

Curriculum Vitae: Ronald Bruce Walter

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Personal

Born in South Bend, Indiana on July 15, 1957. My family moved to Jupiter, Florida in 1960. I was married to Christi A. Cline, 1986. We are blessed with two sons; Dylan Jarod born December, 1992 and Sean Michael born November, 1997.

Education

1977 - 1979	Florida State University, Tallahassee, FL	B.S.	(Biology)
1980 - 1981	Florida State University, Tallahassee, FL	M.S.	(Biology)
1981 - 1985	Florida State University, Tallahassee, FL	Ph. D.	(Molecular Genetics)

Experience

Ongoing (from date to current):

2018 - Member, Scientific Advisory Board/Consultant, Indoor Harvest Corporation

2018 - Member, Scientific Advisory Board, *Aplysia* Genetic Stock Center, Univ. of Miami

2015 - CEO, Blue Building LLC and Sugarloaf Management LLC

2008 - Texas State University Endowed Chair in Cancer Research (formally Mitte Chair), Department of Chemistry & Biochemistry, Texas State University, San Marcos, TX

1998 - Professor, Department of Chemistry & Biochemistry, Texas State University (formally SWT), San Marcos, TX

1994 - Associate Member Graduate Faculty, Graduate School of Biomedical Sciences, University of Texas Health Science Center, Houston, Texas.

1993 - Director, *Xiphophorus* Genetic Stock Center, Texas State University, San Marcos, TX

2000 - Professor Genetics (adjunct), Department of Cellular & Structural Biology, University of Texas Health Science Center, San Antonio, TX 78284-7762.

2000 - Professor of Research (adjunct), Department of Carcinogenesis, University of Texas-M.D. Anderson Cancer Center, Science Park-Research Division, Smithville, TX 78957.

Previous:

1998 - 2002 - Affiliate Member, NIEHS Center for Research on Environmental Disease M.D. Anderson Cancer Ctr., Science Park - Research Division, Smithville, TX

Previous experience, cont.

- 1999 - 2008 - Roy F. and Joann C. Mitte Endowed Chair in Cancer Research, Department of Chemistry & Biochemistry, Texas State University, San Marcos, TX
- 1995 - 2003 - Scientific Advisory Board, Ambion Inc., 2130 Woodward St., Austin, TX 78744. (Quarterly review of research and development program).
- 1988 - 2000 - Associate Professor of Research (adjunct), Dept. of Carcinogenesis Univ. of Texas-M.D. Anderson Cancer Center, Science Park-Research Division, Smithville, TX 78957.
- 1988 - 2000 - Associate Professor Genetics (adjunct), Department of Cellular & Structural Biology, University of Texas Health Science Center, San Antonio, TX 78284
- 1994 - 1998 - Associate Professor of Genetics, Dept. of Biology, Southwest Texas State University (SWT), San Marcos, TX 78666
- 1997 - 1999 - Associate Dean for Research, Office of Research & Sponsored Programs, Southwest Texas State University, San Marcos, TX 78666
- 1995 - 1999 - Associate Director, Institute for Environmental & Industrial Science, SWT.
- 1991 - 1994 - Scientific Consultant & Laboratory Director, Diagnostic Network of America (a subsidiary of Applied Genetics Inc.), Ewing Halsel Drive, San Antonio, TX 78229.
- (Responsible for setting up CAP & AABB laboratory accreditation, training technical staff in molecular diagnosis of Fragile X syndrome and Paternity/Identity analysis utilizing DNA markers.)
- 1988 - 1993 - Assistant Professor of Genetics, Dept. of Biology, Southwest Texas State University (SWT), San Marcos, TX 78666
- Courses developed and taught: General Biology (Freshman), Genetics (Jr./Sr. level), Advanced Genetics (Graduate), Graduate Seminar.
- 1986 - 1988 - Project Investigator then promoted to Research Associate at the U. T.-M.D. Anderson Cancer Research Center, Science Park-Research Division, Smithville, TX 78957.
- 1985 - 1986 - National Research Council Research Associate, Environmental Protection Agency, Environmental Research Laboratory, Gulf Breeze, FL 32562.
- 1981 - 1985 - Taught undergraduate laboratories (microbiology, molecular genetics, immunology and genetics and cell biology) at Florida State University, Tallahassee, FL 32306.

Professional Memberships/Activities (representative examples)

- Aquatic Models Research Consortium (2010-current)
- American Association for the Advancement of Science (1986 - current)
- U.T.-M.D. Anderson Associates (1988 - 2003)
- SWT Grant Activities Program Committee (1992-2003)
- American Society for Human Genetics (1988 - 2001)
- SWT University Lectures Committee, Chair (1991-1992)

Professional Memberships/Activities (cont.)

SWT Graduate Stipend Committee (1991-1993)

Chair, Biology Section, Texas Academy of Sciences (1993)

SWT Biology Department, Budget Committee (1993-1995)

Biology Department, Post Tenure Review Committee (1997)

Texas Genetics Society, Nominations Committee (1995)

Biology Department, Student Assessment Committee (1997)

Texas Genetics Society, Member (1988 - 2005)

Texas Genetics Society, Elected to Board of Directors, 3-year term (1997-2000)

Chair, SWT University Grants Activities Program Committee, (1997-1999)

National Council of University Research Administrators (1999-2000)

Texas Genetics Society, President Elect/Program Chair (2000-2001)

Texas Genetics Society, President (2001-2002)

Organized and Hosted an International Conference entitled "Aquaria Fish Models of Human Disease", September 02-24, 2000, Southwest Texas State University, San Marcos, Texas. Funds for this conference were sought and received from the NIH - National Cancer Institute and the Roy and Joan Mitte Foundation. The meeting consisted of >50 invited platform participants, four topical workshops, and >100 attendees. Organized and funded publication of a special issue of *Marine Biotechnology* containing meeting proceedings and workshop recommendations.

Member, Texas State University wide: Research Planning Committee, appointed - 2003; and – TSU Aquatic Resources Review and Planning Team - 2007

Organizational Board, Aquatic Animal Models of Human Disease Conference: American Type Culture Collection, Manassas VA. (Oct. 2002 - Nov. 2003).

University of Georgia, Athens, GA. (Oct. 2004 - Nov., 2005)

Duke University, Raleigh, NC (Oct. 2006 - Nov., 2007)

Oregon State University, Corvallis, OR (Oct. 2009 - Sept. 2010)

University of Wisconsin, Milwaukee, OR (2012 - Sept. 2013)

University of Alabama, Birmingham, AL (2016- Jan. 2017)

TSU Chemistry & Biochemistry, Chairman Search Committee (member), 2008

TSU Department of Biology, Endowed Chair Faculty Search Committee (member), 2008

FORCAST: Climate Change- Impacts on Texas Water Conference, State Capital, Austin, TX. April 28-30, 2008 - Served on the Conference Steering Committee.

Organized and served as Moderator for the session dedicated to "Coastal Effects of Climate Change". Also, served on final meeting assessment panel.

TSU Presidential Research Task Force (member), 2009-2010.

TSU Principal Investigators Council (member), 2009-2010

TSU, Department of Chemistry & Biochemistry, Biochemistry faculty search committee (Committee chair), 2010-2011.

Professional Memberships/Activities (cont.)

- Assisted Dr. Rachell Booth in putting together a proposal to the DOE JGI Undergraduate Research Program in Microbial Genome Annotation. An attempt to bring contemporary bioinformatics to Biochemistry students. TSU was selected for inclusion in the program. Drs. Booth, David and Walter attended training at the DOE Joint Genome Institute in Walnut Creek, CA, January 22-23, 2009.
- Organized and Chaired NIH-NCRR Workshop on “Realizing the Scientific Potential of Transcriptomics in Aquatic Models” in Portland OR, September 19, 2010. The output of this workshop and round table discussion were recommendations for the NIH to address mechanisms to enhance the use of RNAseq Technology in aquatic models research. See: http://www.ncrr.nih.gov/publications/All_Reports.asp
- Workshop on Cryopreservation of Germplasm and Management of Genetic Resources (Invited Panel Discussant), The 5th Aquatic Models of Human Disease Conference, Oregon State Univ., Corvallis, OR, Sept. 20-22, 2010.
- Cryopreservation of Aquatic Species Roundtable, Invited, Louisiana State University, Baton Rouge, February 25-27, 2013
- Organized a “Consortium of Aquatic Models” comprised of scientists representing various models and having NIH support. This group meets in person and using conference calls to discuss research trends and how best to ensure that aquatic resource development keeps pace with them. The consortium met with NIH program directors to provide them with a written synopsis regarding research resource development. The most recent meeting was July 2, 2013, Milwaukee, WI.
- Organized and Hosted the “7th *Aquaria Fish Models of Human Disease*” Conference (International Conference), Dec. 13-18, 2014 at the Hyatt Resort in Bastrop Texas. Funds for this conference were sought and received from the NIH R13 award (ORIP) and from several biotechnology companies. The meeting consisted of >60 invited platform participants, three topical workshops, and >130 attendees. Organized publication of a special issue of *Comparative Biochemistry & Physiology* containing meeting proceedings and workshop recommendations.
- Organized and Hosted “*The Medaka Model for Comparative Assessment of Human Disease Mechanisms*” workshop at the Hilton Inn at Austin-Bergstrom International Airport, Dec. 18, 2014. This workshop is supported by the NIH, ORIP. The workshop will have 10 short talks and attended by about 18 of the top scientists internationally that use medaka fish in their research investigations. Following the short talks, the goal of the workshop was to develop two or three reasonable goals, and suggested mechanisms to obtain them, that can be instituted and will lead to enhancement of medaka resources for US investigators. These goals and mechanism will be communicated to the NIH.
- Panel Participant (invited), NIH, Office of Research Infrastructure Programs’ (ORIP) strategic planning conference, the next 5 years, July 7-8, 2015, Bethesda, MD
- Invited participant, NIH, OPD, “Innovate to Accelerate” discussion forum, which aims to identify the most compelling areas of science for support via the NIH Common Fund (<http://commonfund.nih.gov/>). September, 2015.
- Member, NIH, OD-ORIP, 11th Biannual Comparative Medicine Resource Directors Meeting Organizational Committee. October-July, 2015-16.

Professional Memberships/Activities (cont.)

Texas State University, Associate Vice President for Research and Federal Relations, Search Committee (member), October 2105-2016.

Poster Judge and Student host (3 MS-Ph.D. and 5 AA-BS students), Annual Biomedical Research Conference for Minority Students, Tampa, FL, November 9-12, 2016.

Cryopreservation of Aquatic Biomedical Models Workshop (Jan. 6th, 2017), Organizational and program committee. Workshop service as session chair and speaker. This workshop is supported by the Division of Comparative Medicine within the Office of Research Infrastructure Programs (ORIP) at NIH.

