



# Humphrey Hung-Chang Yao, Ph.D.

National Institute of Environmental Health Sciences (NIEHS/NIH)  
Reproductive Developmental Biology Group  
111 TW Alexander Drive, C4-10  
Research Triangle Park, NC 27709, USA  
Phone: 984-287-4004 • E-Mail: [humphrey.yao@nih.gov](mailto:humphrey.yao@nih.gov)  
Researcher ID: B-4795-2010  
ORCID iD: 0000-0003-2944-84-69

## Education and Training

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1984-89	B.S. in Biology	Fu-Jen University, Taipei, Taiwan
1994-97	M.S. in Animal Sciences	University of Illinois at Urbana, USA
1997-99	Ph.D. in Reproductive Biology	University of Illinois at Urbana, USA
2000-02	Post-doctor fellow in Developmental Biology	Duke University, USA

## Positions and Employment

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1992-93	Teaching Assistant	Dept. of Biology, Fu-Jen University, Taipei, Taiwan
1992-93	Freelance Translator	Translate English literature to Chinese
1994-99	Research Assistant	Dept. of Animal Sciences, University of Illinois at Urbana
2000-02	Postdoctoral fellow	Dept. of Cell Biology, Duke University Medical Center
2003-09	Assistant Professor	Dept. of Comparative Biosciences, University of Illinois at Urbana
2004-2010	Adjunct Professor	Dept. of Animal Sciences, University of Illinois at Urbana
2009-2010	Adjunct Professor	Dept. of Cell & Developmental Biology, University of Illinois
2009-2010	Associate Professor	Dept. of Comparative Biosciences, University of Illinois at Urbana
2010-2016	Adjunct Professor	Dept. of Comparative Biosciences, University of Illinois at Urbana
2014-2017	Faculty member	Curriculum in Toxicology, University of North Carolina at Chapel Hill
2010-2018	Principal Investigator	Reproductive Developmental Biology Group, National Institute of Environmental Health Sciences (NIEHS/NIH)
2018-present	Senior Investigator	Reproductive Developmental Biology Group, National Institute of Environmental Health Sciences (NIEHS/NIH)

## Honors, Recognitions, and Outstanding Achievements

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1988	Outstanding Undergraduate in Biology, Department of Education, Taipei, Taiwan
1989	First Place Graduate of the Class of 1989, Fu-Jen University, Taipei, Taiwan
1989	Elected member of the Phi Tau Phi Scholastic Honorary Society
1994-97	University Fellowship, University of Illinois at Urbana-Champaign
1997	A. L. Neumann Outstanding Graduate Award, Dept. of Animal Sciences, Univ. of Illinois
1997-98	List of Teachers Ranked as Excellent, Univ. of Illinois at Urbana-Champaign
1997-98	Constance Campbell Research Award, Reprod. Biology Symposium, Northwestern Univ.
1997-99	Graduate College Travel Fund, University of Illinois at Urbana-Champaign
1997-99	Larry Ewing Memorial Travel Fund, Society for the Study of Reproduction
1999	Trainee Research Award, Society for the Study of Reproduction
2000	Postdoctoral Fellow Travel Fund, USDA National Research Initiative, Washington, DC
2000	Postdoctoral Fellow Travel Fund, Burroughs Wellcome Fund, Research Triangle Park, NC
2001	Lalor Foundation Postdoctoral Fellowship
2001	Clontech-Kenneth Fong Travel Fellowship, Society of Chinese Bioscientists in America
2001	Poster Research Award, Southeast Regional Meeting, Society for Developmental Biology

2001	Poster Research Award, 60 <sup>th</sup> Annual Meeting for the Society for Developmental Biology
2003-2012	Faculty member of Frontier in Reproduction, Woods Hole, MA
2004-06	Basil O'Connor Starter Scholar Research Award, March of Dimes Birth Defects Foundation
2004	Levine Junior Faculty Research Award, College of Vet Med, University of Illinois
2006, 07, 09, 10	List of Teachers Ranked as Excellent by students at University of Illinois
2007	Pfizer Research Excellence Award, College of Vet Med, University of Illinois
2008	New Investigator Award, Society for the Study of Reproduction
2009	Kruger Research Award, College of Vet Med, University of Illinois
2010	Keynote speaker, 17 <sup>th</sup> Ovarian Workshop, Milwaukee, Wisconsin
2011	Young Andrologist Award, American Society of Andrology
2013	Associate Editor for Biology of Reproduction
2014	Best Invited Speaker at the 18 <sup>th</sup> European Testis Workshop, Denmark
2015	Outstanding Reviewer Recognition Award by the Endocrine Society
2016	Vice-Chair for the 2016 Gordon Research Conference on Mammalian Reproduction
2016	Mentor of the Year, Division of Intramural Research, NIEHS/NIH
2017-19	Advisory Board member for the Campion Funds for Fertility Research
2018	Chair for the 2018 Gordon Research Conference on Mammalian Reproduction
2018-22	Advisory Board Member for the State Key Laboratory of Reproductive Biology, Beijing, China
2019	Top Reviewer Award from the journal Biology of Reproduction
2019	Research Award, Society for the Study of Reproduction
2020	NIEHS Director's Merit Award
2020	Chih-Ye Honorable Professorship, State Key Laboratory of Stem Cells and Reproductive Biology, Chinese Academic of Sciences
2020	NIH Director's Award for exemplary scientific discovery and dedication to trainee mentoring
2021	Elected Director, Society for the Study of Reproduction

## Leadership Positions

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2008-2010	Member of the University Senate, University of Illinois at Urbana-Champaign
2008-09	Chair of the Strategic Planning sub-Committee for the Society for the Study of Reproduction
2008-11	Chair of the Public Affair Committee for the Society for the Study of Reproduction
2009-10	Faculty Secretary, College of Veterinary Medicine, University of Illinois
2009-11	Chair of the Public Outreach Subcommittee for the Society for the Study of Reproduction
2017	Chair of the Symposium on Advances in Andrology sponsored by Campion Funds
2018	Co-chair of the 2018 Gordon Research Conference on Mammalian Reproduction
2018-19	Elected Councilor, Assembly of Scientists at NIEHS
2019	Coordinator of the Pre-Congress Course for the American Society of Reproductive Medicine
2019-20	Chair of the Nominating Committee for the Society for the Study of Reproduction
2021	Co-Chair of the 9 <sup>th</sup> International Symposium on the Biology of Vertebrate Sex Determination
2021	Director, elected by the members of the Society for the Study of Reproduction

## Invited Presentations

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1. 2001, Invited speaker, Department of Biology, Fu-Jen University, Taipei, Taiwan
2. 2001, Invited speaker, Department of Physiology, Chung-Kung University, Tainan, Taiwan
3. 2002, Invited speaker, Meeting on Evolution of Developmental Diversity, Cold Spring Harbor, New York

