

# NSA DADA

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## EDUCATION

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- 2010-2014      **PhD in Microbiology (Emphasis in mosquito-microbe interactions)** Norwegian University of Life Sciences (NMBU), Faculty of Science and Technology, Ås, Norway.
- 2008-2009      **MSc in Biology and Control of Parasites and Disease Vectors with *Distinction (Summa cum laude)***. Liverpool School of Tropical Medicine (LSTM), Faculty of Health and Life Sciences, University of Liverpool, United Kingdom.
- 2002-2006      **BSc. in Zoology, *Magna cum laude***. University of Calabar, Calabar, Nigeria.

## OVERVIEW OF EXPERTISE & TECHNICAL SKILLS

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- **Vector biology and control:** mosquito surveillance, mass rearing, colonization of field-collected animals, creation of axenic (without microbes) and gnotobiotic (with known microbes) colonies, insecticide resistance assays etc.
- **General insect biology:** physiology, ecology, sampling, dissection, and curation
- **Classical and advanced molecular biology methods:** (meta)genomics, metabarcoding (16S rRNA, ITS, COI, etc), whole genome sequencing & transcriptomics
- **Bioinformatics, biostatistics and data visualizations:** Bash, Linux, Python, & R. Example programs with high proficiency: [Anvi'o](#), [Qiime2](#), [phyloseq](#), [MEGAN](#), [STAMP](#), etc)
- **Microbial ecology & host-microbe interactions:** focus on disease vector systems
- **Diverse sample collection, handling and processing:** water, stool, eDNA (bulk insects, water, and insect cuticle samples) etc.
- **Microscopy:** stereo & compound

## RESEARCH & LEADERSHIP EXPERIENCE

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- 10/2017-present      **Founder and Lead.** Mosquito Microbiome Consortium ([www.mosquito-microbiome.org](http://www.mosquito-microbiome.org))  
*A platform for streamlining methods in mosquito microbiome research and facilitating the extension of this area of research from laboratory to applications for controlling mosquito-borne diseases.*
- *I lead and direct activities of the consortium*
  - *Launched publicly in June 2020*
- 10/2019-09/2020      **Senior Research Scientist.** Faculty of Science and Technology (REALTEK), NMBU
- *I led an independent research program aimed at understanding how microbes shape disease vector biology and evolution.*
  - *I provided technical support and oversight to other projects that I was a part of within and outside of REALTEK.*
  - *I taught, mentored, and supervised students and research staff. Within this capacity, I successfully developed and taught, an MSc/PhD level course on the analysis of mosquito microbiome data.*
  - *I actively sought out and contributed to securing funding/support for my and our group's research and scholarly activities.*
- 09/2017-08/2019      **Research Fellow.** Entomology Branch, Division of Parasitic Diseases and Malaria (DPDM), Center for Global Health, CDC, Atlanta, GA, USA.  
*I developed an independent research program that investigated how microbes shape mosquito physiology and ecology, with a focus on how microbes contribute to insecticide resistance in mosquitoes. I actively;*
- *Led and directed research activities in collaboration with international institutions (in Kenya, Benin, Mexico, Guatemala, Thailand, and UK)*
  - *Conceptualized, designed, supervised, and conducted research projects within the program*
  - *Analyzed and/or supervised the analysis of complex research data—bioinformatics and biostatistics*
  - *Disseminated research outputs e.g. scientific publications, conferences, lectures and invited talks*

- *Taught, mentored, and supervised students and research staff*
  - *Supported activities of the Insecticide Resistance and Vector Control Team, Entomology Branch and DPDM*
  - *Sought out and contributed to securing funding/ support for my and our group's research and scholarly activities.*
- 11/2015-08/2017 **CDC & American Society for Microbiology Postdoctoral Fellow.** Entomology Branch, CDC, Atlanta, GA, USA
  - *Employing metagenomics, next generation sequencing, and metabarcoding approaches, I led a project that identified, for the first time, links between the mosquito microbiome and insecticide resistance in malaria vectors. These findings suggest the presence of a microbe-mediated mechanism of insecticide resistance in mosquitoes that had not been considered before—an achievement that is internationally recognized with awards and honors from notable institutions such as ASTMH and the CDC*
- 08/2015-11/2015 **Postdoctoral Research Associate.** Institut de Recherche pour le Développement (IRD), Department of Health, Montpellier, France.
  - *I developed and tested a protocol for determining the ability of mosquitoes to transmit bacterial infections to vertebrates*
- 03/2015-06/2015 **Postdoctoral Research Associate.** University of Oslo, Dept. of Community Medicine, Institute of Health and Society, Oslo, Norway.
  - *I performed data curation and analysis for a study aimed at identifying the effect of dietary counseling during pregnancy on infant birthweight in Mangochi, Malawi*
- 2010-2014 **Doctoral Research Fellow.** NMBU, Faculty of Science and Technology, Ås, Norway
  - *I led a project that characterized the interactions between container-dwelling mosquitoes and microbes in breeding habitats in Thailand and Laos, and how these interactions affect mosquito vector abundance.*
- 2009 **Research Assistant.** Centers for Neglected Tropical Diseases, LSTM, Liverpool, United Kingdom.
  - *I processed bulk mosquito nucleic acids to screen for filarial worms as part of a project aimed at elucidating the effect of post-conflict rural-urban migration on the transmission of lymphatic filariasis in Sierra Leone and Liberia*

