

## CURRICULUM VITAE YONG ZHU

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### APPOINTMENTS

08/01/2015-Present Professor, Department of Biology, East Carolina University, NC, U.S.A  
07/01/2011-Present Minjiang Chair Professor, Xiamen University, Xiamen, China  
10/01/2017-Present Adjunct Professor, Guangdong Ocean University, Zhenjiang, China  
08/01/08-07/31/14 Associate Professor, Department of Biology, East Carolina University, NC, U.S.A  
0/01/02-07/31/08 Assistant Professor, Department of Biology, East Carolina University, NC, U.S.A  
11/1/93-12/31/01 Research Associate, Marine Science Institute, UT Austin, Texas, U.S.A  
04/1/91-10/30/92 Research Scientist, Central Research Institute, Maruha Co, Tsukuba, Japan.  
04/01/86-03/31/91 Research Assistant, Graduate School of Agricultural and Life Sciences, Faculty of Agriculture, Tokyo University, Tokyo, Japan

### EDUCATION & TRAINING

Degree/ Training	Date	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	1988-1991	University of Tokyo	Comparative Endocrinology
M.Sc	1986-1988	University of Tokyo	Reproductive & Comparative Physiology
Language Training	1984-1985	Dalian Foreign Language College, Dalian China	Japanese Language Courses
B.Sc	1980-1984	Xiamen University, China	Marine Biology

**PhD Thesis: Physiological studies on the maturation and spawning in the tobinnumeri-dragonet *Repomucenus beniteguri*.**

### RESEARCH INTERESTS

Currently, I am focusing studies on: 1) Physiological functions and signaling mechanisms of steroid receptors including genomic and nongenomic steroid receptors; 2) molecular signaling and regulatory mechanisms of oocyte maturation and ovulation; 3) Steroid receptor regulated behaviors.

## **TEACHING ACTIVITIES**

BIOL 2130 DE Survey of Human Physiology and Anatomy (undergraduate course)  
BIOL 2131 DE Survey of Human Physiology and Anatomy Lab (undergraduate course)  
BIOL 2131 Survey of Human Physiology and Anatomy Lab (undergraduate course)  
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 6900 Vertebrate Reproductive Biology (graduate course)  
BIOL 7080 Molecular Endocrinology (graduate course for PhD/MS candidates)  
BIOL 7212/7213 Gene Targeting and Knockout Animals (graduate course)  
BIOL 7630 Fish Physiology (graduate course for PhD/MS candidates)  
BIOL 7890 Current Literatures in Molecular Biology (graduate course)

## **COMMITTEE SERVICE**

Co-Chair: BAFER Revision Committee, 2017-  
Chair: Behavioral Mechanisms Position Search Committee, October 2011  
Chair: Biology Seminar Committee (2012-2017)  
Chair: Burroughs Wellcome Lecture Committee (2013-2017)  
Member: Biology Animal Care and Use Committee (2002-present)  
Member: Biology Molecular and Cellular Biologist Search Committee  
Member: Biology Scholarship Committee (2005-2016)  
Member: Biology Personal Committee (2014-2016)  
Member: Aquatic Research Facilities Committee (2002-present)  
Member: Institutional Animal Care and Use Committee (2004-2010)  
Member: Molecular and Cellular Search Committee, Oct-Dec, 2016  
Member: Physiologist Search Committee, November 2011  
Member: Cell Biologist Search Committee, November 2011  
Member: Fisheries Biologist Search Committee, October 2005  
Member: Fish Bioacoustics Biologist Search Committee, November 2004

## **PROFESSIONAL SERVICE**

Editorial board for General and Comparative Endocrinology  
Associate editor for Frontiers in Experimental Endocrinology  
Senior Editor, 2017-2019, General and Comparative Endocrinology-Special Issue for Chinese Comparative Endocrinologists.

## FUNDED PROPOSALS

10. PI, NIH 2R15GM100461-02, Regulation and Functions of Adamts9 During Ovulation, 03/01/2017-02/29/2020, \$426,233.

9. PI, NIH 1R15GM100461-01A1, To Characterize Nongenomic Progesterin Receptors via Knockouts in Zebrafish, 07/01/2013-02/28/2017, \$316,524.

I proposed to generate knockout models for identifying and characterizing nongenomic progesterin receptors, their signaling and functions. I expect to publish 15-30 manuscripts based on those knockout models.

8. PI, North Carolina Biotechnology Center #2012-BRG-1210, Develop a Genetic Model and Procedure for Sterilizing Invasive Vertebrates, 09/01/2012-08/14/2014, \$75,000.

I proposed to generate progesterin receptor knockout models to study infertility. In future, I will apply the technology in control of invasive vertebrate species including Asian carp. So far, we have successfully generated knockout models which female is infertile. The results will be published in 1 or 2 manuscripts.

7. Co-PI, NSF 0957148 RAPID: The role of membrane progesterin receptor in progesterin-facilitated lordosis, Jan, 2010-Dec, 2010, \$100,000.

I suggested the idea to Dr. Cheryl Frye (PI), offered assistance and collaboration, helped in the proposal writing. We proposed to study functions of membrane progesterin receptors in rodent models using a knockdown approach, because rodent is the best model for studying progesterin induced rapid mating or social behaviors. The experimental data have resulted two recent manuscripts.

6. 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.

Because emergence of zebrafish model in endocrinology field, I was invited to chair and organize a special workshop/symposium for 6th International Symposium on Fish Endocrinology. I wrote the grant to support travel and provide honorary for invited speakers, invited prominent scientists in both fields of endocrinology and development biology, chaired and presented our results, which surely promoted the international recognition of ECU and our research group.

