Lam Si Tung Ho

CONTACT
INFORMATION

Dalhousie University
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CITIZENSHIP

Vietnam

PERMANENT
RESIDENT

Canada

EDUCATION

University of Wisconsin - Madison, USA
    Ph.D., Statistics, 2014 (Advisor: Cecile Ané)

Université d'Orléans, France
    M.S., Applied Mathematics, 2009

University of Science, Ho Chi Minh City, Vietnam
    B.S., Mathematics and Computer Science, 2008

EMPLOYMENT

Assistant Professor	2017 - Present
Department of Mathematics and Statistics	
Dalhousie University, Halifax, Nova Scotia, Canada	
Post-doctoral researcher (Mentor: Marc Suchard)	2014 - 2017
Department of Biostatistics	
University of California, Los Angeles, USA	

RESEARCH
INTERESTS

Statistical Theory and Methods, Stochastic Modelling, Evolutionary Biology, Infectious Disease Epidemiology, Machine Learning, Mathematical Biology

PUBLICATIONS

1. Paul Bastide, **Lam Si Tung Ho**, Guy Baele, Philippe Lemey, Marc A Suchard (2021). *Efficient Bayesian Inference of General Gaussian Models on Large Phylogenetic Trees.* **Annals of Applied Statistics** in press.

2. Gabriel Hassler, Max R. Tolkoff, William L. Allen, **Lam Si Tung Ho**, Philippe Lemey, Marc A. Suchard (2021). *Inferring phenotypic trait evolution*

on large trees with many incomplete measurements. **Journal of the American Statistical Association** in press.

3. Vu Dinh*, **Lam Si Tung Ho*** (2020). *Consistent feature selection for analytic deep neural networks.* **Neural Information Processing Systems (NeurIPS)**. (*Authors contributed equally)

4. **Lam Si Tung Ho***, Hayden Schaeffer*, Giang Tran*, Rachel Ward* (2020). *Recovery guarantees for polynomial coefficients from weakly dependent data with outliers.* **Journal of Approximation Theory** 259:105472. (*Authors are in alphabetical order)

5. **Lam Si Tung Ho**, Binh T. Nguyen, Vu Dinh, Duy Nguyen (2020). *Posterior concentration and fast convergence rates for generalized Bayesian learning.* **Information Sciences** 538:372–383. Mathematical Research Award (VIASM)

6. **Lam Si Tung Ho***, Vu Dinh*, Frederick A. Matsen IV, Marc A. Suchard (2020). *On the convergence of the maximum likelihood estimator for the transition rate under a 2-state symmetric model.* **Journal of Mathematical Biology** 80(4):1119–1138. (*Authors contributed equally)

7. Binh T. Nguyen, Duy M. Nguyen, **Lam Si Tung Ho**, Vu Dinh (2019). *An active learning framework for set inversion.* **Knowledge-Based Systems** 185:104917. Invited paper

8. **Lam Si Tung Ho**, Vu Dinh, Cuong V. Nguyen (2019). *Multi-task learning improves ancestral state reconstruction.* **Theoretical Population Biology** 126:33–39.

9. **Lam Si Tung Ho**, Forrest W. Crawford, Marc A. Suchard (2018). *Direct likelihood-based inference for discretely observed stochastic compartmental models of infectious disease.* **Annals of Applied Statistics** 12(3):1993–2021.

10. Vu Dinh*, **Lam Si Tung Ho***, Marc A. Suchard, Frederick A. Matsen IV (2018). *Consistency and convergence rate of phylogenetic inference via regularization.* **Annals of Statistics** 46(4):1481–1512. (*Authors contributed equally)

11. Binh T. Nguyen, Duy M. Nguyen, **Lam Si Tung Ho**, Vu Dinh (2018). *OASIS: An Active Framework for Set Inversion.* **International Conference on Intelligent Software Methodologies, Tools and Techniques (SOMET)**. Best Paper Award

12. Forrest W. Crawford, **Lam Si Tung Ho**, Marc A. Suchard (2018). *Computational methods for birth-death processes.* **WIREs Computational Statistics** 10(2):e1423.

