

Curriculum Vitae
Brandy St. Laurent, Ph.D.

Wellcome Sanger Institute
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Education

2007 - 2012 **Ph.D.** in Biology. Infectious Diseases and Global Health focus.
Eck Institute for Global Health, University of Notre Dame, Notre Dame, IN

2002 - 2006 **B.S.** in Biology, minor in Philosophy
University of Oregon, Eugene, OR

Research Experience

2018 - present **Visiting Research Fellow, Staff Scientist**
Wellcome Sanger Institute, Genomic Surveillance Unit, Malaria Genetics,
Natural Genetic Variation. Hinxton, Cambridge, UK
Supervisors: Dr. Alistair Miles and Dr. Dominic Kwiatkowski

2012 - 2018 **Postdoctoral Intramural Research Training Award (IRTA) Fellow**
National Institutes of Health, National Institute of Allergy and Infectious
Diseases, Laboratory of Malaria and Vector Research, Rockville, MD
PI: Dr. Rick Fairhurst

2007 - 2012 **Graduate Research Assistant, NSF IGERT Fellow**
Eck Institute for Global Health, University of Notre Dame, Notre Dame, IN
PIs: Dr. Frank H. Collins and Dr. Neil F. Lobo

2006 - 2007 **Undergraduate Research Assistant and Lab Technician**
University of Oregon, Center for Ecology and Evolutionary Biology, Eugene, OR
PIs: Dr. Christina M. Holzapfel and Dr. William E. Bradshaw

Grants, Awards, and Fellowships

2015 - 2017 Principal Investigator - **Grand Challenges Explorations Grant** Round 15
“**Cow-baited tents as a monitoring and intervention tool**”, The Bill and Melinda
Gates Foundation, \$100,000

2011 - 2012 **Development Studies Working Group grant**, Helen Kellogg Institute for
International Studies, \$4600

2007 - 2012 **NSF GLOBES IGERT Fellowship**, University of Notre Dame
An interdisciplinary graduate training fellowship from the NSF, a program in Global Linkages of Biology, the Environment, and Society (GLOBES)

Teaching and Mentoring Experience

2022 **Course Developer and Teaching Assistant**, Wellcome Sanger Institute and PAMCA (the Pan-African Mosquito Control Association)
Development team member and course contributor for a foundational bioinformatic training program for vector genomic data analysis in Africa

2018 - present **Guest Lecturer**, University of Cambridge, Human Parasitology course
Delivering regular guest lectures on Vector Biology

2019 - present **Journal Club Organizer**, Wellcome Sanger Institute, Malaria Genetics
Organize and moderate a weekly Vector Genomics journal club composed of a mix of computer scientists and biologists

2015 - 2016 **Journal Club Organizer**, National Institutes of Health, LMVR
Exploring the Molecular Biology of Malaria

Graduate Teaching Assistant
Department of Biological Sciences, University of Notre Dame

2011, 2009 Assistant instructor (2009), then Primary instructor (2011) of Medical Entomology course and laboratory

2008 Primary instructor of General Entomology course and laboratory

Primary Research Mentor

2012 - 2017 Two post-baccalaureate research assistants (each with 2-year positions) and five summer students, NIH LMVR

2007 - 2012 Four undergraduate students and one lab technician, University of Notre Dame

Professional Memberships

2021 – present Member, Society for Vector Ecology (SOVE)

2011 - present Member, American Society of Tropical Medicine and Hygiene (ASTMH), ACME (medical entomology) subgroup

2014 - 2018 Member, Entomological Society of America (ESA)

Service

Ad hoc reviewer for: Ecology and Evolution, Insects, International Journal for Parasitology, Journal of Medical Entomology, Malaria Journal, Malaria World Journal, Parasites and Vectors, PLOS Computational Biology, PLOS Neglected Tropical Diseases, PLOS One, Transactions of the Royal Society of Tropical Medicine and Hygiene, The Open Tropical Medicine Journal, Science Advances, Sir Henry Dale fellowship applications, Bill and Melinda Gates Foundation grants.