5. PI, East Carolina University Faculty Senate Research/Creative Activity Grants Committee "Prolactin Signaling Pathway in Zebrafish Embryogenesis", \$20,296, July 1<sup>st</sup>, 2007- June 30, 2008 (I could not accept the award due to a RDA was awarded at same time).

I proposed to study functions and signaling of prolactin during embryogenesis using morpholino knockdown approach.

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 1<sup>st</sup>, 2007-June 30<sup>th</sup>, 2008.

I proposed to develop zebrafish model for studying nongenomic steroid receptors, in order to compete for external federal funding. Our indefatigable efforts were finally realized when NIH decided to fund the project five years late in 2013.

3. PI, NSF IOS-0315349 “RUI: Production and characterization of membrane steroid receptor subtypes”, August 1, 2003-July 31, 2007. \$372,511.

I proposed to express and characterize steroid binding and nongenomic progestin signaling of membrane progestin receptors in mammalian cell lines. This major funding support and experimental results had resulted 14 manuscripts.

2. PI, East Carolina University Research/Creative Activity Grant “Localization of novel membrane steroid receptor subtypes”. 2002-2003. \$18,858.

I proposed to determine cellular localization of membrane progestin receptors in the oocytes of zebrafish, and to obtain preliminary results for a major federal funding. Parts of results were used for obtaining a NSF funding.

1. Co-PI, NSF IBN-9980353 "Cloning, sequencing and expression of a steroid membrane receptor" September 1999- August 2001. \$98,000.

I was searching a best way to identify novel nongenomic steroid receptor. Dr. Peter Thomas (PI) was the driving force and enthusiastic supporter to keep the project going using other funding sources. Finally, we obtained preliminary results and convinced NSF to fund the project.

## PUBLICATIONS

### Citation Metrics According to Google Scholar

	All	Since 2010
<b>Citations</b>	<b>3073</b>	<b>1056</b>
<b>h-index</b>	<b>24</b>	<b>16</b>
<b>i10-index</b>	<b>39</b>	<b>23</b>

Computed using Google Scholar (01/07/2018).



**JOURNAL ARTICLES (REFERRED) PUBLISHED IN INTERNATIONAL JOURNALS**

44. Yong L, Thet Z, Zhu Y (2017). Genetic editing of the androgen receptor contributes to impaired male courtship behavior in zebrafish. *J, Exp Biol*. Doi; 10.1242/jeb.161596,
43. Liu D, Brewer, MS, Chen S, Hong W, Zhu Y (2017) Transcriptomic Signatures for Ovulation in Vertebrates. *Gen Comp. Endo.* 247:74-86. doi: 10.1016/j.ygcen.2017.01.019.
42. Chen SX, Yang XZ, Deng Y, Huang J, Li Y, Sun Q, Yu CP, Zhu Y, Hong WS (2017) Silver nanoparticles induce oocyte maturation in zebrafish (*Danio rerio*). *Chemosphere*, 170: 51-60. <http://dx.doi.org/10.1016/j.chemosphere.2016.12.016>
41. Hall KM, Weidner DA, Zhu Y, Dayal S, Whitman AA, Schwalbe RA. (2016) Predominant expression of hybrid N-glycans has distinct cellular roles relative to complex and oligomannose N-glycans. *Int. J. Mol. Sci.* 17. pii: E925.
40. Wang C, Liu D, Chen W, Ge W, Hong W, **Zhu Y**, Shi X Chen SX (2016) Progesterin increases the expression of gonadotropins in Pituitaries of Male Zebrafish. *Journal of Endocrinology*. 230:143-56.
39. Zhang YT, Liu DT, Zhu Y, Chen SX, Hong WS (2016) Cloning and olfactory expression of progesterin receptors in the Chinese black sleeper *Bostrichthys sinensis*. *Gen Comp. Endocrinol.* 230-231, 87-102.
38. **Zhu Y.**, Liu, D., Shaner, Z.C., Chen, S., Hong, W., Stellwag, E.J. (2015). Nuclear progesterin receptor (Pgr) knockouts in zebrafish demonstrate role for Pgr in ovulation but not in rapid non-genomic steroid mediated meiosis resumption. *Front Endocrinol (Lausanne)*. 6:37. doi: 10.3389/fendo.2015.00037. eCollection 2015. PMID:25852646.
37. Li G, Feng J, Lei Y, Wang J, Wang H, Shang LK, Liu DT, Zhao H, **Zhu Y**, Wang YQ (2014) Mutagenesis at specific genomic loci of amphioxus *Branchiostoma belcheri* using TALEN method. DOI: 10.1016/j.jgg.2014.02.003. *Journal of Genetic and Genomics*. PMID:24780619. Total Citations: 3
36. Frye CA, Walf AA, Kohtz AS, **Zhu Y** (2014) Progesterone-facilitated lordosis of estradiol-primed mice is attenuated by knocking down expression of membrane progesterin receptors in the midbrain. *Steroid*. 81:17-25. doi: 10.1016/j.steroids.2013.11.009. PMID:24269738. Total Citations: [2](#)
35. Frye CA, Walf AA, Kohtz AS, **Zhu Y** (2013) Membrane progesterin receptors in the midbrain ventral tegmental area are required for progesterone-facilitated lordosis of rats. *Horm Behav*. 64:539-545. doi: 10.1016/j.yhbeh.2013.05.012. PMID:23770270. Total Citations: [4](#)
34. Cánepa MM, **Zhu Y**, Fossati M, Stiller JW, Vissio PG (2012) Cloning, phylogenetic analysis and expression of somatolactin and its receptor in *Cichlasoma dimerus*: Their role in long-term background color acclimation. *Gen Comp Endocrinol*. 176, 52-61. Total Citations: [9](#)
33. Diotel N, Servili A, Gueguen MM, Mironov S, Pellegrini E, Vaillant C, **Zhu Y**, Kah O, Anglade I (2011) Nuclear progesterone receptors are up-regulated by estrogens in neurons and radial glial progenitors in the brain of zebrafish. *PLoS One*. 6(11): e28375. Total Citation: [6](#)
32. Hanna RN and **Zhu, Y** (2011). Controls of Meiotic Signaling by Membrane or Nuclear Progesterin Receptor in Zebrafish Follicle-Enclosed Oocytes. *Molecular and Cellular Endocrinology*. 337:80-88. doi: 10.1016/j.mce.2011.02.004. Total Citations: [17](#)
31. 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. Total Citations: [47](#)

