

Tom Chou

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U.S. Citizen

Education

1989–1995.....**Ph.D. Physics**, Harvard University
1989–1991.....**M.A. Physics**, Harvard University
1985–1989.....**S.B. Physical Chemistry**, Massachusetts Institute of Technology

Employment

Jul 2009 – present.....**Professor**, Depts. of Computational Medicine & Mathematics, UCLA
Jul 2006 – Jun 2009.....**Associate Professor**, Dept. of Mathematics, UCLA
Jul 2005 – Jun 2009.....**Associate Professor**, Dept. of Biomathematics, UCLA
Jul 2000 – Jun 2005.....**Assistant Professor**, Dept. of Biomathematics, UCLA
Jul 1998 – Jun 2000.....**Lecturer**, Dept. of Mathematics, Stanford
Oct 1996 – Jun 1998.....**Research Fellow**, DAMTP, University of Cambridge
Aug 1995 – Aug 1996.....**Research Assistant**, Dept. of Physics, Cornell University

Other Appointments and Professional Honors

Jan 2017 – June 2023.....**Director**, NIGMS T32 Systems and Integrative Biology Training Grant
Sep 2013 –**Fellow of the American Physical Society**, American Physical Society
Oct 2013 –**Participating Faculty**, Bioinformatics IDP
Oct 2012 –**Affiliate Faculty**, Dept. of Bioengineering
Sep 2012 – Sep 2015.....**Scientific Advisory Committee**, Mathematical Biosciences Institute, OSU
Mar 2010 – Nov 2011.....**Defense Science Study Group**, Institute of Defense Analyses
2009 – 2011.....**Vice-Chair**, Computational and Systems Biology Interdepartmental Program
May 1989 – Aug 1989.....**Resident Researcher**, DuPont Central Research & Development

External Grants and Awards

09/01/2024 – 08/31/2029: Simons travel Award for Mathematicians
04/15/2019 – 02/29/2024: “Tracking clonal dynamics during hematopoiesis: mechanistic insight via modeling and data analysis”
NIH R01HL146552, (PI: T. Chou)
07/15/2018 – 07/14/2021: “Pathophysiology of the stressed brain: Insights from mathematical models of glucocorticoid hormones affecting timing and memory”
Army Research Office W911NF-18-1-0345 (PI: D’Orsogna)
07/01/2018 – 06/30/2023: “Systems and Integrative Biology Training Grant”
NIH NIGMS T32GM008185 (PI: T. Chou)
08/01/2018 – 08/31/2022: “Collaborative Research: Understanding generation, maintenance, and dynamics of immune diversity via clone-count models”
NSF DMS-1814364 (PI: T. Chou)

International Congress of Chinese Mathematicians ICCM 2012-2017 distinguished paper award: *A Path-Integral Approach to Bayesian Inference for Inverse Problems Using the Semiclassical Approximation*

06/01/2018 – 05/31/2019: “Using quality-of-life scores to guide prostate RT”
Breast Cancer Research Foundation (PI: Chou)

05/19/2017 – 05/21/2017: “Workshop on Applied Mathematics in Germinating Oncology Solutions”
Breast Cancer Research Foundation/JKTG Foundation (PI: T. Chou)

10/01/2015 – 09/30/2018: “Quantification and mathematical modeling of viral entry assays”
NSF DMS-1516675 (PI: T. Chou)

09/01/2014 – 08/31/2017 “Warfighter neuroendocrinology: quantifying stress and modeling PTSD”
Army Research Office (co-PI: T. Chou)

09/06/2014 – 08/31/2016: “Mouse and Mathematical Models for HIV-1 suppression through HSPC”
NIH-NHLBI R56HL126544 (co-PI: T. Chou)

09/15/2013 – 12/31/2015 “Brain Activity Maps of Novelty Detection”
NSF Behavioral and Cognitive Sciences, (PI: J. W. Young)

11/20/2013 – 10/31/2015: “Hematopoietic stem/progenitor cell reservoirs”
NIH-NIAID R01AI110297 (PI: I. Chen)