8th Aquatic Fish Models of Human Disease Conference (International Conference). Served on conference organizational committee, conference program committee, and session chair (*Transcriptomics in Aquatic Models*). Jan. 7-12, 2017 at the University of Alabama at Birmingham. Birmingham, AL.

Panel Member, Hands-on Proposal Writing Workshop, *Competing for Funding at the National Institutes of Health*, TSU - Office of Research & Sponsored Projects, January 13, 2017

Session Chair and panel member (invited), NIH Workshop, "Zebrafish & other fish models: Extrinsic environmental factors for rigorous experiments and reproducible results", Bethesda, MD September 11-12, 2017

Professional Reviewer Activities

Manuscript Reviewer: *Photochemistry & Photobiology, Radiation Research, Transactions of the American Fisheries Society, Heredity, Genetics, Genomics, Gene, Marine Environmental Research, Mutation Research, DNA Repair, Marine Biotechnology, Molecular Reproduction & Development, Comparative Physiology & Biochemistry, BMC Genomics, Proceedings of the National Academy of Sciences (USA), BMC Genetics, Biodiversity & Conservation, Journal of Fish Biology, Trends in Genetics, Journal of Proteome Research, Physiological Genomics, PLoS Genetics, PLoS One, Nature, JOVE, J. Exp. Zoology (Molecular & Developmental Evolution), Evolution & Development, Inter. Journal of Radiation Biology, etc.*

Grant Reviewer (*ad hoc*), Texas Sea Grant Program

Grant Review Panel, Texas Sea Grant Program, Marine Biotechnology, 1995.

Grant Reviewer, U.S. Dept. of Agriculture, Biotech/Risk Assessment Program, 1996

Grant Reviewer, National Sea Grant Program, Marine Environ. Biotech. Panel, 2000

Grant Reviewer (*ad hoc*), Duke University, Marine/Freshwater Biomedical Center, 2000

Grant Reviewer (*ad hoc*), Oregon State Univ., Environ. Health Science Ctr., Pilot Grants, 2000-02

Reviewer, (*Ad hoc*) EPA - Long Island Sound Study (research proposals), Nov. 2001

Reviewer TSU Research Enhancement Committee (Reviewer) for the College of Science, Chemistry & Biochemistry Department representative, 2008

Reviewer Activity (cont.)

Reviewer TSU Research Enhancement Committee (Reviewer) for the College of Science, Chemistry & Biochemistry Department representative, 2010
 Grant Reviewer, Department of Defense, U.S. Army Research Office. June 2013.

External Faculty Review or Promotion/Tenure:

External Reviewer, Tenure & promotion committee, Associate Professorial candidate, University of Miami, Rosenstiel School of Marine & Atmospheric Science, Miami, FL. July, 2003.

External Reviewer, Tenure & promotion committee, Professorial candidate, MD Anderson Cancer Center, Research Division, Houston. TX. May, 2004.

External Reviewer, Tenure & promotion committee, Professorial candidate, University of Georgia, Department of Fisheries and Agriculture, Athens, GA. August, 2004.

External Reviewer, Tenure & promotion committee, Professorial candidate, Texas A&M University, College of Veterinary Medicine, College Station, TX. 77843-4467
 October 2006.

External Reviewer, Tenure & promotion committee, Professorial candidate, University of New Mexico, College of Pharmacy, Albuquerque, NM. 87131-0001 March 2007.

External Reviewer, Tenure & promotion committee, Professorial candidate, North Carolina State University, Dept. Biological Sciences, Raleigh, NC 27695-7615, September, 2014.

External Reviewer, Tenure & promotion committee, Professorial candidate, University of Texas Health Science Center at San Antonio, Dept. Cellular & Structural Biology, San Antonio, TX 78229-3900, June 2016.

NIH/NSF Grant Review Study Section, Panel Member:

Chemistry & Related Sciences, Special Emphasis Panel (Special Study Section 2): SBIR (Phase I, II, III) Proposals: March, July, & November 1992.

Chemistry & Related Sciences, Special Emphasis Panel (Special Study Section 2): SBIR (Phase I, II, III) Proposals, March, 1993.

Chemistry & Related Sciences, Special Emphasis Panel (Special Study Section 2): SBIR (Phase 1, II, III), STTR, and RO1 Proposals, July & November, 1994.

Chemistry & Related Sciences, Special Emphasis Panel (Special Study Section 2): SBIR (Phase 1, II, III), STTR, and RO1 Proposals, July 1995.

Chemistry & Related Sciences, Special Emphasis Panel (Special Study Section 2): SBIR (Phase 1, II, III), STTR, and RO1 Proposals, March & Nov., 1996.

Chemistry & Related Sciences, Special Emphasis Panel (Special Study Section 2): SBIR (Phase 1, II, III), STTR Proposals, March 1997.

Chair, Protein Biochemistry, Special Emphasis Panel (Special Study Section 2): SBIR (Phase 1, II, III), STTR Proposals, March 1998.

Reviewer Activity (cont.)

- Protein Biochemistry, Special Emphasis Panel (Special Study Section 2): SBIR (Phase 1, II, III), STTR Proposals, November 1998.
- Protein Biochemistry, Special Emphasis Panel (Special Study Section 2): SBIR (Phase 1, II, III), STTR Proposals, March 1999.
- Panel Member, Review of proposals submitted to a NIH RFA entitled – “Mutagenesis Screens/Phenotyping Tools for Zebrafish”, November 13, 2000.
- Reviewer, (*Ad Hoc*) NIH, CSR-ZRG1 MEP Study Section, Part of a sub-panel performing teleconference review of four proposals submitted that utilize fish model systems, March 2001.
- Panel Member, Environmental Health Sciences Review Committee, NIEHS Center grant (Marine/Freshwater Biomedical Center) site visit review, University of Miami, Miami, FL, May 23-25, 2001.
- Panel Member, Program Project Review Committee, NIH - NCI PO1 site visit grant review team, Brigham & Women’s Hospital, Harvard University, Boston, MA. June 19-21, 2001
- Reviewer, (*Ad Hoc*) NIH, National Center for Research Resources, Special Emphasis Panel, teleconference review of proposals submitted that utilize fish model systems to study carcinogenesis, July 2001.
- Reviewer, (*Ad Hoc*) NIH, CSR-ZRG1 MEP-02 Study Section, Part of a sub-panel performing teleconference review of proposals submitted that utilize fish model systems, October 2001.
- Panel Member, Program Project Review Committee, NIH - NCI PO1 Teleconference grant review team, Brigham & Women's Hospital, Harvard University, Boston, MA. November 20, 2001.
- Reviewer/Panel Member (**4-year appointment**), NIH-NCRR Comparative Medicine Review Committee, RIRG-C, (R01, R24, R13, R21, K01, P40, T32 proposals) 2002-2006. Panel met each February, June and October to review grant proposals
- Panel Member, Advanced Research Cooperation for Environmental Health (ARCH), NIEHS Program Grants, RFA-ES-05-006, Research Triangle Park, Durham, N.C., March 15-17, 2006.
- Panel Member, Special Emphasis Panel, NIH - NCRR. Teleconference grant review team, November 20, 2007.
- Panel member, NIH, Center for Scientific Review, Systemic Injury by Environmental Exposure (SIEE or ZRG1DKUSC90S) grant application (R01, R21) review panel. Bethesda, MD, February 12-13, 2009.
- Panel Member, NSF, Integrative Graduate Education and Research Traineeship (IGERT) program, Full proposal review panel, Arlington, VA., Nov. 9 -10, 2009
- Session Chair and Reviewer, NIH teleconference review, ZRR1-CM-3 (01) SBIR grant related to RFA for development of technology to allow high throughput screening of aquatic models (i.e., zebrafish, medaka, etc.). February 28, 2012

Reviewer Activity (cont.)

Panel member, NIH, Office of the Director, Scientific and Technical Review Board on Biomedical and Behavioral Research Facilities (STOD-1), G20 grant application review panel. Bethesda, MD, October 15-17, 2012.

Panel member, NIH, Office of the Director, Scientific and Technical Review Board on Biomedical and Behavioral Research Facilities (STOD-1), G20 grant application review panel. Bethesda, MD, Internet Assisted Review, November 12-13, 2013.

Fellowships, Grants, & Awards

(R. B. Walter P.I. unless otherwise indicated)

- 1983 & 1985 Presented the Arnold Ravin Award for travel and speaking at the Annual Wind River Conference on Genetic Exchange, Estes Park, CO.
- 1985 & 1986 National Research Council Research Associate Award (Salary and research support).
- 1988 SWT Faculty Organized Research Grant, 1 year, \$3,700, "Use of Additive Transformation to Construct a Set of *Haemophilus influenzae* Strains Useful in Genetic Mapping"
- 1989 National Science Foundation, Research Opportunity Award, Summer, \$13,986, "Origins and Evolution of Duplicated Enzyme Loci in Fishes"
- 1989 National Science Foundation Grant (Eukaryotic Genetics Program), 3 years, \$165,000, "Chromosome Localization and Molecular Characterization of DNA Repair Genes in *Xiphophorus* fishes", R.B. Walter, P.I., and D.C. Morizot, Co-P.I. (MD Anderson, Smithville, TX).
- 1989 Texas Higher Education Coordinating Board (Applied Technology Program), 2 years, \$150,000, "Production of Transgenic Bass (*Micropterus salmoides*) for Commercial and Research Use", R.B. Walter, P.I..
- 1990 National Institutes of Health, R01 Grant (National Cancer Institute), 3 years, \$365,000, "Development of Transgenic Fish for Biomedical Research", R. B. Walter, P.I.
- 1991 Nominated for National Science Foundation Presidential Award.
- 1991 Presidential Award for Excellence in Scholarly/Creative Activities (Assistant Professor level), SWT, \$1,000.
- 1992 SWT Faculty Organized Research Grant, 1 year, \$5,500, "Effects of Map Location on Gene Expression in *Haemophilus influenzae*."
- 1991 Grant/Contract with Applied Genetics Inc., 3 years, ≈\$160,000, "Use of DNA Markers for Molecular Diagnosis and Paternity Determination", R. B. Walter, P.I.
- 1993 Tri-Beta Excellence in Scholarship Award, SWT.
- 1993 U.S. Department of Agriculture Grant, 2 years, \$91,000 (SWT subcontract), "Genetic Linkage Map of Aquacultured Catfishes", D.C. Morizot, P.I. (M.D. Anderson, Smithville, TX); R. Dunham (Auburn University) & R. B. Walter (SWT, San Marcos, TX), Co-P.I.'s.

Fellowships, grants, & awards, cont.

