



Third Quarter

Newsletter

#007 July-September 2022

New door opened for Malaria elimination in Africa



ACoMVeC
AFRICAN CONSORTIUM IN MODELING
FOR EFFECTIVE VECTOR CONTROL



Employee Milestone

New staff recruited at CRID

- **Research assistant - RAFT Project**
 - » Sylvère Kezeta Bondja
- **Driver**
 - » David Gatcheu
- **Project administrative Assistant- ACoMVeC (Interns)**
 - » Bruno Essame
- **Policy and external affairs officer**
 - » Yvon Jesse FOGAN
- **Finance officer**
 - » Vanelle Yamedjeu
- **Communication**
 - » Esther Landrine Bougna

- **Human Ressources Assistant**
 - » Florentine Talla
- **Master students**
 - » Noubouwo Ndifo Leslly Blanche
 - » Mbiatchoua Possi Ornella Ingrid
 - » Kelly Nguefang



Capacity Building

Molecular entomology training

19 participants from 9 African countries trained at CRID



On August 8, the Centre for Research in Infectious Diseases (CRID) hosted a training on molecular entomology for malaria surveillance in Africa at its premises at Odza, Yaoundé, Cameroon. The program was organized as part of a project entitled: "Strengthening local capacity for malaria surveillance and elimination in Africa"; in collaboration with the Pan-African Mosquito Control Association (PAMCA) and the Bill and Melinda Gates Foundation. The training equipped 19 participants from 9 African countries with the ability to understand advanced concepts of molecular entomology-based strategies for malaria control that will enable them to perform malaria surveillance in their home country using molecular tools and concepts. The course, made of both theoretical and lab practical sessions, ran from the 8th to 19th August, 2022.

Data management and analysis



From August 31st to 2nd September 2022, a training course on mosquito data management and analysis was

organised at CRID as part of the PAMCA project entitled : «Strengthening local capacity for malaria surveillance and elimination in Africa». The program was led by Dr Samson Keware, Data manager and modelling specialist at the PAMCA/Ifakara Health Institute, Tanzania. During the training, participants were introduced to the use of R statistical software and on data visualization and statistical modelling analysis for mosquito data management.

CRID at the 8th PAMCA Conference Kigali -Rwanda



CRID researchers participated massively at the PAMCA 8th annual conference and exhibition, Kigali Convention Center, Rwanda, from 26th - 28th September 2022, organised under the theme: Harnessing local institutions and Community support for the elimination of vector-borne diseases. This conference brought together vector-borne disease experts and stakeholders from all over the world.

Prof NDO Cyrille, Dr Elanga Emmanuel, Miss Nathalie Amvomgo and Dr Leon Mugenzi participated on a Pre-conference decision making workshop. However, CRID researchers were well represented in the conference, participating in various areas such as poster presentation, abstract presentation, chairing of scientific sessions, as well as the PAMCA turbo talk competition. ***Ambadiang Marie Marilène**, PhD student at CRID won the 1st price of the Poster Turbo Talk.

MASTER DEFENSE



Stevia Ntadoun, defended her Master dissertation

Training the next generation of African scientists is one of our objectives. On Friday, September 16, 2022, Stevia Ntadoun, defended her Master dissertation in Biochemistry with distinction at the Faculty of Science, University of Yaoundé I, on the topic "Evaluation of the association between a 4.3kb genomic variation and insecticide resistance in Anopheles funestus, major malaria vector" supervised by Pr Jude Bigoga (UYI) and Pr Wondji Charles (LSTM). Congratulations Stevia.

Bravo Tientcheu C. Raissa !



Another success ! On Monday, September 19, 2022, Tientcheu Claudine Raissa, defended her Master dissertation in Animal Biology with distinction at the Faculty of Science, University of Yaoundé I, on the topic; "Fitness cost of metabolic resistance to insecticides due to genomic variation in Anopheles funestus, major malaria vector in Cameroon» supervised by Pr Njiokou Flobert (UYI) and Pr Wondji Charles (LSTM). Bravo! Claudine Raissa !

Public engagement

Exhibition on mosquito-borne diseases

Tuesday July 26, 2022, CRID's team comprising of three researchers; Dr Magellan Tchouakui, Dr Leon Mugenzi and Cedrick Noutchih, bioinformatics technician attended the Young Men Christian Association (YMCA) camping for a public engagement activity at Okola, Centre Region, Cameroon. This camping brought together over 200 youths from all over the national territory. The objective of such engagement activity was to raise awareness about mosquitoes as the deadliest animal on earth; the pathogens or diseases they transmit and the urgent actions that needs to be carry out to keep these diseases at bay.