09/15/2010 – 08/31/2014 “Mathematical Imaging and Modeling of Cortical Spreading Depression
and Wound Healing,”
Army Research Office (PI: T. Chou)

10/01/2010 – 09/30/2014 “Hierarchical kinetic models for self-propelled organisms,”
NSF DMS-1021818 (PI: T. Chou)

06/01/2010 – 05/31/2012 “Quantifying differential CD4/CCR5 usage in HIV1/SIV strains”
NIH-NIAIDS R21AI092218 (PI: B. Lee)

09/15/2010 – 02/28/2012 “Mathematics for microscopy and cell biology,”
NSF DMS-1032131 (PI: T. Chou)

06/01/2010 – 07/31/2011 “Models for corneal mechanics and tonometer calibration”
Oppenheimer Foundation Center for Prevention of Eye Disease, UCLA (PI: Chou)

09/15/2009 “Drug metabolite excretion kinetics”
Innocentive Challenge co-winner

09/01/2004 – 08/31/2010 “Stochastic inverse problems in biophysics”
NSF CAREER Award, DMS-0349195 (PI: T. Chou)

02/01/2004 – 11/30/2009 “Multiscale studies of HIV infection and treatment”
NIH Career Development Award, K25 AI058672 (PI: T. Chou)

08/01/2001 – 07/31/2005 “Models of one-dimensional transport”
NSF DMS-0206733 (PI: T. Chou)

09/01/1998 – 08/31/2000 “Mathematical Sciences Postdoctoral Fellowship”
NSF DMS-9804370 (PI: T. Chou)

Patents

1. Benhur Lee, Chikere kelechi, and Tom Chou, A novel, rapid, and highly sensitive cell-based system for the detection and characterization of HIV, International Application Number: PCT/US2013/032178, International Publication Date: Sep 26, 2013.

Mentoring

Postdoctoral Researchers

12. Dr. Tony Wong (2023–):
Ph.D., Mathematics, University of British Columbia, 2021
11. Dr. Yue Wang (2021–2023):
Ph.D., Applied Mathematics, Univ. of Washington, 2019
Associate Research Scientist, Columbia University
10. Dr. Pouyan Ebrahimbabaie (2021–2022):
Ph.D., Electrical Engineering & Comp. Sci., Univ. of Liège, 2020
NXP Semiconductors, Austria
9. Dr. Lucas Böttcher (2020–2021):
Ph.D., Physics, ETH, Zurich, 2018
Assistant Professor, Frankfurt School of Business & Finance
8. Dr. Davide Maestrini (2019–2021):
Ph.D., Physics, University of East Anglia, 2017
Postdoc, Dept. of Physics, Univ. of Turin
7. Dr. Renaud Dessalles (2017–2019):
Ph.D., Applied Mathematics, INRIA, Paris, 2017
Green Shield Technology, Paris, France
6. Dr. Yao-Li Chuang (2014–2019):
Ph.D., Mathematics, Duke University 2006
5. Dr. Bijan Berenji (2012–2013):
Ph.D., Physics, Stanford University 2011
Lecturer, CalState-Los Angeles
4. Dr. Filippo Posta (2008–2010):
Ph.D., Mathematics, New Jersey Inst. of Tech. 2008
Assistant Professor, Grand Canyon University
3. Dr. Melissa Gibbons (2008–2010):
Ph.D., Mechanical Engineering, UCLA 2008
Assistant Professor, Univ. of San Diego, San Diego, CA
2. Dr. Buddhapriya Chakrabarti (2007–2008):
Ph.D., Physics, Indian Institute of Science, Bangalore 2004
Senior Lecturer, Dept. of Physics & Astronomy, Univ. of Sheffield
1. Dr. Pak-Wing Fok (2006–2009):
Ph.D., Mathematics, MIT 2006
Associate Professor, Dept. of Mathematics, Univ. of Delaware

