

CURRICULUM VITAE

Dr. Bruce B. Riley
Professor

CONTACT INFORMATION

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EDUCATION

B.A., Department of E. P. O. Biology, University of Colorado-Boulder, December, 1982.
Ph.D., Molecular Biology Program, University of Wisconsin-Madison, August, 1990.

RESEARCH AND PROFESSIONAL EXPERIENCE

1985: Graduate research with Steve Barclay, University of Wisconsin-Madison.
1990: Postdoctoral research with John Fallon and Brad Olwin, University of Wisconsin-Madison.
1992: Postdoctoral research with David Grunwald, University of Utah.
1995: Assistant Professor, Biology Department, Texas A&M University.
2000: Associate Professor, Biology Department, Texas A&M University.
2007: Professor, Biology Department, Texas A&M University.

HONORS

B.A. with distinction, University of Colorado, 1982.
Postdoctoral Fellowship, NIH, University of Utah, 1992-1994.
Postdoctoral Fellowship, ACS, University of Utah, 1994-1996.
Texas Advanced Research Program awardee, 1996-1998.
March of Dimes awardee, 1997-1999.
NIH awardee, 1998-present.

PEER-REVIEWED PUBLICATIONS

Gou, Y., Guo, J., Maulding, K. and Riley, B. B. (2018). *sox2* and *sox3* cooperate to regulate otic/epibranchial placode induction in zebrafish. *Dev. Biol.* **435**, 84-95. **PMCID: PMC5818308**

Gou, Y., Vemaraju, S., Sweet, E. M., Kwon, H.-J. and Riley, B. B. (2018). *sox2* and *sox3* play unique roles in development of hair cells and neurons in the zebrafish inner ear. *Dev. Biol.* **435**, 73-83. **PMCID: PMC5818298**

Kantarci, H., Gerberding, A. and Riley, B. B. (2016). Spemann organizer gene Goosecoid promotes delamination of neuroblasts from the otic vesicle. *Proc. Natl. Acad. Sci.* **113(44)**, E6840-E6848. **PMCID: PMC5098670**

Kantarci, H., Edlund, R. K., Groves, A. K. and Riley, B. B. (2015). Tfp2a promotes specification and maturation of neurons of the inner ear through modulation of Bmp, Fgf

