

# Toshiaki Asakura

## Curriculum Vitae

Joint PhD candidate  
Nagasaki University and  
London School of Hygiene & Tropical Medicine  
☎ (+44) 7554 156529  
✉ [toshiaki.asakura1@lshtm.ac.uk](mailto:toshiaki.asakura1@lshtm.ac.uk)  
🌐 My Webpage

🐙 Github   in LinkedIn   🆔 ORCID



## Summary

I am a joint PhD candidate at Nagasaki University and the London School of Hygiene & Tropical Medicine, specialising in infectious disease epidemiology and mathematical modelling. My research revolves around Bayesian inference and transmission dynamic models to support public health decision-making, with particular interests in heterogeneity in social and sexual contact patterns, real-time outbreak response, and elimination/eradication of infectious diseases. Much of my recent work has focused on mpox (clades I and IIb) and contact patterns.

Looking ahead, I am motivated to generate scientific evidence that directly informs policy - particularly for under-represented populations - and translate these insights into actionable outbreak responses. I am committed to producing open research and open source software development as means of fostering equitable access and collaborative science across diverse settings.

## Education

- 2023–present **PhD, Infectious Disease Epidemiology and Modelling**, Nagasaki University, London School of Hygiene & Tropical Medicine Joint PhD Degree Programme for Global Health, Japan, UK,  
Supervisor: Dr Akira Endo and Dr Sebastian Funk .
- 2022–2023 : **MSc Control of Infectious Diseases**, London School of Hygiene & Tropical Medicine, UK,  
Dissertation: "A simulation-based assessment of the early detection ability of environmental surveillance for poliovirus" — Supervisor: Dr Kathleen M. O'Reilly.
- 2016–2022 : **Bachelor of Medicine**, Hokkaido University, Japan.

## Publications

### Published Journal Articles (\* Corresponding author; † Equal contribution)

- J13 Role of community and sexual contacts as drivers of MPXV clade I.  
Hiroaki Murayama†, **Asakura, Toshiaki R.**†, Borame L. Dickens, Dorothy Boyle, Jen Han Foo, Shihui Jin, Patrick K. Mukadi, Keisuke Ejima, Sung-mok Jung, Akihiro Nishi, Kiesha Prem, Audry M. Wakamba, Diafuka Saila-Ngita, David Niyukuri, and Akira Endo.  
*Nature Health*, pages 1–12, April 2026, doi:10.1038/s44360-026-00080-7.
- J12 Disentangling temporal trends of Clade Ib monkeypox virus transmission in Burundi.  
Shihui Jin, **Asakura, Toshiaki R.**, Hiroaki Murayama, Sung-mok Jung, David Niyukuri, Joseph Nyandwi, Liliane Nkengurutse, Olivier Kamatari, Jue Tao Lim, Akira Endo, and Borame L Dickens.  
*The Journal of Infectious Diseases*, 233(1):e140–e144, January 2026, doi:10.1093/infdis/jiaf475.
- J11 Vaccination strategies to achieve outbreak control for MPXV Clade I with a one-time mass campaign in sub-Saharan Africa: A scenario-based modelling study.  
Shihui Jin, **Asakura, Toshiaki R.**, Hiroaki Murayama, David Niyukuri, Diafuka Saila-Ngita, Jue Tao Lim, Akira Endo, and Borame L. Dickens.  
*PLOS Medicine*, 22(9):e1004726, September 2025, doi:10.1371/journal.pmed.1004726.