2014 - 2015 Graduate Student Representative for the ASTMH ACME (medical entomology) subgroup

2011 - 2012 Graduate Student Chair, Development Studies Working Group
Kellogg Institute, University of Notre Dame

Invited Talks

2021 The Bill and Melinda Gates Foundation, Malaria Core Team, learning session.
Hosted by Phillip Welkhoff.
The Role of Diverse Vector Species in Malaria Transmission

2021 University of Glasgow Institute of Biodiversity, Animal Health & Comparative Medicine seminar series. Hosted by Ginny Howick.
Diverse and diverging malaria vectors in Southeast Asia

2021 Max Plank Institute for Infection Biology, New Voices in Infection Biology virtual seminar series. Hosted by Silvia Portugal.
Diverse outdoor-biting malaria vectors and drug-resistant parasites complicate malaria transmission and control in Southeast Asia

2020 APMEN (Asia Pacific Malaria Elimination Network) Tech Talks, virtual seminar series, Topic: Sampling methods for Adult Malaria Vectors.
The efficiency of cow-baited tent traps in sampling malaria vector diversity and abundance (available at <http://tiny.cc/APMENwebinars>)

2016 VectoLand ASEAN-EU Cooperation in Science, Technology, and Innovation meeting. Institute Pasteur, Phnom Penh, Cambodia
Sampling outdoor-biting Anopheles mosquitoes in Cambodia

2016 Georgetown Department of Biology Seminar Series. Georgetown University, Washington D.C., Hosted by Peter Armbruster.
Diverse vectors, outdoor transmission, and drug resistance: why malaria control gets complicated in Cambodia

- 2016 Wellcome Trust Scientific Conference on the Genomic Epidemiology of Malaria (GEM), Wellcome Trust Genome Campus, Hinxton, Cambridge, UK.
Clinically-informed mosquito sampling in Cambodia: a longitudinal study of diverse malaria vectors in three provinces
- 2014 Entomological Society of America Annual Meeting Symposium: Contributions of Mosquito Research to Science and Society. Portland, OR.
Malaria vector diversity in SE Asia and beyond: Challenges and opportunities
- 2014 Ohio Northern University Biology Speaker Series. Hosted by Catherine Craker.
Multifarious Malaria Mosquitoes - why malaria control gets complicated in Southeast Asia
- 2014 Wellcome Trust Scientific Conference on the Genomic Epidemiology of Malaria (GEM), Wellcome Trust Genome Campus, Hinxton, Cambridge, UK
Artemisinin-resistant Plasmodium falciparum and diverse Anopheles vectors in Cambodia

Oral Presentations

- 2022 Vector Kolymbari Meeting 2022. Crete, Greece
Population genomics reveal distinct and diverging populations of *An. minimus* in Cambodia
- 2020 American Society of Tropical Medicine and Hygiene, Virtual
Population genomics of An. minimus in Cambodia
- 2019 American Society of Tropical Medicine and Hygiene, New Orleans, LA
A whole genome taxonomic survey of diverse Southeast Asian malaria vectors
- 2018 Wellcome Trust Scientific Conference on the Genomic Epidemiology of Malaria (GEM), Wellcome Trust Genome Campus, Hinxton, Cambridge, UK
A genomic study of taxonomic diversity of Southeast Asian malaria vectors
- 2016 American Society of Tropical Medicine and Hygiene. Atlanta, GA
Clinically-informed mosquito sampling in Cambodia: a longitudinal study of diverse malaria vectors in three provinces
- 2016 International Conference of Entomology. Orlando, FL.
Cow-baited tents as a tool to monitor and control malaria vectors in Cambodia
- 2015 American Society of Tropical Medicine and Hygiene. Philadelphia, PA.
Artemisinin-resistant Plasmodium falciparum clinical isolates infect diverse vectors in Southeast Asia and Africa
- 2011 American Society of Tropical Medicine and Hygiene. Philadelphia, PA
Evidence for new malaria vector species in the Western Kenyan Highlands