4. 2003, Invited speaker, Cell & Molecular Biology Training Program Symposium, University of Illinois
5. 2004, Invited speaker, Dept. of Neurobiology & Physiology, Northwestern University Medical Center
6. 2004, Invited speaker, Institute of Molecular Biology, Academia Sinica in Taipei, Taiwan
7. 2004, Invited speaker, Department of Biology, Fu-Jen University, Taipei, Taiwan
8. 2004, Invited speaker, Endocrine Grand Round, Department of Medicine, Northwestern University
9. 2005, Invited speaker, Department of Physiology and Biophysics, University of Illinois at Chicago
10. 2005, Invited speaker, the 87<sup>th</sup> Annual Meeting of the Endocrine Society, San Diego
11. 2006, Invited speaker, Institute of Life Sciences, National Taiwan University, Taipei, Taiwan
12. 2006, Invited speaker, Adrenal/Molecular Steroidogenesis 2006, Boston
13. 2006, Invited speaker, Symposium on Toxicant-Induced Alterations in Sexual Differentiation, the Integrated Toxicology and Environmental Health Program of Duke University
14. 2006, Invited speaker, Reproductive Biology Program, Washington State University, Pullman
15. 2006, Invited speaker, International Symposium on Animal Biology of Reproduction, Belo Horizonte, Brazil
16. 2007, Invited speaker, 40<sup>th</sup> Annual Meeting for the Society for the Study of Reproduction, San Antonio
17. 2007, Invited speaker, College of Life Sciences, National Taiwan Ocean University, Keelung, Taiwan
18. 2008, Invited speaker, Dept. of Animal Sciences, Rutgers University, New Brunswick
19. 2008, Invited speaker, Annual Meeting for the Society for the Study of Reproduction, Hawaii.
20. 2008, Invited speaker, Reproductive Tract Biology Gordon Conference, New Hampshire
21. 2008, Invited speaker, International Symposium for Sex Differentiation, Sep 14-16, Fukuoka, Japan
22. 2008, Invited speaker, Institute of Molecular Biology, Academia Sinica in Taipei, Taiwan
23. 2008, Invited speaker, National Yang-Ming University, Taipei, Taiwan
24. 2008, Invited speaker, Reproductive Biology Program, University of Laval, Quebec City, Canada
25. 2008, Invited speaker, Department of Veterinary Sciences, University of Montreal, Montreal, Canada
26. 2009, Invited speaker, Department of Physiology, University of Illinois, Chicago
27. 2009, Invited speaker, 2009 North American Testis Workshop, Philadelphia
28. 2009, Invited speaker, Department of Physiology, Southern Illinois University, Carbondale
29. 2009, Invited speaker, Department of Cell Biology, University of Virginia, Charlottesville
30. 2009, Invited speaker, Molecular Reproduction & Development Conference, Brown University
31. 2009, Invited speaker, College of Life Sciences, National Taiwan Ocean University, Keelung, Taiwan
32. 2009, Invited speaker, Annual meeting for the Society of Reproduction and Fertility, Oxford
33. 2009, Invited speaker, 16<sup>th</sup> International Congress of Comparative Endocrinology, Hong Kong
34. 2010, Invited speaker, Department of Pathology, Baylor College of Medicine, Houston, TX
35. 2010, Invited speaker, Center for Research in Reproductive Physiology, University of Pittsburgh
36. 2010, Keynote Speaker, the 17<sup>th</sup> Ovarian Workshop, Milwaukee, Wisconsin
37. 2010, Invited speaker, 2010 Annual Meeting for the Society for the Study of Reproduction, Milwaukee, WI
38. 2010, Invited speaker, Gordon Research Conference on Reproductive Tract Biology, Andover, NH
39. 2011, Invited speaker, Dept. of Cell & Developmental Biology, University of North Carolina Chapel Hill
40. 2011, Invited Speaker, Laboratory of Molecular Carcinogenesis, NIEHS, NC
41. 2011, Invited speaker, Brown University Superfund Research Program, Providence, RI
42. 2011, Invited speaker, Molecular & Cellular Biology Program, University of Massachusetts, Amherst
43. 2011, Invited speaker, TGFbeta Down Under Conference, Melbourne, Australia
44. 2011, Invited speaker, Institute for Molecular Biosciences, University of Queensland, Australia
45. 2011, Invited speaker, Annual Meeting for American Society of Andrology, Montreal, Canada
46. 2011, Invited speaker, Annual Meeting for the Society for Adaptive Science, Taipei, Taiwan
47. 2011, Invited speaker, Institute of Physiology, National Yang Ming University, Taipei, Taiwan
48. 2011, Invited speaker, Department of Life Sciences, Fu-Jen University, Taipei, Taiwan
49. 2011, Invited speaker, Alfred duPond Hospital for Children, Wilmington, DE
50. 2011, Invited speaker, Brody School of Medicine, East Carolina University, North Carolina
51. 2011, Invited speaker, North American Comparative Endocrinology Symposium, Ann Arbor, MI
52. 2011, Invited speaker, the III Workshop on Mammalian Reproductive Biology, Brazil
53. 2011, Invited speaker, Dept. of Environmental and Molecular Toxicology, North Carolina State Univ.



54. 2011, Invited speaker, Department of Animal Sciences, University of Missouri
55. 2011, Invited speaker, NIH Research Festival, Bethesda
56. 2011, Invited speaker, Endocrine Disruptor Forum, EPA, North Carolina
57. 2011, Alumnus speaker, Illinois Symposium on Reproductive Sciences, Urbana, Illinois
58. 2012, Invited speaker, Triangle Consortium for Reproductive Biology, North Carolina
59. 2012, Invited speaker, Annual meeting for the Endocrine Society, Houston, TX
60. 2012, Invited speaker, Department of Medicine, Fu-Jen University, Taipei, Taiwan
61. 2012, Selected speaker, International Symposium on Biology of Vertebrate Sex Determination, Hawaii
62. 2013, Invited speaker, North Carolina Association for Biomedical Research
63. 2013, Invited speaker, Department of Integrative Biosciences, Texas A&M University
64. 2013, Invited speaker, Laboratory of Cellular & Developmental Biology, NIDDK/NIH
65. 2014, Invited speaker, Symposium in Reproductive Science & Women's Health at University of Kentucky
66. 2014, Invited speaker, McGill Center for the Study of Reproduction Research Day 2014, Montreal
67. 2014, Invited speaker, the 18<sup>th</sup> European Testis Workshop, Elsinore, Denmark
68. 2014, Invited speaker, Gordon Research Conference on Mammalian Reproduction
69. 2014, Invited speaker, Interdisciplinary Toxicology Program, University of Illinois at Urbana-Champaign
70. 2015, Invited speaker, Department of Embryology, Carnegie Institute, Baltimore, MD
71. 2015, Invited speaker, Ovarian Club V: the Asian Pacific Version, Hong Kong
72. 2015, Invited speaker, Curriculum in Toxicology, University of North Carolina at Chapel Hill
73. 2015, Invited speaker, Center for Reproductive Sciences, University of Kansas Medical Center
74. 2015, Invited lecturer, PhD/postgraduate course on 'Disorders of Sex Development- the roles of genes and the environment' Copenhagen, Denmark
75. 2015, Invited speaker, Department of Genetics, Cell Biology, and Development, University of Minnesota
76. 2015, Invited speaker, Annual Meeting for the Society for the Study of Reproduction
77. 2015, Invited speaker, College of Animal Science and Technology, Nanjing Agriculture University, China
78. 2015, Invited speaker, State Key Laboratory of Reprod.



103. 2019, Seminar speaker, Department of Genetics Seminar Series, Univ. of North Carolina at Chapel Hill
104. 2019, Invited speaker, Chinese Academy of Sciences, Beijing, China
105. 2019, Seminar speaker, UT Southwestern Green Center Reproductive Biology Seminar Series
106. 2019, Plenary speaker, the 61<sup>st</sup> annual meeting for the Israel Fertility Association, Israel
107. 2019, Invited speaker, Reproductive Endocrinology and Infertility Program, NICHD/NIH
108. 2019, Chair and speaker, Pre-conference workshop on male reproduction, Annual meeting for the American Society for Reproductive Medicine, Philadelphia, PA
109. 2019, Invited speaker, Reproductive Endocrinology & Infertility Training Program, NICHD/NIH
110. 2019, Plenary speaker, International Conference for Young Researchers in Andrology, Germany
111. 2019, Plenary speaker, 6<sup>th</sup> International Workshop on Molecular Andrology, Giessen, Germany
112. 2019, Plenary speaker, the XIV Ovarian Club Meeting, Paris, France
113. 2019, Plenary speaker, Summit Meeting of Ovarian Diseases & Reproductive Health, Shenzhen, China
114. 2019, Seminar