Students

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|--|--------------------------------------|
| 13. Xiangting Li (2020–) | Ph.D. candidate, UCLA Biomathematics |
| 12. Mingtao Xia (2019–2023)
Courant Instructor, NYU | Ph.D., UCLA Mathematics |
| 11. Bhaven Mistry (2013–2019)
Associate Director and Assistant Professor, Claremont McKenna College | Ph.D., UCLA Biomathematics |
| 10. Stephanie Lewkiewicz (2013–2018)
Research Associate, University of Pennsylvania | Ph.D., UCLA Mathematics |

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| 9. Song Xu (2014–2018) | Ph.D., UCLA Biomathematics |
| Sr. Software Engineer, Microsoft, Seattle, WA | |
| 8. Lae Un Kim (2013–2017) | Ph.D., UCLA Biomathematics |
| Postdoc/Instructor, Dept. of Applied Mathematics, Northwestern University | |
| 7. Joshua Chang (2009–2012) | Ph.D., UCLA Biomathematics |
| President, Mederrata, Inc. | |
| 6. Ben Hertz-Shargel (2007–2010) | Ph.D., UCLA Mathematics |
| Vice President, ThinkEco, Inc. | |
| 5. Sarah A. Nowak (2005–2009) | Ph.D., UCLA Biomathematics |
| Assistant Professor, University of Vermont and RAND | |
| 4. Robert Rovetti (2004–2008) | Ph.D., UCLA Biomathematics |
| Associate Professor, Dept. of Mathematics, Loyola Marymount University | |
| 3. John Marshall (2004–2008) | Ph.D., UCLA Biomathematics |
| Associate Professor, Epidemiology and Biostatistics, UC Berkeley | |
| 2. Kevin D. Klapstein (2000–2004) | Ph.D., UCLA Biomathematics |
| Assistant Professor, Tuoro University | |
| 1. Gregory W. Lakatos (1999–2000) | MS, Stanford Mechanical Engineering |
| Amazon, Vancouver, BC | |

Invited Talks

- Colloquium, Dept. of Mathematics Florida State University, *New applications and extensions of classic structured population models: birth control, drug addiction, and kinetic theory*, Oct 27, 2023
- Systems Biology Workshop, NHLBI Sept 28, 2023
- *Stochastic theory of ribosome-RNAP interactions in translation-transcription coupling*, Biophysics 22, Mexico City, Mexico, Nov. 10, 2022
- *Mortality measures, testing statistics, and control of pandemics*, AMS Western, Salt Lake City, Oct 22, 2022
- *Tutorial: Structured population models: PDEs and applications, Structured population models: applications and kinetic theory*, Biological Physics/Physical Biology (BPPB) Seminar, Oct 7, 2022
- Systems Biology Workshop, NHLBI Sept 30, 2022
- Mathematics of the Cell, Baanf Conference, Oct 22, 2021
- *Kinetic theory of structured populations: demographics, cell size control, and stochastic hierarchies*, Mathematical Biology Seminar, Dept. of Mathematics, NJIT, Oct 27, 2020
- *Kinetic theory of structured populations: demographics, cell size control, and stochastic hierarchies*, Colloquium, Dept. of Mathematics, University of Minnesota, Sept 10, 2020
- *Modeling clonal populations in hematopoiesis and T cell dynamics*, Center for Quantitative Biology, Peking University, Dec 20, 2019
- *Dynamics of structured populations: From aging demographics to cell size control*, Applied Mathematics Colloquium, Northwestern University, Dec 10, 2018
- *Lineage tracking in hematopoiesis: the role of self-renewal and generational aging in clonal extinction and resurrection*, Mathematisches Forschungsinstitut Oberwolfach, Germany, Sept 24, 2018
- *Inference and Uncertainty Quantification in high-dimensional stochastic systems*, IBS Symposium, Seoul, Korea, July 31, 2018

Service

Associate Editor, SIAM Journal on Applied Mathematics (Jan 2022 –)

Board of Scientific Advisors, NIH/NIDDK program review, April 19, 2018

Organizing Committee, SIAM Conference on the Life Sciences, Minneapolis, 2018

“Computational Psychiatry” Minisymposium organizer, SIAM Dynamical Systems 2017, Snowbird, Utah (May 21–25, 2017)