#### **ADVISORY ROLES, CONSULTANCY & SECONDARY ACADEMIC APPOINTMENTS**

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- 2021-present **Expert Assessor.** WHO Prequalification Team – Vector Control Product Prequalification
- 2021-present **Global Health Consultant.** KPMG (Norway) International Development Advisory Service
  - *WHO: Long-Term Agreement for the provision of EVA support for capacity assessment of UNITAID's Pre-Grantees*
- 2020-present **Honorary Research Fellow.** Tropical Infectious Diseases Research Center, University of Abomey-Calavi, Abomey-Calavi, Benin
- 2017-present **Adjunct Lecturer.** Prince of Songkla University (PSU), Hat Yai, Thailand.
- 2019-2021 **Adjunct Research Fellow.** Nigerian Institute of Medical Research, Lagos, Nigeria

#### **INTERNATIONAL RESEARCH STAYS & VISITS**

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- 2018-2019 **Guest Researcher.** Kenya Medical Research Institute (KEMRI), Center for Global Health Research (CGHR), Entomology Section, Kisumu, Kenya
  - *led research activities focused on elucidating the underlying mechanisms of insecticide resistance in East African malaria mosquitoes, particularly from the perspective of mosquito-associated microbes*
  - *provided technical support to the Entomology Section on malaria vector control projects*
  - *trained and supervised staff on disease vector classification, sampling, and curation, as well as collection and management of entomological data*
- 2016-2017 **Guest Researcher.** Universidad del Valle de Guatemala (UVG), Centro de Estudios en Salud, Grupo de Biología y Control de Vectores, Guatemala, Guatemala.
  - *I led research activities focused on understanding how mosquito-associated microbes contribute to insecticide resistance in Guatemalan malaria mosquitoes*

- 2016 **Guest Researcher.** Universidad Autonoma de Yucatan, Departamento de Zoologia, Campus de Ciencias Biologicas y Agropecuarias, Merida, Mexico.
  - *I provided training to laboratory technicians, and staff of local ministry of health, on laboratory colonization of field-collected mosquitoes and insecticide resistance assays*
- 2013 **Guest Researcher.** IRD, Montpellier and University of Montpellier (UM), Bacteriology unit, Faculty of Pharmacy, Montpellier, France.
  - *I led research activities focused on understanding how mosquito-associated microbes contribute to insecticide resistance in Mexican malaria mosquitoes*
- 2010-2012 **Guest Researcher.** Khon Kaen Provincial Health office, Khon Kaen, Thailand
  - *I received training on microbial metabarcoding using temporal temperature gradient gel electrophoresis and sequencing*
  - *I led a project that characterized the interactions between container-dwelling mosquitoes and microbes in breeding habitats*
  - *I established a field research laboratory*
  - *I recruited and trained field assistants as well as provided training to staff of the Provincial Health Office on mosquito surveillance*
  - *I provided evidence-based recommendations for mosquito surveillance and control*
- 2011 **Guest Researcher.** Salavan Health Department, Salavan, Laos Peoples Democratic Republic.
  - *I performed the same activities outlined above for Khon Kaen Provincial Health Office*
- 2010 **Visiting Researcher.** Mukdahan Provincial Health Office, Mukdahan, and Ubon Ratchathani Provincial Health Office, Ubon Ratchathani, Thailand
  - *Working closely with staff of each provincial health office, I examined available data on dengue incidence for the preceding five years and performed site visits for the ecological assessment of dengue mosquitoes. These were done to select appropriate sites for my doctoral research*
- 2010-2011 **Guest Researcher.** Kasetsart University, Entomology Department, Bangkok, Thailand
  - *I designed my doctoral research project on mosquito-microbe interactions, and developed study protocols to obtain ethical clearance from IRBs in both Thailand and Laos*
  - *I conducted preliminary surveys across three provinces in Thailand and four in Laos, and finally selected two villages in one province per country for my doctoral research project*
  - *I procured required equipment and supplies to set up my research laboratory*
- 2009 **Guest Researcher.** Helen Keller International, Freetown, Fourah Bay College, Freetown, and Njala University, Bo, Sierra Leone.
  - *I provided training on the biology, control, and identification of schistosomes and soil transmitted helminths (STH)*
  - *Based at Njala University, I processed and examined stool samples for the presence of STH eggs as part of a country-wide survey of the effects of mass administration of praziquantel and mebendazole for the control of STH and schistosomiasis*

