CURRICULUM VITAE
YONG ZHU

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APPOINTMENTS

2008-Present Associate Professor, Department of Biology, East Carolina University, NC, U.S.A
2002-2008 Assistant Professor, Department of Biology, East Carolina University, NC, U.S.A
1993-2001 Research Associate, Marine Science Institute, UT Austin, Texas, U.S.A
1991-1992 Research Scientist, Central Research Institute, Maruha Co, Tsukuba, Japan.
1986-1991 Research Assistant, Graduate School of Agricultural and Life Sciences, Faculty of Agriculture, Tokyo University, Tokyo, Japan

EDUCATION & TRAINING

Degree/ Training	Data Conferred	Institution	Major/Training Area
Postgraduate Training	2005	Cold Spring Harbor Laboratory	DNA microarray course
Postdoctoral Fellow	1993-1995	University of Texas, Marine Science	Biochemistry, Molecular Endocrinology
Postdoctoral Fellow	1991-1992	Maruha Co, Central Research Institute	Biotechnology, Protein Biochemistry
Ph.D	1991	University of Tokyo	Comparative Endocrinology
M.Sc	1988	University of Tokyo	Reproductive & Comparative Physiology
B.Sc	1984	Xiamen University, China	Maine Biology

RESEARCH INTERESTS

Currently, I am focusing studies on two areas: 1) nongenomic actions of steroids, and 2) physiological functions and molecular mechanisms of the prolactin and their receptors in embryogenesis.

TEACHING ACTIVITIES

BIOL 3320 The Principles of Animal Physiology (undergraduate course).
BIOL 5630 Comparative Animal Physiology (for MS and senior undergraduates)
BIOL 6082 Fundamentals of Vertebrate Endocrinology (for PhD/MS candidates)
BIOL 7080 Molecular Endocrinology (graduate course for PhD/MS candidates)
BIOL 7630 Fish Physiology (graduate course for PhD/MS candidates)
BIOL 7890 Current Literatures in Molecular Biology (graduate course)

COMMITTEE SERVICE

Department: Animal Care and Use, Aquatic Research Facilities, Scholarship

FUNDED PROPOSALS

1. Co-PI, NSF 0957148 The role of membrane progestin receptor in progestin-facilitated lordosis, Jan, 2010-Dec, 2010, $100,000
2. PI, NSF IOS-0810856 International Zebrafish Workshop - a Model System for Exchange of Ideas, Integration of Knowledge and Collaboration between Developmental Biologists and Comparative Endocrinologists, April 1, 2008- March 31, 2009, $9,520
3. PI, East Carolina University Faculty Senate Research/Creative Activity Grants Committee "Prolactin Signaling Pathway in Zebrafish Embryogenesis", $20,296, July 1st, 2007- June 30, 2008 (I could not accept the award due to a RDA was awarded at same time).
4. PI, East Carolina University Division of Research & Graduate Studies Research 2007 Development Award Program "Developing zebrafish as a model for studying nongenomic actions of steroids" $35,000, July 1st, 2007-June 30th, 2008.
5. PI, NSF IOS-0315349 "RUI: Production and characterization of membrane steroid receptor subtypes", August 1, 2003-July 31, 2007. $372,511
6. PI, East Carolina University Research/Creative Activity Grant "Localization of novel membrane steroid receptor subtypes". 2002-2003. $18,858.
7. Co-PI, NSF IBN-9980353 "Cloning, sequencing and expression of a steroid membrane receptor" September 1999- August 2001. $98,000.

Pending Proposals:

PI, NSF-IOS 607579018 "To Determine the Identity of Nongenomic Progestin Receptor Based on Meiosis Resumption in Single-Type and Native-Cell Model", August 1, 2011-July 31,2014, $589,098 (Pending).

PI, East Carolina University Research/Creative Activity Grants Committee 2011.

Identifying Non-Genomic Progestin Signaling Pathways For Membrane Progestin Receptor α and β Using Whole Proteomic Analysis, $ 10,000, July 1, 2011-June, 2012 (Pending).

DECLINED PROPOSALS

1. PI, NSF IOS-0818847 Modulating Roles of Prolactin Receptors in Zebrafish Development, August 1, 2008- July 31, 2011, $566,731
2. PI, NIH 1R13HD059291-01Zebrafish – A Model for Comparative and Developmental Endocrinology, April 1, 2008- March 31, 2009, $24,000
3. PI, NIH R01HD057043-01 "Prolactin functions and mechanisms of actions in embryonic development" January 1st, 2008-December 31st 2010, $461,027, 2007, Declined.
4. PI, NSF IOS-0717519 "Molecular mechanisms of prolactin actions in zebrafish embryogenesis", August 1st, 2007- July 31st, 2010, $367,214, Declined.
5. PI, North Carolina Biotechnology Center 2007-BRG-1214 "Developing zebrafish as a model for studying physiological functions and molecular mechanisms of prolactin family" September 1st, 2007-February 28, 2009, $82,486, Declined.
6. PI, NSF IOS-0641491 "In vivo signaling and interaction of membrane progestin receptor subtypes", January 1st, 2007-December 31st, 2009, $487,811, Declined.
7. PI, East Carolina University Division of Research and Graduate Studies 2006 Research Development Grant Program "Preliminary characterization of physiological mechanisms, signal pathways and genes controlled by prolactin during the embryonic development", $40,000, July 1st, 2006-June 30th,2007, Declined.