Organizer: Inst. for Pure and Applied Math Workshop: Translating data, models, and concepts in cancer biology to clinical practice (Feb 2014)

UCLA David Geffen School of Medicine Biomedical Informatics Task Force (Oct 2013 – Feb 2014)

Associate Editor, Multiscale Modeling and Simulation (Jan 2013 –)

Editorial Board: Computers in Medicine and Biology, (Feb 2011 – 2013)

Associate Editor, Mathematical Medicine and Biology (Jul 2010 –)

Co-Organizer: SIAM Annual Meeting Minisymposium on Intracellular Transport (Jul 2 – 16, 2010)

Elected Member at Large: Division of Biological Physics, American Physical Society (2009–2012)

Invited Participant: 25th Workshop on Mathematical Problems in Industry, University of Delaware (Jun 15–19, 2009)

Invited Participant: Workshop in Microfluidics: Electrokinetic and Interfacial Phenomena, Institute for Mathematics and its Applications (Dec 7–11, 2009)

Faculty Mentor: Research in Industrial Projects, Inst Pure and Applied Math/Aerospace Corporation (Jun 23 – Aug 22, 2008)

Co-Organizer: SIAM Annual Meeting Minisymposium on Mathematical Modeling and Simulation of Biological Membranes (Jul 7 – 11, 2008)

Organizer and longterm participant: Inst. for Pure and Applied Math: Cells & Materials (Mar 2006 – Jun 2006)

Organizer: Keck Seminar Series in Computational Biology (Sep 2000 – Jun 2007)

Core Participant: Inst. for Pure and Applied Math: Nanoscience (Sep 2003 – Jan 2004)

Invited speaker: Workshop on the Role of Theory in Biological Physics, National Science Foundation (May 2003)

UCLA Committee on Diversity and Equal Opportunity (Sep 2008 – 2010; Chair: Jan 2010 – Jul 2010)

UCLA Student Conduct Committee (Sep 2005 – Aug 2008)

Chair, Faculty Search Committee, Biomathematics (2006–2008)

National Academies of Science 4th Frontiers in Science Invited Participant, Tokyo, Japan, Oct 2004

Study Section/Panel Service: NSF, NIH, UC Discovery Grants, Petroleum Research Fund, (2000 – present)

Teaching Experience

UCLA: Computer Science M184/M186A: Introduction to Cybernetics, Biomodeling & Biomedical Computing

UCLA: Computational and Systems Biology 187: Thesis Research & Research Communication in Computational & Systems Biology

