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Education

Ph.D.	The Open University UK, Life and Biomolecular Sciences, 2016. Supervised by Maciej F. Boni. Thesis titled "The Effects of Different Deployment Strategies of Artemisinin Combination Therapies on Slowing Down the Spread of Antimalarial Drug Resistance: Investigation with Individual-Based Simulations". Chapters 2 & 3 published in Lancet Global Health.
B.Sc.	Ho Chi Minh International University, Computer Science and Software Engineering, in International University School of Computing, 2009.
Dip.	Diploma in Software Engineering (Java Technologies), National Institute of Information Technology (NIIT) Vietnam, 2009.

Scientific Positions

June 21 – (now)	Research Assistant Professor at The Pennsylvania State University (PSU), USA. Our research group at PSU is a part of Malaria Modelling Consortium funded by Bill & Melinda Gates Foundation. Continue extending individual-based simulation to evaluate Massive Drug Administration, and Triple Artemisinin Combination Therapies strategies.
Mar 18 – (now)	Postdoctoral scholar at The Pennsylvania State University (PSU), USA. Our research group at PSU is a part of the Malaria Modelling Consortium funded by the Bill & Melinda Gates Foundation. Continued extending individual-based simulation to evaluate Mass Drug Administration, and Triple Artemisinin Combination Therapies strategies.
Jun 16 – Feb 18	Postdoctoral scholar at Oxford University Clinical Research Unit (OUCRU). Worked with Maciej F. Boni on extending individual-based simulation for malaria to evaluate population-level treatment strategies, e.g. triple artemisinin combination therapies, and lengthen dosing scheme.
Jun 11 – Jun 16	Ph.D. Student at Open University UK, supervised by Maciej F. Boni, Piero Olliaro, and Nicholas J. White. Research focused on building and validating an individual based microsimulation, comparing population-scale treatment strategies (Multiple First-line Therapies vs. Single First-line Strategies) for not only lowering number of treatment

failures but also reducing the pressure on artemisinin-resistance evolution, delaying its emergence and slowing its spread.

Aug 09 – Jun 11 Research Assistant at Mathematical Modelling and Bioinformatics Departments, OUCRU, with Maciej F. Boni. Research focused on data collecting, coordinating and setting up a real-time SMS reporting system for the Influenza-like Illness project, and developing simple individual-based models for influenza and malaria.

Funding History

2012 Li Ka Shing Foundation-University of Oxford Global Health Program seed award (1 year) for "Mathematical Modeling of Malaria across Africa and Asia." (PI: 5,000GBP).

Professional Activities

Mar 2017, attending Malaria Modeling Consortium (MMC) meeting 8, South Kensington, London, UK. The meeting was about updating on the progress of the work packages and coordinating MMC support to Cambodia National Malaria control program to eliminate malaria in Cambodia by 2020.

July 2016, collaborating with Malaria Consortium on "Investigation of the magnitude and causes of residual malaria parasite transmission in selected settings" project. Participating 4-day training workshop and field trip on data entry for the entomological collections, management of the GPS tracking data, data entry for the observation studies and recommending relevant data for modeling.

Aug 2013, visiting and collaborating with MORU for a month on applying individual-based model to evaluate the mass drug administration strategy.

Scientific Presentations and Posters

Nov 2022 "Will deploying TACTs in Africa delay or prevent artemisinin resistance?", presentation at the 71st American Society of Tropical Medicine and Hygiene Conference, Seattle, USA.

Nov 2019 "Antimalarial Drug-Resistance Evolution during and after Mass Drug Administration", poster at the 68th American Society of Tropical Medicine and Hygiene Conference, Maryland, USA.

July 2019 "Risk of Antimalarial Resistance in the context of Mass Drug Administration", presentation at PArCon 2019 (Pennsylvania Parasitology Conference)

Apr 2018 "Novel Population-Level Malaria Treatment Strategies for the 2020s", presentation at 6th Annual Disease Modeling Symposium, Washington, USA.

Nov 2017 "Triple ACTs as the New Paradigm for Treatment of Uncomplicated falciparum Malaria", presentation at the 66th American Society of Tropical Medicine and Hygiene Conference, Baltimore, USA.

- "Novel Malaria Treatment Strategies for the 2020s", poster at the 66th American Society of Tropical Medicine and Hygiene Conference, Baltimore, USA.
- Dec 2016 "Optimal population-level deployment of Artemisinin Combination Therapies", poster at 6th Vietnam National Scientific Conference on Infectious Diseases and HIV and AIDS, Vietnam.
- Oct 2015 "Optimal population-level deployment of Artemisinin Combination Therapies" at American Society of Tropical Medicine and Hygiene Conference, Philadelphia, USA.
- March 2015 "Optimal treatment with ACTs using Individual-based Simulation" at the Oxford Tropical Network Conference 2015, Siem Reap, Cambodia.
- Feb 2012 "Effect of population size on evaluating drug resistance in individual-based malaria simulations" at TDMoD.Net virtual conference.
- July 2011 "Individual-based Simulation for Malaria" at TDMoD.Net Modelling Workshop, Hongkong.
- Feb 2011 "Evaluating population-wide antimalarial treatment strategies with individual-based models: preliminary results", poster at Oxford Tropical Network Conference 2011, Vientiane, Laos.