#### **ACADEMIC/PROFESSIONAL AWARDS & HONORS**

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- 2019 **Charles C. Shepard Award Nominee for excellence in science.** US Centers for Disease Control and Prevention and Agency for Toxic Substances and Disease Registry (CDC/ATSDR).
  - 2017 **Future Leader in International Medical Entomology (inaugural) Award.** American Committee of Medical Entomology (ACME), American Society of Tropical Medicine and Hygiene (ASTMH)
  - 2006 **Best graduating student.** National Association of Zoology & Environmental Biology, University of Calabar, Nigeria

#### **FUNDING, RESEARCH SUPPORT & FELLOWSHIPS (> 2.7 million USD awarded)**

##### ***Research grants***

- 2021-2024 **Lead Investigator** “Establishing genomics and bioinformatics hubs for vector-borne disease research in Africa” A Pan-African Mosquito Control Association (PAMCA) initiative. Bill and Melinda Gates Foundation (BMGF), USA—**1,199,565 USD**

- 2021-2024 **Co-Investigator** “Genomics for management of insecticide resistance in African malaria vectors” BMGF, USA—**709,988 USD**
- 2021-2023 **Co-Investigator** “Impact of climate change on tropical blood-sucking insect pests: behavior and pesticide susceptibility” Fundamental Fund, Thailand Science Research and Innovation (TSRI) —1,000,000 THB (~**31,900 USD**)
- 2021-2022 **Co-Principal Investigator** “International research exchange on the mosquito microbiome and its application for vector-borne disease control” French National Center for Scientific Research (CNRS): 19,500 EUR (~**22,500 USD**)
- 2021-2022 **Project partner** “Genetic diversity and maternal transmission of Microsporidia MB strains in field populations of *Anopheles gambiae* s.l. in Cameroon” ANTI-VeC— 39,200 GBP (**54,219 USD**)
- 2020-2021 **Principal Investigator** “Role of the mosquito microbiota in insecticide resistance. A seminal study of invasive *Aedes* populations in Italy” European Cooperation in Science and Technology (Action CA17108) Short Term Scientific Mission Grant—1,950 EUR; ~**2300 USD [cancelled due to COVID-19]**
- 2019-2021 **Co-Investigator** “Building the capacity for the utility of next generation sequencing in insecticide resistance management by African National Malaria Control programs”. Funded by BMGF, USA – **200,000 USD**
- 2015-2019 **Principal Investigator. CDC and American Society for Microbiology (ASM) Postdoctoral Research Fellowship in Infectious Disease and Public Health Microbiology (2015-2017) and CDC Associate Service Fellowship (2017-2019).** “Role of mosquito microbiota in insecticide resistance in malaria mosquitoes”. Funded by the CDC, USA >**226,500 USD** (laboratory space and consumables provided in addition)
- 2018-2018 **Co-Investigator** “Entomological evaluation of an attractive targeted sugar bait for malaria vector control in western Kenya”. Funded by: BMGF via LSTM and Innovative Vector Control Consortium, Liverpool, UK –**139,000 USD**
- 2013-2013 **Principal Investigator. Doctoral overseas research grant** “Microbial composition of *Ae. aegypti* and water from their breeding containers”. Funded by: Research Council of Norway (RCN)—51,000 NOK; ~**6,000 USD**
- 2010-2013 **Doctoral Research Fellowship** “Links between *Aedes aegypti* infestation and fecal contamination in domestic water containers in Thailand and Laos”. Funded by: RCN—948,417 NOK; ~**103,621 USD**
- Travel grants, other research support and monetary value of Awards**
- 2019 **Travel grant** 1<sup>st</sup> European workshop on testing procedures for monitoring and managing insecticide resistance in invasive mosquitoes. Supported by the World Health Organization (WHO) & The Worldwide Insecticide Resistance Network (WIN).
- 2019 **Travel grant** ANTI-VeC (Application of Novel Transgenic technology & Inherited symbionts to Vector Control) International Conference Bursary—1,075 GBP; ~**1,400 USD**
- 2017-2019 **Co-Investigator** “The role of agricultural pesticide usage in the development of resistance to public health insecticides in mosquitoes”. Supported by: Thailand Research Fund and PSU.
- 2017 **Award monetary value (Future Leader in International Medical Entomology).** ACME-ASTMH—**2,000 USD**
- 2009-2009 **Postgraduate (MSc) thesis project support** “Prevalence of Soil-transmitted Helminths (STHs) in Sierra Leone: A survey of school children aged 9-14 years in six districts”. Funded by: LSTM & UK Department for International Development (DFID)— 1,800 GBP; ~**2,300 USD**