- and Notch signaling. *PLoS Genetics* 11(3): e1005037. **PMCID: PMC4364373**
- Edlund, R. K., Ohyama, T., Kantarci, H., Riley, B. B. and Groves, A. K. (2014). Foxi transcription factors promote pharyngeal arch development by regulating formation of FGF signaling centers. *Dev. Biol.* **390**, 1-13. **PMCID: PMC4013273**
- Maulding, K., Padanad, M. S., Dong, J. and Riley, B. B. (2014). Mesodermal Fgf10b cooperates with other Fibroblast Growth Factors during induction of otic and epibranchial placodes in zebrafish. *Dev. Dyn.* **243**, 1275-1285. **PMCID: PMC4313390**
- Riley, B. B. (2013). Induction and morphogenesis of the inner ear, in “*Molecular signaling of mammalian inner ear development*”, Nova Science Publishers, New York.
- Bhat, N., Kwon, H. J. and Riley, B. B. (2013). A gene network that coordinates preplacodal competence and neural crest specification in zebrafish. *Dev. Biol.* **373**, 107-117. **PMCID: PMC3508392**
- Vemaraju, S., Kantarci, H., Padanad, M. S. and Riley, B. B. (2012). A spatial and temporal gradient of Fgf differentially regulates distinct stages of neural development in the zebrafish inner ear. *PLoS Genetics* **8(11)**, e1003068. **PMCID: PMC3499369**
- Padanad, M. S., Bhat, N., Guo, B. and Riley, B. B. (2012). Conditions that influence how cells respond to Fgf during otic placode induction. *Dev. Biol.* **364**, 1-10. **PMCID: PMC4709014**
- Bhat, N. and Riley, B. B. (2011). Integrin- α 5 coordinates assembly of posterior cranial placodes in zebrafish and enhances Fgf-dependent regulation of otic/epibranchial cells. *PLoS ONE* **6(12)**, e27778. **PMCID: PMC3229493**.
- Sweet, E. M., Vemaraju, S. and Riley, B. B. (2011). Sox2 and Fgf interact with Atoh1 to promote sensory competence throughout the zebrafish inner ear. *Dev. Biol.* **358**, 113-121. **PMCID: PMC3171634**.
- Padanad, M. S. and Riley, B. B. (2011). Pax2/8 proteins coordinate sequential induction of otic and epibranchial placodes through differential regulation of *foxi1*, *sox3* and *fgf24*. *Dev. Biol.* **351**, 90-98. **PMCID: PMC3039053**.
- Kwon, H. J., Bhat, N., Sweet, E. M., Cornell, R. A. and Riley, B. B. (2010). Identification of early requirements for preplacodal ectoderm and sensory organ development. *PLoS Genetics* **6 (9)**, e1001133. **PMCID: PMC2944784**.
- Manohar, M., Mei, H., Franklin, A., Sweet, E., Shigaki, T., Riley, B., MacDiarmid, C. and Hirshi, K. (2010). A zebrafish (*Danio rerio*) endomembrane antiporter similar to yeast cation/H⁺ transporter is required for neural crest development. *Biochem.* **49**, 5667-6566.
- Millimaki, B. B., Sweet, E. M. and Riley, B. B. (2010). Sox2 is required for maintenance and regeneration, but not initial development, of hair cells in the zebrafish inner ear. *Dev. Biol.* **338**, 262-269. **PMCID: PMC2815045**.
- Riley, B. B., Sweet, E. M., Heck, R., Evans Fernandez, A., McFarlen, K. N., Warga, R. M. and Kane, D. A. (2010). Characterization of *harpy/Rcal/emil* mutants: Patterning in the absence of cell division. *Dev. Dyn.* **239**, 828-843. **PMCID: PMC3086590**.
- Kwon, H.-J. and Riley, B. B. (2009). Mesendodermal signals required for otic induction: Bmp-antagonists cooperate with Fgf and can facilitate formation of ectopic otic tissue. *Dev. Dyn.* **238**, 1582-1594. **PMCID: PMC2835543**.
- Petko, J. A., Millimaki, B. B., Canfield, V. A., Riley, B. B. and Levenson, R. (2008). Otoc1: A novel Otoconin-90 ortholog required for otolith mineralization in zebrafish. *Dev. Neurobiol.* **68**, 209-222. **PMCID: PMC2730775**.
- Millimaki, B. B., Sweet, E. M., Dhasan, M. S. and Riley, B. B. (2007). Zebrafish *atoh1* genes: Classic proneural activity in the inner ear and regulation by Fgf and Notch. *Development* **134**, 295-305.
- Kwak, S. J., Vemaraju, S., Moorman, S. J., Zeddies, D., Popper, A. N., and Riley, B. B. (2006).