- J10 Modelling international spread of clade IIb mpox on the Asian continent.  
**Asakura, Toshiaki R.**, Sung-Mok Jung, Hiroaki Murayama, Cyrus Ghaznavi, Haruka Sakamoto, Ayaka Teshima, Fuminari Miura, and Akira Endo.  
*Bulletin of the World Health Organization*, 103(7):429–436, July 2025, doi:10.2471/BLT.24.291815.
- J9 Assessing early detection ability through spatial arrangements in environmental surveillance for poliovirus: A simulation-based study.  
**Asakura, Toshiaki R.\*** and Kathleen M. O'Reilly.  
*PLOS ONE*, 20(7):e0325789, July 2025, doi:10.1371/journal.pone.0325789.
- J8 Characterising global risk profiles of Mpox clade Ib importation.  
**Asakura, Toshiaki R.**, Sung-mok Jung, Shihui Jin, Gang Hu, Akira Endo, and Borame Lee Dickens.  
*Journal of Travel Medicine*, 31(8):taae136, December 2024, doi:10.1093/jtm/taae136.
- J7 Traditional and social media usage associated with COVID-19 vaccine uptake in Sapporo, Japan.  
Satoshi Sunohara, **Asakura, Toshiaki R.**, Takashi Kimura, Masayuki Saijo, and Akiko Tamakoshi.  
*Asia Pacific Journal of Public Health*, 36(4):358–365, May 2024, doi:10.1177/10105395241240952.
- J6 Patient characteristics and public health office factors associated with long reporting delay of COVID-19 cases in Sapporo City, Japan.  
Daichi Watanuki, Akiko Tamakoshi, Takashi Kimura, **Asakura, Toshiaki**, and Masayuki Saijo.  
*Journal of Epidemiology*, 34(3):129–136, 2024, doi:10.2188/jea.JE20220359.
- J5 The association between COVID-19-related discrimination and probable post-traumatic stress disorder among patients with COVID-19 in Sapporo, Japan.  
Isaku Kurotori, **Asakura, Toshiaki R.**, Takashi Kimura, Miyuki Hori, Mariko Hosozawa, Masayuki Saijo, Hiroyasu Iso, and Akiko Tamakoshi.  
*Journal of Epidemiology*, 34(12):570–576, 2024, doi:10.2188/jea.JE20230360.
- J4 Case–control study of Long COVID, Sapporo, Japan.  
**Asakura, Toshiaki†**, Takashi† Kimura, Isaku Kurotori, Katabami Kenichi, Miyuki Hori, Mariko Hosogawa, Masayuki Saijo, Kaori Nakanishi, Hiroyasu Iso, and Akiko Tamakoshi.  
*Emerging Infectious Diseases*, 29(5), May 2023, doi:10.3201/eid2905.221349.
- J3 Relationship between out-of-facility deliveries and distance and travel time to delivery facilities in Hokkaido, Japan: An ecological study.  
Yoshihiro Saito, **Asakura, Toshiaki**, Kimura Takashi, Takeshi Umazume, Hidemichi Watari, and Akiko Tamakoshi.  
*Journal of Obstetrics and Gynaecology Research*, 49(3):930–937, 2023, doi:10.1111/jog.15543.
- J2 Effective vaccine allocation strategies, balancing economy with infection control against COVID-19 in Japan.  
Satoshi† Sunohara, **Asakura, Toshiaki†**, Takashi Kimura, Shun Ozawa, Satoshi Oshima, Daigo Yamauchi, and Akiko Tamakoshi.  
*PLOS ONE*, 16(9):e0257107, September 2021, doi:10.1371/journal.pone.0257107.
- J1 Behavioral characteristics of dopamine D5 receptor knockout mice.  
Hitomi† Sasamori, **Asakura, Toshiaki†**, Chiaki Sugiura, Youcef Bouchekioua, Naoya Nishitani, Masaaki Sato, Takayuki Yoshida, Miwako Yamasaki, Akira Terao, Masahiko Watanabe, Yu Ohmura, and Mitsuhiro Yoshioka.  
*Scientific Reports*, 12(1):6014, April 2022, doi:10.1038/s41598-022-10013-5.

