

JIANBO YAO

Professor of Animal Biotechnology and Genomics
Division of Animal and Nutritional Sciences
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Education

Ph.D. Molecular Biology	1997	McGill University, Canada
M.Sc. Immunogenetics	1990	Wageningen University, Netherlands
B.Sc. Animal Science	1985	Shanghai Jiao Tong University, China

Professional Experience

Professor (8/2014-present)	Division of Animal and Nutritional Sciences West Virginia University, Morgantown, WV
Associate professor (8/2009-8/2014)	Division of Animal and Nutritional Sciences West Virginia University, Morgantown, WV
Assistant professor (8/2003-8/2009)	Division of Animal and Nutritional Sciences West Virginia University, Morgantown, WV
Associate director (7/2000-7/2003)	Center for Animal Functional Genomics Michigan State University, East Lansing, MI
Post-doctoral fellow (12/1997-6/2000)	Laboratory of Molecular Neurogenetics Montreal Neurological Ins. Montreal, Canada

Research Areas

- Molecular biology and development of bovine oocyte and early embryos
- Molecular genetics and genomics of rainbow trout

Teaching Duties

- AGBI 514, Animal Biotechnology, 4 credit hours, Fall semester (100% responsibility)
- AGBI 610, General Biochemistry, 4 credit hours, Fall semester (25% responsibility)

Professional Activities

- Member of the NE-1027 Multistate Research Project
- Member of the Genetics and Developmental Biology Program, WVU
- Member of the Reproductive Physiology Program, WVU
- Member of the Society for the Study of Reproduction

Awards and Fellowships

- *Benedum Distinguished Scholar Award* (2012), West Virginia University
- *Outstanding Researcher Award* (2007, 2008, 2012), Davis College of Agriculture, Natural Resources and Design, West Virginia University
- *Jeanne Timmins Fellowship* (1999-2000), Montreal Neurological Institute (Canada)
- *CEMARF Fellowship* (1991-1994), McGill University (Canada)

Selected Publications

1. Wang J, Fu L, Koganti PP, Wang L, Hand JM, Ma H and **Yao J**. 2016. Identification and functional prediction of large intergenic noncoding RNAs (lincRNAs) in rainbow trout (*Oncorhynchus mykiss*). **Marine Biotechnology**. DOI 10.1007/s10126-016-9689-5.
2. Salem M, Paneru B, Al-Tobasei R, Abdouni F, Thorgaard GH, Rexroad III CE and **Yao J**. 2015. Transcriptome assembly, gene annotation and tissue gene expression atlas of the rainbow trout. **PLoS ONE**. doi: 10.1371/journal.pone.0121778.
3. Ma H, Weber GM, Hostuttler MA, Wei H, Wang L and **Yao J**. 2015. MicroRNA expression profiles from eggs of different qualities associated with post-ovulatory ageing in rainbow trout (*Oncorhynchus mykiss*). **BMC Genomics**. 16:201. doi 10.1186/s12864-015-1400-0.
4. Wang L, Ma H, Fu L and **Yao J**. 2014. Kpna7 interacts with egg-specific nuclear factors in rainbow trout (*Oncorhynchus mykiss*). **Molecular Reproduction and Development**. 81:1136–1145.
5. Tripurani SK, Wee G, Lee KB, Smith GW, Wang L and **Yao J**. 2013. MicroRNA-212 post-transcriptionally regulates oocyte-specific basic-helix-loop-helix transcription factor, factor in the germline alpha (FIGLA), during bovine early embryogenesis. **PLoS ONE** 8(9): e76114. doi:10.1371/journal.pone.0076114.
6. Wang L, Tripurani SK, Wanna W, Rexroad III CE and **Yao J**. 2013. Cloning and characterization of a novel oocyte-specific gene encoding an F-Box protein in rainbow trout (*Oncorhynchus mykiss*) **Reproductive Biology and Endocrinology** 11:86. doi:10.1186/1477-7827-11-86.
7. Salem M, Leeds TD, Vallejo RL, Palti Y, Liu S, Sabbagh A, Rexroad III CE and **Yao J**. 2012. RNA-Seq identifies SNP markers for growth traits in rainbow trout. **PLoS ONE** 7(5): e36264. doi:10.1371/journal.pone.0036264.
8. Ma H, Hostuttler M, Wei H, Rexroad III CE and **Yao J**. 2012. Characterization of the rainbow trout oocyte microRNA transcriptome. **PLoS ONE** 7(6): e39649. doi:10.1371/journal.pone.0039649.
9. Tripurani SK, Lee KB, Wee G, Smith GW and **Yao J**. 2011. MicroRNA-196a regulates bovine newborn ovary homeobox gene (NOBOX) expression during early embryogenesis. **BMC Developmental Biology** 11:25. doi:10.1186/1471-213X-11-25.
10. Lingenfelter BM, Tripurani SK, Tejomurtula, J, Smith GW and **Yao J**. 2011. Molecular cloning and expression of bovine nucleoplasm 2 (NPM2): a maternal effect gene regulated by miR-181a. **Reproductive Biology and Endocrinology** 9:40. doi: 10.1186/1477-7827-9-40.ss).
11. Tripurani SK, Lee KB, Wang L, Wee G, Smith GW, Lee YS, Latham KE and **Yao J**. 2011. A novel functional role for the oocyte-specific transcription factor newborn ovary homeobox (NOBOX) during early embryonic development in cattle. **Endocrinology** 152:1013–1023.
12. Salem M, Rexroad III CE, Wang W, Thorgaard GH and **Yao J**. 2010. Characterization of the rainbow trout transcriptome using Sanger and 454-pyrosequencing approaches. **BMC Genomics** 11:564. doi:10.1186/1471-2164-11-564.
13. Tripurani SK, Xiao C, Salem M and **Yao J**. 2010. Cloning and analysis of fetal ovary microRNAs in cattle. **Animal Reproduction Science** 120:16–22.

