboro, KY

**RESEARCH EXPERIENCE**

1995-2002 Graduate Student, Louisiana State University Health Sciences Center, Shreveport,

LA. Mentor: Sidney R. Grimes, Ph.D.

2002-2009 Postdoctoral Fellow, Department of Molecular and Cellular Biochemistry,

University of Kentucky, Lexington, KY. Mentor: Kevin D. Sarge, Ph.D.

2009-2010 Research Associate, Graduate Center for Nutritional Sciences, University of

Kentucky, Lexington, KY. Mentor: Kevin J. Pearson, Ph.D.

2010- Research Scientist, Owensboro Cancer Research Program, Owensboro, KY.

**HONORS & AWARDS**

1995 Outstanding Chemist, American Chemical Society. Brescia College, Owensboro, KY

2001 Travel Award, The American Society for Cell Biology. Washington, DC

2005 The Lalor Foundation - Research Grant in Mammalian Reproductive Biology

2006 Ruth L. Kirschstein NRSA for Individual Postdoctoral Fellows, NICHD

2007 Travel Award, Society for the Study of Reproduction, San Antonio, TX

2007 NIH Contraception and Infertility Research Loan Repayment Program (LRP), NICHD

**PREVIOUS AWARDS**

2005 The Lalor Foundation - Research Grant in Mammalian Reproductive Biology

One year research grant to study "Heat Shock Transcription Factors and their Role in Spermatogenesis and Early Embryogenesis"

Total Award: $35,000

2006 Ruth L. Kirschstein NRSA for Individual Postdoctoral Fellows, NICHD

Three year research grant to study “Heat Shock Factor Function in Spermatogenesis”

Project Period: May 2006 - April 2009

Total Award: $156,468

2007 NIH Contraception and Infertility Research Loan Repayment Program (LRP), NICHD

Award Period: October 2007 – October 2009

Total Award: $37,765

2011 U.S. Army Medical Research and Materiel Command (USAMRMC) award to study “Plant-Based Expression Systems for New Vaccines and Therapeutics”

Project Role: Principal Investigator

Award Period: August 2010 – October 2015

Total Award: $3,799,000

**PROFESSIONAL DEVELOPMENT**

**Invited Presentations**

2007 Invited Speaker, Platform Presentation

“Investigating the Role of HSF2 during Spermatogenesis”

The 40th Annual Meeting of the Society for the Study of Reproduction. San Antonio, TX

2008 Invited Speaker

“Heat Shock Factors and Their Epigenetic Role in Sperm”

27th Annual Symposium in Reproductive Science and Women’s Health. Lexington, KY

2010 Invited Seminar

“Regulation of Heat Shock Protein Expression”

Owensboro Cancer Research Program, Owensboro, KY

2012 Invited Lecture

“Understanding the Role of Calcium in Cell Signaling”

Kentucky Wesleyan College, Owensboro, KY

2013 Invited Lecture

“Potential Role of Calcium Signaling in Leukemia”

Kentucky Wesleyan College, Owensboro, KY

2014 Medical Intervention Training

Completed 80 hrs of training for Project Lead the Way (PLTW), Lexington, KY

**OTHER EXPERIENCE & PROFESSIONAL MEMBERSHIPS**

2000 American Society for Cell Biology

2006 Society for the Study of Reproduction

2008-09 Director, Forum for Reproductive Sciences, University of Kentucky, Lexington, KY