UCLA: Biomath 201: Deterministic Models in Biology

UCLA: Biomath 202: Fourier Methods in Biology

UCLA: Biomath 209: Mechanisms and Modeling of Bioanalytical Assays

UCLA: Biomath/Physics 243: Condensed Matter Physics of the Cell

Stanford: Math 115: Ordinary Differential Equations

Stanford: Math 220C: Asymptotic Methods for PDEs

Peer-reviewed Publications

147. Yurun Ge, Lucas Böttcher, **Tom Chou**, and Maria D’Orsogna, *A knapsack for collective decision-making*, Under Review: Collective Intelligence, (2024); arXiv:2409.13236
146. Lucas Böttcher, Maria R. D’Orsogna, and **Tom Chou**, *Aggregating multiple test results to improve medical decision-making*, Under Review: PLoS Computational Biology, (2024); arXiv:2409.16442
145. Mingtao Xia, Xiangting Li, Qijing Shen, and **Tom Chou**, *An efficient Wasserstein-distance approach for reconstructing jump-diffusion processes using parameterized neural networks*, Under Review: Machine Learning: Science and Technology, (2024); arXiv:2406.01653
144. Mingtao Xia and **Tom Chou**, *Kinetic theories of generation-dependent cellular proliferation models*, Under review: Physical Review E, (2024).
143. Xiangting Li and **Tom Chou**, *Reliable ligand discrimination in stochastic multistep kinetic proofreading: First passage time vs. product counting strategies*, PLoS Comp. Biol., **20**, e1012183, (2024).
142. Sayun Mao, **Tom Chou**, and Maria D’Orsogna, *A probabilistic model of relapse in drug addiction*, Mathematical Biosciences, **372**, 109184, (2024).
141. Mingtao Xia, Xiangting Li, Qijing Shen, and **Tom Chou**, *A Wasserstein-2 Distance for Efficient Reconstruction of Stochastic Differential Equations*, Under review: Machine Learning, (2024); arXiv:2401.11354
140. Mingtao Xia, Xiangting Li, Qijing Shen, and **Tom Chou**, *Learning unbounded-domain spatiotemporal differential equations using adaptive spectral methods*, Journal of Applied Mathematics and Computing, **70**, 4395–4421, (2024).
139. Mingtao Xia, Xiangting Li, and **Tom Chou**, *Overcompensation of transient and permanent death rate increases in age-structured models with cannibalistic interactions*, Physica D, **470**, 134339, (2024).
138. Yue Wang and **Tom Chou**, *Order-of-mutation effects on cancer progression: models for myeloproliferative neoplasm*, Bulletin of Mathematical Biology, **86**, 32, (2024).
137. Lucas Böttcher, **Tom Chou**, and Maria D’Orsogna, *Forecasting drug-overdose mortality by age in the United States at the national and county levels*, PNAS Nexus, **3**, pgae050, (2024).
136. Xiangting Li and **Tom Chou**, *Stochastic nucleosome disassembly mediated by remodelers and histone fragmentation*, Journal of Chemical Physics, **159**, 204107 (2023).
135. Lucas Böttcher, Sascha Wald, and **Tom Chou**, *Mathematical Characterization of Private and Public Immune Repertoire Sequences*, Bulletin of Mathematical Biology, **85**, 102, (2023).
134. Xiangting Li, Sara Habibipour, **Tom Chou**, and Otto O. Yang, *Stochastic model of APOBEC3-mediated mutations in monkeypox virus evolution*, Virus Evolution, **9**, vead058, (2023).
133. Mingtao Xia, Lucas Böttcher, and **Tom Chou**, *Spectrally Adapted Physics-Informed Neural Networks for Solving Unbounded Domain Problems*, Machine Learning: Science and Technology, **4**, 025024, (2023).
132. Hosein Masoomy, **Tom Chou**, and Lucas Böttcher, *Impact of random and targeted disruptions on information diffusion during outbreaks*, Chaos, **33**, 033145 (2023).
131. Lucas Böttcher, **Tom Chou**, and Maria D’Orsogna, *Modeling and forecasting age-specific overdose mortality in the United States*, European Physics Journal, Special Topics, **232**, 1743–1752, (2023).
130. Lucas Böttcher, **Tom Chou**, and Maria R. D’Orsogna, *Fentanyl-driven acceleration of racial, gender and geographical disparities in drug overdose deaths in the United States*, PLoS Global Public Health, **3**, e0000769, (2023).
129. Yunbei Pan, Maria R. D’Orsogna, Min Tang, Thomas Stiehl, and **Tom Chou**, *Clonal abundance patterns in hematopoiesis: Mathematical modeling and parameter estimation*, Frontiers in Systems Biology, **3**, (2023).
128. **Tom Chou**, Sihong Shao, and Mingtao Xia, *Adaptive Hermite Spectral methods in unbounded domains*, Applied Numerical Mathematics, **183**, 201–220, (2023).