13. **Lam Si Tung Ho**, Jason Xu, Forrest W. Crawford, Vladimir V. Minin, Marc A. Suchard (2018). *Birth/birth-death processes and their computable transition probabilities with biological applications.* **Journal of Mathematical Biology** 76(4):911–944.

14. Mandev S. Gill, **Lam Si Tung Ho**, Guy Baele, Philippe Lemey, Marc A. Suchard (2017). *A Relaxed Directional Random Walk Model for Phylogenetic Trait Evolution.* **Systematic Biology** 66(3):229–319.

15. Cécile Ané*, **Lam Si Tung Ho***, Sebastien Roch* (2017). *Phase transitions on the convergence rate of parameter estimation under an Ornstein-Uhlenbeck diffusion on a tree.* **Journal of Mathematical Biology** 74(1):355–385. (*Authors are in alphabetical order)

16. Vu Dinh, **Lam Si Tung Ho**, Binh T. Nguyen, Duy Nguyen (2016). *Fast learning rates with heavy-tailed losses.* **Neural Information Processing Systems (NeurIPS)**.

17. David A. Baum, Cécile Ané, Bret Larget, Claudia Solís-Lemus, **Lam Si Tung Ho**, Peggy Boone, Chloe Drummond, Martin Bontrager, Steve Hunter, Bill Saucier (2016). *Statistical evidence for common ancestry: application to Primates.* **Evolution** 70(6):1354–1363.

18. Daniel Irving Bernstein*, **Lam Si Tung Ho***, Colby Long*, Mike Steel*, Katherine St. John*, Seth Sullivant* (2015). *Bounds on the Expected Size of the Maximum Agreement Subtree.* **SIAM Journal on Discrete Mathematics** 29(4):2065–2074. (*Authors are in alphabetical order)

19. Vu Dinh*, **Lam Si Tung Ho***, Nguyen Viet Cuong, Duy Nguyen, Binh T. Nguyen (2015). *Learning From Non-iid Data: Fast Rates for the One-vs-All Multiclass Plug-in Classifiers.* **Theory and Applications of Models of Computation (TAMC)**. (*Authors contributed equally)

20. **Lam Si Tung Ho**, Cécile Ané (2014). *Intrinsic inference difficulties for trait evolution with Ornstein-Uhlenbeck models.* **Methods in Ecology and Evolution** 5(11):1133–1146.

21. **Lam Si Tung Ho**, Cécile Ané (2014). *A linear-time algorithm for Gaussian and non-Gaussian trait evolution models.* **Systematic Biology** 63(3): 397–408. Publisher's Award

22. Tran Triet, Jeb Anthony Barzen, Sansanee Choowaew, Jon Mike Engels, Duong Van Ni, Nguyen Anh Mai, Khamla Inkhavilay, Kim Soben, Rath Sethik, Bhuvadol Gomontean, Le Xuan Thuyen, Aung Kyi, Nguyen Huy Du, Richard Nordheim, **Lam Si Tung Ho**, Dorn M. Moore, Scott Wilson (2014). *Persistent Organic Pollutants in wetlands of the Mekong Basin.* **U.S. Geological Survey Scientific Investigations Report** 2013–5196, 140 p.

23. **Lam Si Tung Ho**, Cécile Ané (2013). *Asymptotic theory with hierarchical autocorrelation: Ornstein-Uhlenbeck tree models.* **Annals of Statistics** 41(2):957–981.

24. Nguyen Viet Cuong, **Lam Si Tung Ho**, Vu Dinh (2013). *Generalization and Robustness of Batched Weighted Average Algorithm with V-geometrically Ergodic Markov Data.* **Algorithmic Learning Theory (ALT)**.

25. Nguyen Viet Cuong, Vu Dinh, **Lam Si Tung Ho** (2012). *Mel-frequency Cepstral Coefficients for Eye Movement Identification.* **IEEE International Conference on Tools with Artificial Intelligence (ICTAI)**.