- 1994 Texas Higher Education Coordinating Board (Advanced Research Program), 2 years, \$211,000, "Transgenic Fish for Assessment of Mutagen Exposure in Aquatic Environments", R. B. Walter, P.I.
- 1994 Lyndon Johnson Presidential Seminar Award, SWT, \$1,000.
- 1995 National Science Foundation (Laboratory Renovation & Improvement Program), \$865,000 (this amount matched by Texas State Univ. System, total \$ 1.7 million), "Renovation of Research Laboratories", P.C. Cassidy, P.I.; R.B. Walter, Co-P.I.
- 1996 National Institutes of Health Grant (Initiative for Minority Students Development), 5 years, \$1,403,163 (direct costs), \$503,283 (SWT subcontract), "Minority Scientist Development Program" D. C. Herbert, P.I. (UTHSC-San Antonio); R. B. Walter, (SWT, San Marcos, TX) Co-P.I.
- 1997 SWT Faculty Organized Research Grant, 1 year, \$6,000, "Characterization of DNA repair activities in *Xiphophorus* fishes"
- 1997 National Institutes of Health - National Center for Research Resources, R24 grant award (RR-12253), 5 years, \$ 1,826,347 "Enhanced Development of the *Xiphophorus* Model System", R. B. Walter, P.I.).
- 1997 National Institutes of Health Grant Application (A R E A Program), 3 years, \$97,327, "Fungal Ferritins", C. J. Carrano, P. I; R. B. Walter, Co-P.I.
- 1997 Presidential Award for Excellence in Scholarly/Creative Activities (Assoc. Prof./Professor level), SWT, \$5,000.
- 1997 Texas Higher Education Coordinating Board, Advanced Technology Program, 2 years, \$202,904, "Development of a *Xiphophorus* model for inducible neurofibromatosis", R. B. Walter, P.I.
- 1998 National Institutes of Health - National Inst. for Environmental Health Sciences, RO1 grant award (ES-09136), 4 Years, \$ 848,570 (direct costs), ~\$135,000 (SWT subcontract), "Germ Cells: DNA Repair, Mutation, and Environmental Agents" C. A. Walter, P.I. (UT Health Science Center in San Antonio, TX). Co-P.I.'s are R.B. Walter (SWT, San Marcos, TX) and John McCarrey (Southwest Foundation for Biomedical Research, San Antonio, TX).
- 1999 NIH - National Cancer Institute, Program Project (P01) Grant Award (CA-75137), 5 years, \$ 6,357,122 (direct costs), "Genetic Determinants of Tumorigenesis".
This Program consists of three research projects and two supporting cores units (administrative; Core A and animal; Core B). Two research projects are at MD Anderson Cancer Center (Smithville) and 1 research project and the 2 cores are at SWT (San Marcos). R. B. Walter; Overall Program P.I., Project 2 Leader, Core A Leader, Drs. R. Nairn and D. Morizot (MD Anderson, Smithville, TX) are Project 1 and 3 Leaders, respectively.
- 2000 NIH - National Institute for Environmental Health Sciences, (R01-ES-09136), 1 year, \$69,616, "Germ Cells: DNA Repair, Mutation, and Environmental Agents", Administrative Supplemental funding for Special Initiative on Microarray Studies in Environmental Health, (C. A. Walter, P.I., UT Health Science Center in San Antonio, TX (Dept. of Cellular & Structural Biology). Co-PI's; are R.B. Walter

Fellowships, grants, & awards, cont.

- (SWT, San Marcos, TX) and John McCarey (Southwest Foundation for Biomedical Research, San Antonio, TX).
- 2002 NIH- National Center for Research Resources, Exploratory Research Grant (R21-RR17412). 2 years, \$200,000 (direct costs), “Transposon Active Transgenic *Xiphophorus*”, R. B. Walter, P.I., Co-P.I.’s are Tom Chen (U. Conn.) and Perry Hackett (U. Minnesota).
- 2002 NIH-National Center for Research Resources, National Scientific Research Resource Grant (P40-RR17072). 5 years, \$1,322,060 (direct costs), “The *Xiphophorus* Genetic Stock Center”.
- Specific aims include: 1) To preserve and enhance the *Xiphophorus* Genetic Stock Center and provide the research community with animals from managed lines. 2) To establish extensive and flexible computer databases of fish, and derived samples. 3) To continue saturation of the *Xiphophorus* gene map. 4) To establish cryopreservation technology for *Xiphophorus* sperm samples. R. B. Walter, P.I., Co-P.I.’s are S. Kazianis (SWT, San Marcos, TX) and T. Tiersch (L.S.U., Baton Rouge).
- 2003 NOAA, National Ocean Program (Grant #NA03NOS4261162), 2 years with the University of Southern Mississippi - Gulf Coast Marine Laboratory, \$2,500,000 (total costs) with TSU subcontract of \$1,083,400. “The Aquatic Research Consortium: An Environmental Toxicogenomics Approach to Small Aquarium Fish Models”, William Hawkins (USM-GCML), program coordinator; Principal Investigators - Maruis Brouwer (USM-GCML) and Ronald B. Walter (TSU)
- 2003 NIH- National Center for Research Resources, Conference Support Grant (R13-RR018308). 1 year, \$22,600 (direct costs), “Aquatic Animal Models of Human Disease”. Michael Schmale, P.I (U. Miami), Co-P.I.’s are R.B. Walter, (Texas State), D. Crawford (U. Miami), and E. Linney (Duke University).
- This grant was to assist in supporting an international conference on Aquatic Animal Models of Human Disease, held at ATCC in Manassas VA. Sept. 30-Oct.4, 2003.
- 2004 National Institutes of Health Grant (Initiative for Minority Students Development: bridges to Doctorate), 3 years, \$595,763 (direct costs), \$178,059 (Texas State total subcontract), “South Texas Doctoral Bridge Program”. D. C. Herbert, P.I. (UTHSC-San Antonio); R. B. Walter, (Texas State, San Marcos, TX) Co-P.I.
- 2004 NOAA, National Ocean Program (Grant #NA04NOS4260217), 2 years with the University of Southern Mississippi - Gulf Coast Marine Laboratory, \$2,500,000 (total costs) with Texas State subcontract of \$1,083,400. “The Aquatic Research Consortium: Molecular Responses to Hypoxia Exposure in *Xiphophorus*”, William Hawkins (USM), program coordinator; Principal Investigators - Marius Brouwer (USM) and R.B. Walter (Texas State).
- 2005 NOAA, National Ocean Program (Grant #NA05NOS4261162), 2 years with the USM-GCML, \$2,500,000 (total costs) with Texas State subcontract of \$1,201,200. “The Aquatic Research Consortium: Identification of Gene and Protein Expression Patterns Related to Environmental Perturbation”, William

Fellowships, grants, & awards, cont.

- Hawkins (USM-GCML), program coordinator; Principal Investigators - Marius Brouwer (USM-GCML) and R.B. Walter (Texas State).
- 2006 NOAA, National Ocean Program (Grant # NA06NOS4260118), 2 years with the University of Southern Mississippi - Gulf Coast Marine Laboratory, \$2,500,000 (total costs) with Texas State subcontract of \$1,201,200. "The Aquatic Research Consortium: Proteomic and Organismal Responses of Aquatic Organisms to Hypoxia and Toxic Metals". Principal Investigators - Marius Brouwer (USM-GCML) and R.B. Walter (Texas State).
- 2008 NIH, National Center for Research Resources, National Scientific Research Resource Grant (R24-RR024790). 3 years, \$1,291,878 (total costs), "Enhanced development of the *Xiphophorus* Model System".
- Specific aims include: 1) To preserve and enhance the *Xiphophorus* Genetic Stock Center and provide the research community with animals and materials from genetically managed lines. 2) To continue development of technology allowing cryopreservation of *Xiphophorus* sperm samples and to provide a preservation program where the XGSC fish lines are maintained as cryopreserved specimens to protect their genetic heritage. 3) We will collate a *Xiphophorus* BAC-minimal tiling path (BAC-MTP) physical map. 4) To continue develop technology allowing cryopreservation of *Xiphophorus* sperm samples. R.B. Walter, P.I., T. Tiersch (L.S.U.), Co-P.I.
- 2009 NIH, National Center for Research Resources, ARRA Supplement (Translational) to R24-RR024790; "Enhanced development of the *Xiphophorus* Model System. 2 years, \$649,722 (total costs),
- The rationale for this supplemental award is the impact of functional genomic capabilities for three *Xiphophorus* species employed in vertebrate interspecies hybrid crosses to model melanoma induction. These goals are now possible due to progress we made under the parent award (RR-024790) using next generation sequencing to develop a *Xiphophorus* EST database and spearheading an international effort to sequence the *Xiphophorus* genome. Such studies cannot be performed in any other vertebrate, but may be performed using *Xiphophorus* due to its ability to produce fertile interspecies hybrids, extreme species and availability of highly inbred and pedigreed lines at the *Xiphophorus* Genetic Stock Center. R.B. Walter- P.I.
- 2009 Great Lakes Fisheries Commission, 2 years, \$150,000 (total costs) "Establishment of a PCR-based method for fertility assessment in sterile male sea lamprey". Z. Zhang - P.I., R.B. Walter and M. Siefkes - Co-P.I.'s.
- 2010 Post- Doctoral Associate Award, 2 years, \$110,000, Selected for Strategic One-Time salary support for Post-doctoral Associate in the *Xiphophorus* Genetic Stock Center. This award was given "in recognition and appreciation for your (Dr. Walter's) significant contributions to the research enterprise at Texas State".
- 2010 NIH, National Cancer Institute, AREA (R15-CA147871), 2 years \$221,250 (total costs), "Development of Transcriptome Based Biomarkers from Melanoma in Hybrid Fish", Ziping Zhang (P.I.), R.B. Walter (Co-P.I.)

Fellowships, grants, & awards, cont.