- Zebrafish *pax5* regulates development of the utricular macula and vestibular function. *Dev. Dyn.* **235**, 3026-3038.
- Phillips, B.T., Kwon, H.-J., Melton, C., Houghtaling, P., Fritz, A., and Riley, B. B. (2006). Zebrafish *msxB*, *msxC* and *msxE* function together to refine the neural-nonneural border and regulate cranial placodes and neural crest development. *Dev. Biol.* **294**, 376-390.
- Mackereth, M. D., Kwak, S.-J., Fritz, A. and Riley, B. B. (2005). Zebrafish *pax8* is required for otic placode induction and plays a redundant role with Pax2 genes in the maintenance of the otic placode. *Development* **132**, 371-382.
- Riley, B. B., Chiang, M.-Y., Storch, E., Heck, R., Buckles, G. R. and Lekven, A. C. (2004). Rhombomere boundaries are Wnt signaling centers that regulate metamer patterning in the zebrafish hindbrain. *Dev. Dyn.* **231**, 278-291.
- Phillips, B. T., Storch, E. M., Lekven, A. C. and Riley, B. B. (2004). A direct role for Fgf but not Wnt in otic placode induction. *Development* **131**, 923-931.
- Riley, B. B. (2003). Genes controlling the development of the zebrafish inner ear and hair cells. *Current Topics in Developmental Biology* **57**, 357-388.
- Riley, B. B. and Phillips, B. T. (2003). Ringing in the new ear: Resolution of cell interactions in otic development. *Dev. Biol.* **261**, 289-312.
- Kwak, S.J., Phillips, B. T., Heck, R. and Riley B. B. (2002). An expanded domain of *fgf3* expression in the hindbrain of zebrafish *valentino* mutants results in mispatterning of the otic vesicle. *Development* **129**, 5279-5287.
- Whitfield, T. T., Riley, B. B., Chiang, M.-Y., and Phillips, B. T. (2002). Development of the zebrafish inner ear. *Dev. Dyn.* **223**, 427-458.
- Phillips, B. T., Bolding, K. and Riley, B. B. (2001). Zebrafish *fgf3* and *fgf8* encode redundant functions required for otic placode induction. *Dev. Biol.* **235**, 351-365.
- Riley, B. B. and Moorman, S. J. (2000). Development of utricular otoliths, but not saccular otoliths, is necessary for vestibular function and survival. *J. Neurobiol.* **43**, 329-337.
- Riley, B. B., Chiang, M.-Y., Farmer, L., and Heck, R. (1999). The *deltaA* gene of zebrafish mediates lateral inhibition of hair cells in the inner ear and is regulated by *pax2.1*. *Development* **126**, 5669-5678.
- Appel, B., Fritz, A., Westerfield, M., Grunwald, D. J., Eisen, J. S., and Riley, B. B. (1999). *Delta*-mediated specification of midline cell fates in zebrafish embryos. *Current Biology* **9**, 247-256.
- Mendonça, E. S., and Riley, B. B. (1999). Genetic analysis of tissue-interactions required for otic placode induction in the zebrafish. *Dev. Biol.* **206**, 100-112.
- Riley, B. B., Zhu, C., Janetopoulos, C., and Aufderheide, K. J. (1997). A critical period of ear development controlled by distinct populations of ciliated cells in the zebrafish. *Dev. Biol.* **191**, 191-201.
- Riley, B. B. and Grunwald, D. J. (1996). A mutation in zebrafish affecting a localized cellular function required for normal ear development. *Dev. Biol.* **179**, 427-435. PMID:8903357.
- Riley, B. B. and Grunwald, D. J. (1995). Efficient induction of point mutations allowing recovery of specific locus mutations in zebrafish. *Proc. Natl. Acad. Sci. USA* **92**, 5997-6001.
- Olwin, B. B., Kudla, A., Hannon, K., Hein, P., McFall, A., Riley, B., Szebenyl, G., Zhou, Z., Zuber, M. E., and Rapraeger, A. C. (1994). Role of FGF's in skeletal muscle and limb development. *Molecular Reproduction and Development* **39**, 90-100.
- Savage, M. P., Hart, C. E., Riley, B. B., Sasse, J., Olwin, B. B., and Fallon, J. F. (1993). The distribution of FGF-2 suggests it has a role in chick limb bud growth. *Dev. Dyn.*

198,159-170.

- Riley, B. B., Savage, M. P., Simandl, B. K., Olwin, B. B., and Fallon, J. F. (1993). Retroviral expression of FGF-2 (bFGF) affects patterning in chick limb bud. *Development* **118**, 95-104.
- Riley, B. B. and Barclay, S. L. (1990). Conditions that alter intracellular cAMP levels affect expression of the cAMP phosphodiesterase gene in *Dictyostelium*. *Proc. Natl. Acad. Sci. USA* **87**, 4746-4750.
- Riley, B. B. and Barclay, S. L. (1990). Ammonia promotes accumulation of intracellular cAMP in differentiating amoebae of *Dictyostelium discoideum*. *Development* **109**, 715-722.
- Riley, B. B., Jensen, B. R., and Barclay, S. L. (1989). Conditions that elevate intracellular cAMP levels promote spore formation in *Dictyostelium*. *Differentiation* **41**, 5-13.
- Riley, B. B. and Barclay, S. L. (1986). Inhibitors of intracellular cyclic AMP accumulation affect differentiation of sporogenous mutants of *Dictyostelium discoideum*. *FEMS Microbiol. Lett.* **37**, 221-226.

PRESENTATIONS

Invited Seminars.