26. Duong Minh Duc*, **Ho Si Tung Lam***, Nguyen Quang Thang*, Dinh Cao Duy Thien Vu* (2011). *On Harnack's inequality for non-uniformly p-Laplacian equations.* **Acta Mathematica Vietnamica** 36(2): 199–214. (*Authors are in alphabetical order)

SELECTED HONORS AND AWARDS

Faculty of Science Killam prize (Dalhousie university)	2021
Canada Research Chair Tier 2	2017 - present
Mathematical Research Award (VIASM)	2020
Best Paper Award (SOMET)	2018
Publisher's Award (Society of Systematic Biologists)	2014
Second Prize, Vietnam Student Olympiad in Mathematics (Analysis)	2006
Third Prize, Vietnam Student Olympiad in Mathematics (Algebra)	2006
Second Prize, Vietnam Student Olympiad in IT (Informatics)	2005

INVITED TALKS

26th Annual Infectious Diseases Research Day 13th Annual Canadian Center for Vaccinology Symposium Halifax, Nova Scotia	April 2021
Biostatistics/SAGE Seminars, University of Calgary	December 2020
Alberta Statistics and Probability Seminar University of Alberta	November 2020
DatAI@SG Webinar, Vietnam	November 2020
CAIMS Annual Meeting, Whistler, BC, Canada	June 2019
SSC 2019 Annual Meeting, University of Calgary	May 2019
AARMS CRG workshop, Dalhousie University	May 2019

WNAR 2018 Meeting, University of Alberta	June 2018
61st ISI World Statistics Congress, Marrakech, Morocco	July 2017
Analysis, Probability and their Applications Conference Quy Nhon, Vietnam	December 2016
Department of Statistics, Stanford University	March 2016
Department of Mathematics and Statistics Dalhousie University	February 2016
Department of Statistics, Ohio State University	February 2016
Department of Mathematics and Statistics University of Massachusetts Amherst	December 2015
QCBio Research Lunch Series, UCLA	August 2015
Evolution Seminar Series, JF Crow Institute for the Study of Evolution University of Wisconsin - Madison	February 2014
Probability Seminar, Department of Mathematics University of Wisconsin - Madison	October 2013

Contributed Talks

SSC 2018 Annual Meeting McGill University, Montréal, Québec, Canada	June 2018
Joint Statistical Meetings, Seattle, USA	August 2015
WNAR/IMS Conference, University of Hawaii - Manoa	June 2014
Evolution Conference, Snowbird, Utah, USA	June 2013
Student Seminar, Department of Statistics University of Wisconsin - Madison, USA	December 2012

Posters

Joint Academic Retreat, UCLA	October 2016
Joint Academic Retreat, UCLA	October 2015
SMBE, Chicago, Illinois, USA	July 2013
Symposium on Integration of Mathematical and Biological Sciences University of Wisconsin - Madison	October 2012

Professional Service

Reviewer
- American Naturalist (1), Annals of Statistics (1), BIT Numerical Mathematics (1), Bulletin of Mathematical Biology (2), Computers in Biology and Medicine (1), Genetics (1), Genomics (1), Heliyon (1), IEEE Journal of Biomedical and Health Informatics (1), Journal of Theoretical Biology (1), Journal of the

American Statistical Association (1), Mathematical Biosciences (1), Mathematical Biosciences and Engineering (1), Methods in Ecology and Evolution (3), Molecular Phylogenetics and Evolution (1), PeerJ (2), PLOS Computational Biology (1), Proceedings of the Royal Society B (1), SIAM Journal on Discrete Mathematics (1), SOMET (6), Statistics and Computing (1), Systematic Biology (6)

- A chapter of *Modern Phylogenetic Comparative Methods and Their Application in Evolutionary Biology*
- Postdoctoral Fellow application to the Research Foundation Flanders - FWO
- 2019 New Frontiers in Research Fund (Reviewer)
- 2020 NSERC Discovery Grant (External reviewer)
- 2020 New Frontiers in Research Fund (External reviewer)
- 2021 NSERC Discovery Grant (External reviewer)