- 2010 NSF RAPID Award #1048208, 1 year, \$42,871 (subcontract from U. Miami), “Collaborative Research: Genetic Impact of the Deepwater Horizon Oil Release”, This award is aimed at assessing the genetic impact of oil exposure on natural *Fundulus* populations along the Louisiana coast. The allele frequencies before and after exposure will be assessed to determine if specific alleles (genotypes) are being selectively lost at the population level. D. Crawford, P.I. (Univ. Miami), A. Whitehead (LSU) and R. B. Walter (TSU), Co-PI’s.
- 2011 NIH, National Center for Research Resources, Competitive Renewal of R24-RR024790) – now the Office of Research and Infrastructure Programs (ORIP), Division of Comparative Medicine Grant R24-OD-011120. 5 years, \$3,039,285 (total costs), “Enhanced development of the *Xiphophorus* Model System”.
Specific Aims are: (1) To maintain and enhance the *Xiphophorus* Genetic Stock Center and provide the research community with animals, resources, and databases from genetically managed lines according to the specifications of each investigator. (2) To sequence and annotate the genomes of *X. hellerii*, *X. couchianus*, and *X. montezumae*. Specific aim 2 involves developing functional genomic capabilities for *Xiphophorus* species employed in interspecies hybrid melanoma models. (3) Initiates establishment of a sperm repository for XGSC stocks and to continue to extend the protocols developed in our past project period with other *Xiphophorus* species. R. B. Walter (P.I.), T. Tiersch (LSU; Co-PI). Awarded August 8, 2011.
- 2011 NIH, National Center for Research Resources, National Scientific Research Resource Grant (R24), Division of Comparative Medicine Grant R24-OD-011199. 4 years, \$484,740 (Subcontract to TSU). “Advancing the Scientific Potential of Transcriptomics in Aquatic Models”,
Specific Aims are: centered around developing a set of protocols and best practices for transcriptome analyses of aquatic non-model organisms. The overall goal is to facilitate high-throughput transcriptomics for the aquatic science community by providing access to Illumina sequencing and processing resources. William Cresko, P.I. (Univ. Oregon), John Postlethwait (Univ. Oregon) and R. B. Walter (TSU-SM), Co-P.I.’s, Awarded Sept. 16, 2011.
- 2012 Japan Society for the Promotion of Science, Young Researcher Overseas Visit Program for Vitalizing Brain Circulation, 2 years (June. 2011-May 2012), This Grant Funds one Japanese Postdoctoral Associate to Visit the Walter laboratory at Texas State University for at least a 10-month period to perform Transcriptome Expression Analyses of Medaka Oocyte Maturation and Sex Changes in Adults. Kyoshi Naruse (Natl. Inst. Basic Biology, Japan) P.I., R.B. Walter (TSU) Co-P.I.
- 2012 NIH, ORIP, Supplement to Promote Diversity in Health-Related Research. Supplement to R24-OD-011120; “Enhanced development of the *Xiphophorus* Model System, 2 years, \$253,840 (total costs).
 The overriding rationale for this supplemental request is the impact of allowing a talented URM post doctoral researcher, Dr. Tzinzuni Garcia, to further develop his ideas and research to such a point that he may submit and receive grant

Fellowships, grants, & awards, cont.

support to continue his career as an independent scientist. Dr. Garcia's research has been focused on; (1) development of new methods for comparative visualization of complex RNAseq trends and (2) development of tools allowing improved methods for *de novo* assembly of RNA transcripts and for interactive analysis of transcript and genomic data. This request directly addresses PA-05-015, R. B. Walter - P.I.

- 2013 NIH, NIGMS, Bridges to Baccalaureate Program (PAR-12-277), "Bridges to Biomedicine (R25 GM-107750)", 5 years, \$1,514,054 (total costs).

Program Goals: Texas State University will partner with two of the Alamo Colleges; San Antonio Community College (SAC) and Northwest Vista Community College (NVC), to establish a program focused on strengthening student transfer relationships and increasing success of underrepresented minority (URM) students in the biomedical sciences upon transfer to the baccalaureate institution. The *Bridges to Biomedicine* program stems from discussions between TxState, SAC and NVC faculty to address the most important obstacles to upper-division transfer and degree completion by URM students showing a commitment to a biomedical career. These obstacles include: (a) misguided advising that leads to incomplete foundational course sequences; (b) inadequate academic preparation for math and science courses; (c) financial challenges distracting academic focus; (d) failure to appreciate the relevance of a biomedical career; and (e) student families that do not understand the commitment required for a biomedical career. R.B. Walter, P.I. (TxState), S. Volk de Garcia, Prog. Coordinator., K. Madappat (SAC) and P. Nair (NVC), Co-P.I.'s. Awarded September, 2013.

- 2013 NIH, ORIP, Supplement to R24-OD-011120; "Enhanced development of the *Xiphophorus* Model System" *Wavelength Dependent Gene Expression*, 2 years, \$128,172 (total costs),

Specific Aims: (1) To perform genetic profiling of the molecular genetic response to light of varying wavelengths (50nm bands between 300 to 700nm) in fish skin. (2) To identify sets of genes that exhibit wavelength dependent genetic regulation and determine their regulatory mechanisms. Wavelength dependent gene expression across such a broad range has, to our knowledge, never been assessed. R. B. Walter- P.I.

- 2013 NIH, NIGMS, Bridges to Doctorate Program (PAR-12-276), "South Texas Doctoral Bridge Program (R25 GM-102783)", 5 years, \$1,726,108 (total costs), \$1,399,033 (TxState subcontract).

Program Goals: The South Texas Doctoral Bridge Program (STDBP) will be established between the University of Texas Health Science Center San Antonio (UTHSCSA) and Texas State University in San Marcos (TxState). The region served by these two institutions encompass a ~53,000 sq. mile area with a population of over 4 million, of which ~2.9 million (>70%) are designated members of underrepresented minority populations (URM). The STDBP is designed to provide a combination of mentoring and student development activities as well as rigorous and enhanced didactics and research training during a thesis-based M.S. degree in Biochemistry that will ensure Bridge Scholars

Fellowships, grants, & awards, cont.

completing the program will be competitive for admission into, and prepared for graduate studies in the highest quality research doctoral programs in biomedical science nationwide. The STDBP will accomplish these goals through the following aims (1) To establish intensive recruiting to increase the number of URM students completing thesis-based MS degrees at TxState and ready to matriculate into strong doctoral programs, and (2) To enhance the capability of the Bridge Scholars to be competitive for, gain admission into, and thrive within strong doctoral programs, such as the IMGP at UTHSCSA. B. Oyajobi, P.I. (UTHSC-SA), N. Blake (UTHSC-SA), R. B. Walter. (TxState), and R. Booth (TxState) Co-P.I.'s, Awarded July, 2013.

Competitive Renewal Submitted Spring 2018, priority score 20

- 2014 NIH OD/NIEHS/NIDDK, "Support for the 7th Aquatic Models of Human Disease Conference". R13 OD 11550507, 1 year \$15,000, (total cost)

Aquatic animal models have played important roles in advancing our understanding of the origins of human disease and have also contributed to the study and identification of drug targets and tests associated with the diagnosis, prevention and treatment of disease. The Aquatic Animal Models for Human Disease Conference is the primary conference that does not focus on one aquatic species or one disease. The 7th conference in this series will be hosted by the Texas State University and held outside Austin, Texas in December 13-18, 2014. The program has been designed by recognized leaders in the field to provide highlight advances in the use of aquatic animals in biomedical research. R. B. Walter - PI)

- 2014 ORIP/NIGMS, "Development of Aquatic Model Resources for Therapeutic Screens". R24 OD018555-01, 4 years, \$2,654,224 (total costs), \$860,328 (TxState subcontract).

Specific Aims include: We hypothesize that disease states are characterized by constellations of gene activities that are involved in the cause of the disease, in the manifestation of disease symptoms, and in the animal's protective or compensatory response to disease. We propose first, to identify transcriptional disease signatures (TDSs), suites of genes that change expression in the diseased state; second, to develop methods and resources for the identification of TDSs, and third, to screen for compounds that return the TDS to that of healthy fish. We predict that TDS changes will reveal test drug effects earlier than morphological or physical tests of chronic disease phenotypes, thus decreasing screening times for chronic disease therapeutics. Our approach is novel; as far as we know, this strategy has never before been utilized in a drug screen. John Postlethwait (Univ. Oregon – PI), Wes Warren (Washington Univ. - Co-PI), Manfred Scharl (Univ, Wurzburg, GDR – Co-PI), R.B. Walter (Texas Sate Univ. – Co-PI).

Fellowships, grants, & awards, cont.

2014 NSF CC*IE, “Networking Infrastructure: Enabling and Improving Data-Driven Research at Texas State University”, NSF-CCIE, 2 years, \$499,895.

Our part of this request for institutional network upgrades. The research investigations within my program depend on our ability to share with and retrieve data from collaborators. The sequencing data we use is generated at several off-site facilities; currently, even with compressed data, the retrieval takes hours and even days. Impact of new infrastructure on research: By allowing us to more quickly access terabyte-sized data housed on separate storage assets from the analytical cluster, the larger bandwidth would enable us to better share the limited storage space local to the cluster. These upgrades are absolutely necessary to enable us to tackle ever-larger data sets in more complex systems. Xiao Chen (TxState – PI), Hongchi Shi (TxState – Co-PI), R.B. Walter (TxState – Co-PI), Jennifer Jensen (TxState – Co-PI).

2016 NIH, ORIP, DCM, R24-OD-011120 (competitive renewal), 4 years, \$2,524,879 (total costs), “Enhanced development of the *Xiphophorus* Model System”.

Specific Aims are: (1) To maintain and enhance the *Xiphophorus* Genetic Stock Center (XGSC), ensure long term storage of germplasm representing all XGSC lines, and provide the research community with animals, resources, and databases from genetically managed lines according to the specifications of each investigator. (2) We will enhance the *Xiphophorus* genomic resources by providing major upgrades (PacBio resequencing and BioNano optical mapping) to the genome assemblies for *X. hellerii* and *X. couchianus*. (3) We will determine basal genetic expression profiles of nine *Xiphophorus* organs and assess genetic transduction of a model external stimulus (light) through the organism by assessment of rate, magnitude and architecture of global genetic change. Awarded September 01, 2016 (2016-2020). R.B. Walter - P.I., T. Tiersch (LSU; Co-PI), Wes Warren (Univ. Washington, Co-PI).

2018 NIH, NIGMS, Bridges to Doctorate Program (PAR-12-276), Competitive renewal support, “South Texas Doctoral Bridge Program (R25 GM-102783)”, 5 years, 07-01-18 – 06-30-23, \$1,518,469 (total costs), \$1,241,098 (TSU subcontract).

The Specific Aims are: (1) To strengthen scholar preparation and enhance the TSU M.S. in Biochemistry curriculum by including pre-matriculation course and developing two new graduate courses. (2) To maintain and increase recruitment beyond the program capacity for spillover to increase UR pursuing the M.S.; formalize near-peer mentoring networks; and enhance evaluation efficacy efforts by long-term tracking of STDBP alumni. (3) To conduct career/personal development workshops for Bridge Scholars and Mentor training for Program Faculty. Annual workshops will be conducted for scholars focusing on: (i) Scientific Writing; (ii) Career Choice and Early Decisions that Impact Preparation; (iii) Career Survival Skills; (iv); Management of Finances in Graduate School (Budgeting 101) and Longer-term Financial Planning; (v) Communication Skills (appropriate professional/social interactions and conduct). In addition, “Mentor training” workshops for all faculty (to be required for STDBP Program Faculty), will be held. To be awarded July B. Oyajobi, P.I. and N. Blake (UTHSCSA), R. B. Walter (TxState) Co-P.I., and R. Salinas, Program Coordinator.