30. Hanna RN, Daly SC, Pang Y, Anglade I, Kah O, Thomas P, **Zhu Y** (2010) Characterization and expression of the nuclear progesterin receptor in zebrafish gonads and brain. *Biol Reprod* 82: 112-122. Total Citations: [38](#)
29. Nguyen N and **Zhu Y** (2009) Prolactin functions as a survival factor during zebrafish embryogenesis. *Comp Biochem Physiol A Mol Integr Physiol.* 153:88-93. Total Citations: [8](#)
28. Hanna R and **Zhu Y** (2009) Expression of membrane progesterin receptors in zebrafish (*Danio rerio*) oocytes, testis and pituitary. *General and Comparative Endocrinology* 161:153-157. Total Citations: [28](#)
27. Nguyen N, Stellwag EJ, **Zhu Y** (2008) Prolactin-dependent modulation of organogenesis in the vertebrate-recent discoveries in zebrafish. *Comp Biochem Physiol C Toxicol Pharmacol.* 148:370-380. Total Citations: [18](#)
26. **Zhu Y**, Hanna RN, Schaaf MJM, Spaink HP, Thomas P (2008) Candidates for membrane progesterin receptors in vertebrate gametes—past approaches and future challenges. *Comp Biochem Physiol C Toxicol Pharmacol.* 148:381-389. Total Citations: [68](#)
25. 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. Total Citations: [3](#)
24. Xie C, Nguyen N, **Zhu Y**, Li Q (2007) Detection of the recombinant proteins in single transgenic microbial cells using laser tweezers and raman spectroscopy. *Analytical Chemistry* 79: 9269-9275. Total Citations: [23](#)
23. **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. Total Citations: [42](#)
22. 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 Progesterin Membrane Receptor Alpha Subtypes and Their Evolutionary Origins. *Endocrinology* 148: 705-718. Total Citations: [153](#)
21. Hanna RN, Pang Y, Thomas P, **Zhu Y** (2006) Cell Surface Expression, Progesterin Binding and Rapid Nongenomic Signaling of Zebrafish Membrane Progesterin Receptors  $\alpha$  and  $\beta$  in Transfected Cells. *Journal of Endocrinology* 190: 247 - 260. Total Citations: [73](#)
20. Nguyen N, Sugimoto M, **Zhu Y** (2006) Production and purification of recombinant somatolactin  $\beta$  and its effects on melanosome aggregation in zebrafish. *General and Comparative Endocrinology* 145: 182-187. Total Citations: [16](#)
19. **Zhu Y**, Stiller JW, Shaner MP, Baldini A, Scemama JL, Capehart AA (2004) Cloning of somatolactin  $\alpha$  and  $\beta$  cDNAs in zebrafish and phylogenetic analysis of two distinct somatolactin subtypes in fish. *Journal of Endocrinology* 182: 509-518. Total Citations: [70](#)
18. Thomas P, Pang Y, **Zhu Y**, Detweiler C, Doughty K (2004) Multiple rapid progesterin actions and progesterin membrane receptor subtypes in fish. *Steroids* 69:567-573. Total Citations: [93](#)
17. **Zhu Y**, Rice CD, Pang Y, Pace M, Thomas P (2003) Cloning, expression and characterization of a novel membrane progesterin receptor and evidence it is an intermediary in meiotic maturation of fish oocytes. *Proc. Natl. Acad. Sci. USA* 100: 2231-2236. Total Citations: [605](#)
16. **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 progesterin receptor. *Proc. Natl. Acad. Sci. USA* 100:2237-2242. Total Citations: [563](#)

15. Thomas P, **Zhu Y**, Pace M (2002) Progesterone membrane receptors involved in the meiotic maturation of teleost oocytes: a review with some new findings. *Steroids* 67:511-577. Total Citations: [104](#)
14. **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. Total Citations: [29](#)
13. **Zhu Y**, Thomas P (1998) Effects of light on plasma somatolactin levels in red drum (*Sciaenops ocellatus*). *General and Comparative Endocrinology*. 111:76-82. Total Citations: [30](#)
12. **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. Total Citations: [9](#)
11. 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. Total Citations: [29](#)
10. **Zhu Y**, Thomas P (1996) Elevations of somatolactin in plasma and pituitaries and increased  $\alpha$ -MSH cell activity in red drum exposed to black background and decreased illumination. *General and Comparative Endocrinology* 101:21-31. Total Citations: [38](#)
9. **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. Total Citations: [6](#)
8. **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. Total Citations: [56](#)
7. **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. Total Citations: [16](#)
6. Asahina K, **Zhu Y**, Aida K, Hagashi T (1991) Synthesis of 17 $\alpha$ ,21-dihydroxy-4-pregnene-3,20-dione, 17 $\alpha$ ,20 $\beta$ -dihydroxy-4-pregnen-3-one, and 17 $\alpha$ ,20 $\beta$ ,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. Total Citations: [2](#)
5. **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. Total Citations: [5](#)
4. **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. Total Citations: [8](#)
3. **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. Total Citations: [13](#)
2. **Zhu Y**, Furukawa K, Aida K, Hanyu I (1989) Annual reproductive rhythm of the tobinumeri-dragonet (*Repomucenus beniteguri*) Callionymidae in Lake Hamana. *Nippon Suisan Gakkaishi-Bulletin of the Japanese Society of Fisheries Science* 55:591-599. Total Citations: [24](#)

1. **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.

