Joseph Hua Tien

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The Ohio State University
Department of Mathematics
Division of Epidemiology (by courtesy)

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EDUCATION

Cornell University, Ithaca, NY

2007   Ph.D. Applied Mathematics (Advisor: John Guckenheimer)

2005   M.S. Applied Mathematics

Princeton University, Princeton, NJ

1998   B.A. Ecology and Evolutionary Biology (Highest Honors)

EMPLOYMENT

2021-   **The Ohio State University**
             Professor, Department of Mathematics

2015- 2021   **The Ohio State University**
             Associate Professor, Department of Mathematics

2009-2015   **The Ohio State University**
             Assistant Professor, Department of Mathematics

2007-2009   **McMaster University**
             Postdoctoral Research Fellow

SELECTED PUBLICATIONS

Tien JH, Eisenberg MC, Cherng ST, Porter MA. 2020. Online reactions to the 2017 'Unite the Right' rally in Charlottesville: measuring polarization in Twitter networks using media followership. *Applied Network Science.* 5(10).

Jacobsen KA, Tien JH. 2018. A generalized inverse for graphs with absorption. *Linear Algebra and its Applications.* 537: 118-147.

Burch MG, Jacobsen KA, Tien JH, Rempala GA. 2017. Network-based analysis of a small Ebola outbreak. *Mathematical Biosciences and Engineering.* 14(1): 67-77.

Tien JH, Shuai Z, Eisenberg MC, van den Driessche P. 2015. Disease dynamics on community networks with environmental pathogen movement. *Journal of Mathematical Biology.* 70: 1065-1092.

Tien JH, Poinar HN, Fisman DN, Earn DJD. 2011. Herald waves of cholera in 19th century London. *Journal of the Royal Society Interface* 8(58): 756-760.

Tien JH, Earn DJD. 2010. Multiple transmission pathways and disease dynamics in a waterborne pathogen model. *Bulletin of Mathematical Biology.* 72(6): 1506-1533.

SELECTED GRANTS

The Intelligence Advanced Research Projects Activity. Co-PI. "Anticipatory misinformation influence sentinel system." 2020-2021. $1,000,000.

National Science Foundation. DMS-1814737, PI. "Disease spread on networks: integrating structure, dynamics, and data through a generalized inverse." 2018-2021. $220,000.

Centers for Disease Control. Co-I. "Syphilis epidemiology in Columbus, Ohio: a cohort and network study." 2017-2020. $1,604,318.

National Science Foundation. OCE-1115881, PI. "Modeling the effects of heterogeneity in water quality on cholera disease dynamics". 2011-2017. $973,128.

SELECTED INVITED TALKS

Institute for Computational and Experimental Research in Mathematics (ICERM). Workshop: Mathematical and computational approaches to social justice. Providence, RI. March 2021.

SIAM Applications of Dynamical Systems. Mini-symposium: Dynamics of Democracy. Snowbird, UT. May 2019.

Computer science seminar. Purdue U. September 2017.

International Linear Algebra Society: mini-symposium on Linear Algebra and Mathematical Biology. Iowa State U. July 2017.

Southern Poverty Law Center: Data Summit. Montgomery, Alabama. April 2017.

AMS Sectional Meeting: Network Theory, Bloomington, Indiana. April 2017.

Workshop on Graph Theory and its Applications, U. Central Florida. Plenary speaker. March 2017.

Applied and Interdisciplinary Mathematics seminar, University of Michigan. November 2015.

International Congress of Industrial and Applied Mathematics. Beijing. August 2015.

NIMBioS Undergraduate Research Conference in Mathematical Biology, Knoxville. Tennessee. Plenary speaker. November 2014.

DATA AND SOCIETY INITIATIVES

Collaborations with the Atlantic, Huffington Post, and Southern Poverty Law Center on network structure of the alt-right.

Susan Bourbaki Anthony. Organization for data-driven approaches to promoting informed civic engagement. Co-founder and director. `susanbourbaki.com`

Mother Jones. Article covering analysis of Twitter connections of white nationalist groups with politicians. `http://www.motherjones.com/politics/2017/01/jeff-sessions-close-ties-white-nationalists-twitter/`

SELECTED INTERDISCPLINARY SERVICE

Comprehensive Monitoring Team. Modeling team lead, The Ohio State University. 2020-present.

Infectious Diseases Institute – co-thematic lead, Ecology, Epidemiology, and Population Health. 2017-present.

US-Canadian Institutes Epidemiology Summer School: Mathematical Modeling of Infectious Disease Spread. 2016. Organizing committee, Chair.

Mathematical Biosciences Institute Emphasis Semester on Infectious Disease Dynamics (Spring 2018). Organizing committee. Co-organizer for workshop on disease ecology, as part of this emphasis semester.

SELECTED AWARDS

Lord Robert May Prize. Best paper 2015-2016, J. Biological Dynamics. Awarded 2017.