**Zhijian Jake Tu**

Professor, Department of Biochemistry, Virginia Tech

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**EDUCATION**

B.S. in Physiology and Biophysics, 1984-88, Peking University, Beijing, China

B.S. in Law (Second Degree), 1984-88, Peking University, Beijing, China

Ph.D., 1989-94, Department of Entomology, University of Arizona, Tucson, AZ

**PROFESSIONAL APPOINTMENTS**

*Professor,* June 2008-present, Dept. of Biochemistry, Virginia Tech

*Associate Professor,* June 2004-June 2008, Dept. of Biochemistry, Virginia Tech

*Assistant Professor,* June 1999-June 2004, Dept. of Biochemistry, Virginia Tech

*Assistant Research Scientist*, 1998-1999, Dept. of Entomology, Univ. of Arizona

*Postdoctoral Research Associate*, 1994-1997, Dept. of Entomology, Univ. of Arizona

**SELECTED HONOR AND SERVICES**

Panels and Advisory Committees

Chair of Parasites and Vectors Study Section, NIH, 2016-2017

Panel Member of the NSF GRFP, 2016

Member (2002-2003) or Ad Hoc Reviewer (since 2004) of NIH Review Panel

Member, VectorBase Working Group, 2010-present

Member of the NIAID/NHGRI Eukaryotic Pathogen and Vector Genome Working Group, 2010-2012

Consultant, The Joint FAO/IAEA Consultants Meeting on A Generic Approach for the Development of Genetic Sexing Strains for SIT Applications, IAEA, United Nations, Vienna, Austria, 2015

Vice Chair, Genomics Committee, Entomology Society of China, 2015-present

Editorial Boards, Other Services and Awards

Editorial Board, Insect Molecular Biology, 2016-present

Associate Editor, BMC Genomics, 2014-present

Academic Editor, PLoS One, 2012-present

Associate Editor, Journal of Insect Science, October 2007-present

Inaugural Henry Hagedorn Distinguished Scientist Speaker, 2014, Interdisciplinary Graduate Program in Insect Science, University of Arizona, Tucson

Member of the Organizing Committee, EMBO (European Molecular Biology Organization) Conference on Molecular & Population Biology of Mosquitoes and Other Disease Vectors, 2007-present

Organized and chaired the symposium on Bioinformatics and the next-gen revolution. International Congress of Entomology, Daegu, South Korea. 2012

Virginia Tech College of Agriculture and Life Sciences Excellence in Basic Research Award. 2011.

**Program Focus**

Mosquito transmitted diseases, such as malaria, dengue fever, and encephalitis claim millions of lives worldwide each year. Current control measures are under threat as drug- and insecticide-resistance increases. Novel approaches are needed and needed urgently. My laboratory studies the basic genetics and physiology of mosquitoes with the long-term goal of reducing the burden of vector-borne infectious diseases.

My laboratory employs functional genomics, comparative genomics, and bioinformatics approaches to study genes involved in sex-determination and early embryonic development in mosquitoes. The above research topics will lead to mosquito control applications through the manipulation of sex ratios and mating behavior. A better understanding of embryonic development will contribute to new approaches to facilitate efficient and safe spread of refractory genes in mosquito populations to control infectious diseases. We are also interested in the function and evolution of non-coding RNAs and repetitive sequences.