Publications List

14. **Nguyen TD***, Gao B*, Amaratunga C, Dhorda M, Tran TN-A, White NJ, Dondorp AM, Boni MF*, Aguas R*

Preventing antimalarial drug resistance with triple artemisinin-based combination therapies

2023

[in review at Nature Communications] *indicates equal contribution

13. Zupko RJ, **Nguyen TD**, Wesolowski A, Gerardin J, Boni MF

National-scale simulation of human movement in a spatially coupled individual-based model of malaria in Burkina Faso

Scientific Report, 10.1038/s41598-022-26878-5, 2023

13. Zupko RJ, **Nguyen TD**, Ngabonziza JCS, Kabera M, Li H, Tran TN-A, Tran TK, Uwimana A, Boni MF

Potential policy interventions for slowing the spread of artemisinin-resistant pfkelch R561H mutations in Rwanda

medRxiv, 10.1101/2022.12.12.22283369, 2022

12. Li EZ, **Nguyen TD**, Tran TN-A, Zupko RJ, Boni MF

Assessing emergence risk of double-resistant and triple-resistant genotypes of Plasmodium falciparum

bioRxiv, 10.1101/2022.05.31.494246, 2022

11. Watson OJ*, Gao B*, **Nguyen TD***, Tran TN-A, Penny MA, Smith DL, Okell L, Aguas R, Boni MF.

Pre-existing partner-drug resistance facilitates the emergence and spread of artemisinin resistance: a consensus modelling

The Lancet Microbe, 10.1016/S2666-5247(22)00155-0, 2022

*indicates equal contribution

10. Zupko RJ, **Nguyen TD**, Somé FA, Tran TN-A, Gerardin J, Dudas P, Giang DDH, Wesolowski A, Ouédraogo J-B, Boni MF.

Long-term effects of increased adoption of artemisinin combination therapies in Burkina Faso

PLOS Global Public Health, 10.1371/journal.pgph.0000111, 2022

9. **Nguyen TD***, Tran TN-A*, Parker DM, White NJ, Boni MF.

Antimalarial mass drug administration in large populations and the evolution of drug resistance

bioRxiv, 10.1101/2021.03.08.434496v1, 2021.

[in review at PLoS Biology] *indicates equal contribution

8. Vinh DN, Nhat NTD, de Bruin E, Vy NHT, Thao TTN, Phuong HT, Anh PH, Todd S, Quan TM, Thanh NTL, Lien NTN, Ha NTH, Hong TTK, Thai PQ, Choisy M, **Nguyen TD**, Simmons CP, Thwaites GE, Clapham HE, Chau NVV, Koopmans M, Boni MF.

Age-seroprevalence curves for the multi-strain structure of influenza A virus

Nature Communications, 10.1038/s41467-021-26948-8, 2021.

7. Goldlust SM, Thuan PD, Giang DDH, Thang ND, Thwaites GE, Farrar J, Thanh NV, **Nguyen TD**, Grenfell BT, Boni MF, Hien TT.

The decline of malaria in Vietnam, 1991-2014

Malaria Journal 17(1) DOI: 10.1186/s12936-018-2372-8, 2018

6. Lam HM, Wesolowski A, Hung NT, **Nguyen TD**, Nhat NTD, Todd S, Vinh DN, Vy NHT, Thao TTN, Thanh NTL, Tin PT, Minh NNQ, Bryant JE, Buckee CO, Ngoc TV, Chau NVV, Thwaites GE, Farrar J, Tam DTH, Vinh H, Boni MF.

Non-annual seasonality of influenza-like illness in a tropical urban setting.

Influenza and Other Respiratory Viruses 12(6) DOI: 10.1111/irv.12595, 2018

5. Tun STT, von Seidlein L, Pongvongsa T, Mayxay M, Saralamba S, Kyaw SS, Chanthavilay P, Celhay O, **Nguyen TD**, Tran TN-A, Parker DM, Boni MF, Dondorp AM, White LJ.

Towards malaria elimination in Savannakhet, Lao PDR: Mathematical modelling driven strategy design

Malaria Journal 16(1) DOI: 10.1186/s12936-017-2130-3, 2018

4. **Nguyen TD**, Olliaro P, Dondorp AM, Baird JK, Lam HM, Farrar J, Thwaites GE, White NJ, Boni MF.

Optimal population-level deployment of artemisinin combination therapies.

Lancet Global Health, 3(12):e758-e766, 2015.

3. Peak C, Thuan PD, Britton A, **Nguyen TD**, Wolbers M, Thanh NV, Buckee CO, Boni MF.

Measuring the impact of artemisinin-based case management on malaria incidence in southern Vietnam, 1991-2010.

Am J Trop Med Hyg, 92:811-817, 2015.

2. Boni MF, **Nguyen TD**, de Jong MD, van Doorn HR.

Virulence attenuation during an influenza A/H5N1 pandemic.

Phil Trans R Soc B, 368:20120207, 2013.

[led and carried out individual-based model development for a hypothetical avian influenza pandemic ; paper was profiled in National Geographic and by the Wall Street Journal]

1. Hien TT, Boni MF, Bryant JE, Ngan TT, Wolbers M, **Nguyen TD**, Truong NT, Ha DQ, Hien VM, Nhu LNT, Thanh TT, Uyen LTT, Nhien PT, Chinh NT, Chau NVV, Farrar JJ, van Doorn HR.

Early Pandemic influenza (2009 H1N1) in Ho Chi Minh City, Vietnam: A Clinical Virological and Epidemiological Analysis.

PLoS Med, 7(5) :e1000277, 2010.