8. PI, NSF IOS-0614719 "In vivo signaling and interaction of membrane progestin receptor subtypes", August 1st, 2006-July 31st, 2009, $483,899, Declined.
9. PI, NSF IOS-0241306 "RUI: Characterization and Comparison of Novel Membrane Steroid Receptor Subtypes in Zebrafish", January 1st, 2003- December 31st, 2005, $372,511, Declined.

PATENT (Pending) A gene family encoding membrane steroid receptors.

PUBLICATIONS

JOURNAL ARTICLES (REFERRED) PUBLISHED IN INTERNATIONAL JOURNALS

1. Hanna, R.N. and Zhu, Y. (in press). Controls of Meiotic Signaling by Membrane or Nuclear Progestin Receptor in Zebrafish Follicle-Enclosed Oocytes. Molecular and Cellular Endocrinology.
2. Carnevali O, Tosti L, Speciale C, Peng C, Zhu Y, Maradonna F (2010) DEHP impairs zebrafish reproduction by affecting critical factors in oogenesis PLoS One. 5:e10201.
3. Hanna RN, Daly SC, Pang Y, Anglade I, Kah O, Thomas P, Zhu Y. (2010) Characterization and expression of the nuclear progestin receptor in zebrafish gonads and brain. *Biol Reprod* **82:** 112-122.
4. Nguyen, N, **Zhu Y** (2009) Prolactin functions as a survival factor during zebrafish embryogenesis. *Comp Biochem Physiol A Mol Integr Physiol.* **153**:88-93.
5. Hanna R, **Zhu Y** (2009) Expression of membrane progestin receptors in zebrafish (*Danio rerio*) oocytes, testis and pituitary. *General and Comparative Endocrinology* **161**:153-157
6. Nguyen N, Stellwag EJ, **Zhu Y** (2008) Prolactin modulating organogenesis in the vertebrate-recent discoveries in zebrafish. *Comp Biochem Physiol C Toxicol Pharmacol*. **148**:370-380.
7. **Zhu Y**, Hanna RN, Schaaf MJM, Spaink HP, Thomas P (2008) Candidates for membrane progestin receptors in vertebrate gametes—past approaches and future challenges. *Comp Biochem Physiol C Toxicol Pharmacol*. **148**:381-389
8. Summers K, **Zhu Y** (2008) Positive selection on a prolactin paralog following gene duplication in cichlids: adaptive evolution in the context of parental care? *Copeia*, **4**: 872-976.
9. Xie C, Nguyen N, **Zhu Y**, Li Q (2007) Detection of the recombinant proteins in single transgenic microbial cells using laser tweezers and ramen spectroscopy. *Analytical Chemistry* **79:** 9269-9275.
10. **Zhu Y**, Song D, Tran N, Nguyen N (2007) The effects of the members of growth hormone family knockdown in zebrafish development. *General and Comparative Endocrinology* **150:** 395-404.
11. Thomas P, Pang Y, Dong J, Groenen P, Kelder J, de Vlieg J, **Zhu Y**, Tubbs C (2007) Steroid and G Protein Binding Characteristics of the Seatrout and Human Progestin Membrane Receptor Alpha Subtypes and Their Evolutionary Origins. *Endocrinology* **148**: 705-718.
12. Hanna RN, Pang Y, Thomas P, **Zhu Y** (2006) Cell Surface Expression, Progestin Binding and Rapid Nongenomic Signaling of Zebrafish Membrane Progestin Receptors α and β in Transfected Cells. *Journal of Endocrinology* **190**: 247 - 260.
13. Nguyen N, Sugimoto M, **Zhu Y** (2006) Production and purification of recombinant somatolactin β and its effects on melanosome aggregation in zebrafish. *General and Comparative Endocrinology* **145**: 182-187.
14. **Zhu Y**, Stiller JW, Shaner MP, Baldini A, Scemama JL, Capehart AA (2004) Cloning of somatolactin α and β cDNAs in zebrafish and phylogenetic analysis of two distinct somatolactin subtypes in fish. *Journal of Endocrinology* **182**: 509-518.
15. Thomas P, Pang Y, **Zhu Y**, Detweiler C, Doughty K (2004) Multiple rapid progestin actions and progestin membrane receptor subtypes in fish. *Steroids* **69**:567-573.