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**SCIENTIFIC PUBLICATIONS** (♣ students/mentees; ⚡ significant recognition/award; ‡ equal contribution)

**Peer-reviewed**

- 2021
- Dada, N.**, Benedict, A.C. ♣, López, F.J. ♣, Lol, J.C. ♣, Sheth, M., Padilla, N. and Lenhart, A. Comparative characterization of internal and cuticle surface microbiota of laboratory-reared F<sub>1</sub> *Anopheles albimanus* originating from different sites. *Malaria Journal*, 20:414 [↗](#)
  - Pelloquin, B. ♣, Kristan, M., Edi, C., Meiwald, A., Clark, E., Jeffries, C. L., Walker, T., **Dada, N.**‡, Messenger, L. A.‡. Overabundance of *Asaia* and *Serratia* bacteria is associated with deltamethrin insecticide susceptibility in *Anopheles coluzzii* from Agboville, Côte d’Ivoire. *Microbiology Spectrum*, 9(2): e00157-21 [↗](#)

3. Overgaard, H. J., **Dada, N.**, Lenhart, A., Stenstrom, T-A, & Alexander, N., 2021 Integrated management of Aedes-borne arboviral diseases and diarrheal diseases. *Bulletin of the World Health Organization*, 99:583-592 [↗](#)
4. Omoke, D. **👤**, Kipsum, M., Otieno, S., Esalimba, E., Sheth, M., Lenhart, A., Njeru, EM., Ochomo, E., **Dada, N.**, 2021. Western Kenyan *Anopheles gambiae* s.s. showing intense permethrin resistance harbor distinct microbiota. *Malaria Journal*, 20:77 [↗](#)
5. **Dada N**, Jupatanakul N, Minard G, Short SM, Akorli J, and Villegas LM, 2021. Considerations for mosquito microbiome research from the Mosquito Microbiome Consortium. *Microbiome*, 9:36 [↗](#)
6. Ratisupakorn, S. **👤**, Lorn, S., **Dada, N.**, Ngampongsai, A., Chaivisit, P., Ritthison, W., & Tainchum, K., 2021. *Aedes albopictus* (Skuse) susceptibility status to agrochemical-insecticides used in durian plantating systems in southern Thailand. *Journal of Medical Entomology*, 58:3 [↗](#)
- 2019 7. **Nsa Dada**, Juan C. Lol **👤**, Ana Cristina Benedict **👤**, Fransisco López **👤**, Mili Sheth, Nicole Dzuris, Norma Padilla & Audrey Lenhart. Pyrethroid exposure alters internal and cuticle surface bacterial communities in *Anopheles albimanus*. *The ISME Journal*, 13:2447-2464 [↗](#)  
**🏆 2020 nominated for Charles C. Shepard Award for excellence in science**
8. Nanthasane Vannavong **👤**, Razak Seidu, Thor-Axel Stenström, **Nsa Dada**, & Hans Jorgen Overgaard (2019) Dengue-like illness surveillance: a two-year longitudinal survey in suburban and rural communities in Laos and Thailand. *WHO Western Pacific Surveillance and Response Journal*, 10 (1) [↗](#)
- 2018 9. **Nsa Dada**, Mili Sheth, Kelly Liebman, Jesus Pinto & Audrey Lenhart (2018) Whole metagenome sequencing reveals links between mosquito microbiota and insecticide resistance in malaria vectors. *Scientific Reports*, 8 (2084) [↗](#)  
**🏆 2020 Scientific Reports Editor's choice: vector-borne diseases**  
**🏆 2019 nominated for Charles C. Shepard Award for excellence in science**  
**🏆 2018 Scientific Reports top 100 (#27) Microbiology articles**
- 2017 10. Nanthasane Vannavong **👤**, Hans Jorgen Overgaard, Chareyonviriyaphap Theeraphap, **Nsa Dada**, Ram Rangsin, Archawongs Sibounhom, Thor-Axel Stenström, & Razak Seidu (2017) Assessing factors associated with *E. coli* contamination of household drinking water in suburban and rural Thailand and Laos. *Journal of Water Science & Technology: Water Supply*, 18(3) [↗](#)
11. Nanthasane Vannavong **👤**, Razak Seidu, Thor-Axel Stenstrom, **Nsa Dada**, Hans J. Overgaard (2017) Effects of socio-demographic characteristics and household water management on dengue vector production in suburban and rural villages in Thailand and Laos. *Parasites & Vectors*, 10 (170) [↗](#)
- 2014 12. **Nsa Dada**, Estelle Jumas-Bilak, Sylvie Manguin, Razak Seidu, Thor-Axel Stenström, & Hans Jorgen Overgaard (2014) Comparative assessment of the bacterial communities associated with *Aedes aegypti* larvae and water from domestic water storage containers. *Parasites & Vectors*, 7(391) [↗](#)
- 2013 13. **Nsa Dada**, Nanthasane Vannavong, Razak Seidu, Audrey Lenhart, Thor-Axel Stenström, Theeraphap Chareonviriyaphap, & Hans J. Overgaard (2013) Relationship between *Aedes aegypti* production and occurrence of Escherichia coli in domestic water storage containers in rural and sub-urban villages in Thailand and Laos. *Acta Tropica*, 126(3):177-185 [↗](#)
- 2012 14. Hodges, M., **Dada, N.**, Wamsley, A., Paye, J., Bangura, M., Nyorkor, E., Sonnie, M. & Zhang, Y. 2012. Mass drug administration significantly reduces infection of Schistosoma mansoni and hookworm in school children in the national control program in Sierra Leone. *BMC Infectious Diseases*, 12, 16. [↗](#)
- 2011 15. Hodges, M., **Dada, N.**, Wamsley, A., Paye, J., Nyorkor, E., Sonnie, M., Barnish, G., Bockarie, M. & Zhang, Y. 2011. Improved mapping strategy to better inform policy on the control of schistosomiasis and soil-transmitted helminthiasis in Sierra Leone. *Parasites & Vectors*, 4, 97. [↗](#)