Fellowships, grants, & awards, cont.

- 2018 NIH, ORIP, PA-16-288, Research Supplement to Promote Diversity in Health-Related Research. Administrative Supplement to R24-OD-011120-11S1; “Enhanced development of the *Xiphophorus* Model System, 2 years, \$265,667 (total costs).

The overriding rationale for this supplemental request is the impact of allowing a talented URM post doctoral researcher, Dr. Raquel Salinas (Ph.D., Duke University, 2016), to further develop her ideas and research to such a point that she may submit and receive grant support to continue her career as an independent scientist. Dr. Salinas will perform studies aimed at translating results regarding light waveband specific gene regulation studies that were discovered using various biomedical fish models into mammals (mice), R. B. Walter - P.I.

- 2018 NIH, NCI, R15 Award CA-223964, “Identification and Characterization of a Endogenous EGFR Regulatory Locus in the *Xiphophorus* Genome, 3 years, \$435,591 (total costs).

The objective of this proposal is to identify the gene(s) responsible for the oncogene regulatory function and thereby assist development of testable hypothesis regarding the tumor suppression mechanisms of *R(Diff)*. Accordingly, we propose three experimental specific aims: (1) We will genotype expressed genes in *Xiphophorus* benign pigment cell lesions and spontaneous melanoma tumors, and define candidate *R(Diff)* loci on newly re-sequenced and gap-closed *Xiphophorus* genome assemblies. (2) We will further reduce the size of the candidate *R(Diff)* locus on chromosome 5 by genotyping *R(Diff)* candidates in large numbers of BC₁ hybrid progeny. (3) We will evaluate the effectiveness of *R(Diff)* candidate gene(s) in the ability to regulate the *xmrk* oncogene in the *Xiphophorus* pigment lesion cells and the *xmrk-Tg* medaka model. Dr. Yuan Lu - P.I., R.B. Walter – Co-P.I.

- 2018 NIH, ORIP, PA-18-658, “Administrative Supplements for Research on Sex/Gender Influences. Administrative Supplement to R24-OD-011120-11S2; “Enhanced development of the *Xiphophorus* Model System, 1 year, \$97,175 (total costs).

Given our preliminary data, it is important to identify the sex specific regulatory effects after specific light waveband exposures that may be purposely utilized to manipulate the organisms to a more favorable genetic condition prior to treatment. Additionally, to address the effect that pregnancy may have on female health, it is also important to measure baseline gene expression in pregnant females to reveal genetic responses specifically associated with pregnancy. Accordingly, our specific aims are; (1) We will identify sets of genes in the skin, brain and liver of female *X. maculatus* that are responsive to FL and 50 nm wavelength regions between 300 to 600 nm and determine waveband(s) that lead to the largest and the smallest genetic response differences between females and males. (2) We will identify sets of genes in skin, brain and liver of pregnant female *X. maculatus* that are responsive to FL and to 50 nm wavebands between 300 to 600 nm and characterize functions that involve waveband-responsive genes.

Invited Lectures and External Seminars Presented

- Honors Biology Symposia, Bowie High School (Invited Lecture), Austin, TX, Nov. 1990
- U.T.-M.D. Anderson Cancer Center (Depart. of Carcinogenesis, Seminar), March, 1990.
- University of Texas (Department of Chemistry, Invited Lecture), Austin, TX, April 1991.
- Baylor College of Medicine (Dept. Genetics & Molecular Medicine, Seminar), Houston, TX, Jan. 1992
- University of Texas Health Science Center, Dept. Cell & Structural. Biology (Invited Seminar), San Antonio, TX, Nov. 1992
- U.T.-M.D. Anderson Cancer Center, Science Park-Research Division, Smithville, TX, DNA Damage and Repair Meeting (Invited Lecture), March, 1992
- Gordon Research Conference on "Mammalian DNA Repair" (Invited Lecture), Oxnard, CA, Feb. 1993.
- Symposia on "Genetics & the Law" Austin, TX (Invited Lectures), March, 1993 and Oct., 1994.
- University of Texas Medical Branch, Dept. of Molecular Medicine (Invited Seminar), Galveston, TX, May 1993
- Texas Christian University, Department of Biology (Invited Seminar), Fort Worth, TX, October, 1993.
- Trinity University, Department of Biology (Invited Seminar), San Antonio, TX, October, 1993
- Marine Biotechnology Workshop, Texas Sea Grant Program (Invited Lecture), Houston, TX, Sept. 1993
- South Texas Regional Blood Bank (Invited Lecture), San Antonio, TX. March. 1994.
- International Meeting of the Photochemistry & Photobiology Society (Invited Lecture), Scottsdale, AZ, June 1994.
- New Braunfels Independent School Dist., Science Faculty Lecture (Invited Lecture), Jan. 1995. Ambion Inc., Austin, TX (Invited Lecture), March, 1995
- U.T.-Medical Branch, Sealy Center for Molecular Sciences, NSF-I/UCRC Consortium for Molecular and Environmental Diagnostics (Invited Lecture), March, 1996.
- U.T.-M.D. Anderson Cancer Center, Science Park-Research Division, Smithville, TX, DNA Damage and Repair Meeting (Invited Lecture), April, 1996.
- Kellog Minority Retreat, Texas Graduate Minority Fellowship (Invited Lecture), Oct. 1996
- 9th International Conference on Genes, Gene Families and Isozymes (Invited Lecture), San Antonio, TX, April, 1997
- National Institute of Environmental Health Sciences (NIEHS) workshop on "Unique Marine/Freshwater Models for Environmental Health Research" (Invited Lecture) "The *Xiphophorus* System: Utility for Fundamental Investigation of the Genetic & Environmental Components of Induced Tumorigenesis, March 20-21, 1998

Invited Lectures (cont.)

- National Center for Research Resources, Comparative Medicine Resources Director's Meeting, University of Miami, Rosenstiel School of Marine & Atmospheric Sciences, Miami, FL. "The *Xiphophorus* Genetic Stock Center" (Invited Presentation), February 3-5, 1999.
- Virginia Commonwealth University-Medical College of Virginia, Department of Human Genetics and Massey Cancer Center, Richmond, VA, "Mapping Tumor Suppressor Genes in Fish" (Invited Seminar), February 25, 1999
- University of Texas at Dallas, Department of Molecular & Cell Biology, Richardson, TX, "The *Xiphophorus* Fish System: DNA Repair and Tumorigenesis" (Invited Seminar), March, 2000.
- Texas Genetics Society (27th annual meeting) Houston, TX, "The Genetic Determinants of Tumorigenesis as Developed in *Xiphophorus* Fish" (Invited Platform Lecture), March, 2000
- University of Tulsa, Department of Biological Science, Tulsa, OK, "Development of Inducible Tumor Models Using *Xiphophorus* Inter-species Hybrid Fish" (Invited Seminar), April, 2000
- Southwest Texas State University, Department of Chemistry & Biochemistry, "DNA Repair and Tumorigenesis in *Xiphophorus* Fishes", San Marcos, TX (Departmental Seminar), April, 2000.
- NIH - National Center for Research Resources: Comparative Medicine Resource Directors Meeting, Genetic Management Workshop, Manassas, VA. (Presentation on Fish Genetic Management), April, 2000.
- NIH/NCI-SWT International Conference & Workshop on "Aquaria Fish Models of Human Disease", September 21-24, San Marcos, TX. "The *Xiphophorus* Genetic Stock Center" (lecture and abstract) September, 2000.
- NIH/NCI-SWT International Conference & Workshop on "Aquaria Fish Models of Human Disease" September 21-24, San Marcos, TX. "Repair of DNA Alkylation Damage in *Xiphophorus* Fish and Hybrids" (lecture and abstract) September, 2000.
- Washington State University, School of Biological Sciences, Pullman, WA. "The *Xiphophorus* Genetic System: Tumorigenesis and DNA Repair" (Departmental Seminar), October 2, 2000.
- Washington State University, Cancer Research Group, Pullman, WA. "Genetics of Tumorigenesis in *Xiphophorus* Interspecies Hybrid Models" (Cancer Prevention Research Center, Invited Seminar), October 3, 2000.
- American Chemical Society, Central Texas Section, "Aquaria Fish as Models of Human Cancer" (Invited lecture), February 15, 2001.
- Southwest Foundation for Biomedical Research, San Antonio TX, "The *Xiphophorus* Fish System as a Model for Induced Tumorigenesis" (Invited lecture). April 4, 2001.
- University of Texas at San Antonio, Division of Life Sciences, "The *Xiphophorus* Genetic System as a Model for Induced Tumorigenesis" (Invited lecture). April 16, 2001.

Invited Lectures (cont.)

- Texas Technological University, Institute of Environmental and Human Health, Department of Environmental Toxicology, Lubbock Texas, “Molecular Genetics of *Xiphophorus* Carcinogenesis” (Invited Lecture), October 5, 2001.
- NIH-National Institute on Aging, Comparative Biology of Aging Workshop, “The *Xiphophorus* Fish Genetic Model: Utility and Potential for Aging Research” (Invited Presentation), February 6, 2002.
- National Center for Research Resources, Comparative Medicine Resources Director’s Meeting, Southwest Foundation for Biomedical Research, San Antonio, TX, (Invited Presentation) “*Xiphophorus* Genetic Stock Center”, Nov. 19-21, 2002.
- Aquatic Animal Models of Human Disease Conference, Manassas VA. (Invited Presentation), R.B. Walter, “DNA Repair in Hybrid Fish of the Genus *Xiphophorus*”, Sept. 30-Oct.4, 2003.
- 3rd Annual Mount Desert Island Stem Cell Symposium, Bar Harbor, ME, (Invited Presentation), R.B. Walter, “Age Dependent Changes in Mutant Frequencies and Spectra in Differentiating Mouse Spermatogenic Cells”, August 13-14, 2004.
- University of Louisiana, Department of Biology, Lafayette, LA. (Invited Seminar) R.B. Walter, “Employing the *Xiphophorus* Fish Model to Study Tumorigenesis and DNA Repair”. October 28, 2004.
- University of South Alabama, College of Medicine, Mobile, AL, Distinguished Scientist Seminar Series (Invited Seminar), R.B. Walter, “*Xiphophorus* Interspecies Hybridization as a Model for Genetic Dysregulation & Tumorigenesis”, April 2006.
- Florida Institute of Technology, Melbourne, FL., Department of Biological Sciences (Invited Seminar) R.B. Walter, “Modulation of Gene Expression in Melanoma Susceptible *Xiphophorus* Interspecies Hybrids”, January, 2007.
- NOAA-NOS, Ecological Impacts of Hypoxia on Living Resources Conference & Workshop, (Invited Presentation), R. B. Walter “Genomic and Proteomic Methods to Identify Hypoxia-Regulated Proteins in Medaka (*Oryzias latipes*)”, Bay St. Louis, MS, March 26-29, 2007.
- National Evolutionary Synthesis Center (NeScent), Catalysis meeting on “*Developing Models Systems for Evolutionary Genomics Using Poeciliid Fishes*” (Invited Presentation), R. B. Walter, “Genetic and Genomic Resources for *Xiphophorus* Research”, Duke University, Durham, NC, May 1-4, 2007.
- The 4th Aquatic Models of Human Disease Conference (Invited Presentation). R. B., Walter, “Proteomic Analyses of the Gordon-Kosswig Melanoma Model”. Duke University, Durham, N. C., Jan. 31-Feb.3, 2008. (Genomics Session Chair)
- The 4th Aquatic Models of Human Disease Conference (Invited Presentation). R.B. Walter, “*Genetic and Genomic Resources for Xiphophorus & Medaka*”, presented in the “Omics in aquatic animal models: state of the art and needs for the future”, workshop, Duke University, Durham, N. C., Jan. 31-Feb.3, 2008.
- A Celebration of the Career of Dr. Michael Siciliano, Symposia: From Fish to FISH and Beyond, (invited presentation), R.B. Walter, “Fish Genetics Laboratory Comes to Texas”, MD Anderson Cancer Center, Houston, May 16, 2008.