16. **Zhu Y**, Rice CD, Pang Y, Pace M, Thomas P (2003) Cloning, expression and characterization of a novel membrane progestin receptor and evidence it is an intermediary in meiotic maturation of fish oocytes. *Proc. Natl. Acad. Sci. USA* **100**: 2231-2236.
17. **Zhu Y**, Bond JE, Thomas P (2003) Identification, classification and partial characterization of genes in humans and other vertebrates homologous to a novel fish membrane progestin receptor. *Proc. Natl. Acad. Sci. USA* **100**:2237-2242.
18. Thomas P, **Zhu Y**, Pace M (2002) Progestin membrane receptors involved in the meiotic maturation of teleost oocytes: a review with some new findings. *Steroids* **67**:511-577.
19. **Zhu Y**, Yoshiura Y, Kikuchi K, Aida K, Thomas P (1999) Cloning and phylogenetic relationship of red drum somatolactin cDNA and effects of light on pituitary somatolactin mRNA expression. *General and Comparative Endocrinology*. **113**:69-79.
20. **Zhu Y**, Thomas P (1998) Effects of light on plasma somatolactin levels in red drum (*Sciaenops ocellatus*). *General and Comparative Endocrinology*. **111**:76-82.
21. **Zhu Y**, Thomas P (1997) Studies on the physiology of somatolactin secretion in red drum and Atlantic croaker. *Fish Physiology and Biochemistry*. **17**:271-278.
22. **Zhu Y**, Thomas P (1997) Effects of somatolactin on melanosome aggregation in the melanophores of red drum (*Sciaenops ocellatus*) scales. *General and Comparative Endocrinology* **105**: 127-133.
23. **Zhu Y**, Thomas P (1996) Elevations of somatolactin in plasma and pituitaries and increased α-MSH cell activity in red drum exposed to black background and decreased illumination. *General and Comparative Endocrinology* **101**:21-31.
24. **Zhu Y**, Thomas P (1995) Plasma somatolactin concentrations in Atlantic croaker during gonadal recrudescence. In: "Reproductive Physiology of Fish", Edited by F.W. Goetz and P. Thomas, Published by Fish Symposium 95, Austin, p.42.
25. **Zhu Y**, Thomas P (1995) Red drum somatolactin: development of a homologous radioimmunoassay and plasma levels after exposure to stressors or various backgrounds. *General and Comparative Endocrinology* **99**:275-288.
26. **Zhu Y**, Kobayashi M, Furukawa K, Aida K (1994) Gonadotropin develops sensitivity to maturation-inducing steroid in the oocytes of daily spawning teleosts, tobinumeri-dragonet (*Repomucenus beniteguri*) and Kisu (*Sillago japonica*). *Fisheries Science* **60**:541-545.
27. Asahina K, **Zhu Y**, Aida K, Hagashi T (1991) Synthesis of 17alpha,21-dihydroxy-4-prognene-3,20-dione, 17alpha,20beta-dihydroxy-4-pregnen-3-one, and 17alpha,20beta,21-trihydroxy-4-pregnen-3-one in the ovaries of tobinumeri-dragonet (*Repomucenus beniteguri*), callionymidae teleostei. In: "Reproductive physiology of Fish", Edited by A.P. Scott et al., Published by Fishsymp 91, Sheffield, 80-82.
28. **Zhu Y**, Furukawa K, Aida K (1991) Effects of photoperiod on spawning rhythm in the tobinumeri-dragonet (*Repomucenus beniteguri*). *Nippon Suisan Gakkaishi-Bulletin of the Japanese Society of Fisheries Science*. **57**:2033-2037.
29. **Zhu Y**, Furukawa K, Aida K, Hanyu I (1991) Effects of water temperature and photoperiod on the initiation and termination of autumn spawning season in tobinumeri-dragonet (*Repomucenus beniteguri*). *Nippon Suisan Gakkaishi-Bulletin of the Japanese Society of Fisheries Science* **57**:1871-1876.
30. **Zhu Y**, Furukawa K, Aida K, Hanyu I (1991) Daily spawning rhythm during spring and autumn spawning seasons in the tobinumeri-dragonet (*Repomucenus beniteguri*). *Nippon Suisan Gakkaishi-Bulletin of the Japanese Society of Fisheries Science* **57**:1865-1870.

31. **Zhu Y**, Furukawa K, Aida K, Hanyu I (1989) Annual reproductive rhythm of the tobinumeri-dragonet (*Repomucenus beniteguri*) Callinymidae in Lake Hamana. *Nippon Suisan Gakkaishi-Bulletin of the Japanese Society of Fisheries Science* **55**:591-599.
32. **Zhu Y**, Aida K, Furukawa K, Hanyu I (1989) Development of sensitivity to maturation-inducing steroids and gonadotropins in the oocytes of the tobinumeri-dragonet (*Repomucenus beniteguri*) Callionymidae (teleostei). *General and Comparative Endocrinology* **76**:250-260.

BOOK CHAPTER

33. Thomas P, **Zhu Y,** Pang Y (2003) Current knowledge of the nature and identity of progestin and estrogen membrane receptors in fish gonads. in The Identities of Membrane Steroid Receptors. Watson, C.S. ed. Boston: Kluwer Acaemic Publishers, 131-138.