1. (1997). Genetic analysis of zebrafish development. University of Texas Health Sciences Center, San Antonio, TX.
2. (1998). Role of Delta-Notch signaling in zebrafish development. Neuroscience Program, Texas A&M University, College Station, TX.
3. (1998). Role of Delta-Notch signaling in zebrafish inner ear development. Genetics Program, Texas A&M University, College Station, TX.
4. (1998). Genetic analysis of Delta-Notch signaling in zebrafish development. Department of Anatomy, University of Wisconsin, Madison, WI.
5. (1998). Genetic analysis of Delta-Notch signaling in zebrafish development. Baylor College of Dentistry, Dallas, TX.
6. (2000). Genetic analysis of otic development in zebrafish. Biology Department, Texas A&M University – College Station.
7. (2000). Genetic analysis of otic development in zebrafish. Genetics Program, University of Iowa, Iowa City, IA.
8. (2001). A signaling network required to maintain rhombomere boundaries organizing centers in the zebrafish hindbrain. Meeting for the American Association of Anatomists, Zebrafish Minisymposium, Orlando, Florida.
9. (2001). Otic induction and hindbrain patterning in the zebrafish. University of Colorado, Boulder, CO.
10. (2002). FGF signaling and inner ear development in the zebrafish. 61st annual meeting for the Society for Developmental Biology, Madison, WI.
11. (2002). How the zebrafish got its ears (and other just-so stories), Childrens' Hospital Medical Center, Cincinnati, OH.
12. (2002). How the zebrafish got its ears (and other just-so stories), Medical School, Texas A&M University.
13. (2003). How the zebrafish got its ears (and other just-so stories). Neuroscience Program, Texas A&M University.
14. (2003). "A genetic network controlling induction of the otic placode in zebrafish", NIH.
15. (2006). "The inner ear is not a big truck. It's a series of tubes", Biology

- Department, Texas A&M University – College Station. (Title alludes to Senator Ted Steven’s comments regarding the internet).
16. (2006). “The inner ear is not a big truck. It’s a series of tubes”, University of Texas – Austin. (Title alludes to Senator Ted Steven’s comments regarding the internet).
 17. (2006). “Fgf and Pax-ification of the Zebrafish Inner Ear: From Placode Formation to Sensory Development.”, University of Maryland – College Park.
 18. (2007). “Fgf Signaling Regulates Placode Formation and Sensory-Neural Development in the Zebrafish Inner Ear”, Barcelona, Spain.
 19. (2007), “Zebrafish as a genetic model system for development and disease”, Vet School, Texas A&M University.
 20. (2007), “Fgf signaling coordinates development of sensory hair cells and neurons in the inner ear”, Department of Neuroscience and Behavior, SUNY – Stony Brook.
 21. (2008), “Inner ear development in zebrafish: Genetic regulation of a complex sensory system”, Department of Biology, Harding University.
 22. (2010), “Preplacodal ectoderm vs. neural crest: neighboring cells with opposing needs for a Bmp gradient”, NIH.
 23. (2010), “Induction and early patterning of the zebrafish otic placode”, University of Wisconsin-Madison.
 24. (2010), “Early patterning of the zebrafish inner ear”, Experimental Biology Meeting, Anaheim, CA.
 25. (2011), “Development of zebrafish cranial placodes: How vertebrate embryos make sense”, University of Texas-Austin.
 26. (2013). Mechanisms for stepwise formation and functional diversification of neurons in the inner ear. Gordon Research Conference on Neural Crest and Cranial Placodes, Stonehill College, Easton, MA.
 27. (2013). Formation of mechanosensory cells and neurons in the zebrafish inner ear: Sound mechanisms for development and regeneration. Biology Department, Texas A&M University – College Station, TX.
 28. (2015). “Sound mechanisms for sensory development and regeneration in zebrafish”, Texas Tech University Health Sciences Center – Lubbock, TX.
 29. (2015). “Sound mechanisms for sensory development and regeneration in zebrafish”, University of North Texas – Denton, TX.
 30. (2016). “Sound mechanisms for sensory development and regeneration in zebrafish”, Genetics Program, Texas A&M University – College Station, TX.
 31. (2017). “Sound mechanisms for sensory development and regeneration in zebrafish”, Baylor University, Waco, TX.
 32. (2018). “Sensory development in zebrafish: Repurposing glycolysis to generate lactate as a cell signaling molecule”, Reproductive Biology Program, Texas A&M University, College Station, TX.
 33. (2018). “The Warburg Effect and lactate signaling augment Fgf signaling to promote sensor-neural development in the otic vesicle”, Experimental Biology Conference, San Diego, CA.