**PUBLICATIONS**

**Research Papers – Peer Reviewed**

1. Singal R, vanWert J, Bashambu M, Wolfe SA, **Wilkerson DC**, Grimes SR. Testis-specific histone H1t gene is hypermethylated in nongerminal cells in the mouse. Biol Reprod 2000; 63: 1237-1244.
2. **Wilkerson DC**, Wolfe SA, Grimes SR. H1t/GC-box and H1t/TE1 element are essential for promoter activity of the testis-specific histone H1t gene. Biol Reprod 2002; 67: 1157-1164.
3. **Wilkerson DC**, Wolfe SA, Grimes SR. Sp1 and Sp3 activate the testis-specific histone H1t promoter through the H1t/GC-box. J Cell Biochem 2002; 86: 716-725.
4. **Wilkerson DC**, Wolfe SA, Grimes SR. TE2 and TE1 sub-elements of the testis-specific histone H1t promoter are functionally different. J Cell Biochem 2003; 88: 1177-1187.
5. Wolfe SA, **Wilkerson DC**, Prado S, Grimes SR. Regulatory factor X2 (RFX2) binds to the H1t/TE1 promoter element and activates transcription of the testis-specific histone H1t gene. J Cell Biochem 2004; 91: 375-383.
6. Xing H, **Wilkerson DC**, Mayhew CN, Lubert EJ, Skaggs HS, Goodson ML, Hong Y, Park-Sarge OK, Sarge KD. Mechanism of hsp70i gene bookmarking. Science 2005; 307: 421-423.
7. Skaggs HS, Xing H, **Wilkerson DC**, Murphy LA, Hong Y, Mayhew CN, Sarge KD. HSF1-Tpr interaction facilitates export of stress-induced hsp70 mRNA. J Biol Chem. 2007 Nov 23; 282(47):33902-7.
8. **Wilkerson DC**, Skaggs HS, Sarge KD. HSF2 binds to the Hsp90, Hsp27, and c-Fos promoters constitutively and modulates their expression. Cell Stress Chaperones 2007; 12: 283-290.
9. Murphy LA, **Wilkerson DC**, Hong Y, Sarge KD. PRC1 associates with the hsp70i promoter and interacts with HSF2 during mitosis. Exp Cell Res. 2008 Jul 1; 314(11-12):2224-30.
10. **Wilkerson DC**, Murphy LA, Sarge KD. Interaction of HSF1 and HSF2 with the Hspa1b Promoter in Mouse Epididymal Spermatozoa. Biol Reprod. 2008 Aug; 79(2):283-8.
11. **Wilkerson DC**, Sarge KD. RNA Polymerase II interacts with the Hspa1b Promoter in Mouse Epididymal Spermatozoa. Reproduction. 2009 Jun; 137(6):923-9.
12. Ungvari Z, Bailey-Downs L, Gautam T, Jimenez R, Losonczy G, Zhang C, Ballabh P, Recchia FA, **Wilkerson DC**, Sonntag WE, Pearson K, Cabo R, Csiszar A. Adaptive induction of NF-E2-Related Factor-2-driven antioxidant genes in endothelial cells in response to hyperglycemia. Am J Physiol Heart Circ Physiol. 2011 Jan 7.
13. Carter LG, Lewis KN, **Wilkerson DC**, Tobia CM, Ngo Tenlep SY, Shridas P, Garcia-Cazarin ML, Wolff G, Andrade FH, Charnigo RJ, Esser KA, Egan JM, de Cabo R, Pearson KJ.Perinatal exercise improves glucose homeostasis in adult offspring. Am J Physiol Endocrinol Metab. 2012 Oct 15; 303(8):E1061-8.

**Book Chapters and Invited Reviews**

1. Grimes SR, **Wilkerson DC**, Noss KR, Wolfe SA. Transcriptional control of the testis-specific histone H1t gene. Gene. 2003 Jan 30; 304: 13-21. Review.
2. Grimes SR, **Wilkerson DC**, Noss KR and Wolfe SA, 2003. "Regulation of transcription of the testis histone H1t gene". Invited chapter for the Transworld Research Network series 'Recent Research Developments in Cellular Biochemistry'. Vol. 1, 2003. Book chapter.
3. Hilgarth RS, Murphy LA, Skaggs HS, **Wilkerson DC**, Xing H, Sarge KD. Regulation and function of SUMO modification. J Biol Chem. 2004 Dec 24; 279(52):53899-902. Review.
4. **Wilkerson DC**, Sankar U. Mitochondria: a sulfhydryl oxidase and fission GTPase connect mitochondrial dynamics with pluripotency in embryonic stem cells. Int J Biochem Cell Biol. 2011 Sep; 43(9):1252-6. Review