127. Xiangting Li and **Tom Chou**, *Stochastic dynamics and ribosome-RNAP interactions in transcription-translation coupling*, Biophysical Journal, **121**, 254–266, (2023).
126. Yue Wang, Bhaven Mistry, and **Tom Chou**, *Discrete stochastic models of SELEX: aptamer capture probabilities and protocol optimization*, Journal Chemical Physics, **156**, 244103, (2022).
125. Yue Wang, Renaud Dessalles, and **Tom Chou**, *Modeling the impact of birth control policies on China’s age distribution: effects of interbirth period and minimum birth age constraints*, Royal Society Open Science, **9**, 211619, (2022).
124. **Tom Chou** and Maria D’Orsogna, *A mathematical model of reward-mediated learning in drug addiction*, Chaos, **32**, 021102, (2022).
123. Mingtao Xia, Lucas Böttcher, and **Tom Chou**, *Controlling epidemics through optimal allocation of test kits and vaccine doses across networks*, IEEE Transactions on Network Science and Engineering, **9**, 1422–1436, (2022).
122. Renaud Dessalles, Yunbei Pan, Mingtao Xia, Davide Maestrini, Maria D’Orsogna and **Tom Chou**, *How naive T-cell clone counts are shaped by heterogeneous thymic output and homeostatic proliferation*, Frontiers in Immunology, **12**, 735135, (2022).
121. Xinzhe Zuo and **Tom Chou**, *RNAP density- and elongation speed-dependent error correction in RNA polymerization*, Physical Biology, **19**, 026001, (2022).
120. Lucas Böttcher, Maria D’Orsogna, and **Tom Chou**, *A statistical model of COVID-19 testing in populations: effects of sampling bias and testing errors*, Philosophical Transactions A, **380**(2214), 20210121, (2022).
119. Yolanda Markaki, Johnny Gan Chong, Yuying Wang, Elsie C. Jacobson, Christy Luong, Shawn Y. X. Tan, Joanna W. Jachowicz, Mackenzie Strehle, Davide Maestrini, Abhik Banerjee, Bhaven A. Mistry, Iris Dror, Francois Dossin, Johannes Schöneberg, Edith Heard, Mitchell Guttman, **Tom Chou**, and Kathrin Plath, *Xist nucleates local protein gradients to propagate silencing across the X chromosome*, Cell, **184**, 6174–6192, (2021).
118. Lucas Böttcher, Maria D’Orsogna, and **Tom Chou**, *Using excess deaths and testing statistics to improve estimates of COVID-19 mortalities*, European Journal of Epidemiology, **36**, 545–558, (2021).
117. Mingtao Xia and **Tom Chou**, *Kinetic theory for structured population models: application to stochastic sizer-timer models of cell proliferation*, Journal of Physics A, **54**, 385601, (2021).
116. William M. Pardridge and **Tom Chou**, *Mathematical models of blood-brain barrier transport of monoclonal antibodies targeting the transferrin receptor and the insulin receptor*, Pharmaceuticals, **14**, 535, (2021).
115. Mingtao Xia, Sihong Shao, and **Tom Chou**, *A frequency-dependent p-adaptive technique for spectral methods*, Journal of Computational Physics, **446**, 110627, (2021).
114. Zhijian Yang, Daniel Olszewski, Chujun He, Giulia Pintea, Jun Lian, **Tom Chou**, Ronald Chen, and Blerta Shtylla, *Machine learning and statistical prediction of patient Quality-of-Life after prostate radiation therapy*, Computers in Biology and Medicine, **129**, 104127, (2021).
113. Mingtao Xia, Sihong Shao and **Tom Chou**, *Efficient Scaling and moving techniques for spectral methods in unbounded domains*, SIAM Journal on Scientific Computing, **43**, A344–A3268, (2021).
112. Xiaou Cheng, **Tom Chou**, and Maria D’Orsogna, *Neuroendocrine state transition dynamics with circadian drive*, Computational and Structural Biotechnology Journal, **19**, 664–690, (2021).
111. Sam C. P. Norris, Andrea M. Kasko, **Tom Chou**, and Maria D’Orsogna, *Stochastic model of randomly end-linked polymer network micro-regions*, Macromolecules, **54**, 126–142, (2021).
110. Jonathan Wylie and **Tom Chou**, *Uniformly accurate effective equations for disease transmission under pair formation dynamics*, Physical Review E, **103**, 032306, (2021).
109. Lucas Böttcher, Mingtao Xia, and **Tom Chou**, *Why case fatality ratios can be misleading: individual- and population-based mortality estimates and factors influencing them*, Physical Biology, **17**, 065003, (2020).
108. Song Xu, Lucas Böttcher and **Tom Chou**, *Diversity in Biology: definitions, quantification, and models*, Physical Biology, **17**, 031001, (2020).