INVITED PRESENTATIONS

1. The nongenomic progestin receptor for inducing final oocyte maturation. The Second International Symposium for Fish Growth and Reproduction. Satellite Symposium for 16th ICCE Meeting, University of Hong Kong, Hong Kong, 2009 June 20-21.
2. Prolactin modulates organogenesis. International Zebrafish Workshop-A Model for Comparative and Developmental Endocrinology (2008), University of Calgary, Calgary, Alberta, Canada. June 22, 2008
3. Nongenomic Actions of Membrane and Nuclear Progestin Receptors during Final Oocyte Maturation in Zebrafish (2008) 6th International Symposium on Fish Endocrinology, University of Calgary, Calgary, Alberta, Canada. June 23, 2008
4. Nongenomic actions of steroids (2007) *College of Life Science, Zhejiang University, October 15, 2007*
5. Physiological functions and molecular mechanisms of prolactin in zebrafish embryogenesis (2007) *College of Life Sciences, Zhejiang University, China, October 15, 2007*
6. The membrane receptors that mediate nongenomic actions of progestin in zebrafish (2007) *International Conference of Comparative Physiology, Biochemistry, and Toxicology, Hangzhou, China, October 10-14, 2007.*
7. Do members of growth hormone and prolactin superfamily have any physiological roles during the development?- recent discoveries in the zebrafish (2007) *Institute of Aquatic Economic Animals, School of Life Sciences, Zhongshan (Sun- Yat-sen) University, Guangzhou, China. October 6, 2007.*
8. A model for studying nongenomic and genomic actions of steroid –the members of a novel GPCR family and classical progestin receptors in zebrafish (2007) *Institute of Aquatic Economic Animals, School of Life Sciences, Zhongshan (Sun- Yat-sen) University, Guangzhou, China. October 5, 2007.*
9. Identity of maturation-inducing-substance receptors in vertebrates-members of a novel GPCR family or classical steroid receptors? (2007) *Department of Biology, The Chinese University of Hong Kong, Hong Kong, October 4, 2007.*
10. Physiological functions of growth hormones and prolactin superfamily in the development of zebrafish (2006) *Department of Biochemistry and Molecular Biology, The Brody School of Medicine, East Carolina University, March 27, 2006.*
11. Physiological functions of prolactin in the development of zebrafish *(2005), Department of Biology, East Carolina University, November 10, 2005.*

12. DNA microarray-an overview of the latest development in the technology and applications (2005) *East Carolina University Chapter of Sigma Xi, The Third Annual State-of-the-Art Forum, The Brody School of Medicine, October 28, 2005.*
13. Cloning and characterization of membrane progestins receptors in vertebrates. *Department of Physiology, The Brody School of Medicine, East Carolina University, June 16, 2005*
14. Great lessons learned from studies of fish hormones and receptors: discovery of a novel membrane steroid receptor family and potential roles of growth hormone, prolactin and somatolactins during the embryonic development and early growth in vertebrates (2004) *Department of Marine Biosciences, Tokyo University of Marine Science and Technology, Tokyo, Japan, October 22, 2004.*
15. Physiological functions of pituitary hormones with emphases on the roles of somatolactins in fish (2004) *Department of Biomolecular Science, Toho University, Funabashi, Japan, October 22, 2004.*
16. Potential roles of growth hormone, prolactin and somatolactins during the embryonic development and early growth in fish (2004) *Department of Integrated Biosciences, Graduate School of Frontier Sciences, Tokyo University, Kashiwa, Japan, October 21, 2004.*
17. Two most recent developments in studies of hormones and receptors: discovery of membrane steroid receptors and potential roles of growth hormone, prolactin and somatolactins in the early development of vertebrates (2004) *College of Life Sciences, Zhejiang University, Hangzhou, China, October 18, 2004.*
18. Expression of growth hormone, prolactin and somatolactins in the embryonic development and their potential in fish (2004) *International Workshop on Fish Genetics and Development, Wuhan, China, October 11-14, 2004.*
19. Identifying a family of putative membrane progestin receptors in vertebrates in the new genomic era (2002) *35th Annual Meeting Society for the Study of Reproduction, Baltimore, Maryland, USA, July28-31, 2002.*
20. Physiological functions of somatolactin? a fish pituitary hormone after 12 years of studies (2002) *Tokyo University of Fisheries, Tokyo, Japan, March 18, 2002.*
21. Function analyses of promoters and hormonal regulation of putative membrane progestin receptors (mPR) in human and fish models (2002), *an invited presentation at a collaborative meeting with scientists and administrators of N.V. Organon at Department of Biology, East Carolina University, North Carolina, USA, April, 2002.*
22. A novel family of putative membrane progestin receptors in vertebrates (2002*) an invited presentation at collaborative meetings with scientists and administrators of N.V. Organon at 5430 BH Oss, The Netherlands, March 5-12, 2002.*
23. Effects of somatolactin on melanophore aggregation in fish scales (1996) *Third International Symposium on Fish Endocrinology, Hakodate, Japan, May 27-31, 1996.*
24. Studies on physiological roles on somatolactin, a recently discovered pituitary protein in fish (1996) *Department of Aquatic Bioscience, Tokyo University, Tokyo, Japan, April1, 1996.*

ABSTRACTS OF PRESENTATIONS

1. Zhu Y (2011). Identification and Characterization of a Novel-GPCR Like Steroid Family in Vertebrates. Keystone Symposia "Transmembrane Signaling by GPCRs and Channels." January 23-28, 2011. Taos, New Mexico, U.S.A.