2004-06	Reviewer for the Lalor Foundation Postdoctoral Fellowship
2006	Special Emphasis Review Panel, NICHD/NIH
2006	Review Panel, IOB-Developmental System Cluster, NSF
2008	Special Emphasis Review Panel, NIEHS/NIH
2008	Environmental Health Sciences Review Committee (EHSRC/NIH)
2009	Special Emphasis Review Panel at NIEHS/NIH
2009	Review Panel, ARRA Grand Opportunities on Bisphenol A, NIH
2009	Review Panel, ARRA Opportunities on Research and Research Infrastructure, NIH
2009	Review Panel, Medical Research Council (MRC) Senior Non-clinical Fellowship, London
2010	Review Panel, KUH-Fellowship Study Session, NIH
2010	Review Panel, Australian NHMRC Project Grant Research Funding Scheme
2010	Review Panel, Australian National Health and Medical Research Council (NHMRC)
2010	Review Panel, Scientific Research in Biomedicine, Fondazione Cariplo, Milan, Italy
2011	External Reviewer, Webb-Waring Biomedical Foundation Research Award, Colorado
2011	Review Panel, Agence Nationale De La Recherche, France
2012-13	Regular member, Cellular, Molecular and Integrative Reproduction Study Session, NIH
2014	Ad Hoc reviewer, Cellular, Molecular and Integrative Reproduction Study Session, NIH
2017	External Reviewer, the Fund for Scientific Research – FNRS in Brussels, Belgium
2020	External Reviewer, the Fund for Scientific Research – FNRS in Brussels, Belgium
2020-present	Regular member, Cellular, Molecular and Integrative Reproduction Study Session, NIH
2022	External reviewer, Agence Nationale de la Recherche, France

### **Editorship**

2006-2017	Board of Reviewing Editors, Biology of Reproduction
2009-2011	Editorial Board, Adaptive Medicine
2009-2011	Editorial Board, Development & Reproduction
2010-2012	Editorial Board, Journal of Drug Metabolism and Toxicology
2010-2014	Faculty Member of the Faculty of 1000
2010-2015	Editorial Board, Endocrinology
2012	Guest Editor for PLoS Genetics
2012-13	Editor, Special Issue for Sexual Development
2013-2017	Associate Editor, Biology of Reproduction
2014-present	Editorial Board, Sexual Development
2019-2020	Board of Reviewing Editors, Biology of Reproduction

### **Journal Ad Hoc Reviewer**

American Journal of Physiology: Endocrinology and Metabolism, Animal Reproduction, Archives of Environmental Contamination and Toxicology, Biology of Reproduction, Biology of Sex Differences, BMC Biology, BMC Developmental Biology, BMC Genetics, Cancer Research, Cell and Tissue Research, Cell Research, Cell Reports, Cell Reports Medicine, Cells, Chromosome Research, Current Biology, Development, Genes, and Evolution, Developmental Biology, Developmental Cell, Developmental Dynamics, Differentiation, eLife, Endocrinology, Environmental Health Perspectives, Experimental Biology and Medicine, Experimental Cell Research, FASEB Journal, Federation of European Biochemical Societies Journal, Frontiers in Biology, Frontiers in Cellular & Developmental Biology, Gene Expression Pattern, Genesis, Histology and Histopathology, Human Reproduction, International Journal of Andrology, International Journal of Urology, Journal of Andrology, Journal of Assisted Reproduction and Genetics, Journal of Clinical Endocrinology & Metabolism, Journal of Clinical Investigation, Journal of Clinical Medicine, Journal of Endocrinology, Journal of Experimental Zoology, Mechanisms of Development, Molecular & Cell Biology, Molecular & Cellular Endocrinology, Molecular Endocrinology, Molecular Reproduction & Development, Nature, Nature Cell Biology, Nature Communications, New England Journal of Medicine, Oncogene, PLoS Biology, PLoS Genetics, PLoS One, PNAS, Reproduction,



Reproduction, Fertility, and Development, Reproductive Biology & Endocrinology, Science, Science Advances, Scientific Reports, Sexual Development, Toxicology and Applied Pharmacology, Toxicology Science, Trends in Endocrinology and Metabolism

## Committee Services

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### International and National:

- 2004-11 Advisor for the Trainee Affair Committee, Society for the Study of Reproduction (SSR)
- 2005-08 Newsletter Editor for the Society for the Study of Reproduction
- 2005-10 Member of the Public Affair Committee for the Society for the Study of Reproduction
- 2008-09 Chair of the Public Affair Subcommittee for the Strategic Planning Committee for the SSR
- 2008-13 Member of the Program Committee for the Society for the Study of Reproduction
- 2008-11 Chair of the Public Affair Committee for the Society for the Study of Reproduction
- 2009-11 Chair of the Public Outreach Subcommittee for the Society for the Study of Reproduction
- 2009-11 Society for the Study of Reproduction representative to the FASEB Board of Directors
- 2011-12 Member of the Membership Committee for the Society for the Study of Reproduction
- 2012-15 Member of the Annual Meeting Steering Committee for the Endocrine Society
- 2012-14 Member of the Diversity Committee for the American Society of Andrology
- 2013-19 Member of the Publication Committee for the Society for the Study of Reproduction
- 2014-15 Member of the Program Committee for the Society for the Study of Reproduction
- 2014-16 Member of the Award Committee for the Society for the Study of Reproduction
- 2016-19 Advisory Board Member for the Campion Fund, the Leppert Foundation
- 2017 Chair for the Symposium on Advances in Andrology: the Basic Science Behind Fertility sponsored by Campion Funds.
- 2018 Co-chair of Gordon Research Conference on Mammalian Reproduction
- 2018-20 Member of the Nominating Committee for the Society for the Study of Reproduction
- 2019-20 Chair of the Nominating Committee for the Society for the Study of Reproduction
- 2019-20 Executive member of the Program Committee for the Society for the Study of Reproduction
- 2021 Chair of the 9<sup>th</sup> International Symposium on the Biology of Vertebrate Sex Determination
- 2020-22 Member of the Advisory Board for European Human Gonad Development Cell Atlas Consortium
- 2020-2021 Member of the Virtual Education Committee for the Society for the Study of Reproduction
- 2021-2023 Director, Society for the Study of Reproduction

### At NIEHS and NIH

- 2011 Section Chair for 2011 NIH Research Festival
- 2011 & 12 Mentor of NIH Summer Internship Program
- 2011-13 Committee member of Animal Care and Use Committee (ACUC)
- 2012-present Committee member of NIEHS Scholar Connect Program
- 2013-14 Reviewer for the NIH FARE Award
- 2015-16 Search Committee member for Deputy Chief of Comparative Medicine Branch
- 2015-present Member of NIH Developmental Biology Special Interest Group
- 2016-present Member of NIH Single-Cell Genomics Special Interest Group
- 2016 Search Committee member for Deputy Director of the Division of Intramural Research
- 2017-19 Member of the Stadtman Search Committee (Developmental Biology)
- 2018 Member of the Search Committee for tenure track investigator at NIEHS
- 2018-19 Councilor, Assembly of Scientists at NIEHS
- 2018-19 Member of the Committee for Laboratory Renovations
- 2019 Member of the Search Committee for Administrative Officer for Division of Intramural Research

2019 Member of the Search Committee for Staff Scientist in Stem Cell Biology Group  
 2020 Reviewer for NIEHS Cross-Division Faculty Proposals  
 2020 Member of the Search Committee for tenure track investigator at NIEHS  
 2020-present Member of the Animal Care and Use Committee (ACUC)  
 2021 Reviewer for NIEHS Cross-Division Faculty Proposals  
 2022 Member of the Steering Committee for Diversity IRTA Program  
 2022 Member of the Post-doctoral Recruiting Committee  
 2022 Member of Electronic Lab Notebook Committee  
 2022 Member of NIH-Georgetown Graduate Partnership Program Admission Committee  
 2022 Chair of the Staff Scientist Search Committee at NIEHS

### **At University of Illinois:**

2003-2004 Search Committee for the candidates for Post-Genomics Initiative  
 2003-2010, Organizing Committee for the Fields Lectureship, University of Illinois  
 2004-2007, Research Advisory Committee, College of Veterinary Medicine, University of Illinois  
 2004, Name Change Committee, Department of Comparative Biosciences, College of Vet Med  
 2005, Steering committee for the Translation Research Graduate Program, College of Vet Med  
 2006, Search Committee for the Director for the Mouse Transgenic Facility  
 2006-07, Mentor for the International Student Mentoring Program (INTERLINK)  
 2006, Search Committee for the Chair for the Comparative Bioscience Department, College of Vet Med  
 2007, Search Committee for the Neurobiologist position at Comparative Biosciences, University of Illinois  
 2007-09, Ad hoc Teaching Evaluation Committee, Veterinary Bioscience, University of Illinois  
 2008-2010, University Senate, University of Illinois  
 2008-2010, General University Policy Committee, University Senate, University of Illinois  
 2008-10, Occupational Health and Safety Committee, College of Veterinary Medicine, University of Illinois  
 2008-10, Safety Committee, Dept. of Veterinary Biosciences, University of Illinois  
 2009-10, Faculty Secretary, College of Veterinary Medicine, University of Illinois  
 2009-2010, Awards and Scholarships Committee, College of Veterinary Medicine, University of Illinois  
 2009-2010, Research Advisory Committee, College of Veterinary Medicine, University of Illinois