107. Mingtao Xia, Chris D. Greenman and Tom Chou, *PDE models of adder mechanisms in cellular proliferation*, SIAM Journal on Applied Mathematics, **80**(3), 1307–1335, (2020).
106. Stephanie Lewkiewicz, Yao-Li Chuang, and Tom Chou, *Dynamics of T-Cell Receptor Distributions Following Acute Thymic Atrophy and Resumption*, Mathematical Biosciences and Engineering, **17**(1), 28–55, (2020).
105. Bhaven Mistry and Tom Chou, *Non-Specific Binding Kinetics for Automatic Gating in Fluorescence Activated Cell Sorting (FACS)*, Mathematical Biosciences and Engineering, **16**(5), 4477–4490, (2019).
104. Stephanie Lewkiewicz, Yao-Li Chuang, and Tom Chou, *A Mathematical Model of the Effects of Aging on Naive T Cell Populations and Diversity* Bulletin of Mathematical Biology, **81**(7), 2783–2817, (2019).
103. Farid Manuchehrfar, Wei Tian, Tom Chou, and Jie Liang, *Stochastic Evolution of Coagulation-Fragmentation processes using the Accurate Chemical Master Equation approach*, Communications in Information and Systems, **19**, 37–55, (2019).
102. Yao-Li Chuang, Tom Chou, and Maria R. D’Orsogna, *A network model of immigration: how social linking and cultural adjustment lead to segregation or integration*, Networks and Heterogeneous Media, **14**, 53–77, (2019).
101. Song Xu and Tom Chou, *Immigration-induced phase transition in a regulated multispecies birth-death process*, Journal of Physics A: Mathematical and Theoretical, **51**, 425602, (2018).
100. Renaud Dessalles, Maria R. D’Orsogna, and Tom Chou, *Exact steady-state distributions of multispecies birth-death-immigration processes: effects of mutations and carrying capacity on diversity*, Journal of Statistical Physics, **173**, 182–221, (2018).
99. Shyr-Shea Chang and Tom Chou, *A Model for Bipolar Disorder based on Learned Expectation*, Computational Psychiatry, **2**, 205–222, (2018).
98. Bhaven Mistry, Maria R. D’Orsogna, and Tom Chou, *Stochastic effects of multiplicity of infection on virus quantification and infectivity assays*, Biophysical Journal, **114**(11), 2974–2985, (2018).
97. Song Xu, S. Kim, I. S. Y. Chen, and Tom Chou, *Modeling large fluctuations of thousands of clones during hematopoiesis: the role of stem cell self-renewal and bursty progenitor dynamics in rhesus macaque*, PLoS Computational Biology, **14**, e1006489, (2018).
96. Yao-Li Chuang, Tom Chou, M. R. D’Orsogna, *Age-structured social interactions enhance radicalization and extremism*, Journal of Mathematical Sociology, **42**, 128–151, (2018).
95. J. C. Chang, Y. Liu, and Tom Chou, *High-resolution reconstruction of cellular traction-force distributions: the role of physical constraints and compressed optimization*, Biophysical Journal, **113**, 2530–2539, (2017).
94. J. De Anda, E. Y. Lee, C. K. Lee, R. Bennett, X. Ji, Mark C. Harrison, S. Soltani, M. C. Harrison, A. E. Baker, Y. Luo, Tom Chou, G. A. O’Toole, A. M. Armani, R. Golestanian, G. C. L. Wong, *High-speed 4D computational microscopy of flagellum-driven surface motility in Pseudomonas aeruginosa*, Nano Letters, **11**, 9340–9351, (2017).
93. Lae Un Kim, Maria D’Orsogna, and Tom Chou, *Perturbing the hypothalamic-pituitary-adrenal stress response system: mathematical modeling to improve diagnosis of post-traumatic and related stress disorders*, Computational Psychiatry, **2**, 28–49, (2017).
92. Sam C. P. Norris, Tom Chou, and Andrea M. Kasko *Diffusion of photoabsorbing degradation byproducts in photodegradable polymer networks*, Macromolecular Theory and Simulation, **26**, 1700007, (2017).
91. G. Suryawanshi, Song Xu, Yiming Xie, Tom Chou, Namshin Kim, Irvin S.Y. Chen, Sanggu Kim, *Bidirectional Retroviral Integration Site PCR Methodology and Quantitative Data Analysis Workflow*, Journal of Visualized Experiments, **124**, e55812, (2017).
90. Yao-Li Chuang, M. R. D’Orsogna, and Tom Chou, *A bistable belief model for radicalization and conflict*, Quarterly of Applied Mathematics, **LXXV**, 19–37, (2016).
89. Bhaven Mistry, M. D’Orsogna, N. Webb, B. Lee, and Tom Chou, *Quantifying sensitivity of HIV-1 viral entry to receptor and coreceptor expression through kinetic models*, Journal of Physical Chemistry B, **120**, 6189–6199, (2016).