Poster Presentations

- 2021 American Society of Tropical Medicine and Hygiene 2021, virtual
Signals of evolutionary selection within distinct and diverging populations of An. minimus in Cambodia
- 2021 Society for Vector Ecology (SOVE), 2021 annual conference, virtual
Population genomics of An. minimus in Cambodia
- 2021 Women in Malaria Conference (WIM), inaugural virtual conference
Population genomics reveal distinct and diverging populations of An. minimus in Cambodia
- 2018 PAMCA (Pan-African Mosquito Control Association), Victoria Falls, Zimbabwe
A genomic study of diverse outdoor biting Southeast Asian malaria vectors
- 2018 MIM (Multilateral Initiative on Malaria) Pan-African Malaria Conference, Dakar, Senegal
Targeting outdoor biting malaria vectors using insecticide-treated cow-baited tents
- 2017 American Society of Tropical Medicine and Hygiene. Baltimore, MD.
Insecticide-treated cow-baited tents as a tool to control outdoor biting malaria vectors
- 2014 American Society of Tropical Medicine and Hygiene. New Orleans, LA.
Investigating the role of diverse anophelines in transmitting artemisinin-resistant Plasmodium falciparum in Cambodia
- 2013 American Society of Tropical Medicine and Hygiene. Washington, D.C.
Accurate species identification is critical for malaria control: the utility of molecular characterization of Anopheline species across Indonesia, a country of diverse vectors and malaria transmission
- 2013 American Society of Tropical Medicine and Hygiene. Washington, D.C.
Diverse sympatric malaria vector species in Pursat Province, western Cambodia, an area where Artemisinin-resistant Plasmodium falciparum is highly prevalent
- 2011 American Society of Tropical Medicine and Hygiene. Philadelphia, PA
Host attraction of Anophelines in South Halmahera, Indonesia
- 2011 American Society of Tropical Medicine and Hygiene. Philadelphia, PA
Utilizing morphological and molecular species identification for the characterization of malaria vectors in Kenya and Indonesia

Publications

Cannon M, Bogale H, Bhalerao D, Keita K, Camara D, Barry Y, Kieta M, Coulibaly D, Kone AK, Doumbo OK, Thera MA, Plowe CV, Travassos M, Irish S, Yeroshefsky J, Dorothy J, Prendergast B, **St. Laurent B**, Fritz M, Serre D, 2021. High-Throughput identification of eukaryotic parasites and arboviruses in mosquitoes. *Biol Open* (2021) 10 (7): bio058855.

Makunin A, Park N, Goodwin S, Korlević P, Von Wyszczetki K, Jacob C, Davies R, Waterhouse R, Kwiatkowski D, **St Laurent B**, Ayala D, Lawniczak M, 2021. Multiplexed amplicon sequencing for *Anopheles* mosquito species identification and population genomics. *Molecular Ecology Resources*. 2021; 00:1–17.

Syafruddin D, Lestari Y, Permana DH, Asih P, **St. Laurent B**, Zubaidah S, Rozi I, Kosasih S, Shinta, Sukowati S, Hakim L, Haryanto E, Mangunwardoyo W, Bangs M, Lobo N, 2020. *Anopheles sundaicus* complex and the presence of *Anopheles epiroticus* in Indonesia. *PLoS Neglected Tropical Diseases* 14 (7), e0008385.

Hansen SG, Womack J, Scholz I, Renner A, Edgel KA, Xu G, Ford JC, Grey M, **St. Laurent B**, Turner JM, Shannon Planer, Legasse AW, Richie TL, Aguiar JC, Axthelm MK, Villasante ED, Weiss W, Edlefsen PT, Picker LJ, Früh K, 2019. Cytomegalovirus vectors expressing *Plasmodium knowlesi* antigens induce immune responses that delay parasitemia upon sporozoite challenge. *PLoS one* 14 (1), e0210252.

St. Laurent B, Burton T, Sukowati S, Zio M, Sumardi, Sudibyo H, Suwito S, Fitri S, Asih PB, Kosasih S, Bretz D, Shinta, Burkot TR, Hawley WA, Collins FH, Lobo NF, 2018. Comparative evaluation of anopheline sampling methods in three localities in Indonesia. *Malaria Journal* 17:13.