Organizer

- *Recent Statistics Research of New Investigators Across Canada*
  Invited Session, SSC 2021
  Virtual   June 7 - June 11, 2021
- *Advanced Statistical Inference for Stochastic Models of Evolutionary Biology*
  Topic-Contributed Session, JSM 2018
  Vancouver, British Columbia, Canada   July 28 - August 2, 2018
- *Bayesian inference for Markov processes: challenges and solutions*
  Special Topic Session, 61st ISI World Statistics Congress
  Marrakech, Morocco   July 2017

Administrative responsibilities

- New Investigators Committee (Statistical Society of Canada)   2018 - 2021
- Statistics Seminar Coordinator (Math & Stat)   2018 - present
- EDI Working Group (CGEB)   2019 - present
- Calculus Committee (Math & Stat)   2020 - present
- Program Committee (SOMET)   2020 - present
- Hiring Committee (Math & Stat)   2019, 2020
- Gray-Doolittle Award Committee (CGEB)   2019

Thesis Committee Member

- Glen Pridham (PhD), Department of Physics & Atmospheric Science
  Title: TBA
  Dalhousie University   2021 - present
- Dongpu Li (PhD), Department of Microbiology and Immunology
  Title: TBA
  Dalhousie University   2020 - present
- Wanru Jia (MSc), Department of Mathematics and Statistics
  Title: Edge Detection Operators for X-ray Images Based on Hessian Matrices
  Dalhousie University   Dec 8, 2020
- Mary Gunn Hayes (MSc), Department of Mathematics and Statistics
  Title: Cross-study Analyses Of Microbial Abundance Using Generalized Common Factor Methods
  Dalhousie University   May 8, 2020

- Junqiu Gao (MSc), Department of Mathematics and Statistics
  Title: Ornstein-Uhlenbeck Process and Optimal Sampling For Analysis of Microbiome Data
  Dalhousie University   August 23, 2019

Thesis Defense Chair
- Jiaxin Luo (MSc), Department of Mathematics and Statistics
  Title: Novel Statistical Analyses of Longline Survey Data for Improved Indices of Atlantic Halibut Abundance
  Dalhousie University   Dec 1, 2020

Outreach
- AARMS-CMS-Dal math camp   Summer 2019

TEACHING EXPERIENCE

Instructor, Dalhousie University
- MATH/STAT 3380: Sample Survey Methods (Winter 2018/2019, Fall 2020/2021)
- STAT 4370/5370: Stochastic Processes (Fall 2018/2019)
- STAT 2060/ECON 2260/MATH 2060: Introduction to Probability and Statistics (Winter 2017/2018, Winter 2019/2020)

Teaching Assistant, University of Wisconsin - Madison
- STAT 301: Introduction to Statistical Methods (Fall 2009, Fall 2013)
- STAT 310: Introduction to Probability and Math. Stat. II (Fall 2013)

MENTORING EXPERIENCE

Undergraduate Students
- Yurunyun Wang (Honours Thesis)
  Dalhousie University   Fall 2020 - Winter 2021
- Yuan Wu (Honours Thesis)
  Dalhousie University   Fall 2019 - Winter 2020
- Shaoming Kang (Honours Thesis)
  Dalhousie University   Fall 2019 - Winter 2020
- Varshit Dubey (Mitacs Globalink Research Internship)
  Dalhousie University   Summer 2019
- Kieran Bhaskara (Summer Research)
  Dalhousie University   Summer 2018

Graduate Students
- Wensha Zhang (PhD), co-supervise with Tobias Kenney
  Dalhousie University   September 2019 - present
- Abe Adeeb (MSc), co-supervise with Edward Susko
  Dalhousie University   January 2019 - present

SOFTWARE

phylolm: R package for fitting phylogenetic (generalized) linear regression models
MultiBD: R package for direct likelihood-based inference of multivariate birth-death processes