Total Citations: [34](#)

### **BOOK CHAPTER**

1. 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 Academic Publishers, 131-138. Total Citations: [2](#)

### **INVITED PRESENTATIONS**

1. Progestin and nuclear progestin receptor regulate ovulatory circuit and metalloproteinases. Nov 3, The University of Hong Kong, Hong Kong, China.
2. Molecular mechanisms for multiple progestin receptors regulated fertility in female zebrafish. The Fifth Zebrafish Research Conference of China-Developmental Genetics and Disease Models, October 29-November 1, 2017, Wuzhen, China.
3. Regulation of oocyte maturation and ovulation in fish. The Eighth Cross-Strait Conference of Mainland China and Taiwan Fish Physiology and Aquacultures, October 22-25, 2017, Xiamen, China.
4. Hormonal regulation and environmental effects of oocyte maturation and ovulation in fish. October 23, College of Environmental Science and Engineering, Gulin University of Technology, Gulin, China
5. Recent development of gene editing and their applications. October 20, Dalian Foreign Language University, Dalian, China.
6. Molecular mechanisms for fertility regulation by multiple progestin receptors in zebrafish. October 12, 2017, College of Fisheries and Life Science, Shanghai Ocean University, Shanghai, China.
7. Molecular mechanisms for fertility regulation by multiple progestin receptors in zebrafish. October 6, Faculty of Science, The University of Macau, Macau, China.
8. Molecular mechanisms for fertility regulation by multiple progestin receptors in Zebrafish. Oct 6, School of Biological Science, The University of Hong Kong, Hong Kong, China.
9. Generation and characterization of zebrafish knockout models for studying functions of genomic and nongenomic progestin receptors. 18<sup>th</sup> International Congress of Comparative Endocrinology, June 4-9, 2017, Chateau Lake Louise, Banff National Park, Alberta, Canada.
10. Molecular Mechanisms for Progesterone Receptor Membrane Component (Pgrmc) Caused Subfertility. June 29-July 3, 2017. 2017 SCBA (Society of Chinese Bioscientists in America)- The 16th International Symposium (2017 SCBA).
11. Generating and characterizing nuclear progestin receptor (Pgr) knockouts in zebrafish. Third North American Society for Comparative Endocrinology Biannual Meeting (NASCE2015) June 21–25, 2015, Ottawa, ON, Canada.
12. Nongenomic Progestin Receptors and Their Signaling in Zebrafish Model. North American Society for Comparative Endocrinology Biannual Meeting (NASCE2013) May 22–25, 2013, Querétaro, México.
13. 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.



14. Prolactin modulates organogenesis. International Zebrafish Workshop-A Model for Comparative and Developmental Endocrinology (2008), University of Calgary, Calgary, Alberta, Canada. June 22, 2008
15. Nongenomic Actions of Membrane and Nuclear Progesterone Receptors during Final Oocyte Maturation in Zebrafish (2008) 6<sup>th</sup> International Symposium on Fish Endocrinology, University of Calgary, Calgary, Alberta, Canada. June 23, 2008
16. Nongenomic actions of steroids (2007) *College of Life Science, Zhejiang University, October 15, 2007*
17. Physiological functions and molecular mechanisms of prolactin in zebrafish embryogenesis (2007) *College of Life Sciences, Zhejiang University, China, October 15, 2007*
18. The membrane receptors that mediate nongenomic actions of progesterone in zebrafish (2007) *International Conference of Comparative Physiology, Biochemistry, and Toxicology, Hangzhou, China, October 10-14, 2007.*
19. 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.*
20. A model for studying nongenomic and genomic actions of steroid –the members of a novel GPCR family and classical progesterone receptors in zebrafish (2007) *Institute of Aquatic Economic Animals, School of Life Sciences, Zhongshan (Sun- Yat-sen) University, Guangzhou, China. October 5, 2007.*
21. 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.*
22. 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.*
23. Physiological functions of prolactin in the development of zebrafish (2005), *Department of Biology, East Carolina University, November 10, 2005.*
24. 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.*
25. Cloning and characterization of membrane progesterone receptors in vertebrates. *Department of Physiology, The Brody School of Medicine, East Carolina University, June 16, 2005*
26. 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 somatotropins 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.*
27. Physiological functions of pituitary hormones with emphases on the roles of somatotropins in fish (2004) *Department of Biomolecular Science, Toho University, Funabashi, Japan, October 22, 2004.*
28. Potential roles of growth hormone, prolactin and somatotropins 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.*

29. 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.*
30. 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.*
31. Identifying a family of putative membrane progesterin receptors in vertebrates in the new genomic era (2002) *35<sup>th</sup> Annual Meeting Society for the Study of Reproduction, Baltimore, Maryland, USA, July 28-31, 2002.*
32. Physiological functions of somatolactin? a fish pituitary hormone after 12 years of studies (2002) *Tokyo University of Fisheries, Tokyo, Japan, March 18, 2002.*
33. Function analyses of promoters and hormonal regulation of putative membrane progesterin 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.*
34. A novel family of putative membrane progesterin 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.*
35. Effects of somatolactin on melanophore aggregation in fish scales (1996) *Third International Symposium on Fish Endocrinology, Hakodate, Japan, May 27-31, 1996.*
36. Studies on physiological roles on somatolactin, a recently discovered pituitary protein in fish (1996) *Department of Aquatic Bioscience, Tokyo University, Tokyo, Japan, April 1, 1996.*