### **Graduate Thesis Committee member at University of Illinois (excluding own students):**

1. 2004, Ph.D. thesis committee for Alex Rivera, Dept. of Animal Sciences
2. 2004, Ph.D. thesis committee for Holly Nye, Dept. of Cell and Developmental Biology
3. 2004-2007, Ph.D. thesis committee member for Tingxia Guo, Dept. of Cell and Developmental Biology
4. 2004-2008, Ph.D. thesis committee member for Carla Morrow, Dept. of Comparative Biosciences
5. 2004-2006, M.S. thesis committee for Anand Panimaya, Dept. of Comparative Biosciences
6. 2004-2010, Ph.D. these committee for David Zimmerman, Dept. of Cell & Developmental biology
7. 2004, Ph.D. these committee for Mo Cheng, Dept. of Cell & Developmental biology
8. 2005-2010, Ph.D. thesis committee for Yuying Wang, Dept. of Cell & Developmental Biology
9. 2006-2008, Ph.D. thesis committee for Shawn Breen, Dept. of Animal Sciences
10. 2006-2007, M.S. thesis committee for Matt Wuchter, Dept. of Veterinary Clinical Medicine
11. 2006-2010, Ph.D. thesis committee for Bongki Kim, Dept. of Animal Sciences
12. 2006-2007, M.S. thesis committee for Stacey Lofgren, Dept. of Animal Sciences
13. 2006-2007, M.S. thesis committee for Lauren Storm, Dept. of Comparative Biosciences
14. 2006-2009, Ph.D. thesis committee for Amrita Das, Dept. of Comparative Biosciences
15. 2006-2009, Ph.D. thesis committee for Mary Law, Dept. of Comparative Biosciences
16. 2007-2008, M.S. thesis committee for Rebekah Weck, Dept. of Comparative Biosciences
17. 2007, Ph.D. thesis committee for Tessie Paulose, Dept. of Comparative Biosciences



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NIH/NIEHS/DIR Zhao (Trainee at NIEHS) 1/1/2017-12/31/2018  
 Title: Intramural Research Innovative Research Award, NIEHS/NIH  
 Role: Mentor

1K99HD081204-01 Clement (Trainee at NIEHS) 8/01/2014- 7/31/2019  
 Title: Mechanisms of a Novel Actin Related Protein in Male Gametes Ensuring Fertility  
 Role: Co-mentor

1K99ES021737-01A1 Burns (Trainee at NIEHS) 7/1/2015-6/30/2017  
 Title: Endometriosis and Environmental Endocrine Disrupting Chemical Exposure  
 Role: Co-mentor

### **US Federal Funding before Joining NIEHS in 2010**

T32 HD007028 Sherwood (PI) 07/01/2003-04/30/2006

Title: Program of Research Training in Reproductive Biology  
 Role: Preceptor

R01 HD046861 Yao (PI) 01/1/2005-11/30/2010  
 (Renewal in 2010 was awarded a score of 16 or 4 percentile. Renewal was withdrawn as a result of taking a position at NIEHS)  
 Title: Unveil a Novel Pathway in Mammalian Ovary Development  
 Role: PI

F31 HD054330 Joseph (Doctoral Trainee) 07/01/2006-06/30/2008  
 Title: Novel Signaling Molecules in Wolffian Duct Development and Differentiation  
 Role: co-PI and mentor

T32 ES07326 Schantz (PI) 1/1/2009-12/31/2013  
 Research Training Program in Environmental Toxicology  
 Role: Preceptor

R01 HD059661 Yao (PI) 9/30/2009-8/31/2011  
 Title: Cell Fate Determination in Fetal Testis  
 Role: PI (This grant was transferred to Dr. Paul Cooke after appointment at NIEHS)

P20 ES018163 Schantz (PI) 2/15/2010-2/14/2013  
 Title: Novel Methods to Assess Effects of Bisphenol A & Phthalates on Child Development  
 This is a formative grant funded by both NIEHS and US EPA for future submission for the Children's Environmental Health and Disease Prevention Research Center  
 Role: Co-Investigator (switched to consultant after the appointment at NIEHS)

USEPA RD834593 Schantz (PI) 2/15/2010-2/14/2013  
 Title: Novel Methods to Assess Effects of Bisphenol A & Phthalates on Child Development  
 This is a formative grant funded by both NIEHS and US EPA for future submission for the Children's Environmental Health and Disease Prevention Research Center  
 Role: Co-Investigator (switched to consultant after the appointment at NIEHS)

### **State and Private Funding**

1. Lalor Foundation Post-doctoral Research Grant, 2001-2002, \$60,000, PI  
Title: Battle of the Sexes: Decisive Roles of Meiotic Germ Cells in Sex Determination of Mammalian Gonads
2. University of Illinois Campus Research Board Award, 2003-2004, \$20,000, PI  
Title: Identification of a Novel Pathway for the Development of Mammalian Ovary
3. Veterinary Medicine Research Funds, University of Illinois, 2003-2004, \$20,000, PI  
Title: Involvement of WNT4/noncanonical Pathway in the Development of Mammalian Ovary
4. Starter Scholar Research Funds, March of Dimes Birth Defect Foundation, 2004-2006, \$150,000, PI  
Title: Identification of a Novel Pathway in Mammalian Ovary Development

### **Didactic Teaching Records**

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#### **Workshops**

2015, 2017, 2020, 2022: Instructor for the Workshop on "How to Deliver a Knockout Scientific Presentation" at NIEHS

2020: Instructor for the Workshop on "How to Write a Scientific Manuscript" at NIEHS

#### **Courses taught at University of Illinois**

Reproductive Biology (ANSC331, 431, & 531), Advanced Endocrinology (MCB512), Developmental Biology (MCB410), Histology (VM603), Human Reproduction (MCB190 & 290)

#### **Course Coordinator**

VM603, Structures and Functions, First Year Curriculum for Veterinary Medicine, University of Illinois

### **Teaching Records and Accomplishment**

1. Teaching Assistant (anatomy & histology), 1992-93, Biology Dept, Fu-Jen University, Taipei, Taiwan
2. Teaching Assistant (reproductive biology), 1997-98, Animal Sciences, University of Illinois at Urbana-Champaign, on the List of Teachers Ranked as Excellent.
3. Lecturer (Avian Physiology & Reproductive Biology), 1995-98, Animal Sciences, University of Illinois at Urbana-Champaign, on the List of Teachers Ranked as Excellent.
4. Lecturer (Advanced Physiology, Discovery Course, and Molecular Endocrinology), 2003-2009, Reproductive Biology Training Program, University of Illinois at Urbana-Champaign
5. Invited Lecturer (Integrative Biology: Development, Immunity, and Cancer), 2004-2009, University of Illinois at Chicago
6. Teachers Ranked as Excellent by Students at University of Illinois (Advanced Endocrinology), Fall, 2006
7. Teachers Ranked as Excellent by Students at University of Illinois (Advanced Reproductive Biology), Spring, 2007
8. Teachers Ranked as Excellent by Students at University of Illinois (Advanced Reproductive Biology), Spring, 2009
9. Teachers Ranked as Excellent by Students at University of Illinois (Histology), Spring, 2010
10. Faculty member of Frontier in Reproduction, 2003-2012, Marine Biology Laboratory, Woods Hole, MA

## Workshops on Grant Writing, Manuscript Preparation, and Public Presentation

### **I have held such workshop at:**

NIEHS (2015 to present), Fu-Jen University in Taiwan (2016), Tsinghua University in China (2017), Chinese Academy of Sciences (2017), US Environmental Protection Agency (2021), the 6<sup>th</sup> Annual US Developmental Origins of Health and Disease Society (2022),