16. Ene E. Oku, Donald A. Ukeh and **Nsa Dada**, 2011. Prevalence and Seasonal Distribution of Daytime Biting Diptera in Rhoko Forest in Akamkpa, Cross River State, Nigeria. *International Journal of Zoological Research*, 7: 279-285. [DOI](#)

### TEACHING EXPERIENCE (see [here](#) for full descriptions)

2020	<b>Online course (MSc/PhD level). Analysis of mosquito-derived 16S rRNA seq data using QIIME2</b>
2019	<b>Class lecture and hands-on lab (PhD level). Mosquito Biology in <i>Malaria Prevention, Control and Treatment Course</i> for CDC's Epidemic Intelligence Officers and Resident Advisors</b>
2018	<b>Class lecture and hands-on lab and field (BSc and MSc level). <i>General insect classification, sampling and curation</i>. KEMRI, CGHR, Entomology Branch, Kisumu, Kenya</b>
2018	<b>Class lecture and hands-on lab (MSc level). <i>Malaria Prevention, Control and Treatment Course 2018 (GH574)</i>. Rollins School of Public Health Global Health Program. Emory University, Atlanta, USA</b>
2017	<b>Organizer and Instructor (MSc/PhD level). Hands-on workshop on <i>Insecticide Resistance</i>. Entomology branch, DPDM, Center for Global Health, CDC</b>
2016	<b>Organizer and Instructor (BSc/MSc level). Hands-on laboratory training. Universidad del Valle de Guatemala (UVG), Guatemala</b> <ul style="list-style-type: none"> <li>▪ <i>Larval and adult assays for insecticide resistance in mosquito populations</i></li> <li>▪ <i>Mosquito oviposition and mass rearing techniques</i></li> <li>▪ <i>Sex differentiation of mosquito pupae</i></li> </ul>
2012	<b>Organizer and Instructor. Hands-on field training on <i>Water and Mosquito Sampling</i>. Salavan Health Department, Salavan, Laos PDR</b>
2011	<b>Organizer and Instructor. Hands-on field &amp; Laboratory training. Khon Kaen Provincial Health office, Khon Kaen, Thailand</b> <ul style="list-style-type: none"> <li>▪ <i>Water sampling and testing</i></li> <li>▪ <i>Mosquito sampling and identification</i></li> </ul>
2009	<b>Class lecture (BSc level). Short course. HKI, Freetown, Sierra Leone</b> <ul style="list-style-type: none"> <li>▪ <i>Characteristics of soil transmitted helminths</i></li> <li>▪ <i>Collection and storage of stool samples for the identification of soil transmitted helminth eggs</i></li> </ul>
2009	<b>Hands-on laboratory training (BSc level). <i>Microscopic identification of helminth eggs using WHO Kato-Katz technique</i>. Fourah Bay College, Freetown, and Njala University, Bo, Sierra Leone</b>