Davidson JR, Supratman S, Shinta, Asih PB, Syafruddin D, **St. Laurent B**, Hawley WA, Liu F, Burkot TR, Collins FH, Lobo NF, 2018. Using barrier screens to characterize mosquito composition, flight activity, and abdominal status in South Lampung, Indonesia. *Malaria Journal* 11:440.

St. Laurent B, Burton T, Baharuddin A, Asih PB, Miller HC, Kosasih S, Djana IGW, Zubaidah S, Shinta, Firman S, Burkot T, Hawley WA, Syafruddin D, Sukowati S, Collins F H, Lobo NF, 2017. Host attraction and biting behavior of *Anopheles* mosquitoes in South Halmahera, Indonesia. *Malaria Journal* 16: 310.

St. Laurent B, Oy K, Miller B, Gasteiger EB, Lee E, Sovannaroeth S, Gwadz RW, Anderson JM, Fairhurst RM, 2016. Cow-baited tents are highly effective in sampling diverse *Anopheles* malaria vectors in Cambodia. *Malaria Journal* 15: 440.

St. Laurent B, Supratman S, Asih PB, Bretz D, Mueller J, Miller HC, Baharuddin A, Shinta, Surya A, Ngai M, Laihad F, Syafruddin D, Hawley WA, Collins FH, Lobo NF, 2016. Behaviour and molecular identification of *Anopheles* malaria vectors in Jayapura district, Papua province, Indonesia. *Malaria Journal* 15: 192.

St. Laurent B, Cooke M, Krishnankutty SM, Asih P, Mueller JD, Kahindi S, Ayoma E, Oriango RM, Thumloup J, Drakeley C, Cox J, Collins FH, Lobo NF, Stevenson JC, 2016.

Molecular characterization reveals diverse and unknown malaria vectors in the western Kenyan highlands. *American Journal of Tropical Medicine and Hygiene* 94: 327-35.

Lobo NF, **St. Laurent B**, Sikaala CH, Hamainza B, Chanda J, Chinula D, Krishnankutty SM, Mueller JD, Deason NA, Hoang QT, Boldt HL, Thumloup J, Stevenson J, Seyoum A, Collins FH, 2015.

Unexpected diversity of *Anopheles* species in eastern Zambia: implications for evaluating vector behavior and interventions using molecular tools. *Scientific Reports* 5: 17952.

St. Laurent B, Miller B, Burton TA, Amaratunga C, Men S, Sovannaroeth S, Fay MP, Miotto O, Gwadz RW, Anderson JM, Fairhurst RM, 2015. Artemisinin-resistant *Plasmodium falciparum*

clinical isolates can infect diverse mosquito vectors of Southeast Asia and Africa. *Nature Communications* 6: 8614.

Stevenson J, **St. Laurent B**, Lobo NF, Cooke MK, Kahindi SC, Oriango RM, Harbach RE, Cox J, Drakeley C, 2012. Novel vectors of malaria parasites in the western highlands of Kenya.

Emerging Infectious Diseases 18: 1547-9.

Preprints

St. Laurent B, Harding N, Nguyen T, Oy K, Soklun C, Sari M, Sunly R, Nhep S, Rocket K, Drury E, Goncalves S, Drury E, Goncalves S, Sovannaroeth S, Kwiatkowski D, Miles A.

Population genomics reveal distinct and diverging populations of *An. minimus* in Cambodia. Under review.

Manuscript available on BioRxiv doi: <https://doi.org/10.1101/2021.11.11.468219>

Open access whole genome and SNP data release: <https://www.malariagen.net/resource/35>

References

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*note: Frank is currently enjoying his retirement, his recommendation letter is available through his research project manager, Katie Cybulski, with his permission.
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Dominic Kwiatkowski, MRCP

Senior Group Leader – Genomic Surveillance Unit, Malaria Genetics, Natural Genetic Variation
Wellcome Sanger Institute, Malaria Programme
Fellow of the Royal Society, Fellow of the Academy of Medical Sciences
Head of the Malaria Genomic Epidemiology Network (MalariaGEN)
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