## **ABSTRACTS OF PRESENTATIONS**

1. Nichole J. Carter, Dong Teng Liu, Matthew W. Chilton, Alexandria I. Warren, Yasmene H Odeh, and Yong Zhu. Generate and Characterize Adamts9 knockout zebrafish. SSR (Society for Study Reproduction) 2017 Annual Meeting, Washington DC, July 13-16, 2017.
2. Yong Zhu, Dong Teng Liu, Nichole J. Carter, Xin Jun Wu, Jennifer Lesniak, and Elizabeth L. Ryan. Progesterin receptor-dependent and -independent regulation of metalloproteinases during ovulation in zebrafish. SSR (Society for Study Reproduction) 2017 Annual Meeting, Washington DC, July 13-16, 2017
3. Yong Zhu, Dong Teng Liu, Xin Jun Wu. Generation and Characterization of Zebrafish Knockout Models for studying functions of Genomic and Nongenomic Progesterin Receptors. 18th International Congress of Comparative Endocrinology (ICCE18), Chateau Lake Louise, Alberta, Canada, June 4-9, 2017.
4. Xin Jun Wu, Dong Teng Liu, Yong Zhu. Knocking Out Progesterone Receptor Membrane Components (Pgrmc) Results Subfertility in Female Zebrafish. Endo 2017 (Annual Meeting for Endocrine Society) April 1-4, 2017.
5. Dongteng Liu, Nichole J. Carter, Xinjun Wu, and Yong Zhu. Local positive feedback signaling of progesterone is critical for LH induced ovulation in zebrafish preovulatory oocytes. TCRB (Triangle Consortium for Reproductive Biology)- 26th Annual Meeting - February 25, 2017

6. Xin Jun Wu, Dong Teng Liu and **Yong Zhu**. Knocking Out Progesterone Receptor Membrane Component Family Results in Subfertility in Female Zebrafish. TCRB (Triangle Consortium for Reproductive Biology)-26th Annual Meeting - February 25, 2017.
7. Dongteng Liu, Michael S. Brewer, **Yong Zhu**. Transcriptomic analysis of zebrafish preovulatory follicular cells reveals conserved genes, pathways and biological processes for ovulation in vertebrates TCRB (Triangle Consortium for Reproductive Biology)- 25th Annual Meeting - February 6, 2016
8. Dongteng Liu, Nichole J Carter, Xinjun Wu, **Yong Zhu**. To Determine Ovulatory Circuit in Zebrafish. 2016 TAGC (The Allied Genetics Conference), July 13-17, 2016, Orlando, Florida.
9. **Yong Zhu**, Dongteng Liu, Jun Feng, Zoe C Shaner, Lengxob Yong, Guang Li, Shixi Chen, Wan-Shu Hong, Yiquan Wang, Establishing Genome Engineering Tools for Answering Fundamental Questions in the Fields of Endocrinology, Evolution and Development Using Model and Non-Model Organisms. FASEB Research Conference, Genome Engineering-Cutting-Edge Research Applications, , June 22-27, 2014, Nassau Bahamas.
10. **Yong Zhu**, Nongenomic Progesterone Receptors and Their Signaling in Zebrafish Model. North American Society for Comparative Endocrinology Biannual Meeting (NASCE2013) May 22–25, 2013, Querétaro, México.
11. **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.
12. Hanna RN, Daly SCJ, **Zhu Y** (2008) Nongenomic Actions of Membrane and Nuclear Progesterone Receptors during Final Oocyte Maturation in Zebrafish. 6<sup>th</sup> International Symposium on Fish Endocrinology, June 22-27, 2008, Calgary, Canada.
13. Nguyen N, **Zhu Y** (2008) Prolactin modulates organogenesis in zebrafish development. 6<sup>th</sup> International Symposium on Fish Endocrinology, June 22-27, 2008, Calgary, Canada.
14. Hanna R, Daly, SCJ, Zhu Y (2008) Nongenomic actions of membrane and nuclear progesterone in zebrafish oocytes. 2<sup>nd</sup> Annual Research and Creative Achievement Week, East Carolina University, Greenville, NC, March 31-April 4, 2008
15. 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.*
16. 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.*
17. Pereira MP, Nguyen N, **Zhu Y** (2008) Expression and distribution of receptors for prolactin, growth hormone and somatotactin in zebrafish. *17<sup>th</sup> Annual Meeting of the Triangle Consortium for Reproductive Biology. NIEHS, Raleigh, NC. February 23, 2008.*
18. Hanna RN, Daly SCJ, **Zhu Y** (2008) Studies of Nongenomic Actions of Membrane and Nuclear Progesterone Receptors in Zebrafish Model. *17<sup>th</sup> Annual Meeting of the Triangle Consortium for Reproductive Biology. NIEHS, Raleigh, NC. February 23, 2008*
19. 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 8<sup>th</sup>, 2007