### MENTORSHIP & STUDENT SUPERVISION

2020-present	<b>Postdoc Co-Supervisor. Dr. Wassiyath Mousse. University of Abomey-Calavi, Benin</b>
2020-present	<b>PhD Co-Supervisor. Patcharawan Sirisopa. Kasetsart University, Bangkok, Thailand</b>
2019-2019	<b>MSc Co-Supervisor. Bethanie Pelloquin. London School of Hygiene and Tropical Medicine, London (LSTMH), United Kingdom</b> <ul style="list-style-type: none"> <li>▪ One lead author manuscript under journal consideration</li> </ul>
2017-2019	<b>MSc Main Supervisor. Diana Omoke. Kenyatta University, Nairobi, Kenya</b> <ul style="list-style-type: none"> <li>▪ Inaugural BlackInEntomology Research Prize</li> <li>▪ Published one lead author peer-reviewed paper &amp; finalizing second lead author manuscript</li> <li>▪ ASTMH/American Committee of Medical Entomology 2019 Young Investigator Award</li> <li>▪ East Africa Consortium for Clinical Research/European and Developing Countries Clinical Trials Partnership Fellowship for Genomics training</li> <li>▪ Committee on Data of the International Council for Science-Research Data Alliance (CODATA-RDA) Scholarship for the 2018 CODATA-RDA Research Data Science Advanced Bioinformatics Workshop</li> <li>▪ Biosciences eastern and central Africa-International Livestock research Institute (BeCA-ILRI) Scholarship for the 2017 BeCA-ILRI advanced bioinformatics training</li> </ul>
2017-2019	<b>MSc Co-Supervisor. Sakda Ratisupakorn. PSU, Hat Yai, Thailand</b>

- 2018-2019
  - Published one lead author peer-reviewed paper
- 2018-2019 **PhD Co-Supervisor (rotation)**. Jonathan Gerhart. CDC and Georgia Institute of Technology (Georgia Tech), Atlanta, USA
  - Awarded the Association of Public Health Laboratories and CDC Bioinformatics Fellowship
- 2016 **Undergraduate Research Assistants**. Universidad del Valle de Guatemala
  1. Juan C. Lol
  2. Ana Cristina Benedict
  3. Francisco Lopez
  - All co-authors on my research outputs, including two publications
- 2015-2017 **PhD Co-Supervisor**. Nanthasane Vannavong. NMBU, Aas, Norway
  - Published three lead author peer-reviewed papers

## KEYNOTES & SELECTED INVITED PRESENTATIONS

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### *Upcoming*

- 2021
1. Title TBD. *Institute of biodiversity, animal health & comparative medicine, University of Glasgow, UK (Remote)*. Fall 2021
  2. Title TBD. *BIPOC in Parasitology (Remote)*. Fall 2021

### *Past*

- 2021
3. The mosquito microbiome: Another wrinkle in the insecticide resistance conundrum. *Microbiome Centers Consortium Seminar series (Remote)*. Fall 2021
  4. Mosquito-microbe interactions: Are the implications for gene drives? *Foundation for the National Institutes of Health: GeneConvene Global collaborative seminar series, USA (Remote)*. May 2021
  5. The mosquito microbiome: Another wrinkle in the insecticide resistance conundrum *Entomology Department, The Ohio State University, Columbus, Ohio, USA (Remote)*. April 2021
  6. **Keynote**. The mosquito microbiome: Another wrinkle in the insecticide resistance conundrum. *Inaugural Women in Malaria Conference (Remote)*. March 2021
- 2019
7. The mosquito microbiota and insecticide resistance *12th Annual Arthropod Genomics Symposium. Manhattan, Kansas. June 2019*
  8. Role of mosquito microbiota in insecticide resistance. *Division of Parasitic Diseases and Malaria Seminar, CGH, CDC, Atlanta, GA. May 2019*
- 2018
9. Differential microbial composition between insecticide resistant and susceptible malaria vectors: Another wrinkle in the insecticide resistance conundrum? *KEMRI, CGHR, Kisumu, Kenya. May 2018.*
- 2017
10. Differential microbial composition between insecticide resistant and susceptible New World malaria mosquitoes: Another wrinkle in insecticide resistance mechanism? *Advanced Molecular Detection Group, Division of Parasitic Diseases and Malaria, US Centers for Disease Control and Prevention, Atlanta, GA, USA. January 2017.*
- 2016
11. Differential microbial composition between insecticide resistant and susceptible New World malaria mosquitoes: Another wrinkle in insecticide resistance mechanism? *Universidad del Valle de Guatemala (UVG), Guatemala. November 2016*
  12. *Department of Environmental Sciences, Emory University, Atlanta GA, USA. November 2016*
  13. The role of mosquito microbiota in insecticide resistance. *Advanced Molecular Detection Group, Division of Parasitic Diseases and Malaria, US Centers for Disease Control and Prevention, Atlanta, GA, USA. February 2016.*
- 2014
14. How research findings generated over the past few years have influenced the control of Arboviruses: Dengue and Chikungunya. *Norwegian University of Life Sciences, Ås, Norway. December 2014*
  15. Dengue mosquito production and fecal contamination in domestic water containers and Thailand and Laos. *International Seminar on Integrated Water-Related Disease Control, Ås, Norway. May 2014*