2. Hanna RN, Daly SCJ, Zhu Y (2008) Nongenomic Actions of Membrane and Nuclear Progestin Receptors during Final Oocyte Maturation in Zebrafish. 6th International Symposium on Fish Endocrinology, June 22-27, 2008, Calgary, Canada.
3. Nguyen N, **Zhu Y** (2008) Prolactin modulates organogenesis in zebrafish development. 6th International Symposium on Fish Endocrinology, June 22-27, 2008, Calgary, Canada.
4. Hanna R, Daly, SCJ, Zhu Y (2008) Nongenomic actions of membrane and nuclear progestin in zebrafish oocytes. 2nd Annual Research and Creative Achievement Week, East Carolina University, Greenville, NC, March 31-April 4, 2008
5. Nguyen N, Pereira M, **Zhu Y** (2008) Zebrafish potentially serves as a model to study prolactin associated human diseases *4th Aquatic Models for Human Disease Conference, Durham, North Carolina, USA. January 31-February 3, 2008.*
6. Hanna RN, Daly SCJ, **Zhu Y** (2008) Studies of membrane and nuclear progesterone receptors in zebrafish. *4th Aquatic Models for Human Disease Conference, Durham, North Carolina, USA. January 31-February 3, 2008.*
7. Pereira MP, Nguyen N, **Zhu Y** (2008) Expression and distribution of receptors for prolactin, growth hormone and somatolactin in zebrafish. *17th Annual Meeting of the Triangle Consortium for Reproductive Biology. NIEHS, Raleigh, NC. February 23, 2008.*
8. Hanna RN, Daly SCJ, **Zhu Y** (2008) Studies of Nongenomic Actions of Membrane and Nuclear Progestin Receptors in Zebrafish Model. *17th Annual Meeting of the Triangle Consortium for Reproductive Biology. NIEHS, Raleigh, NC. February 23, 2008*
9. Nguyen N, **Zhu Y** (2007) Prolactin- a potential modulator in zebrafish embryogenesis, Triangle Zebrafish Group 2007 Fall Meeting, North Carolina State University, Raleigh, North Carolina, November 8th, 2007
10. **Zhu Y**, Hanna RN, Harris C, Daly SCJ, Broekhuis J, Schaaf MJM, Spaink HP, Thomas P (2007) The membrane receptors that mediate nongenomic actions of progestin in zebrafish. *International Conference of Comparative Physiology, Biochemistry, and Toxicology & 6th Chinese Comparative Physiology Conference, Hangzhou, China, October 10-14, 2007.*
11. **Zhu Y**, Nguyen N, Song D, Tran NT, Rhinehart JE, Susan M. Tobiasson SM, Yang PN (2007) Physiological functions and molecular mechanisms of prolactin in zebrafish embryogenesis. *International Conference of Comparative Physiology, Biochemistry, and Toxicology & 6th Chinese Comparative Physiology Conference, Hangzhou, China, October 10-14, 2007.*
12. **Zhu Y**, Hanna RN, Daly SCJ (2007) Zebrafish oocytes, a model for studying nongenomic actions of progestin. *Model Systems for Infectious Disease and Cancer in Zebrafish, Zebrafish Workshop, Leiden University, Leiden, Netherland, July 16-18, 2007.*
13. **Zhu Y**, Nguyen N, Song D, Tran NT, Rhinehart JE, Tobiasson SM, Yang PN (2007) Physiological functions and signaling pathways of prolactin superfamily during embryogenesis in zebrafish. *Model Systems for Infectious Disease and Cancer in Zebrafish, Zebrafish Workshop, Leiden University, Leiden, Netherland, July 16-18, 2007.*
14. **Zhu Y,** Hanna RN (2007) Expression of membrane progestin receptors α and β in zebrafish. *8th International Symposium on Reproductive Physiology of Fish. Saint Malo, France, June 3-8, 2007.*
15. **Zhu Y**, Hanna RN, Daly SCJ (2007) Characterization and expression of nuclear progestin receptors in zebrafish. *8th International Symposium on Reproductive Physiology of Fish. Saint Malo, France, June 3-8, 2007.*