## **Mentoring Records**

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### High School Students

1. Tanika Bantukul; 2014 and 2015; Currently a senior at Georgia Institute of Technology
  - NIH Summer Internship: Best poster presentation winner (high school category)
2. Neil Shah; 2016; Currently a junior at University of North Carolina at Chapel Hill
  - NIH Summer Internship: Best poster presentation winner (high school category)
  - Semifinalist, 2016 Siemens Competition in Math, Science, and Technology

### Undergraduates

1. Lilian Sung; 2006-07; Currently a resident in neurobiology at University of Chicago Medical Center
2. Jessica Tomaszewski; 2004-2005; Currently a senior zoo manager at Brookfield Zoo in Chicago  
Howard Hughes Undergraduate Award 2004
3. Yasmin Crespo-Mejias; 2011 &12; Currently a medical student at University of Puerto Rico  
NIH Undergraduate Scholarship Award 2013 (**Under-represented minorit** )
4. Malcolm Richbourg; 2012-13; NIEHS Scholar Connect Program Fellow; Currently a graduate student at Liberty University, NC (**Under-represented minorit** )
5. Iris Salswach Cadena; 2019-2020; NIEHS Scholar Connect Program Fellow from NC State University  
Outstanding Scholar Award from the NIEHS Scholar Connect Program, (**Under-represented minorit** )

### Master Students

1. Kirsten Holthusen, M.S., 2003-2006. Current position: Research Technician at Rosalind Franklin University, Chicago
  - Co-chair for the Sex Determination Session, SSR annual meeting at Omaha, 2006
2. Avenel Joseph, M.S., 2004-2006. Current position: FASS/AAAS Congressional Fellow, DC (**Under-represented minorit** )
  - NIEHS Interdisciplinary Environmental Toxicology Scholar 2005
  - NIEHS Toxicology Training Grant Predoctoral fellowship 2003-2005
  - SSR Larry Ewing Memorial Trainee Grant 2005
  - SSR Lalor Foundation Travel/Merit Award 2005
  - UIUC Reproductive Biology Training Program Travel Award 2005



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- Billie Field Travel Award, 2007, 2008, 2009
- SSR Lalor Foundation Merit Fellowship, 2007, 2008, 2009
- SSR Trainee Research Award Finalist, 2007
- SSR Larry Ewing Memorial Trainee Grant 2007, 2008 and 2009
- Second place winner of SSR Trainee Research Award (oral presentation) 2007
- NIH Predoctoral Service Award in Endocrine, Developmental, & Reproductive Toxicology 2007-2009
- J. O. Alberts Graduate Student Award, College of Vet Med, University of Illinois, 2007
- Graduate College Travel Award, 2007-09
- Chair for the Platform session for the annual meeting for the Society for the Study of Reproduction, 2008
- Phi Zeta Mu Basic Science Presentation Award, 2009
- Environmental Toxicology Scholarship, 2009-10
- Elected as the Trainee Representative, Society for the Study of Reproduction, 2009-2011
- Elected to attend the 4<sup>th</sup> Annual NIH National Graduate Student Research Festival, 2009

4. Chen-Che Jeff Huang, Ph.D., 2006-2010, Current position: Assistant Professor, Department of Anatomy, Physiology, and Pharmacology, Auburn University

- Graduate College Travel Award, 2007-09
- Travel Award, Endocrine Society, 2008
- Billie Field Travel Award, 2008, 2009
- Dr. Ted and Mrs. Carroll Valli Outstanding DVM/PhD Student Award, 2008
- Endocrine Society Trainee Travel Fellowship, 2009
- SSR Larry Ewing Memorial Trainee Grant 2009
- Recipient of the Billie Field Graduate Fellowship, 2009
- Winner of the University of Illinois Mu Chapter Phi Zeta manuscript competition, 2010
- J. O. Alberts Graduate Student Award, College of Vet Med, University of Illinois, 2010

5. Chang Liu, Ph.D., 2009-2015; Current position: Scientist, Therapeutic Discovery, Precision BioSciences, Inc.

- SSR Trainee Research Award Finalist, 2009
- SSR Larry Ewing Memorial Trainee Travel Fund 2010, 2011, 2013
- Travel Fellowship from International Symposium on Biology of Vertebrate Sex Determination, 2012
- SSR Trainee Research Award Winner, 2013
- SSR Lalor Foundation Travel Fellowship, 2013
- Winner of poster award competition at Triangle Consortium of Reproductive Biology 2014

### **Post-baccalaureate Fellows at NIEHS**

1. Verda Agan, BS, 2017-18; Current position: MD/PhD student at Vanderbilt University
  - 2017 NIH Academy Certificate Program Fellow
  - 2018 Outstanding Presentation Award, NIH Post-Bac Poster Day
2. Kamiya Bridges, BS, 7/1/2020-7/31/2022, (**Under-represented minority**) 2 orals 4 posters
  - 2021 Winner of the NIEHS Post-Baccalaureate Fellow Big Picture, Small Talk Competition
  - 2021 Outstanding Presentation Award, NIH Post-Bac Poster Day
  - 2021 Burroughs Welcome Travel Fellowship, Society for the Study of Reproduction
  - 2022 Outstanding Presentation Award, NIH Post-Bac Poster Day
3. Abigail Kitakule, BS, 7/1/2022-present, (**Under-represented minority**)



### **Post-doctoral Fellows**

1. Rupesh Gupta, PhD, 2006-2010, Current position: Human Safety Toxicologist at Proctor & Gamble
  - 2007 Finalist for the Colgate-Palmolive Post-Doctoral Fellowship
  - 2007 & 08 Billie Field Travel Award
  - 2008 & 2009 SSR Larry Ewing Memorial Trainee Travel Fund
  - 2009-2011 NIH Postdoctoral Service Award in Endocrine, Developmental, & Reproductive Toxicology
2. Manal Othman, PhD, 2009-2010, Current position: Associate Professor, Department of Anatomy, College of Medicine & Medical Sciences, Arabian Gulf University, Bahrain.
3. Heather Franco, PhD, IRTA Fellow, 2/2011-10/2013, Current position: Principal Proposal manager at PPD Inc.
  - 2012 Travel Fellowship from International Symposium on Biology of Vertebrate Sex Determination
  - 2013 SSR Lalor Foundation Travel Fellowship
  - 2013 SSR Larry Ewing Memorial Trainee Travel Fund
4. Erica Ungewitter, PhD, IRTA Fellow, 2/2011-11/2015; Current position: Senior Grant Writer at Baebies, Inc., Durham, NC
  - 2012 Travel Fellowship from International Symposium on Biology of Vertebrate Sex Determination,
  - 2013 SSR Trainee Research Award Finalist,
  - 2013 SSR Lalor Foundation Travel Fellowship,
  - 2013 SSR Larry Ewing Memorial Trainee Travel Fund
  - 2013 NIH Fellow Award for Research Excellence (FARE)
  - 2014 NIH Summer Research Mentor Award
  - 2014 NIH Fellow Award for Research Excellence (FARE)
5. Emmi Rotgers, MD/PhD, Visiting Fellow, 3/14/2016-5/4/2018; Current position: Clinical Resident at the Hospital District of Helsinki and Uusimaa, Helsinki, Finland
  - 2017 SSR Larry Ewing Memorial Trainee Travel Fund
  - 2017 NIH Fellow Award for Research Excellence (FARE)
  - 2018 Early Career Forum Award, Endocrine Society
  - 2018 Outstanding Abstract Award, Endocrine Society
6. Barbara Nicol, Ph.D., Visiting Fellow, 10/2012-2/2020, Current position: Staff Scientist at NIEHS
  - 2014 NIH Fellow Award for Research Excellence (FARE)
  - 2015 NIH Women Scientist Advisors (WSA) Scholar Award
  - 2015 NIH Fellow Award for Research Excellence (FARE)
  - 2016 NIH Fellow Award for Research Excellence (FARE)
  - 2017 NIEHS Science Day Poster Presentation Award
  - 2018 NIEHS Science Day Poster Presentation Award.
7. Kathryn Sarah McClelland, Ph.D., Visiting Fellow, 8/17/2015-8/9/2018; Current position: Post-doc fellow at The Hospital for Sick Children (SickKids) in Toronto, Canada
  - 2016 SSR Larry Ewing Memorial Trainee Travel Fund
  - 2016 Lalor Foundation Merit Award
  - 2016 NIEHS Science Day Poster Presentation Award
  - 2017 Champion Best Poster Presentation Award, annual meeting for the Triangle Consortium for Reproductive Biology (TCRB)