88. **Tom Chou** and C. D. Greenman, *A hierarchical kinetic theory of birth, death, and fission in age-structured interacting populations*, Journal of Statistical Physics, **164**, 49–76, (2016).
87. Lae Un Kim, M. D’Orsogna, and **Tom Chou**, *Onset, timing, and exposure therapy of stress disorders: mechanistic insight from a mathematical model of oscillating neuroendocrine dynamics*, BMC Biology Direct, **11**, 13, (2016).
86. Yao-Li Chuang, **Tom Chou**, and M. R. D’Orsogna, *Swarming in viscous fluids: three-dimensional patterns in swimmer- and force-induced flows*, Physical Review E, **93**, 043112, (2016).
85. Chris D. Greenman and **Tom Chou**, *A kinetic theory of age-structured stochastic birth-death processes*, Physical Review E, **93**, 012112, (2016).
84. Joshua C. Chang, Pak-Wing Fok, and **Tom Chou**, *Bayesian Uncertainty Quantification for Bond Energies and Mobilities Using Path Integral Analysis*, Biophysical Journal, **109**, 966–974, (2015).
83. S. Goyal, S. Kim, I. Chen, and **Tom Chou**, *Mechanisms of blood homeostasis: lineage tracking and a neutral model of cell populations in rhesus macaques*, BMC Biology, **13**, 85, (2015).
82. Maria R. D’Orsogna, Qi Lei, and **Tom Chou**, *First assembly times and equilibration in stochastic coagulation-fragmentation*, Journal of Chemical Physics, **143**, 014112, (2015).
81. **Tom Chou** and Yu Wang, *First passage times in differentiation and evolution in the presence of bottlenecks, deserts, and oases*, Journal of Theoretical Biology, **372**, 65–73, (2015).
80. Pak-Wing Fok, Qunhui Han, and **Tom Chou**, *Reconstruction of the Broadwell process from exit time distributions*, The IMA Journal of Applied Mathematics, **80**, 1–23, (2015).
79. N. Amini, S. Nowroozizadeh, N. Cirineo, S. Henry, T. Chang, **Tom Chou**, A. L. Coleman, J. Caprioli, and K. Nouri-Mahdavi, *Influence of The disc-fovea angle on limits of RNFL variability and glaucoma discrimination*, Investigative Ophthalmology & Visual Science, **55**, 7332–7342, (2014).
78. K. Chikere, N. E. Webb, **Tom Chou**, K. Borm, J. Sterjovski, P. R. Gorry and B. Lee, *Distinct HIV-1 entry phenotypes are associated with transmission, subtype specificity, and resistance to broadly neutralizing antibodies*, Retrovirology, **11**, 48, (2014).
77. S. Nowroozizadeh, N. Cirineo, N. Amini, S. Knipping, T. Chang, **Tom Chou**, J. Caprioli, and K. Nouri-Mahdavi, *Influence of correction of ocular magnification on performance of spectral-domain retinal nerve fiber layer measurements*, Investigative Ophthalmology & Visual Science, **55**, 3439–3446, (2014).
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