Oral Presentations at Meetings (selected from submitted abstracts).

1. **Riley, B. B.**, Appel, B., and Eisen, J. S. (1998). *deltaA* regulates development of the hindbrain and inner ear. International Meeting for Zebrafish

- Development and Genetics, Cold Spring Harbor, NY.
2. **Riley, B. B.** and Chiang, M.-Y. (1998). Genetic analysis of Delta-Notch signaling in zebrafish. Lost Pines Conference, Smithville, TX.
 3. **Riley, B. B.** and Chiang, M.-Y. (1999). Delta-Notch signaling plays multiple roles in hindbrain patterning in the zebrafish. SW regional meeting for the Society for Developmental Biology, Austin, TX.
 4. Phillips, B. T., Fritz, A. and **Riley, B. B.** (2000). Role of *muscle segment homeobox-B (msxB)* in zebrafish neural development. SW meeting for the Society for Developmental Biology, Houston, TX.
 5. **Riley, B. B.**, Evans, A. E. and Chiang, M.-Y. (2001). Analysis of a cell cycle mutant and the role of mitosis in developmental patterning. First Texas Zebrafish Development and Genetics Meeting, San Antonio, TX.
 6. **Riley, B. B.**, Phillips, B. T., Kwak, S.-J., and Heck, R. (2002). Induction and patterning of the otic placode by FGF signaling, International Meeting for Zebrafish Development and Genetics, Madison, WI.
 7. **Riley, B. B.**, Chiang, M.-Y., Heck, R. and Storch, E. (2003). Rhombomere boundaries are Wnt signaling centers that pattern the hindbrain, Second Texas Zebrafish Development and Genetics Meeting, College Station, TX.
 8. Kwak, S.-J., Moorman, S. J. and **Riley, B. B.** (2004). Pax5 regulates neuroblast production in the inner ear and is specifically required for vestibular function. (2004). International Meeting for Zebrafish Development and Genetics, Madison, WI.
 9. Kwon, H.-J. and **Riley, B. B.** (2006). Cooperation between Nodal and Fgf signaling in otic development. Meeting for Zebrafish Development and Genetics, Madison, WI.
 10. Kwon, H.-J., Bhat, N., and **Riley, B. B.** (2008). Dynamic regulation of Bmp regulates early development of cranial placodes. SW meeting for the Society of Developmental Biology, Houston, TX
 11. Kwon, H.-J., Bhat, N., Sweet, E. M., Cornell, R. A., and **Riley, B. B.** (2009). Early requirements for preplacodal ectoderm and sensory organ development. European Meeting for Zebrafish Development and Genetics, Rome, Italy.
 12. Kantarci, H. and **Riley, B. B.** (2013). Mechanisms for stepwise formation and functional diversification of neurons in the inner ear. European Meeting for Zebrafish Development and Genetics, Barcelona, Spain.
 13. Gou, Y., Kwon, H.-J. and **Riley, B. B.** (2014). Characterizing the roles of Sox2 and Sox3 in sensory/neural patterning during zebrafish inner ear development. International Meeting for Zebrafish Development and Genetics, Madison, WI.
 14. Kantarci, H. and **Riley, B. B.** (2016). Glycolysis meets Fgf signaling: The glycolytic enzyme PGK1 is required non-autonomously for Fgf-dependent specification of otic neurons in zebrafish. The Allied Genetics Conference/International Meeting for Zebrafish Development and Genetics, Orlando, FL.

FUNDING

Current

National Institutes of Health, NIDCD R56

“Genetic Analysis of Inner Ear Development in Zebrafish”

Award period: June 2018-May 2019; Total direct costs: \$200,000.

Completed

National Institutes of Health, NIDCD R01

“Genetic Analysis of Inner Ear Development in Zebrafish”

Award period: April 2013-March 2018; Total direct costs: \$1,062,500.

National Institutes of Health, NIDCD R01

“Genetic Analysis of Inner Ear Development in Zebrafish”

Award period: April 2008-March 2013; Total direct costs: \$1,062,500.

National Institutes of Health, NIDCD R01

“Genetic Analysis of Inner Ear Development in Zebrafish”

Award period: April 2003-March 2008; Total direct costs: \$1,137,500.