20. **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 progesterin in zebrafish. *International Conference of Comparative Physiology, Biochemistry, and Toxicology & 6th Chinese Comparative Physiology Conference, Hangzhou, China, October 10-14, 2007.*
21. **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.*
22. **Zhu Y**, Hanna RN, Daly SCJ (2007) Zebrafish oocytes, a model for studying nongenomic actions of progesterin. *Model Systems for Infectious Disease and Cancer in Zebrafish, Zebrafish Workshop, Leiden University, Leiden, Netherland, July 16-18, 2007.*
23. **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.*
24. **Zhu Y**, Hanna RN (2007) Expression of membrane progesterin receptors  $\alpha$  and  $\beta$  in zebrafish. *8th International Symposium on Reproductive Physiology of Fish. Saint Malo, France, June 3-8, 2007.*
25. **Zhu Y**, Hanna RN, Daly SCJ (2007) Characterization and expression of nuclear progesterin receptors in zebrafish. *8th International Symposium on Reproductive Physiology of Fish. Saint Malo, France, June 3-8, 2007.*
26. 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.*
27. Hanna RN, Pang Y, Thomas P, **Zhu Y** (2007) Progesterone Binding and Expression of Membrane Progesterin Receptors  $\alpha$  and  $\beta$  in Zebrafish. *16th Annual Meeting of the Triangle Consortium for Reproductive Biology. UNC School of Medicine, Chapel Hill, NC. January 27th, 2007.*
28. 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.*
29. 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.*
30. Hanna RN, **Zhu Y** (2006) Rapid non-genomic signaling of membrane progesterin receptor  $\alpha$  and  $\beta$ . *15th Annual Meeting of the Triangle Consortium for Reproductive Biology. UNC School of Medicine, Chapel Hill, NC. February 11, 2006.*
31. **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.*

32. Hanna RN, **Zhu Y** (2005) Preliminary characterization of zebrafish membrane progesterin receptor  $\alpha$  and  $\beta$ . *4<sup>th</sup> International meeting of Rapid Responses to Steroid Hormones, San Diego, CA. June 16-18, 2005.*
33. Nguyen N, **Zhu Y**, Sugimoto M (2005) Producing biological active recombinant zebrafish somatolactin in *E. coli*. *14<sup>th</sup> ECU Annual Graduate Student Science Research Day, Murphy Center, Greenville, NC. March 7, 2005.*
34. Song D, **Zhu Y** (2005) Physiological functions of somatolactin subtypes in the embryonic development of zebrafish, *Danio rerio*. *14<sup>th</sup> ECU Annual Graduate Student Science Research Day, Murphy Center, Greenville, NC. March 7, 2005.*
35. Hanna RN, **Zhu Y** (2005) Further characterization of a novel family of membrane progesterin receptors. *14<sup>th</sup> ECU Annual Graduate Student Science Research Day, Murphy Center, Greenville, NC. March 7, 2005.*
36. 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.*
37. Hanna RN, **Zhu Y** (2005) Nongenomic steroid signaling of membrane progesterin receptor  $\alpha$  and  $\beta$ . *102 Annual Meeting of North Carolina Academy of Science, Meredith College, March 18-20, NC. 2005.*
38. Hanna RN, **Zhu Y** (2005) Expression and characterization of membrane progesterin receptor  $\alpha$  and  $\beta$ . *14<sup>th</sup> Annual Meeting of the Triangle Consortium for Reproductive Biology. UNC School of Medicine, Chapel Hill, NC. February 12, 2005.*
39. **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. *14<sup>th</sup> Annual Meeting of the Triangle Consortium for Reproductive Biology, UNC School of Medicine, Chapel Hill, NC. February 12, 2005.*
40. **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. *6<sup>th</sup> American Fisheries Society ECU Sub-committee Meeting, Greenville, NC. December 3<sup>rd</sup>, 2004.*
41. Shaner MP, Lanfranchi PN, Cheng JN, **Zhu Y** (2004) Transcription factors regulating expression of growth hormone superfamily in zebrafish-phase I: computer analyses. *6<sup>th</sup> American Fisheries Society ECU Sub-committee Meeting, Greenville, NC. December 3<sup>rd</sup>, 2004.*
42. Nguyen N, Sugimoto M, **Zhu Y** (2004) Producing biological active recombinant zebrafish somatolactins in *E. coli*. *6<sup>th</sup> American Fisheries Society ECU Sub-committee Meeting, Greenville, NC. December 3<sup>rd</sup>, 2004.*
43. Hanna RN, **Zhu Y** (2004) Further Characterization of Membrane Progesterin Receptor Subtypes in Zebrafish. *6<sup>th</sup> American Fisheries Society ECU Sub-committee Meeting, Greenville, NC. December 3<sup>rd</sup>, 2004.*
44. Tran NT, Pereira MP, **Zhu Y** (2004) Morphological and Biochemical Changes in the Members of the Growth Hormone Superfamily During Embryonic Development in Fish. *6<sup>th</sup> American Fisheries Society ECU Sub-committee Meeting, Greenville, NC. December 3<sup>rd</sup>, 2004.*
45. 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. *6<sup>th</sup> American Fisheries Society ECU Sub-committee Meeting, Greenville, NC. December 3<sup>rd</sup>, 2004.*
46. **Zhu Y** (2004) Expression of growth hormone, prolactin, and somatolactins in the embryonic development and their potential in fish. *1<sup>st</sup> International Workshop on Fish Genetics and Development, Wuhan, China, October 11-14, 2004.*
  47. Nguyen N, **Zhu Y** (2004) Production and purification of recombinant somatolactins. *1<sup>st</sup> International Workshop on Fish Genetics and Development, Wuhan, China, October 11-14, 2004.*
  48. **Zhu, Y**, Rice CD, Thomas, P (2002) Identifying a family of putative membrane progesterin receptors in vertebrates in the new genomic era. *35<sup>th</sup> Annual Meeting Society for the Study of Reproduction, Baltimore, Maryland, USA, July28-31, 2002.*
  49. Thomas, P, **Zhu, Y** (2002) Discovery of a new family cDNAs encoding putative membrane progesterone receptors in vertebrates. *35<sup>th</sup> Annual Meeting Society for the Study of Reproduction, Baltimore, Maryland, USA, July28-31, 2002.*
  50. **Zhu Y**, Rice CD, Thomas P (2002) Cloning, expression and characterization of a putative membrane progesterin receptor in a fish model, spotted seatrout. *84th Annual Meeting of The Endocrine Society, San Francisco, USA, June 19-22, 2002.*
  51. **Zhu Y**, Thomas P, Rice CD (2002) Membrane steroid receptors in vertebrates: cloning, expression and characterization. *12<sup>th</sup> Triangle Consortium for Reproductive Biology. February, Raleigh, North Carolina, 2002.*
  52. **Zhu Y**, Thomas P, Rice CD (2001) Cloning, expression and characterization of a putative membrane progesterin receptor in seatrout ovaries. *Second International Meeting for Rapid Responses to Steroid Hormones. Denver, Colorado, June, 2001.*
  53. **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.*
  54. **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.*
  55. **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.*
  56. **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*
  57. **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.*
  58. **Zhu Y**, Thomas P (1994) Development of red drum somatolactin radioimmunoassay. *Proceedings of 1994 Southwestern Regional Conference on Comparative Endocrinology, American Society of Zoologists. Texas Tech University, Texas, USA. p.20.*
  59. Okada T, **Zhu Y**, Kawazoe I, Atsumi M, Kimura S, Aida K (1993) Study on culture tuna-I. Spermatogenesis and changes in steroid hormones concentrations. *Proceedings of the Annual Meeting of the Japanese Society of Fisheries Science, April, 1993. No. 567, p.164.*