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## Conference presentations and invited talks

- C6 Poster presentation: Survey design matters for capturing heterogeneity in social contacts: from exponential to scale-free.  
**Asakura, Toshiaki R.**, Sebastian Funk, and Akira Endo.  
In *10th Epidemics International Conference on Infectious Disease Dynamics*. San Diego, US., December 2025.
- C5 Invited talk: Characterising global risk profiles of mpox clade ib importation.  
**Asakura, Toshiaki R.**, Sung-mok Jung, Shihui Jin, Gang Hu, Akira Endo, and Borame Lee Dickens.  
In *Mpox Community Call at WHO Collaboratry*, October 2024.
- C4 Poster presentation: Projecting international mpox spread in asia: ongoing global health risk.  
**Asakura, Toshiaki R.**, Sung-mok Jung, Hiroaki Murayama, Miura Fuminari, and Endo Akira.  
In *The 34th Annual Scientific Meeting of the Japan Epidemiological Association*. Shiga, Japan, January 2024.
- C3 Oral presentation: A quantitative simulation-based evaluation of the early detection of poliovirus using environmental surveillance.  
**Asakura, Toshiaki R.** and Kathleen M. O'Reilly.  
In *9th Epidemics International Conference on Infectious Disease Dynamics*. Bologna, Italy, December 2023.
- C2 Oral presentation: The student's enlightenment activity against covid-19: No more corona project.  
**Asakura, Toshiaki R.**  
In *The 79th annual meeting of the Japanese Society of Public Health*. Kyoto, Japan, October 2020.
- C1 Poster presentation: Monitoring the transmissibility of highly pathogenic avian influenza (h5n1) virus in poultry: A birth-death skyline model.  
**Asakura, Toshiaki R.** and Hiroshi Nishiura.  
In *World-leading next generation MD researchers and training project 2019 National Retreat*. Nagoya, Japan, April 2019.

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## Grants

- 2024-2026 Japan Society for the Promotion of Science (JSPS) DC1 Research Fellowships and JSPS KAKENHI (Grants-in-Aid for Research Fellow of the JSPS), no. 24KJ1827. Amount: ¥1,400,000 for 2 years.
- 2023-2027 Nagasaki University WISE programme (Doctoral Program for World-leading Innovative & Smart Education). Amount: ¥6,000,000 for 3-years.

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## Awards & Scholarships

- 2023 British Council Japan Association Scholar Award. Amount: ¥150,000.
- 2023 MSc Projects Funding, Trust Funds, London School of Hygiene & Tropical Medicine. Amount: £1,000.
- 2022 The Rotary Foundation. Global grant scholarship
- 2022 Hokkaido University, School of Medicine, Alumni Association President's Award

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## Academic service

Peer-review experiences PLoS Computational Biology (1), VeriXiv (1), Nature Communication (1), Scientific Reports (2), BMC Public Health (1), BMC Infectious Diseases (2), Critical Public Health (1).

## Teaching experience

- Cosupervision 1 MSc student (2025)
- Teaching assistant Introduction to Infectious Disease Modelling and its Applications, London School of Hygiene & Tropical Medicine (2025)
- Introduction to infectious disease epidemiology and modelling, School of Tropical Medicine and Global Health, Nagasaki University (2023, 2024, 2025)

## Media & Public engagement

- March - May 2020 Scientific communication about basic countermeasures against COVID-19 for young populations

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## Research experience

- April - August 2022 Academic Fellow, Faculty of Medicine, Hokkaido University - Supervisor: Akiko Tamakoshi

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## Skills

- Academic skills Mathematical modelling (compartment model, meta-population model, network-based model)
- Theoretical epidemiology (infectious disease epidemiology, cohort study)
- Computing statistics (Markov-Chain Monte Carlo method, Bayesian statistics, Gaussian process)
- Forecasting (scoring rules, forecasting evaluation)
- Programming Languages Julia, R, Python, SAS, C++
- IT skills Claude code, Docker, LaTeX, Git/GitHub, Typescript, Django, React, Nginx
- Language Japanese (native), English (business), Chinese (daily)
- Interests Running, Wine, Travel, Novels