National Institutes of Health, NIDCD R01

“Genetic Analysis of Inner Ear Development in Zebrafish”

Award period: May 1998-April 2003; Total direct costs: \$412,000.

March Of Dimes

“Mutational analysis of early otic development in the zebrafish”

Award period: June 1997-May 1999; Total direct costs: \$85,306.

Texas Advanced Research Program

“Mutational analysis of inner ear development in the zebrafish”

Award period: January 1996-August 1998; Total direct costs: \$119,000.

TEACHING

Courses Taught:

Introductory Biology (BIOL 113), 1996-2000, 2002.

Developmental Genetics (BIOL 611), 1997-present.

Cell Biology of Zebrafish Development (BIOL 617), 1998.

Embryology (BIOL 344), 2001-2018.

Developmental Biology (BIOL 414), 2018.

Graduate Students Mentored:

1998 - Chenwei Zhu, M.S. E. Savio Mendonsa, M.S.

2004 - Bryan T. Phillips, Ph.D.

2006 - Su-Jin Kwak, Ph.D.

2009 - Adam Stevenson, M.S.

2010 - Bonny Millimaki, Ph.D., Elly Sweet, Ph.D.

2011 - Mahesh Padanad, Ph.D., Shruti Vemarju, Ph.D.

2012 - Neha Bhat, Ph.D., Ryan McCormick, M.S.

2017 - Husniye Kantarci, Ph.D.

2018 - Yunzi Gou, Ph.D. Sarah Salzman, M.S.

Amy Tan, Ph.D. candidate, 2017-present.

Jorden Holland, Ph.D. candidate, 2018.

Jim Kutlowski, Ph.D. candidate, 2018.

Whitney Roberson, Ph.D. candidate, 2018.

Other Graduate Committees:

2000 - Rheka Seshadri, Ph.D., Xian Zhou, M.S. (Statistics).

2001 - Stephen Farmer, M.S., Marie-Christine Ramel, M.S.
 2004 - Zachary Lewis, Ph.D., Marie-Christine Ramel, Ph.D.
 2005 - Jared Burkes, Ph.D., Veronica Martinez, Ph.D.
 2006 - Terasa Prock, Ph.D., Keetan Patel, Ph.D., Mei-Seon Seong, Ph.D.
 2007 - Kenyon Mobely, Ph.D., Tony Kreipe, M. S.
 2008 - Anita Hernandez, Ph.D. , Todd Gruninger, Ph.D., Rebecca Brosseau, M.S.
 Bi-Wei Guo, M.S., Sujita Sukumaran, M.S.
 2009 - Bryan Krock, Ph.D., Elena Repnikova, Ph.D.
 2010 - Lisa Ellis, Ph.D.
 2011 - Kevin Baker, Ph.D., Anand Narayanan, Ph.D., Lynn Dudinsky, M.S.,
 Lauren Menasco-Davis, M.S.
 2012 - Alejandra Gonzales, Ph.D., Kimberly Paczolt, Ph.D., Dana Pappalardo, Ph.D.
 2013 - Charles Goldsmith, Ph.D.
 2014 - Michelle Ramsey, Ph.D., Ana Suescan, Ph.D., Xiaoyan Guo, Ph.D.
 2015 - Robbie Schultz, Ph.D.
 2017 - Ryan McCormick, Ph.D., David Green, M.S. Saurav Hohanty, M.S.
 Jianfeng Lin, Ph.D. candidate, 2015-2017 (left program).
 2018 - Patrick Suess, Ph.D. Thad Whitacker, Ph.D.
 Yi Sun, Ph.D. candidate, 2011-present.
 Kristen Consalvo, Ph.D. candidate, 2017-present.
 Aldrin Lugena, Ph.D. candidate, 2017-present.
 Yu Tang, Ph.D. candidate, 2018.
 Mary (MC) Hannon, Ph.D. candidate, 2018.