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61. Kawazoe I, **Zhu Y** (1992) Application of recombinant tuna growth hormone. *Proceedings of Symposium on Fish Pituitary Hormone Research. Kitasato University, Tokyo, Japan. 1992. p.11.*
62. Kawazoe I, **Zhu Y**, Kimura S, Sakamoto T, Hirano T (1992) Development of a radioimmunoassay using recombinant and natural growth hormone of bluefin tuna. *Proceedings of the Annual Meeting of the Japanese Society of Fisheries Science, April, 1992. No. 401, p.401.*
63. **Zhu Y**, Kobayashi M, Furukawa K, Aida K, Hanyu I (1991) Gonadotropins develops the sensitivity of oocytes to maturation-inducing steroid in tobionumeri-dragonet (*Repomucenus beniteguri*) and kisu (*Sillago japonica*). *Proceedings of the Annual Meeting of the Japan Society for Comparative Endocrinology. p.17.*
64. **Zhu Y**, Furukawa K, Aida K (1990) Factors regulating daily spawning time in the tobionumeri-dragonet. *Proceedings of the Annual Meeting of the Japanese Society of Fisheries Science, April, 1990. No. 333, p.87.*
65. 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 tobionumeri-dragonet, (*Repomucenus beniteguri*), Callionymidae (Teleostei). *Proceedings of the Annual Meeting of the Japan Society for Comparative Endocrinology. No.5, p.11.*
66. **Zhu Y**, Furukawa K, Aida K, Hanyu I (1989) Induction of sensitivity to 17alpha,20beta -dihydroxy-4-pregnen-3-one in mature oocytes of the tobionumeri-dragonet treated with HCG. *Proceedings of the Annual Meeting of the Japanese Society of Fisheries Science, April, 1989. No. 318, p.75.*
67. **Zhu Y**, Aida K, Furukawa K, Hanyu I (1988) Daily spawning rhythm in a small marine fish, the tobionumeri-dragonet (*Repomucenus beniteguri*), Callionymidae. *Proceedings of the Annual Meetings of the Japan Society for Comparative Endocrinology, No.3, p.39*
68. **Zhu Y**, Furukawa K, Aida K, Hanyu I (1988) Spawning rhythms in the tobionumeri-dragonet. *Proceedings of the Annual Meeting of the Japanese Society of Fisheries Science, April, 1988. No. 608, p.160.*
69. **Zhu Y**, Furukawa K, Aida K, Hanyu I (1988) Annual reproductive rhythms in the tobionumeri-dragonet. *Proceedings of the Annual Meeting of the Japanese Society of Fisheries Science, April, 1988. No. 607, p.160.*

## **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*

- 2017 ECU College of Arts and Science, Research Reassignment Award.
- 2015 ECU Division of Research, Economic Development, and Engagement Faculty Reassignment Award
- 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
- American Journal of Physiology
- Biochimica et biophysica Acta
- Comparative Biochemistry and Physiology
- Environmental Science & Technology
- Fish Biology
- Fish Physiology and Biochemistry
- Frontiers in Experimental Endocrinology
- Gene
- General and Comparative Endocrinology
- Journal of the World Aquaculture Society
- Molecular and Cellular Endocrinology
- Trends in Endocrinology and Metabolism
- PLOS ONE
- Reproductive Biology and Endocrinology
- Reproduction Nutrition Development

*SESSION CHAIRMAN*

1. 2<sup>nd</sup> 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 35<sup>th</sup> Annual Meeting, Baltimore, June 28-31, 2002.

*SYMPOSIUM ORGANIZER*

1. Co-Chair and co-organizer, 8<sup>th</sup> Intercongress Symposium of Asia and Oceania Society for Comparative Endocrinology, July 6-18, Sydney, Australia.
2. Organizer, First International Symposium for Chinese Comparative Endocrinologists, July 1-4, Shanghai Ocean University, Shanghai, China
3. Co-Chair and symposium co-organizer, Molecular mechanisms for progesterone receptor Membrane Component (Pgrmc) Caused Subfertility. June 29-July 3, 2017. 2017 SCBA



(Society of Chinese Bioscientists in America)- The 16th International Symposium (2017 SCBA).