**Selected Abstracts**

1. **Wilkerson DC,** Wolfe SA, vanWert JM, and Grimes SR. 1997. Characterization of Enriched Fractions Containing the Testis-specific Histone H1t/TE Element Binding Protein. Mol. Biol. Cell 8:220a.
2. vanWert JM, **Wilkerson DC,** Mottram PJ, Wolfe SA, and Grimes SR. 1997. Analysis of Cis-acting Elements within the Rat Histone H1t Proximal Promoter. Mol. Biol. of the Cell 8:326a.
3. vanWert JM, Wolfe SA, Mottram PJ, **Wilkerson DC,** Grimes SR. 1998. The TE Enhancer Is Essential For Regulation of Transcription of the H1t Gene. Mol. Biol. of the Cell 9 (supplement): 177a.
4. Mottram PJ, **Wilkerson DC,** vanWert JM, Wolfe SA, Grimes SR. 1998. Evidence For Tissue-Specific Binding of Nuclear Proteins to the Histone H1t Promoter. Mol. Biol. of the Cell 9 (supplement): 177a.
5. **Wilkerson DC,** Wolfe SA and Grimes SR. 1999. Identification and Characterization of Proteins that Bind to the H1t/TE Element of the Testis-Specific Histone H1t gene. (Abst.#1189) Mol. Biol. of the Cell 10 (supplement): 205a.
6. **Wilkerson DC**, vanWert JM, Singal R and Grimes SR. 2000. Hypermethylation of the Testis-Specific Histone H1t Gene May Contribute to Transcriptional Repression in Nongerminal Cells. (Abst. # 1613) Mol. Biol. of the Cell 11 (supplement): 310a.
7. **Wilkerson** **DC** and Sarge KD. 2003. Characterizing Heat Shock Factors and Identifying Their Role in Spermatogenesis. Summer Conference for the Department of Biochemistry, Jabez, KY.
8. **Wilkerson DC**, Murphy LA, and Sarge KD. 2005. The Role of HSF1 and HSF2 in Mature Spermatozoa. The 24th Annual Symposium in Reproductive Sciences. University of Kentucky, Lexington, KY.
9. **Wilkerson DC**, Murphy LA, and Sarge KD. 2006. Characterizing HSF1 and HSF2 in Mature Spermatozoa. Summer Conference for the Department of Biochemistry, Pine Mountain State Resort Park, Pineville, KY.
10. **Wilkerson** **DC** and Sarge KD. 2006. The Role of HSF1 and HSF2 during Spermatogenesis. The 25th Annual Symposium in Reproductive Sciences. University of Kentucky, Lexington, KY.
11. **Wilkerson DC**, Murphy LA, and Sarge KD. 2007. Investigating the Role of HSF2 during Spermatogenesis. The 40th Annual Meeting of the Society for the Study of Reproduction. San Antonio, TX.
12. **Wilkerson DC**, Murphy LA, and Sarge KD. 2007. HSF2 Bookmarks the Hsp70 Gene in Epididymal Spermatozoa. The 26th Annual Symposium in Reproductive Sciences. University of Kentucky, Lexington, KY.
13. **Wilkerson DC**, Tenlep SN, and Pearson KJ. 2010. Maternal Consumption of a Western Diet Promotes Obesity in Offspring. National IDeA Symposium of Biomedical Research Excellence. Bethesda, MD.
14. **Wilkerson DC**, Cates J, Sankar U. 2011. Gfer Contributes to Mitochondrial Homeostasis Through Interactions with Drp1. James Graham Brown Cancer Center 11th Annual Retreat. Louisville, KY.
15. **Wilkerson DC**, Cates J, Cary RL, Sankar U. 2012. Regulation of the Mitochondrial Fission GTPase Drp1 by the Sulfhydryl Oxidase Gfer. Research Louisville 2012. Louisville, KY.

**REFERENCES**

Available upon request