16. Nguyen N, **Zhu Y** (2007) Functions of the prolactin and its molecular mechanisms in zebrafish embryos. *2007 Southeast Regional Meeting of the Society for Developmental Biology. UNC Friday Center in Chapel Hill, NC on May 4,-6, 2007.*
17. Hanna RN, Pang Y, Thomas P, **Zhu Y** (2007) Progesterone Binding and Expression of Membrane Progestin Receptors α and β in Zebrafish. *16th Annual Meeting of the Triangle Consortium for Reproductive Biology. UNC School of Medicine, Chapel Hill, NC. January 27th, 2007.*
18. Hanna RN, Kalmus GK, **Zhu Y** (2007) Identification and Localization of Nuclear Progesterone Receptor Isoforms in Zebrafish. *16th Annual Meeting of the Triangle Consortium for Reproductive Biology. UNC School of Medicine, Chapel Hill, NC. January 27th, 2007.*
19. Nguyen N, **Zhu Y** (2007) Regulation of growth and development by prolactin through suppression of apoptosis in zebrafish embryos. *16th Annual Meeting of the Triangle Consortium for Reproductive Biology. UNC School of Medicine, Chapel Hill, NC. January 27th, 2007.*
20. Hanna RN, **Zhu Y** (2006) Rapid non-genomic signaling of membrane progestin receptor α and β. *15th Annual Meeting of the Triangle Consortium for Reproductive Biology. UNC School of Medicine, Chapel Hill, NC. February 11, 2006.*
21. **Zhu Y**, Song D, Tran NT, Kalmus GK (2006) Suppression of the gas bladder and reduction of the eyes in prolactin knockdown zebrafish. *15th Annual Meeting of the Triangle Consortium for Reproductive Biology, UNC School of Medicine, Chapel Hill, NC. February 11, 2006.*
22. Hanna RN, **Zhu Y** (2005) Preliminary characterization of zebrafish membrane progestin receptor α and β. *4th International meeting of Rapid Responses to Steroid Hormones, San Diego, CA. June 16-18, 2005.*
23. Nguyen N, **Zhu** Y, Sugimoto M (2005) Producing biological active recombinant zebrafish somatolactin in *E. coli*. *14th ECU Annual Graduate Student Science Research Day, Murphy Center, Greenville, NC. March 7, 2005.*
24. Song D, **Zhu Y** (2005) Physiological functions of somatolactin subtypes in the embryonic development of zebrafish, *Danio rerio*. *14th ECU Annual Graduate Student Science Research Day, Murphy Center, Greenville, NC. March 7, 2005.*
25. Hanna RN, **Zhu Y** (2005) Further characterization of a novel family of membrane progestin receptors. *14th ECU Annual Graduate Student Science Research Day, Murphy Center, Greenville, NC. March 7, 2005.*
26. Song D, Kalmus GK, **Zhu Y** (2005) Expression of somatolactins in the development in zebrafish. *102 Annual Meeting of North Carolina Academy of Science, Meredith College, March 18-20, NC. 2005.*
27. Hanna RN, **Zhu Y** (2005) Nongenomic steroid signaling of membrane progestin receptor α and β. *102 Annual Meeting of North Carolina Academy of Science, Meredith College, March 18-20, NC. 2005.*
28. Hanna RN, **Zhu Y** (2005) Expression and characterization of membrane progestin receptor α and β. *14th Annual Meeting of the Triangle Consortium for Reproductive Biology. UNC School of Medicine, Chapel Hill, NC. February 12, 2005.*
29. **Zhu Y**, Song D, Tran NT, Tobiasson SM, Rhinehart JE, Pereira MP, Nguyen N, Kalmus GK (2005) Maternal transferring and expression of growth hormone, prolactin and somatolactin

in early development of zebrafish. *14th Annual Meeting of the Triangle Consortium for Reproductive Biology, UNC School of Medicine, Chapel Hill, NC. February 12, 2005.*

30. **Zhu Y** (2004) Studies of nongenomic actions of steroids and physiological functions of growth hormone superfamily during early embryonic development using model species, zebrafish and medaka. *6th American Fisheries Society ECU Sub-committee Meeting, Greenville, NC. December 3rd, 2004.*
31. Shaner MP, Lanfranchi PN, Cheng JN, **Zhu Y** (2004) Transcription factors regulating expression of growth hormone superfamily in zebrafish-phase I: computer analyses. *6th American Fisheries Society ECU Sub-committee Meeting, Greenville, NC. December 3rd, 2004.*
32. Nguyen N, Sugimoto M, **Zhu Y** (2004) Producing biological active recombinant zebrafish somatolactins in *E. coli. 6th American Fisheries Society ECU Sub-committee Meeting, Greenville, NC. December 3rd, 2004.*
33. Hanna RN, **Zhu Y**(2004) Further Characterization of Membrane Progestin Receptor Subtypes in Zebrafish. *6th American Fisheries Society ECU Sub-committee Meeting, Greenville, NC. December 3rd, 2004.*
34. Tran NT, Pereira MP, **Zhu Y** (2004) Morphological and Biochemical Changes in the Members of the Growth Hormone Superfamily During Embryonic Development in Fish. *6th American Fisheries Society ECU Sub-committee Meeting, Greenville, NC. December 3rd, 2004.*
35. Tobiasson SM, Rhinehart JE, Song D, **Zhu Y** (2004) Development of Highly Sensitive RT-PCR and Real-Time PCR Methods for Detections of Low Levels of Transcripts of Growth Hormone Superfamily Members in Zebrafish. *6th American Fisheries Society ECU Sub-committee Meeting, Greenville, NC. December 3rd, 2004.*
36. **Zhu Y** (2004) Expression of growth hormone, prolactin, and somatolactins in the embryonic development and their potential in fish. *1st International Workshop on Fish Genetics and Development, Wuhan, China, October 11-14, 2004.*
37. Nguyen N, **Zhu Y** (2004) Production and purification of recombinant somatolactins. *1st International Workshop on Fish Genetics and Development, Wuhan, China, October 11-14, 2004.*
38. **Zhu, Y**, Rice CD, Thomas, P (2002) Identifying a family of putative membrane progestin receptors in vertebrates in the new genomic era. *35th Annual Meeting Society for the Study of Reproduction, Baltimore, Maryland, USA, July28-31, 2002.*
39. Thomas, P, **Zhu, Y** (2002) Discovery of a new family cDNAs encoding putative membrane progesterone receptors in vertebrates. *35th Annual Meeting Society for the Study of Reproduction, Baltimore, Maryland, USA, July28-31, 2002.*
40. **Zhu Y**, Rice CD, Thomas P (2002) Cloning, expression and characterization of a putative membrane progestin receptor in a fish model, spotted seatrout. *84th Annual Meeting of The Endocrine Society, San Francisco, USA, June 19-22, 2002.*
41. **Zhu Y**, Thomas P, Rice CD (2002) Membrane steroid receptors in vertebrates: cloning, expression and characterization. 12th *Triangle Consortium for Reproductive Biology. February, Raleigh, North Carolina, 2002.*
42. **Zhu Y**, Thomas P, Rice CD (2001) Cloning, expression and characterization of a putative membrane progestin receptor in seatrout ovaries. *Second International Meeting for Rapid Responses to Steroid Hormones. Denver, Colorado, June, 2001.*