4. Co-Chair and symposium co-organizer, 18<sup>th</sup> International Congress of Comparative Endocrinology, June 4-9, 2017, Alberta, Canada
5. Chair and symposium organizer, The North American Society for Comparative Endocrinology. May 22-25, 2013, Querétaro, México
6. Chair of Scientific Program Committee and Co-Chair of Organizing Committee Zebrafish Workshop-A Model for Comparative and Developmental Endocrinology June 22<sup>nd</sup>, 2008, University of Calgary, Calgary, Alberta, Canada  
A special event coordinated with the 6<sup>th</sup> International Symposium on Fish Endocrinology

### GRADUATES AND UNDERGRADUATES RESEARCH

Thesis Director/Project Supervisor

Current Graduate Research Assistant:

DongTeng Liu, PhD candidate, Generating and characterizing zebrafish knockout for nongenomic steroid receptors.

Xinjun Wu, PhD candidate, Generating and characterizing zebrafish knockouts for progesterone receptor membrane components

Zayer Thet, Ms candidate, Generating and characterizing zebrafish knockout models for the androgen receptor.

Paul Bridgers, Ms candidate, Generating and characterizing zebrafish knockouts for somatolactins

Nichole Carter, Ms candidate, Regulation and function for Adamts9 during ovulation.

Current Undergraduate Research Assistants:

Connie Lutz (May 2014-present), Screening zebrafish knockouts for sodium ion channels.

Charles Jauss (Jan 2014-present), Screening and raising zebrafish knockouts.

Lauren Elizabeth (May 2014-present), Screening and raising zebrafish and stickleback knockouts.

Lorreen Agandi (May 2014-present), raising zebrafish knockouts

Current memberships in graduate student's thesis/dissertation committees

Payal Chokshi (MS candidate, Aug 2013-), Analysis of scn5Laa and scn5Lab gene function in zebrafish heart development through TALENs/CRISPR mediated gene knockout.

Yanqiong Zhang (PhD candidate, Aug 2012-), The miRNA pathway in crude oil/dispersant induced reproductive toxicity

Faten Ahmad Taki (PhD candidate, Aug 2013-), MS80: a novel MAPK/sir-2.1/miR-80 network for nicotine-induced disorders.

For past graduate students

Student Name	Period	Degree Awarded	Title of Thesis
Michael P. Shaner	Jan. 2002-Jul. 2003	M.Sc	Cloning of somatolactin $\alpha$ and $\beta$ cDNA subtypes in zebrafish, <i>Danio rerio</i>
Danyin Song	Jan. 2004-Oct. 2005	M.Sc	Expression of GH/PRL/SL and effects of gene expression knockdown on zebrafish ( <i>Danio rerio</i> ) development

Richard N. Hanna	Aug.2003-Aug.2005	M.Sc	Characterization of zebrafish membrane progesterin receptor subtypes in zebrafish, <i>Danio rerio</i>
Richard N. Hanna	Sep. 2005-Apr. 2009	Ph.D	Studies of nongenomic progesterin 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 progesterin receptor $\alpha$
Jun. 2002-Dec. 2002	Vanessa L. Humphrey	Characterization of membrane progesterin receptor $\beta$
Jun. 2003-Dec. 2003	Shamarra Johnson	Cloning of somatolactin $\alpha$ in zebrafish
Jun. 2002-May 2004	Angela Baldini	Cloning of somatolactin $\beta$ 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.	<i>In Situ</i> localization and expression of GH
Jun. 2004-May 2006	Ngoc-Tuyen Tran	<i>In Situ</i> 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 progesterin 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

Nichole J Carter ( Aug 2014-Dec 2015); Leah Elizabeth Taylor (Jan 2015 -April 2016); Connie Rachel Lutz (Aug 2014-Dec 2015). Kaeden M Jordison (Aug 2014-Dec 2015). Christopher S Allen (Jan 2015-Dec 2015). Zayer Thet (Aug 2013-April 2015). Peter A. Soares (2015); Aaron T Hyman (2015); Lorreen A Agandi (2014)

## COMMITTEE MEMBER

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 <i>Cassia occidentalis</i> 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 $\alpha$ and $\beta$ 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	<i>Oreochromis mossambicus</i> , nitric oxide, and hypoxia
Joshua Murauskas	Aug. 2004-Aug. 2006	M.Sc	Dr. Roger A. Rulifson	Investigating the reproductive migration of adult hickory shad, <i>Alosa mediocris</i>
Pengda Liu	Aug. 2004-Dec. 2008	Ph.D	Dr. John Stiller	Functional Sequence in the Yeast <i>Saccharomyces cerevisiae</i> 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 $\alpha$ -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
Yanqiong Zhang	Aug. 2010-April. 2016	Ph.D	Drs. Xiao Pan	Reproductive Toxicity of Crude Oil-Dispersant Mixture in <i>Caenorhabditis elegans</i>
Faten Ahmad Taki	Aug. 2011-April. 2016	Ph.D	Dr. Bohong Zhang	Vectors of transmission: An early nicotine puff triggers a long-lasting microRNA molecular “memory” in <i>C. elegans</i>
Amelia Jean Helms	Aug. 2015-	Ph.D	Dr. Elizabeth T. Ables	Roles of ftz-f1 in germ stem cell and development in <i>Drosophila melanogaster</i>
Joshua P. Mogus	Aug. 2015-April ?	M.Sc	Dr. Krista McCoy	Alpha-1-Fetoprotein (AFP) in vinvlozolin exposure
Elida Rachelle Kirkland	Aug. 2015-April ?	M.Sc	Dr. Yiping Qi	Large T-DNA Insertions and Large Chromosomal Deletions in <i>Arabidopsis thaliana</i>
Thomas Harlan Miller	Jan. 2015-April ?	M.Sc	Dr. Fadi A. Issa	Characterization of Social-Status modulation of Dopamine Pathway Gene Expression in Zebrafish

## REFERENCES

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