Invited Lectures (cont.)

- 3rd International Workshop on Fish Genomes, Wellcome Trust Genome Campus, Hinxton, UK. (2009) “The Platyfish Genome Project”, R.B. Walter, March 13-14.
- Texas Poeciliid Conference (2009). R.B. Walter. “An Update on *Xiphophorus* Genomic Resources”, Also Ziping Zhang and R.B. Walter, “Transcriptome Analysis of male and female *Xiphophorus maculatus* Jp 163A., Texas State University-San Marcos, December 14, 2009.
- Florida Gulf Coast University, Ft. Myers, FL. Department of Marine and Ecological Science (Invited seminar). “*Xiphophorus* Fish Interspecies Hybrid Models: From Tumors to Genomics”. March 16, 2010.
- NIH-NCRR Workshop, Realizing the Scientific Potential of Transcriptomics in Aquatic Models. “Transcriptomics in *Xiphophorus*: Recent Developments and promise of novel discoveries”. Portland OR, Sept. 19, 2010.
- The 5th Aquatic Models of Human Disease Conference. R.B., Walter, “Transcriptomics in *Xiphophorus* Interspecies Hybrids Yield New Ideas About Old Problems”, Oregon State University, Corvallis, OR (Transcriptomics & Fish Genomics Session Chair), Sept. 20-22, 2010.
- EMBL-EBI Fish Genome meeting. R. B. Walter (2011), “Aberrant Gene Regulation within *Xiphophorus* Interspecies Hybrids”. Sanger Center, Hinxton, UK, March 11-12, 2011.
- National Center for Research Resources, N.I.H., R.B., Walter, “*Xiphophorus* interspecies hybrids: a vertebrate model for gene interaction and allele specific expression”, NIH, NCRR, Bethesda, MD. April 5, 2011
- 5th International Conference of *Poeciliid* Biologists, R.B. Walter, “Aberrant gene expression in *Xiphophorus* interspecies hybrids”, The University of the West Indies, St. Augustine, Trinidad and Tobago, June 24-29, 2013.
- 9th Comparative Medicine Resource Directors Meeting, NIH, Division of Comparative Medicine, Evolution of Disease Model Resources, R. B. Walter, “Next Generation Aquatic Resources: in the Lab and the Field”, Bethesda, MD. Aug. 14-16, 2012.
- 6th Aquatic Animal Models for Human Disease and Midwest Zebrafish Conference. (2013) R. B. Walter, “From gene sets through chromosomal assignment to assessment of coregulation via RNAseq”, University of Wisconsin at Milwaukee, Milwaukee, WI, June 30 - July 3, 2013
- 7th Aquatic Animal Models for Human Disease. R. B. Walter, “Comparison of *X. couchianus* and *X. hellerii* genome models provide genomic variation insight among *Xiphophorus* Species”, Texas State University, Bastrop, Texas, December 14, 2014
- Texas A&M University at Corpus Christi, Department of Life Sciences, Corpus Christi, TX. R.B. Walter, “*Xiphophorus*: A Genetic Model for Melanoma and the Response of Skin to Varied Light Sources.” March 20, 2015.
- University of Washington, Department of Comparative Medicine (Seminar), R.B. Walter, “The *Xiphophorus* Model and Transcriptomic Response of Skin to Varied Light Sources”. Seattle, WA, October 29, 2015.

Invited Lectures (cont.)

- Oklahoma State University, Department of Physiological Sciences (Seminar), R.B. Walter, “The *Xiphophorus* Genetic Model: From Melanoma to Genetic Transduction”. Stillwater, OK, December, 6, 2016.
- 8th Aquatic Animal Models for Human Disease. R.B. Walter, Y. Lu, M. Boswell, W.T. Boswell, J. Chang, M. Savage, T.T. Gonzalez, G. Medrano, S.M. Walter, J. Reyes, SA. Ellis, and D.J. Walter. “Waveband Induced Gene Regulation in Vertebrate Aquatic Models”, University of Alabama at Birmingham, AL, Jan. 7-12, 2017.
- Cryopreservation of Aquatic Biomedical Models Workshop, R.B. Walter, “Cryopreservation in Viviparous Fishes (*Xiphophorus* sp.)”, University of Alabama at Birmingham. Birmingham, AL, January 6, 2017.
- NBRP Medaka Workshop, Kiyoshi Naruse and Tomoko Obara (organizers), R.B. Walter, “Selective Regulation of Genetic Pathways in Medaka by Exposure to Discrete Light Wavebands”, 8th Aquatic Animal Models for Human Disease, University of Alabama at Birmingham. Birmingham, AL, January 10, 2017.
- Health Scholar Showcase, Texas State University, presented two posters showing activities of the *Xiphophorus* Genetic Stock Center (*The Xiphophorus Genetic Stock Center: A National Research Resource and Scientific Treasure*) and recent translational biomedical projects being performed (*The Molecular Biosciences Research Group: Two Examples of Current Translational Research Projects*), San Marcos, TX, February 10, 2017.
- University of Texas Health Science Center at San Antonio, Department of Cell Systems & Anatomy and the Medical School, R.B. Walter, “Waveband Specific Transcriptional Control of Gene expression in Vertebrates”, Seminar, San Antonio, TX, March 27, 2018.
- Texas State University, Department of Chemistry & Biochemistry, R.B. Walter “*Fish Tales: From Melanoma to Waveband Specific Gene Regulation*”, Seminar, San Marcos, TX, April 4, 2018
- Ohio University, Department of Biology, Athens, Ohio, R.B. Walter, “*Light Source and Wavelength Specific Transcriptional Regulation of select genetic pathways in Vertebrates: Xiphophorus maculatus, Danio rerio, Oryzias latipes, and Mus musculus*”, Seminar, Athens, OH, September 17, 2018.
- 4th Strategic Medaka Conference. *Walter, R.B., Lu, Y., Boswell, M., Lu, Y., Boswell, W.T., Savage, M., Hildreth, K., and C.A. Walter (2018). *The Genetic Response to Fluorescent Light Exposure Within Internal and External Organs Is Conserved Among Vertebrates (Danio rerio, Oryzias latipes, and Mus musculus)*, Invited Lecture, Heidelberg, Germany, April 16-18, 2018.

Publications

Conference Abstracts/Posters:

- Stuy, J.H., and R.B. Walter (1981) "Transfer of chromosomally integrated plasmids in *Haemophilus influenzae*." In: *Molecular Biology and Ecology of Bacterial Plasmids*. S. Levy, R. Clowes, and E. Koeing (eds.), Plenum Press, N. Y., N.Y.
- Walter, R.B., Pierce, J., Case, R. and M.S. Tang (1988) "The anthramycin-*N*²-guanine DNA adduct is recognized by the UVRABC nuclease *in vitro*." *Journal of Cellular Biochemistry* suppl. 12A, Alan A. Liss Press, New York, N.Y.
- Walter, R.B., and J.H. Stuy (1988) "*Haemophilus influenzae* high efficiency transforming markers are low efficiency when assayed on *mutB1* mutant recipients." *Proceedings of the 9th European Meeting on Genetic Transformation*.
- Nairn, R.S., Walter, R.B., Svensson, R., Morizot, D.C. (1988) "Classical gene mapping using DNA RFLPs in *Xiphophorus* hybrids." *Isozyme Bulletin*.
- Walter, R.B., Svensson, R., Harless, J., Kallman, K., Morizot, D.C., and R.S. Nairn (1989) "Mapping of DNA repair genes in *Xiphophorus* fishes." *Isozyme Bulletin*.
- Walter, R.B., Obermoeller, R., Svensson, R., Harless, J., Morizot, D., and R.S. Nairn (1990) "RFLP mapping of an *ERCC2*-like gene in *Xiphophorus* fishes." *Abstracts of the Texas Genetics Society*, Dallas, TX
- Raabe, T., Walter, R.B., and J. Koke (1990) "Localization of Exogenous Prokaryotic DNA Taken Up by Skeletal and Cardiac Muscle Cells *In Vivo*." *Abstracts of the Texas Society for Electron Microscopy*.
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Peer Reviewed and Invited Publications (cont.)