43. **Zhu Y**, Thomas P, Rice CD (2000) Cloning, expression and characterization of a putative membrane progesterone receptor in spotted seatrout. *Proceedings of 14th International Symposium of Journal of Steroid Biochemistry & Molecular Biology, Recent Advances in Steroid Biochemistry & Molecular Biology, Quebec, Canada, p.115.*
44. **Zhu** Y, Thomas P (1997) Effects of illumination on circulating somatolactin levels in red drum. *Proceedings of 1997 Combined Western/Southwestern Regional Conference on Comparative Endocrinology, American Society of Zoologists. University of Denver, Denver, USA. p.27.*
45. **Zhu** Y, Thomas P (1996) Studies of the physiological role of somatolactin in sciaenid fishes. *Proceedings of the Third International Symposium on Fish Endocrinology. May, 1996, Hakodate, Japan. p.49.*
46. **Zhu Y**, Thomas P (1995) Plasma somatolactin concentrations in Atlantic croaker during gonadal recrudescence. *Proceedings of Fifth International Symposium on the Reproductive Physiology of Fish. July, 1995, Austin, Texas, USA. p.48*
47. **Zhu Y,** Thomas P (1994) Elevation of somatolactin in red drum plasma following transfer to a dark background tank. *Proceedings of the Annual Meeting of the American Society for Zoologist. American Zoologist. 34: p.42A.*
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54. **Zhu Y**, Furukawa K, Aida K (1990) Factors regulating daily spawning time in the tobinumeri-dragonet. *Proceedings of the Annual Meeting of the Japanese Society of Fisheries Science, April, 1990. No. 333, p.87.*
55. Asahina K, **Zhu Y**, Aida K (1990) Biosynthesis of 17alpha,21-dihydroxy-4-pregnen-3,20-dione, 17alpha,20beta-dihydroxy-4-pregnen-3-one, and 17alpha,20beta,21-trihydroxy-4-pregnen-3-one from 17alpha-hydroxyprogesterone in the ovaries of tobinumeri-dragonet, (*Repomucenus beniteguri*), Callionymidae (Teleostei). *Proceedings of the Annual Meeting of the Japan Society for Comparative Endocrinology. No.5, p.11.*

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PROFESSIONAL EXPERIENCE

PROFESSIONAL ORGANIZATIONS

Society for Developmental Biology 2007-
Triangle Zebrafish Research Groups 2007-
Society of the Study of Reproduction 2002-
Endocrine Society 2002-
Triangle Consortium for Reproductive Biology, 2002-
Society For Integrative & Comparative Biology 1994-1995
Asia and Oceania Society for Comparative Endocrinology 1988-1991
The Japan Society of Fisheries Science 1988-1991

AWARDS

2008 Thomas Harriot College of Arts and Sciences Research Award, ECU
2005 Thomas Harriot College of Arts and Sciences Research Award, ECU
1991 The Association for Overseas Technical Scholarship Award, Tokyo, Japan.
1985-1990 Department of Education Oversea Scholarship Award, China.

REVIEW OF GRANT PROPOSALS

NSF, National Science Foundation
USDA, Enhancing Animal Reproductive Efficiency Program
NOAA, National Sea Grant Biotechnology Initiative

REFEREE OF MANUSCRIPTS

Agriculture
Comparative Biochemistry and Physiology
Fish Physiology and Biochemistry
Gene
General and Comparative Endocrinology
Journal of the World Aquaculture Society
Molecular and Cellular Endocrinology
Trends in Endocrinology and Metabolism
Reproductive Biology and Endocrinology
Reproduction Nutrition Development

SESSION CHAIRMAN

1. 2nd International Symposium on Fish Growth & Reproduction, June 21, 2009, Hong Kong
2. Neuroendocrinology Symposium, International Conference of Comparative Physiology, Biochemistry, and Toxicology, Hangzhou, China, October 10-14, 2007
3. International Workshop on Fish Genetics and Development, Wuhan, China, October 11-14, 2004
4. Society for the Study of Reproduction 35th Annual Meeting, Baltimore, June 28-31, 2002.