- 2013 16. Relationship between *Aedes aegypti* production and fecal contamination in domestic water containers in Thailand and Laos. *Institut de Recherche pour le Développement (IRD) & University of Montpellier, Faculty of Pharmacy, Montpellier, France. June 2013.*
- 2011 17. Dengue vector production in domestic containers in Ban Han and Ban Waileum, Khon Kaen, Thailand. *Annual meeting of the District Health Center, Manchakhiri District, Khon Kaen, Thailand. December 2011.*
- 2010 18. Stored household water in Thailand and Laos: A possible link between dengue and diarrhea? *First annual meeting for the Thailand Research Fund (senior research scholar). Bangkok, Thailand. August 2010*

### CONTRIBUTED CONFERENCE TALKS (selected)

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- 2019 1. **Nsa Dada**, Diana Omoke Nyanting'a, Ezekiel Mugendi, Eric Ochomo, Mathew Kipsum, Samson Otieno, Edward Esalimba, Juan C. Lol, Ana Cristina Benedict, Francisco López, Kelly Liebman, Jesus Pinto, Mili Sheth, Nicole Dzuris, Norma Padilla and Audrey Lenhart. The mosquito microbiota and insecticide resistance. *6<sup>th</sup> Annual Conference of the Pan-African Mosquito Control Association.* Yaoundé, Cameroun. September 2019
- 2018 2. **Nsa Dada**, Juan Carlos Lol, Ana Cristina Benedict, Francisco López, Mili Sheth, Nicole Dzuris, Norma Padilla and Audrey Lenhart. Location-driven microbial composition in lab reared progeny of wild-caught mosquitoes and its implications for mosquito-microbe translational research. *Joint Annual Meeting of the Entomological Societies of America, Canada and British Columbia.* Vancouver, British Columbia Canada. November 2018
3. **Nsa Dada**, Juan Carlos Lol, Ana Cristina Benedict, Francisco López, Mili Sheth, Nicole Dzuris, Norma Padilla and Audrey Lenhart. Novel microbial candidate markers of pyrethroid resistance in *Anopheles albimanus*, a major Latin American malaria vector. *67<sup>th</sup> Annual Meeting of the American Society of Tropical Medicine and Hygiene.* New Orleans, Louisiana USA. October 2018.
- 2017 4. **Nsa Dada**, Mili Sheth, Kelly Liebman, Jesus Pinto & Audrey Lenhart. Functional diversity of the microbiota in *Anopheles albimanus* provides new insights into insecticide resistance mechanisms. *66<sup>th</sup> Annual Meeting of the American Society of Tropical Medicine and Hygiene.* Baltimore, Maryland USA. November 2017.
5. **Nsa Dada**, & Audrey Lenhart. *Anopheles albimanus* microbiota and links to insecticide resistance: A whole metagenome sequencing approach. *American Society for Microbiology, Research in Progress Meeting.* Atlanta GA, USA. April 2017.
- 2016 6. **Nsa Dada** & Audrey Lenhart. The role of mosquito microbiota in insecticide resistance: Studies on *Anopheles albimanus* in South and Central America. *American Society for Microbiology Research in Progress Meeting.* Atlanta GA, USA. May 2016.
- 2014 7. **Nsa Dada**. Dengue mosquito production and fecal contamination in domestic water containers and Thailand and Laos. *International Seminar on Integrated Water-Related Disease Control.* Ås, Norway. May 2014
- 2012 8. **Nsa Dada**, Nanthasanne Vannavong, Razak Seidu, Audrey Lenhart, Thor-Axel Stenström, Theeraphap Chareonviriyaphap & Hans J. Overgaard. *Aedes aegypti* productivity and fecal contamination in domestic water storage containers in two villages in Northeastern Thailand. *XXIV International congress of Entomology.* Daegu, Korea. August 2012
- 2010 9. **Nsa Dada**. Stored household water in Thailand and Laos: A possible link between dengue and diarrhea? *First annual meeting for the Thailand Research Fund (senior research scholar).* Bangkok, Thailand. August 2010