- Klotz, B., Kneitz, S., Regensburger, M., Dannemann, M., Kelso, J., Lu, Y., Boswell W., Postlethwait, J., Warren, W., Kunz, M., Walter, R.B. and M. Schartl (2018). Expression signatures of early-stage and advanced medaka melanomas. *Comp. Biochem. & Physiology, Part C*, 208:20-28
<https://doi.org/10.1016/j.cbpc.2017.11.005>
- Lu, Yuan, Reyes, J., Walter, S., Gonzalez, T., Medrano, G., Boswell, M., Boswell, W., Savage, S. and R.B. Walter (2018). Characterization of Basal Gene Expression Trends Over a Diurnal Cycle in *Xiphophorus maculatus* Skin, Brain and Liver. *Comp. Biochem. & Physiology, Part C*, 208:2-11,
<https://doi.org/10.1016/j.cbpc.2017.11.013>
- Wise, J.P. Jr., Wise, T.F., Wise, C.F., Wise, S.S., Gianos, C. Jr., Xie, H., Walter, R.B., Boswell, M., Zhu, C., Zheng, T., Perins, C., and J.P. Sr., Wise. (2018). A three-year study of metal levels in skin biopsies of whales in the Gulf of Mexico after the Deepwater Horizon oil crisis. *Comp. Biochem. & Physiology, Part C*, 205:15-25, <https://doi.org/10.1016/j.cbpc.2017.12.003>
- Warren, W.C., Kuderna, L., Alexander, A., Catchen, J., Pérez-Silva, J.G., López-Otín, Víctor Quesada, C., Minx, P., Tomlinson, C., Montague, M., Farias, F.H.G., Walter, R.B., Marques-Bonet, T., Glenn, T., Kieran, T.J., Wise, S.S., Wise Jr., J.P., Waterhouse, R.M., and J.P. Wise, Sr. (2018). The novel evolution of the sperm whale genome. *Genome Biol. Evolution* 9(12):3260-3264.
<https://doi.org/10.1093/gbe/evx187>
- Lu, Y., Boswell, M., Boswell, W., Kneitz, S., Hausmann, M., Klotz, B., Regneri, J., Savage, M., Amores, A., Postlethwait, J., Warren, W., Schartl, M., and R. B. Walter (2018). Comparison of *Xiphophorus* and Human Melanoma Transcriptomes Reveals Conserved Pathway Interactions, *Pigment Cell Melanoma Res.*, 2018:1-13, <https://doi.org/10.1111/pcmr.12686> (Cover photo selection)
- Warren, W., García-Pérez, R., Xu, S., Lampert, K., Chalopin, D., Stöck, M., Loewe, L., Lu, Y., Kuderna, L., Minx, P., Montague, M., Tomlinson, C., Hillier, L., Murphy, D., Wang, J., Wang, Z., Garcia, C.M., Thomas, G., Volff, J-N., Farias, F., Aken, B., Walter, R.B., Pruitt, K., Marques-Bonet, T., Hahn, M., Kneitz, S., Lynch, M., and M. Schartl (2018). Clonal polymorphism and high heterozygosity in the celibate genome of the Amazon molly, *Nature - Evolution and Ecology*, 2:669–679,
<https://doi.org/10.1038/s41559-018-0473-y>
- Walter, R.B., Boswell, M, Chang, J., Boswell, W.T., Lu, Y., Navarro, K, Walter, S.M., Walter, D.J., Salinas, R. and M. Savage (2018). Waveband Specific Transcriptional Control of Select Genetic Pathways in Vertebrate Skin. *BMC Genomics*, 19:355-373. <https://doi.org/10.1186/s12864-018-4735-5>
- Regneri, J., Klotz, B., Wilde, B., Kottler, V., Hausmann, M., Kneitz, S., Regensburger, M., Maurus, K., Götz, R., Lu, Y., Walter, R., Herpin, A., and M. Schartl (2018). Analysis of the putative tumor suppressor gene *cdkn2ab* in pigment cells and melanoma of *Xiphophorus* and medaka, *Pigment Cell Melanoma Res.* 2018;00:1–11, <https://doi.org/10.1111/pcmr.12729> (Cover photo selection).

Peer Reviewed and Invited Publications (cont.)

- Zavadil, J., Herzig, M., Hildreth, K., Foroushani, A., Boswell, W., Walter, R.B., Reddick, R., White, H., Zare, H., and C. Walter (2018). C3HeB/FeJ Mice Mimic Gene Expression and Pathobiological Features of Human Hepatocellular Carcinoma, *Molecular Carcinogenesis*. 2018;1–12, <https://doi.org/10.1002/mc.22929>
- Franchini, P., Jones, J., Xiong, P., Kneitz, S., Gompert, Z., Warren, W.C., Walter, R.B., Meyer, A., Scharl, M. (2018). Long-term experimental hybridization results in a heterologous transition and the evolution of a new sex chromosome in swordtail fish, *Nature Communication*. 9:5136, <https://doi.org/10.1038/s41467-018-07648-2>
- Lu, Y., Boswell, M., Boswell, W., Kneitz, S., Klotz, B., Regneri, J., Savage, M., Postlethwait, J., Warren, W., Scharl, S., and R.B. Walter (2018). Gene Expression Variation and Parental Allele Inheritance in a *Xiphophorus* Interspecies Hybridization Model, *PLoS Genetics*, *In press*.
- Lu, Y., Boswell, W., Boswell, M., Klotz, B., Kneitz, S., Regneri, J., Savage, M., Mendoza, C., Postlethwait, J., Warren, W.C., Scharl, M., Walter, R.B. (2018). Application of the Transcriptional Disease Signatures (TDSs) to Screen Melanoma-Effective Compounds in a Small Fish Model, *Scientific Reports*, *In press*.
- Childress, W.M., Bosworth, B., Vhesney, E., Walter, R.B., Tiersch, T.R. (2018). On-site Capabilities of a Mobile Laboratory for Sperm Cryopreservation of Blue Catfish (*Ictalurus furcatus*), *Xiphophorus* species, and red Snapper (*Lutjanus campechanus*), *Submitted*
- Boswell, M., Lu, Y., Boswell, W., Savage, M., Hildreth, K., Salinas, R., Walter, C.A., and Walter R.B. (2018). Fluorescent Light Incites a Highly Conserved Immune and Inflammatory Genetic Response within Internal and External Organs of Vertebrates (*Danio rerio*, *Oryzias latipes* and *Mus musculus*), *Submitted*.

Master & Honors Thesis Supervisor**Thesis Advisor/Mentor, completed:**

- Rebecca D. Obermoeller, M.S. “Partial characterization of an XRCC-like locus in *Xiphophorus* fishes”. Completed- August 1991. [Currently working as Research Associate, Ambion Inc., Austin TX].
- Karl A. Morton, M.S. “Cloning, DNA sequence determination, and evolutionary comparison of the *Haemophilus influenzae* mutB1 gene”. Completed – December 1991. (Coker Fellowship Award Recipient) [Sequence supervisor at the CODIS Facility, Texas Crime Lab., Austin TX].
- Luis Della Coletta, M.S. “Cloning and DNA sequence analysis of the *Xiphophorus maculatus* ERCC2 genetic locus”. Completed - May 1993. (Coker Fellowship Award Recipient). [Currently Senior Research Associate, Cancer Biology, U.T.-M.D. Anderson Cancer Center, Smithville].

Thesis Advisor/Mentor, completed (cont.):

- Sallyanne Fossey, M.S. "Cloning, DNA sequence, and expression analysis of the *Xiphophorus maculatus* β -Actin gene". Completed - May 1993. [Ph.D. in Cell Biology & Genetics from Wake Forest University, NC, completed 2000, Currently Research Scientist at Vanderbilt University].
- Trisha Tuley, M.S. "Characterization of the uracil-*N*-glycosylase locus of *Xiphophorus maculatus*". Completed - December, 1994. [Research Assistant, Neurobiology, Southwest Research Foundation, Dallas, TX].
- Jody Williams, M.S. "Use of random amplified polymorphic DNA (RAPD) to identify largemouth bass subspecies and their intergrades". Completed - July 1996. [Forensic Scientist, Texas Dept. of Corrections Crime Laboratory, Austin TX].
- Dana D. Moore, B.S. (Senior Honors Thesis). "Nucleotide sequence, evolutionary conservation, and linkage map assignment of the insulinoma rig gene orthologue in *Xiphophorus maculatus*". Completed - December, 1995. [Completed M.S. in Microbiology, Baylor College of Medicine, Houston, TX -1997; Research Associate, U.T.-M.D. Anderson Cancer Center, Smithville].
- Art Braden, M.S., "Characterization of the *Xiphophorus JUNA* locus". Completed - July, 1996. (Coker Fellowship Award Recipient; Biology Colloquium Best Graduate Paper Award). [Ph.D. Program, Biomedical Engineering, U.T. Arlington, Arlington, TX, completed 2003]
- Steve Gilmer, M.S. "Isolation, nucleotide sequence determination and mapping of the *Xiphophorus maculatus JUNB* locus". Completed - July, 1996. [Employed at an Austin, TX, Environmental testing laboratory]
- Gabriel Intano, M.S. "Spontaneous mutation frequencies during spermatogenesis in transgenic mice". Completed - July, 1996. (Coker Fellowship Award Recipient). [Ph.D. Program in Cell & Structural. Biology from the U.T. Health Science. Ctr. at San Antonio, completed 2002, Professor, Colorado State University]
- Hai-Ying Li, M.S. "Analysis of methylation pattern stability in fishes: Methylation pattern inheritance in *Xiphophorus* interspecies crosses and during early embryonic development of *Oryzias*." Completed - Fall 1996. (Coker Fellowship Award Recipient). [Research Associate, U.T.-M.D. Anderson Cancer Center]
- Huang-Mo, Sung, M.S. "Characterization of O⁶-Methylguanine DNA Methyltransferase and Base Excision DNA Repair Activity in *Xiphophorus* Fishes". Completed - Summer 1997. (Coker Fellowship Award Recipient). [Ph.D. Program in Molecular Biology & Genetics from the University of Texas at Dallas, completed 2003, Professor, Taiwan]
- Karen Lord - M.S. (Non-thesis track), Initiated study Spring 1996. Completed Fall 1998.
- Jarah Meador - M.S. "Nucleotide Excision Repair and Photoenzymatic Repair in *Xiphophorus* Fishes". Completed - May 1999. [Ph.D. in Biomedical Science from the MD Anderson Cancer Center, Science Park -Research Division, Smithville, TX, completed 2004].