WORKSHOP ORGANIZER

Chair of Scientific Program Committee and Co-Chair of Organizing Committee
Zebrafish Workshop-A Model for Comparative and Developmental Endocrinology
June 22nd, 2008, University of Calgary, Calgary, Alberta, Canada
A special event coordinated with the 6th International Symposium on Fish Endocrinology

GRADUATES AND UNDERGRADUATES RESEARCH

Thesis Director/Project Supervisor

For past graduate students

Student Name	Period	Degree Awarded	Title of Thesis
Michael P. Shaner	Jan. 2002-Jul. 2003	M.Sc	Cloning of somatolactin α and β cDNA subtypes in zebrafish, *Danio rerio*
Danyin Song	Jan. 2004-Oct. 2005	M.Sc	Expression of GH/PRL/SL and effects of gene expression knockdown on zebrafish (*Danio rerio*) development
Richard N. Hanna	Aug.2003-Aug.2005	M.Sc	Characterization of zebrafish membrane progestin receptor subtypes in zebrafish, *Danio rerio*
Richard N. Hanna	Sep. 2005-Apr. 2009	Ph.D	Studies of nongenomic progestin receptors in zebrafish
Sean C.J Daly.	Sep. 2008-Aug. 2010	M.Sc	Localization and changes of nuclear progesterone receptors in zebrafish oocytes and adjacent follicular cells.
Nhu Nguyen	Aug.2004 Nov. 2010	Ph.D.	Prolactin function in zebrafish development

For undergraduate students

Month/Year	Student Name	Title of Project
Jan. 2002-May 2004	Aarti Patel	Characterization of membrane progestin receptor α
Jun. 2002-Dec. 2002	Vanessa L. Humphrey	Characterization of membrane progestin receptor β
Jun. 2003-Dec. 2003	Shamarra Johnson	Cloning of somatolactin α in zebrafish
Jun. 2002-May 2004	Angela Baldini	Cloning of somatolactin β in zebrafish
Jan. 2003-Aug. 2004	Nhu Nguyen	Production of recombinant somatolactins
Jan. 2004-Dec. 2004	Susan Tobiasson	Changes of prolactin transcript in embryogenesis
Jan. 2003-Aug. 2005	Melina P. Pereira	Production of recombinant GH and prolactin
Aug. 2003-Aug. 2005	Jennifer Rhinehart	Changes of GH mRNA in embryogenesis
Aug. 2004-May 2005	Vi Phuong Vo	Production of recombinant GH receptor
Jan. 2005-Aug. 2005	Walter C. Hodges Jr.	*In Situ* localization and expression of GH
Jun. 2004-May 2006	Ngoc-Tuyen Tran	*In Situ* localization of pituitary hormones in embryos
Aug. 2005-May 2006	Jung Cheng	Cloning of promoter sequences for GH, PRL and SL
Jan.2006-May 2006	Lynnette L. Crabtree	Changes of somatolactin receptors in embryogenesis
Jan. 2006-May 2006	Michael S. Odom	Changes of GHR transcript in embryogenesis
Jan. 2006-Aug. 2007	Nonenipha Phanethay	Changes of PRLR mRNA in the embryogenesis

Aug. 2006-May 2007	Sheila Lee	The functions of prolactin during the development
Jan. 2007-May 2007	Eiichi Murakami	Functions of GH during the development
Jun. 2006-May2008	Pang Nhia Yang	Functions of prolactin during the development
Aug. 2007-Dec 2007	Jennifer D. Overby	Prolactin receptor during zebrafish development
Jan. 2008-May 2008	Sheena Hamilton	Nongenomic actions of nuclear progestin receptor
Jan. 2008-May 2008	Linnea Rush	Prolactin receptor in olfactory development
Aug. 2010-Dec 2010	Brandon Nicholson	Verifying de-follicular procedure for zebrafish oocytes

COMMITTEE MEMBE

For past graduate students

Student Name	Period	Degree Awarded	Thesis Director	Title of Thesis
Roger J. McMurray	Jan. 2002-Jul. 2003	M.Sc	Dr. Alexander K. Murashov	The effect of the selective estrogen receptor modulator LY117018 on peripheral nerve regeneration
Shawn A. Moore	Jan. 2002-Jul. 2004	M.Sc	Dr. Gerhard W. Kalmus	Determination of optimal concentrations of *Cassia occidentalis* used to inhibit histamine release from MC/9 mast cells
Anil Thankappan	Jan. 2003-Aug. 2004	M.Sc	Dr. Thomas J. McConnell	Characterization of oligosaccharide components of MHC class II α and β chains and the role of n-linked glycosylation and its interaction with calnexin in channel catfish
Robin S. Mckeel	Jan. 2003-Jul. 2005	M.Sc	Dr. Mary A. Farwell	*Oreochromis mossambicus*, nitric oxide, and hypoxia
Joshua Murauskas	Aug. 2004-Aug. 2006	M.Sc	Dr. Roger A. Rulifson	Investigating the reproductive migration of adult hickory shad, *Alosa mediocris*
Pengda Liu	Aug. 2004-Dec. 2008	Ph.D	Dr. John Stiller	Functional Sequence in the Yeast Saccharomyces cerevisiae RNA Polymerase II C-Terminal Domain and Phosphorlation Pattern and Binding Proteins Repertoire Studies of the CTD Mutants
Keyren E. Corey	Aug. 2004-Aug.2008	M.Sc	Dr. Thomas J. McConnell	Comparing transfection efficacy of catfish □-actin promoter and CMV promotor in catfish fiberblast Cells
Pierre Le Pabic	Aug. 2003-Feb. 2009	Ph.D	Drs. Stellwag & Scemama	Characterization of Hox 2 Genes in Tilapia

REFERENCES

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