- 2017 NIH Fellow Award for Research Excellence (FARE)
  - 2017 NIEHS Science Day Poster Presentation Award
  - 2018 Lalor Foundation Merit Award from SSR
  - 2018 SSR Larry Ewing Memorial Trainee Travel Fund
  - 2018 SSR Finalist of the Trainee Research Award – Poster Presentation, Annual Meeting for the Society for the Study of Reproduction
8. Fei Zhao, Ph.D., Post-doctoral Fellow, 9/2014-12/2019, Current position: Assistant Professor, Dept. of Comparative Biosciences, University of Wisconsin, Madison
- 2015 SSR Larry Ewing Memorial Trainee Travel Fund
  - 2016 NIH Summer Research Mentor Award
  - 2016 Champion Best Poster Presentation Award, 25<sup>th</sup> annual meeting for the Triangle Consortium for Reproductive Biology (TCRB)
  - 2016 SSR Larry Ewing Memorial Trainee Travel Fund
  - 2016 Lalor Foundation Merit Award
  - 2016 Winner of the Trainee Research Award – Platform Presentation, Annual Meeting for the Society for the Study of Reproduction
  - 2016 NIEHS Science Day Poster Presentation Award.
  - 2017 Winner of the inaugural Division of Intramural Research Innovative Research Award, NIEHS/NIH
  - 2017 SSR Larry Ewing Memorial Trainee Travel Fund
  - 2017 Lalor Foundation Merit Award
  - 2017 Finalist of the Trainee Research Award – Poster Presentation, Annual Meeting for the Society for the Study of Reproduction
  - 2018 SSR Larry Ewing Memorial Trainee Travel Fund
  - 2018-23, recipient of NIH K99/R00 Pathway to Independence Award (HD096051-01)
  - 2018 NIEHS Science Day Poster Presentation Award
  - 2019 NIH Fellow Award for Research Excellence (FARE)
  - 2019 NIEHS Science Day Poster Presentation Award
  - 2019 NIEHS Fellow of the Year Award
9. Namya Mellouk, Ph.D., Visiting Fellow, 2/4/2019-12/29/2020; current position: faculty in the National Research Institute for Agriculture, Food and the Environment (INRAE) in France
10. Saniya Rattan, Ph.D., IRTA Fellow, 8/1/2019-3/11/2022; current position: Staff Fellow at US Food & Drug Administration (FDA)
- 2020 NIH FARE award
  - 2020 Winner of the Trainee Research Award – Platform Presentation for the SSR annual meeting
  - 2020-22 NIGMS Post-doctoral Research Associate Program (PRAT) Award
  - 2021 Best Poster Presentation Finalist, annual meeting for the Triangle Consortium for Reproductive Biology (TCRB)
  - 2021 Post-doctoral Presentation Award (First place), Mid-Atlantic Regional Meeting for Society for Developmental Biology
11. Ciro Amato, Ph.D., IRTA Fellow, 10/8/2018-present, (**Under-represented minority** )
- 2019 NIH Summer Research Mentor Award
  - 2019 Society for the Study of Reproduction Trainee Travel Award
  - 2020 NIEHS Science Day Best Oral Presentation Award
  - 2021 Post-doctoral Presentation Award (Third place), Mid-Atlantic Regional Meeting for Society for Developmental Biology
  - 2021 NIEHS Science Day Best Poster Presentation Award
  - 2021 NIEHS Intramural Research Paper of the Year

- 2021 NIH Fellows Award for Research Excellence (FARE Award)
- 2021 NIEHS RDBL StAR Award for the Fellow
- 2021 Post-doctoral oral presentation winner, Virtual Symposium on Biology of Sex Determination
- 2022 Best Oral Presentation Award, annual meeting for the Triangle Consortium for Reproductive Biology (TCRB)
- 2022 Lalor Foundation Travel Award from the Society for the Study of Reproduction
- 2022 Post-Doctoral Platform Presentation 1<sup>st</sup> place winner for the annual meeting for SSR
- 2022 NIEHS RDBL StAR Award for the Fellow
- 2022 NIEHS Fellow of the Year Award

12. Adriana Alexander, Ph.D., IRTA Fellow, 2/14/2022-present, (**Under-represented minority** )
- 2022 Lalor Foundation Travel Award from the Society for the Study of Reproduction
  - 2022 NIH Fellows Award for Research Excellence (FARE Award)
  - 2022 FASEB Inaugural CARES (Career Advancement and Research Excellence Support) Award

13. Yu-Ying Chen, Ph.D., Visiting Fellow, 3/21/2022-present

14. Martin Estermann, Ph.D., Visiting Fellow, 4/11/2022-present, (**Under-represented minority** )

**Mentor or co-mentor for K99/R00 fellows**

1. Co-mentor for Jennifer McKey, Ph.D., 2021-2026; currently an assistant professor at University of Colorado
2. Mentor for Fei Zhao, Ph.D., 2018-23, currently an assistant professor at University of Wisconsin, Madison
3. Co-mentor for Tracy Clement, Ph.D., 2015-2019, currently an assistant professor at Texas A&M University
4. Co-mentor for Katherine Burns, Ph.D., 2013-2017, currently an assistant professor at University of Cincinnati