14. Tejomurtula J, Lee KB, Tripurani SK, Smith GW and **Yao J**. 2009. Role of Importin $\alpha 8$, a new member of the importin α family of nuclear transport proteins, in early embryonic development in cattle. *Biology of Reproduction* 81:333–342.
15. Ramachandra RK, Salem M, Gahr S, Rexroad III CE and **Yao J**. 2008. Cloning and characterization of microRNAs from rainbow trout (*Oncorhynchus mykiss*): their expression during early embryonic development. *BMC Developmental Biology* 8:41. doi:10.1186/1471-213X-8-41.
16. Qiu G, Rexroad III CE and **Yao J**. 2008. Identification of a novel germ cell-specific mRNA-like transcript (RtGST-1) predominantly expressed in early previtellogenic oocyte in rainbow trout (*oncorhynchus mykiss*). *Molecular Reproduction and Development* 75:723-730.
17. Bettgowda A, **Yao J**, Sen A, Li Q, Lee K, Kobayashi Y, Patel OV, Coussens PM, Ireland JJ and Smith GW. 2007. JY-1, a novel oocyte-specific gene, regulates granulosa cell function and early embryonic development in cattle. *Proceedings of the National Academy of Sciences U.S.A.* 104:17602-17607.
18. Ramachandra RK, Lankford SE, Weber GM, Rexroad III CE and **Yao J**. 2007. Identification of OORP-T, a novel oocyte-specific gene encoding a protein with a conserved oxysterol binding protein domain in rainbow trout. *Molecular Reproduction and Development* 74:502–511.
19. Lingenfelter BM, Dailey RA, Inskeep EK, Vernon MW, Poole DH, Rhinehart JD and **Yao J**. 2007. Changes of maternal transcripts in oocytes from persistent follicles in cattle. *Molecular Reproduction and Development* 74:265-272.
20. **Yao J**, Ren X, Ireland JJ, Coussens PM, Smith TPL and Smith GW. 2004. Generation of a bovine oocyte cDNA library and microarray: Resources for identification of oocyte-expressed genes potentially important for oocyte/follicular development and early embryogenesis. *Physiological Genomics* 19:84-92.
21. **Yao J** and Shoubridge EA. 1999. Expression and functional analysis of Surf-1 in Leigh Syndrome patients with cytochrome c oxidase deficiency. *Human Molecular Genetics* 8:2541-2549.
22. Zhu* Z, **Yao* J** (*equal contribution), Johns T, Fu K, De Bie I, Macmillan C, Cuthbert AP, Newbold RF, Wang J, Chevrette M, Brown GK, Brown RM and Shoubridge EA. 1998. Surf-1, encoding a factor involved in the biogenesis of cytochrome c oxidase, is mutated in Leigh Syndrome. *Nature Genetics* 20:337-343.