### FORMAL SCIENCE ADVOCACY & OUTREACH

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#### Science Advocacy

- 2019-2020 **eLife Community Ambassador for responsible science**  
Worked closely with eLife's Early-Career Advisory Group to promote responsible behavior in science. I particularly advocated for rigor and reproducibility; openness; equitable *Global North-South* collaborations; and diversity/increased representation of minoritized groups in science.



**Outreach/Communication**

- 2018      **Engage: Global Health. *ASTMH 67th Annual Meeting, New Orleans, USA***
- ASTMH's inaugural public health outreach event comprising fifteen stations showcasing different elements of the work we do as scientists and healthcare professionals in the field of tropical medicine.
  - I co-led the '*There's DNA everywhere*' station, where I demonstrated DNA extraction from strawberries to over 200 visiting high school students, their teachers/chaperones

**MEDIA APPEARANCES**

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- 2019      1. **The Atlantic.** A new way to keep mosquitoes from biting. [↔](#)
2. **Science News.** A fungus weaponized with a spider toxin can kill malaria mosquitoes. [↔](#)
3. **Science News for Students.** A fungus plus a spider toxin equals a weapon to kill mosquitoes [↔](#)
4. **CDC Bulletin.** Cutting-Edge Malaria Intervention Research. [↔](#)
5. **Chemical & Engineering News.** Computationally designed enzyme inhibitors overcome pesticide resistance. [↔](#)
- 2016      6. **CNN.** Zika: Is the US ready for the fight? [↔](#)

**PROFESSIONAL SERVICE, MEMBERSHIP & LEADERSHIP**

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**Editorial Board**

2022-2024      mBio Junior Editorial Board (Inaugural)

**Grants Reviewer/Panel**

2021      The African Academy of Sciences (AAS)

2021      South African National Research Foundation (NRF)

2021      UK Research and Innovation (UKRI)

2021      French National Research Agency

2019-present      ASTMH Annual Meeting Travel Award Committee

2019-present      Royal Society of Tropical Medicine and Hygiene (RSTMH) Global Assessor

**Conference abstract Reviewer**

2019      ASM Microbe Conference 2019

**Chair scientific conference sessions**

2017      66th Annual Meeting of ASTMH

**Co-Chair.** Mosquitoes: Insecticide resistance and control

**Thesis examination committees**

2021      **MSc Thesis Examination.** Ms. Warin Klakankhai. Prince of Songkla University (PSU), Hat Yai, Thailand

**Ad hoc peer reviewer for scientific journals, 2015-present (See [here](#) for more details)**

- |                              |                                    |   |
|------------------------------|------------------------------------|---|
| 1. Microbiome                | 7. PLOS Neglected Tropical Disease | 13. Acta Tropica                        |
| 2. Microbial Ecology         | 8. Parasites and Vectors           | 14. Cellular & Molecular Biology        |
| 3. FEMS Microbiology Ecology | 9. Malaria Journal                 | 15. Int. J. Mol. Sci.                   |
| 4. Frontiers in Microbiology | 10. Epidemiology & Infection       | 16. Afr. J. Bacteriol. Res.             |
| 5. Scientific Reports        | 11. Journal of Insect Science      | 17. Int. J. Environ. Res. Public Health |
| 6. PeerJ                     | 12. Journal of Vector Ecology      |   |

**Professional memberships & leadership**

2015-present      1. American Society of Tropical Medicine and Hygiene

- *Annual Meeting Travel Awards Committee (2019-present)*

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|--------------|--|
| 2015-present | 2. American Committee of Medical Entomology <ul style="list-style-type: none"><li>▪ <i>Executive Council Elected Member (2021-present)</i></li></ul> |
| 2020-present | 3. International Society for Viruses of Microbes   |
| 2019-present | 4. Pan African Mosquito Control Association  |
| 2019-present | 5. Microbiology Society (Associate)  |
| 2017-present | 6. Federation of European Microbiological Society (Affiliate)  |
| 2015-present | 7. American Society for Microbiology   |
| 2020-2020    | 8. Norwegian Entomological Association   |
| 2018-2018    | 9. Entomological Society of America  |
| 2015-2020    | 10. American Committee of Molecular, Cellular and Immunoparasitology   |
| 2015-2020    | 11. ASTMH Committee on Global Health   |