Thesis Advisor/Mentor, completed (cont.):

- Angela Wheeler - M.S. "Partial Nucleotide Sequence, Mapping, and Relative Expression of a *Xiphophorus* Fish *NFI* Gene". Completed -April 2001. (Best Student Presentation award - Biology Colloquium - 2000 and Texas Genetic Society meeting - 2001). [Research Technician, Ambion Inc. - Austin, TX].
- Kevin Kelner - M.S. "Molecular Characterization, Transcriptional Expression, and Mapping of a *X. maculatus* *RAB27* Gene. Completed - Summer, 2001, [Research Technician, Asuragen Inc., Austin Texas].
- Christina Daniels - M.S. "Nucleotide Sequence, Mapping, and Relative Expression of the *Xiphophorus maculatus* Cyclophilin 40 Gene (*PPID*)". Completed April, 2001. MS-Ph.D. Bridge Student, Selected to Attend Berkeley Edge Conference, selected for oral presentation 2001 SACNAS national Conference) [Ph.D. in Virology at University of Kansas, Lawrence, completed 2007].
- Vandeeta, Khanolkar - M.S. "Study of the *CDKN2D (P19)* Locus in *Xiphophorus*". Completed - Summer 2003, SWT Dept. of Chemistry and Biochemistry [Research Technician, Mayo Clinic, Dept. of Neuroscience, Jacksonville, FL].
- Ramiro Thomas Sosa - M.S. "Molecular Characterization, and Expression of the *Xiphophorus maculatus* Apurinc/Apyrimidinic Endonuclease Gene. Completed – Fall 2003, TSU, Dept. of Chemistry and Biochemistry. [Ph.D. studies in Biochemistry at University of Texas, Austin].
- Lucretia Krause, B.S. (Senior Honors Thesis). "Cloning and Nucleotide sequence analyses of the *Xiphophorus maculatus* Aryl Hydrocarbon Receptor (AhR) Gene". Completed - December, 2003.
- Sabrina Dartez, B.S. (Senior Honors Thesis). "Cloning and Nucleotide sequence analyses of the *Xiphophorus maculatus* Aryl Hydrocarbon Nuclear Translocation Factor (ARNT) Gene". Completed - December, 2003.
- Arnold Ruijngaart, M.S., "Cloning and expression of a Fappy-N-Glycosylase (FEN-1) in *Xiphophorus*". Completed Spring 2005 (Outstanding graduate student award recipient). [Ph.D. studies in Biochemistry at University of Texas, Austin].
- Douglas Barth, M.S., Characterization of *Xiphophorus maculatus* Polymerase β Containing a Site Directed Mutation at Aspartic Acid 63. Completed Summer 2006.
- Amy Nicole Perez, M.S. "Identification of Differentially Expressed Proteins in *Xiphophorus* Fishes of the Gordon-Kosswig Melanoma Model". Completed Summer 2006. [Crime Laboratory Technician training, San Antonio]
- Lyndsey M. Kirk, B.S. (Senior Honors Thesis). "Hypoxic Stress Induced Gene Modulation in Medaka (*Oryzias latipes*). Completed Spring, 2009. TSU, Department of Biology. [Ph.D. studies in University of California at Davis, Biochemistry].
- Kevin Downs, M.S. "Characterization of UVB Inducible Gene Expression in *Xiphophorus* skin". Completed Spring 2013. [Ph.D. Program in biomedicine, UT Health Science Center in San Antonio].

Thesis Advisor/Mentor, completed (cont.):

Adam Contreras. B.S., Senior Honors Thesis. Cortisol Release Due to Experimental Handling and UVB Radiation *Xiphophorus* Species. Completed Spring 2013. [Ph.D. studies in University of California at Davis, Biochemistry].

Kaela Caballero, M.S. Differential Gene Expression in the Skin of *Xiphophorus maculatus* Jp 163B in Response to Full Spectrum (10,000 K) Fluorescent Light. Completed July, 2015. [Veterinary Medicine studies at Michigan State University].

Jordan Chang, M.S., Wavelength dependent gene expression in *Xiphophorus*. Completed Spring, 2016. [Doctoral studies in Biomedicine, Penn. State University, Hershey, PA].

Trevor Gonzales, Kinetics of Gene Expression Profile Shifts in Zebrafish (*Danio rerio*) Organs After Exposure to Fluorescent Light, Initiated M.S. thesis studies Summer 2016, [Doctoral studies in Genetics, Duke University, N.C.].

Ellysa, Vogt, Dose response of Light driven modulation of Genetic Profiles in Zebrafish (*Danio rerio*), Initiated studies Summer 2017. Fall 2018. Entered doctoral studies in Genetics, University of North Carolina at Chapel Hill, N.C.

Taryn Olivas, Protein Level Analyses of Specific Light Wavebands Induced Genetic Modulation in Zebrafish (*Danio rerio*). Initiated studies Fall 2017. Fall 2018 - Entered doctoral studies in Genetics, Yale University, CT.

Soroush Omidvarnia, "The Genetic Effects of Long-Term LED Light Exposure on a Transgenic *Oryzias latipes* (Japanese medaka) Melanoma Model", Initiated Honors thesis research Fall 2017, completed Summer 2018.

Graduate/Honors Thesis Supervisor, in progress:

Angel Sandoval, SURE Undergraduate program research student. Initiated studies Summer 2018.

Sarah Voss. Undergraduate research student, Initiated studies Summer 2018.

Postdoctoral Mentor

1998 - 2000 Belinda Fuller, Ph.D. (Louisiana State University, 1997), Zoology, Genetics.

1998 - 2000 Jakob Kirchner, Ph.D. (Rutgers University, 1991), Molecular Genetics.

2000 - 2001 Tracey Blevins, Ph.D. (MD Anderson Cancer Ctr.; Graduate School of Biomedical Science (1999), Pharmacology.

2009 - 2014 Tzuni I. Garcia, Ph.D. (University of Texas Medical Branch, Galveston, TX), Toward the Rational Design of Mechanical Proteins, (Biophysical structure and Computational Biology).

2010 - 2014 Yingjia Shen, Ph.D. (Miami of Ohio, Ohio). Transcriptome analysis in *Arabidopsis*. (Bioinformatics of RNA splicing).

Postdoctoral Mentor, cont.

- 2012 – 2013 Vagmita Pabuwal, Ph.D., (University of the Sciences, Philadelphia, PA), Analysis of 3D Folding Protein Structures using Computational Approaches” (Bioinformatics).
- 2012 - 2013 Suresh Kumar, Ph.D., (University of Vienna, Austria), Likelihood of Protein Structure Determination (Structural and Computational Biology)
- 2012 - 2014 Sara Volk de Garcia. Ph.D. (Johns Hopkins University, Baltimore, MD), (Biochemistry & Molecular Biology), Employed as research associate to develop and implement NIH Bridge and K-12 STEM grant programs.
- 2013 - 2014 Kuan Yang, Ph.D. (Virginia Tech., Bioinformatics), M.S. (Univ. So. Mississippi, Biology), M.S. (University of Glasgow, Computer Science). Ancestral Bacterial Genome Reconstruction.
- 2015 - 2017 Yuan Lu, Ph.D. (University of Missouri, Columbia, MO, Biochemistry), Transcriptome analysis of human metastatic prostate cancer cells deciphers new functions of ERR β .
- 2017-current Raquel Salinas, Ph.D. (Duke University), Program Coordinator for South Texas Doctoral Bridge Program. Research topic: Opsin Evolution and Translation of Waveband Specific Gene Regulation into Mouse Models.

Research Assistant Professor Mentor

- 2000 - 2003 - Steve Kazianis, Ph.D. (New York University, 1994) [Assistant Professor, Wistar Institute, Univ. Pennsylvania].
- 2003 - 2004 - Wendi David, Ph.D. (University of Texas, 2002), [Assistant Professor, Chemistry & Biology, Texas State University].
- 2005 - 2006 - Zhenlin Ju, Ph.D. (Auburn University, 2001) Bioinformatics, (UT-MD Anderson Cancer Center, Houston) [Senior Scientist, M.D Anderson Cancer Center, Houston, TX].
- 2008 - Shuhong Wang, Assoc. Professor, Jimei University, Xiamen, P.R. China Fisheries College and Aquaculture Biotechnology Research Institute. Visiting Scientist - 2008-2009.
- 2007- 2011- Ziping Zhang, Ph.D. (University of Hong Kong, 2002) Marine Ecotoxicology, (Michigan State University, MI) [Assistant Professor, Seton Hall University, 2011].
- 2017 - current, Yuan Lu, Ph.D. (University of Missouri, Columbia, MO, Biochemistry), Transcriptome analysis of human metastatic prostate cancer cells deciphers new functions of ERR β .

Graduate Thesis Committee Member, completed:

- Colene D. Drace, M.S. “Histochemistry of oxidants in rat myocardium during ischemia and reperfusion”. Completed - December, 1990.
- Timothy D. Raabe, M.S. “Myocyte uptake of exogenous DNA”. Completed - May, 1991.

Tracey Toliver, M.S. "Detection and localization of human superoxide dismutase in rat myocardium induced by injection of DNA". Completed - May, 1993.

Graduate Thesis Committee Member, completed (cont.):

Camille Graham, M.S. "The fate of plasmid DNA injected into skeletal muscle". Completed - May, 1993

Shelia Jeffcoat, M.S. "Characterization of the G3.5 Novel Cytoskeletal Antigen: Further Characterization". Completed - May, 1994.

Mark Lee, M.S. in Computer Science, Completed - May 1994.

Rhonda L. Rolig - Ph.D. (1997), U.T. Graduate School for Biomedical Sciences M.D. Anderson Cancer Center, Houston, TX (doctoral advisory committee). [Post-doctoral Assoc., St. Judes Research Hospital, Memphis, TN].

Jennifer Adams, M.S. "The Role of *rpoS* in the Formation of *Escherichia coli* Biofilms" Completed - Spring, 1998. SWT, Dept. of Biology, SWT.

Dawn Schneider, M.S. "Assay Development and Purification of 2-(2'-hydroxyphenyl) Benzenesulfinate (HPBS) Desulfinate" Completed - Spring 2000, SWT Dept. of Chemistry and Biochemistry.

Gabriel Intano - "Mutagenesis and DNA Base Excision Repair in Germ Cells of Male Mice". [Ph.D. Program, Cell & Structural Biology, U.T. Health Science Center at San Antonio]. Completed November, 2002.

Chris Scott, M.S. "Generation and Characterization of *dszB* mutants from *Nocardia asteroides* A3H1". Completed - Spring 2003, SWT Dept. of Chem. & Biochem.

Jason R. Plyer - Elucidation of the SV4- T Antigen Helicase Activity with Quadraplex DNA Using Surface Plasmon Resonance, Completed, Summer 2009. TSU, Department of Chemistry & Biochemistry.

Rafael C. Uribe, Ph.D. "Vitrification for Ultra-rapid cryopreservation in Aquatic Models", Louisiana State University, Agriculture Research Station, Baton Rouge, LA. completed Summer 2011.

Ye Rui, Ph.D candidate. "Development of Seawater *Oryzias melastigma* as a Marine Model Fish for Immunotoxicology", Chow Yei Ching School of Graduate Studies (RPg Team), City University of Hong Kong. Summer 2015.

Elesio Salas, MS., "Characterization of Ligand Specificity of the RNA Binding Protein", Completed May, 2017. TSU, Department of Chemistry & Biochemistry.

Toyosi Adewunmi, MS., "Identification of Accessory Proteins and Their Impact on the Epithelial Sodium Channel (ENaC)", Completed May, 2017. TSU, Department of Chemistry & Biochemistry.

Jose Miguel Castro, MS. "Biochemical Analysis of Evolutionary Divergent Vertebrate LARP6 Proteins", Completed May, 2017. TSU, Department of Chemistry & Biochemistry.