## Publications

### Peer-Reviewed Research Articles (for NCBI Library record, please click this [URL](#))

1. Hwang C, Pu HF, Hwang CY, Liu JY, Yao HC, Tung YF, Wang PS. Age-related differences in the release of luteinizing hormone and gonadotropin-releasing hormone in ovariectomized rats. **Neuroendocrinolog** . **1990** Aug;52(2):127-32. PubMed PMID: 2125700.
2. Yao HH, Volentine KK, Bahr JM. Destruction of the germinal disc region of an immature preovulatory chicken follicle induces atresia and apoptosis. **Biol Reprod**. **1998** Sep;59(3):516-21. PubMed PMID: 9716548.
3. Volentine KK, Yao HH, Bahr JM. Epidermal growth factor in the germinal disc and its potential role in follicular development in the chicken. **Biol Reprod**. **1998** Sep;59(3):522-6. PubMed PMID: 9716549.
4. Chun SY, McGee EA, Hsu SY, Minami S, LaPolt PS, Yao HH, Bahr JM, Gougeon A, Schomberg DW, Hsueh AJ. Restricted expression of WT1 messenger ribonucleic acid in immature ovarian follicles: uniformity in mammalian and avian species and maintenance during reproductive senescence. **Biol Reprod**. **1999** Feb;60(2):365-73. PubMed PMID: 9916003.
5. Yao HH, Bahr JM. Germinal disc-derived epidermal growth factor: a paracrine factor to stimulate proliferation of granulosa cells. **Biol Reprod**. **2001** Jan;64(1):390-5. PubMed PMID: 11133698.
6. Yao HH, Bahr JM. Chicken granulosa cells show differential expression of epidermal growth factor (EGF) and luteinizing hormone (LH) receptor messenger RNA and differential responsiveness to EGF and LH dependent upon location of granulosa cells to the germinal disc. **Biol Reprod**. **2001** Jun;64(6):1790-6. PubMed PMID: 11369610.
7. Yao HH, Whoriskey W, Capel B. Desert Hedgehog/Patched 1 signaling specifies fetal Leydig cell fate in testis organogenesis. **Genes Dev**. **2002** Jun 1;16(11):1433-40. PubMed PMID: 12050120; PubMed Central PMCID: PMC186321.
8. Yao HH, Capel B. Disruption of testis cords by cyclopamine or forskolin reveals independent cellular pathways in testis organogenesis. **Dev Biol**. **2002** Jun 15;246(2):356-65. PubMed PMID: 12051821; PubMed Central PMCID: PMC4073602.
9. Schmahl J, Yao HH, Pierucci-Alves F, Capel B. Colocalization of WT1 and cell proliferation reveals conserved mechanisms in temperature-dependent sex determination. **Genesis**. **2003** Apr;35(4):193-201. PubMed PMID: 12717730; PubMed Central PMCID: PMC4041374.
10. Yao HH, DiNapoli L, Capel B. Meiotic germ cells antagonize mesonephric cell migration and testis cord formation in mouse gonads. **Development**. **2003** Dec;130(24):5895-902. Epub 2003 Oct 15. PubMed PMID: 14561636; PubMed Central PMCID: PMC4073601.
11. Ross AJ, Tilman C, Yao H, MacLaughlin D, Capel B. AMH induces mesonephric cell migration in XX gonads. **Mol Cell Endocrinol**. **2003** Dec 15;211(1-2):1-7. PubMed PMID: 14656469; PubMed Central PMCID: PMC4073607.
12. Yao HH, Matzuk MM, Jorgez CJ, Menke DB, Page DC, Swain A, Capel B. Follistatin operates downstream of Wnt4 in mammalian ovary organogenesis. **Dev D n**. **2004** Jun;230(2):210-5. PubMed PMID: 15162500; PubMed Central PMCID: PMC4046253.
13. Yao HH, DiNapoli L, Capel B. Cellular mechanisms of sex determination in the red-eared slider turtle, *Trachemys scripta*. **Mech Dev**. **2004** Nov;121(11):1393-401. PubMed PMID: 15454268; PubMed Central PMCID: PMC4067764.
14. Yao HH, Aardema J, Holthusen K. Sexually dimorphic regulation of inhibin beta B in establishing gonadal vasculature in mice. **Biol Reprod**. **2006** May;74(5):978-83. Epub 2006 Feb 1. PubMed PMID: 16452457; PubMed Central PMCID: PMC1819406.
15. Tomaszewski J, Joseph A, Archambeault D, Yao HH. Essential roles of inhibin beta A in mouse epididymal coiling. **Proc Natl Acad Sci U S A**. **2007** Jul 3;104(27):11322-7. Epub 2007 Jun 25. PubMed PMID: 17592132; PubMed Central PMCID: PMC2040897.
16. Deutscher E, Hung-Chang Yao H. Essential roles of mesenchyme-derived beta-catenin in mouse Müllerian duct morphogenesis. **Dev Biol**. **2007** Jul 15;307(2):227-36. Epub 2007 May 3. PubMed PMID: 17532316; PubMed Central PMCID: PMC2020447.

17. Liu CF, Bingham N, Parker K, Yao HH. Sex-specific roles of beta-catenin in mouse gonadal development. **Hum Mol Genet.** 2009 Feb 1;18(3):405-17. doi: 10.1093/hmg/ddn362. Epub 2008 Nov 3. PubMed PMID: 18981061; PubMed Central PMCID: PMC2638797.
18. Barsoum IB, Bingham NC, Parker KL, Jorgensen JS, Yao HH. Activation of the Hedgehog pathway in the mouse fetal ovary leads to ectopic appearance of fetal Leydig cells and female pseudohermaphroditism. **Dev Biol.** 2009 May 1;329(1):96-103. doi: 10.1016/j.ydbio.2009.02.025. Epub 2009 Mar 3. PubMed PMID: 19268447; PubMed Central PMCID: PMC2673990.
19. Gupta RK, Meachum S, Hernández-Ochoa I, Peretz J, Yao HH, Flaws JA. Methoxychlor inhibits growth of antral follicles by altering cell cycle regulators. **Toxicol Appl Pharmacol.** 2009 Oct 1;240(1):1-7. doi: 10.1016/j.taap.2009.07.007. Epub 2009 Jul 14. PubMed PMID: 19615393; PubMed Central PMCID: PMC2739885.
20. Gupta RK, Singh JM, Leslie TC, Meachum S, Flaws JA, Yao HH. Di-(2-ethylhexyl) phthalate and mono-(2-ethylhexyl) phthalate inhibit growth and reduce estradiol levels of antral follicles in vitro. **Toxicol Appl Pharmacol.** 2010 Jan 15;242(2):224-30. doi: 10.1016/j.taap.2009.10.011. Epub 2009 Oct 27. PubMed PMID: 19874833; PubMed Central PMCID: PMC2789888.
21. Huang CC, Miyagawa S, Matsumaru D, Parker KL, Yao HH. Progenitor cell expansion and organ size of mouse adrenal is regulated by sonic hedgehog. **Endocrinology.** 2010 Mar;151(3):1119-28. doi: 10.1210/en.2009-0814. Epub 2010 Jan 29. PubMed PMID: 20118198; PubMed Central PMCID: PMC2840682.
22. Liu CF, Parker K, Yao HH. WNT4/beta-catenin pathway maintains female germ cell survival by inhibiting activin betaB in the mouse fetal ovary. **PLoS One.** 2010 Apr 29;5(4):e10382. doi: 10.1371/journal.pone.0010382. PubMed PMID: 20454446; PubMed Central PMCID: PMC2861588.
23. Archambeault DR, Yao HH. Activin A, a product of fetal Leydig cells, is a unique paracrine regulator of Sertoli cell proliferation and fetal testis cord expansion. **Proc Natl Acad Sci.** 2010 Jun 8;107(23):10526-31. doi: 10.1073/pnas.1000318107. Epub 2010 May 24. PubMed PMID: 20498064; PubMed Central PMCID: PMC2890803.
24. Huang CC, Yao HH. Inactivation of Dicer1 in Steroidogenic factor 1-positive cells reveals tissue-specific requirement for Dicer1 in adrenal, testis, and ovary. **BMC Dev Biol.** 2010 Jun 11;10:66. doi: 10.1186/1471-213X-10-66. PubMed PMID: 20540774; PubMed Central PMCID: PMC2897782.
25. Barsoum I, Yao HH. Redundant and differential roles of transcription factors Gli1 and Gli2 in the development of mouse fetal Leydig cells. **Biol Reprod.** 2011 May;84(5):8949. doi: 10.1095/biolreprod.110.088997. Epub 2011 Jan 5. PubMed PMID: 21209421; PubMed Central PMCID: PMC4574634.
26. Archambeault DR, Tomaszewski J, Childs AJ, Anderson RA, Yao HH. Testicular somatic cells, not gonocytes, are the major source of functional activin A during testis morphogenesis. **Endocrinology.** 2011 Nov;152(11):4358-67. doi: 10.1210/en.2011-1288. Epub 2011 Sep 27. PubMed PMID: 21952240; PubMed Central PMCID: PMC3199008.
27. McDowell EN, Kisielewski AE, Pike JW, Franco HL, Yao HH, Johnson KJ. A transcriptome-wide screen for mRNAs enriched in fetal Leydig cells: CRHR1 agonism stimulates rat and mouse fetal testis steroidogenesis. **PLoS One.** 2012;7(10):e47359. doi: 10.1371/journal.pone.0047359. Epub 2012 Oct 25. PubMed PMID: 23133512; PubMed Central PMCID: PMC3484991.
28. Huang CC, Liu C, Yao HH. Investigating the role of adrenal cortex in organization and differentiation of the adrenal medulla in mice. **Mol Cell Endocrinol.** 2012 Sep 25;361(1-2):165-71. doi: 10.1016/j.mce.2012.04.004. Epub 2012 May 3. PubMed PMID: 22580128; PubMed Central PMCID: PMC3409340.
29. Barsoum IB, Kaur J, Ge RS, Cooke PS, Yao HH. Dynamic changes in fetal Leydig cell populations influence adult Leydig cell populations in mice. **FASEB J.** 2013 Jul;27(7):2657-66. doi: 10.1096/fj.12-225060. Epub 2013 Apr 8. PubMed PMID: 23568777; PubMed Central PMCID: PMC3688755.
30. Archambeault DR, Yao HH. Loss of smad4 in Sertoli and Leydig cells leads to testicular dysgenesis and hemorrhagic tumor formation in mice. **Biol Reprod.** 2014 Mar 20;90(3):62. doi: 10.1095/biolreprod.113.111393. Print 2014 Mar. PubMed PMID: 24501173; PubMed Central PMCID: PMC4076392.
31. Liu C, Peng J, Matzuk MM, Yao HH. Lineage Specification of Ovarian Theca Cells Requires Multi-Cellular Interaction via Oocyte and Granulosa Cells. **Nature Communications.** 2015, Apr 28;6:6934. DOI:



- 10.1038/ncomms7934. PubMed PMID: 25917826; PubMed Central PMCID: PMC4413950. (Selected as the NIEHS Division of Intramural Research paper of the year)
32. Nicol B, Yao HHC. Gonadal Fate in the absence of pro-testis Sox9 and pro-ovary beta-catenin. **Biol Reprod** **2015**, 93(2):35, 1–12. DOI 10.1095/biolreprod.115.131276. PubMed PMID: 26108792; PubMed Central PMCID: PMC4706297. (Selected as the cover feature for this issue).
  33. Rodriguez K, Ungewitter E, Crespo Y, Liu C, Nicol B, and Yao HHC. Effects of in utero exposure to arsenic during the second half of gestation on reproductive end points and metabolic parameters in female CD-1 mice. **Environ Health Perspect** **2016**, 124:336–343; <http://dx.doi.org/10.1289/ehp.1509703>; PubMed PMID: 26295903; PubMed Central PMCID: PMC4786990.
  34. Kang HS, Chen LY, Lichti-Kaiser K, Liao G, Gerrish K, Bortner CD, Yao HHC, Eddy EM, Jetten AM. Transcription Factor GLIS3: a New and Critical Regulator of Postnatal Stages of Mouse Spermatogenesis. **Stem Cells** **2016**; 34:2772–2783. Jun 28. doi:10.1002/stem.2449. PubMed PMID: 27350140.
  35. Liu C, Rodriguez K, Yao HHC. Mapping lineage progression of somatic progenitor cells in the mouse fetal testis. **Development** **2016** Oct 15; 143(20):3700–3710. PubMed PMID: 27621062. PubMed Central PMCID: PMC5087644. (Selected as feature article of the journal; selected as NIEHS intramural papers of the month in Nov 2016)
  36. Ungewitter E, Rotgers E, Bantukul T, Brown P, Kawakami Y, Kissling G, and Yao HHC. Teratogenic Effects of in Utero Exposure to Di-(2-Ethylhexyl)-Phthalate (DEHP) in B6:129S4 Mice **Toxicological Sciences** **2017** 157 (1): 8–19. (Selected as cover image of this issue). PubMed PMID: 28123099.
  37. Zhao F, Franco HL, Rodriguez K, Brown P, Tsai MJ, Tsai SY, and Yao HHC. Elimination of the male reproductive tract in the female mouse embryo is promoted by COUP-TFII. 2017. **Science** **2017** 357(6352):717–720. doi: 10.1126/science.aai9136. PMID: 28818950; PMCID: PMC5713893 Highlighted in Perspectives and multiple news outlets; NIEHS Intramural paper of month in October 2017.
  38. Wear HM, Eriksson A, Yao HHC, Watanabe KH. Cell-based computational model of early ovarian development in mice. **Biology of Reproduction** **2017**; 97(3), 365–377. PMID: 29088396
  39. Plummer NW, Ungewitter EK, Smith KG, Yao HH, and Jensen P. A new mouse line for cell ablation by diphtheria toxin subunit A (DTA) controlled by a Cre-dependent FLEX switch. **Genesis** **2017** 2017 Oct;55(10). doi: 10.1002/dvg.23067. Epub 2017 Sep 19. PMID: 28875587
  40. Liu C, Rodriguez K, Brown P, and Yao HHC. Reproductive, physiological, and molecular outcomes in female mice deficient in Dhh and Ihh. **Endocrinology** . **2018** Jul 1; 159(7): 2563–2575. doi: 10.1210/en.2018-00095. PMID: 29788357
  41. Ungewitter E, Rotgers E, Kang HS, Lichti-Kaiser K, Li L, Grimm SA, Jetten AM, and Yao HHC. Transcription factor GLIS3 is required for retrotransposon silencing and male germ cell survival. **Scientific Reports** **2018**. Jun 25;8(1):9662. doi: 10.1038/s41598-018-27843-x. PMID: 29941866
  42. Nicol B, Grimm SA, Gruzdev A, Scott G, Ray MK, and Yao HHC. Genome-wide identification of FOXL2 binding and characterization of FOXL2 feminizing action in the fetal gonads. **Human Molecular Genetics** **2018** 27(24):4273–4287; doi: 10.1093/hmg/ddy312. (Selected as the NIEHS Division of Intramural Research paper of the month in November 2018)
  43. Nicol B, Grimm SA, Chalmel F, Lecluze E, Pannetier M, Pailhoux E, Dupin-DeBeyssat, Guiguen Y, Capel B, Yao HHC, RUNX1 safeguards the identity of the fetal ovary through an interplay with FOXL2. **Nature Communications** **2019**;10(1):5116. Doi:10.1038/s41467-019-13060-1. PMID:31712577. (Selected as the NIEHS Division of Intramural Research paper of the year in 2019)
  44. Koth ML, Novak A, Holthusen KA, ; Kothandapani A, Jiang K, Nicol B, Yao HHC, Garcia-Moreno SA, Futtner CR, Maatouk DM, Jorgensen JS. Canonical Wnt/β-catenin Activity and Differential Epigenetic Marks Direct Sexually Dimorphic Regulation of Irx3 and Irx5 in Developing Gonads. **Development** **2020**, Mar 30;147(6). doi: 10.1242/dev.183814. PubMed PMID: 32108023.
  45. Rodriguez KF, Mellouk N, Ungewitter EK, Nicol B, Liu C, Brown PR, Willson CJ, Yao HH. In utero exposure to arsenite contributes to metabolic and reproductive dysfunction in male offspring of CD-1 Mice. **Reprod Toxcol.** **2020** Aug;95:95–103. doi: 10.1016/j.reprotox.2020.05.006. Epub 2020 May 17. PubMed PMID: 32428649; PubMed Central PMCID: PMC7323850.



46. Brown PR, Gillera SEA, Fenton SE, Yao HH. Developmental exposure to tetrabromobisphenol A has minimal impacts on male rat reproductive health. **Reprod Toxicol.** 2020 Aug;95:59-65. doi: 10.1016/j.reprotox.2020.05.003. Epub 2020 May 13. PubMed PMID: 32416200; PubMed Central PMCID: PMC7323851.
  47. Lozoya A, McClelland KS, Papas B, Li J-L, Yao HHC, Patterns, Profiles, and Parsimony: dissecting transcriptional signature from minimal single-cell RNA-seq output with SALSA. **Front Genet.** 2020
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2. Yao HHC. The Pathway to Femaleness: Current Knowledge on Embryonic Development of the Ovary. *Mol Cell Endocrinol*. 2005 Jan 31;230(1-2):87-93. Review. PubMed PMID: 15664455; PubMed Central PMCID: PMC4073593.
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4. Liu CF, Archambeault D, Yao HHC, Testis Cord Morphogenesis: Determination, Establishment, and Maintenance. *Animal Reproduction* 3(2):92-97, 2006. No PubMed ID available.
5. Ditewig A and Yao HHC, Organogenesis of the Ovary: A Comparative Review on Vertebrate Ovary Formation. *Organogenesis*. 2005 Apr;2(2):36-41. PubMed PMID: 19521565; PubMed Central PMCID: PMC2634084.
6. Yao HHC and Barsoum, The Road to Maleness: from Testis to Wolffian Duct. *Trends Endocrinol Metab*. 2006 Aug;17(6):223-8. Epub 2006 Jul 5. Review. PubMed PMID: 16822678; PubMed Central PMCID: PMC4073594.
7. Archambeault D, Tomaszewski J, Joseph A, Yao HHC, Epithelium-mesenchyme crosstalk in Wolffian duct and fetal testis cord development. *Genesis*. 2009 Jan;47(1):40-8. doi: 10.1002/dvg.20453. Review. PubMed PMID: 18979542; PubMed Central PMCID: PMC2877590.
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**(Abstracts are available upon request)**