SERVICE

Service to the Biology Department:

Biology Animal Care Committee, Chair 2010-present.
 Graduate Recruiting and Admissions Committee
 Chair 2013-present.
 Member 1999-2002, 2012.
 Graduate Advisor, 2010-2011.
 Department Head Search Committee
 Member 2013.
 Chair 2008.
 Faculty Search Committee
 Chair 2007, 2019.
 Member 1997; 2000; 2001.
 Graduate Program Committee, Member 1998, 2003-2009.
 Annual Review Committee (Tenure and Promotion).
 Member 2003-2005, 2010-2012, 2014-2015.
 Chair 2013.
 Committee for Review of Untenured Faculty, Member 2002-2005.
 Departmental Staff Review Committee, Member 2003.
 Awards Committee, Member 2007-present.
 Instructional Enhancement/Equipment Fee (IE/EF) Committee, Chair 2004-2010.
 Seminar Committee, Member 1996 - present.

College and University Service:

Member, College of Science Tenure & Promotion Committee, 2008-2011.
Member, Executive Committee for Genetics Program, 2005-2010.
Chair, Membership Committee for Genetics Program, 2007-2010.
Chair, Faculty Advisory Council (reporting to the Dean), 2003-2008.
Member, Faculty Advisory Council (reporting to the Dean), 1999-2003.
Chair, Awards Committee for Genetics Program, 2006-2007.
Member, Graduate Curriculum Committee for Genetics Program, 2003-2004.
Member, Life Sciences Task Force (inter-collegiate funding program), 2002-2004.
Member, University Lab Animal Care Committee (IACUC), 2000-2003.

Community and State Service:

NSF Biophysics Outreach Program (for K-12 girls, TAMU campus), 2013.
Presentation to Youth Symposium held on TAMU campus, 2003.
Organized Second Texas Zebrafish Development and Genetics Meeting, College Station, TX, 2003.

National/International Service:

Grant Proposal Reviews

Ad hoc reviewer for NIH (including study sections AUD, CDF5, DEV1, DEV2, IFCN-G, MDCN6, ZDC1) **119 grants since 1998.**
Ad hoc reviewer for NSF, **9 grants since 1999.**
Ad hoc reviewer for March Of Dimes, **3 grants since 2002.**
Ad hoc reviewer for ACS, **14 grants since 2004.**
Ad hoc reviewer for the Wellcome Trust (UK,) **7 grants since 2000.**
Ad hoc reviewer for the MRC (UK), **1 grant in 2007.**
Ad hoc reviewer for the BBSRC (UK), **1 grant in 2010.**
Ad hoc reviewer for Dept. of Molecular Biology, Vanderbilt University (intramural grant), 2001.
Ad hoc reviewer for Medical College of Georgia (intramural grant), 2002.
Total: **156 proposals since 1998.**

Evaluations of Faculty for Tenure/ Promotion (extramural), 15 since 2006.

Book Reviews

Scott Freeman, *Biological Science*, 2nd edition, Chapters 21 and 22 (2003).
Campbell & Reese, *Biology*, 8th edition, Chapter 47, (2006).
Fromherz, *Experimental Design & Research in Molecular Biology*, Chapter 9 (2007).

Reviewer for Peer-Reviewed Journals.

BMC Developmental Biology, **2 papers since 2010.**
Development, **23 papers since 2003.**
Developmental Biology, **17 papers since 2003.**
Developmental Dynamics, **29 papers since 1998.**

Developmental Neurobiology, **2 papers since 2009.**
Disease Models & Mechanisms, **2 papers since 2008.**
Elife, **5 papers since 2016.**
European Journal of Morphology, **1 paper in 2001.**
FEBS Lett., **1 paper in 2007.**
Genesis, **1 paper in 2004.**
Genetics, **1 paper in 2007.**
Genome Biology, **1 paper in 2008.**
Genomics, **1 paper in 1997.**
Hearing Research, **1 paper in 2015.**
International Journal of Developmental Biology, **1 paper in 2014.**
Journal of Comparative Neurology, **1 paper since 2018.**
Journal of Experimental Biology, **2 papers since 2011.**
Journal of Molecular Biology, **1 paper in 2006.**
Journal of Neuroscience, **4 papers since 2009.**
Mechanisms of Development, **13 papers since 2003.**
PLoS Biology, **4 papers since 2013.**
PLoS Genetics, **6 papers in 2013.**
PLoS ONE, **60 papers since 2008.**
Proc. Natl. Acad. Sci., **3 papers in 2006.**
Translational Research, **1 paper in 2015.**
Zebrafish, **1 paper in 2015.**
Total: 184 papers since 1998.

Editorial Board Member:

Developmental Dynamics since 2003.
PLoS ONE 2008-2018.