Dissemination activities

Wednesday, August 10th 2022. Dr Elanga Emmanuel, Deputy Head of Department of Medical Entomology, CRID and Dr Goupeyou_Youmsi, Regional Coordinator for West Africa PAMCA_Wivc (Women in Vector Control) were on CRTV_news studio for a talk on the Malaria molecular entomology training for Malaria surveillance in Africa.

Visits

CDC Atlanta at CRID to further collaboration



Dr Lucy Mackenzie-Impoinvil from the Entomology Branch, Division of Parasitic Diseases and Malaria, Centre for Global Health of the Centres for Disease Control and Prevention (CDC) Atlanta, USA; visited CRID in order to prepare the Launching of a collaborative project between CDC Atlanta and CRID. During her stay from Sunday 11th to Thursday 15th September 2022, Dr Lucy visited field sites for larval collection (Mbalmayo) and other CRID's facilities. A strong collaboration is being put in place between CRID and the CDC.

Working visit at CRID



United States Agency for International Development (USAID) and President's Malaria Initiative (PMI) staff in a working visit at CRID to assess CRID research capacity. As Executive Director, Prof Charles Wondji gave a brief presentation of the CRID.

ACoMVeC: Our newly Awarded Project

We are delighted to announce a newly awarded \$3 Millions project from the Bill and Melinda Gates foundation led by Prof Charles Wondji at the Centre for Research in Infectious Diseases (CRID). The new consortium named African Consortium in Modelling for Effective Vector Control (ACoMVeC) main goal is to support malaria mathematical modelling capacity-building efforts across sub-Saharan Africa with a



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specific focus on vector control. For three years, the project will focus on training 15 PhD level modelers on vector control from the 7 ACoMVeC research institutions in collaboration with local NMCPs across French and English-speaking countries with support from experienced modelers. This project will generate key evidences to support national malaria control Programs in these countries.

General Statistics

42 Women

68 Men

24 Scientists

30 Administration

37 Students

19 Technicians



CRID's expertise is valued during the WAASuN meeting



Dr Basile Kamgang, Head of Medical Entomology Department at CRID attended the second West Africa Aedes Surveillance Network (WAASuN) meeting in Abidjan, Cote d'Ivoire from July 4th-8th, 2022. He was invited as a specialist on Arbovirus vectors in Africa. Dr Aurelie Prisca Yougang, Post-Doc Researcher at CRID, was also part of the meeting as focal person on insecticides resistance in Aedes mosquitos at CRID.

The meeting was held under the theme; "Creating awareness on the threat of Aedes and invasive non-Aedes mosquito species in West Africa". The main objectives of the WAASuN meeting was to get updates from countries on Aedes surveillance activities, deliver information from other partners on Aedes Research, surveillance activities and protocols; provide updates on WAASuN activities, development of ToR's and strategic plans; Carry out capacity building (hands-on) training on Aedes surveillance activities; socialization and networking. Dr Basile Kamgang has participated to the elaboration of strategic plan for yellow fever outbreak in Cameroon.



Why is World Mosquito Day celebrated ?

World Mosquito Day is observed on August 20th in order to honour Sir Ronald Ross who discovered the link between mosquitoes and the transmission of malaria in the year 1897. Mosquito-borne diseases such as malaria, dengue and chikungunya spread more during the monsoons. The 125th edition of world mosquito day was celebrated under the theme: "Harness innovation to reduce the malaria disease burden and save lives".



Scientific Publication

- Spatial distribution of insecticide resistant populations of *Aedes aegypti* and *Ae. albopictus* and first detection of V410L mutation in *Ae. aegypti* from Cameroon, <https://bit.ly/3e2CN0i>, by Matthew Montgomery, James F. Harwood, Aurelie P. Yougang, Theodel A. Wilson-Bahun, Armel N. Tedjou, Christophe Rostand Keumeni, Auston Marm Kilpatrick, Charles S. Wondji & Basile Kamgang; Published on August 17, 2022 in *Infectious Diseases of Poverty*.
- Seroprevalence of Rift Valley fever virus in domestic ruminants of various origins in two markets of Yaoundé, Cameroon, <https://bit.ly/3QqaeXH>, by Francine Yousseu Sado, Huguette Simo Tchegnna, Basile Kamgang, Doumani Djonabaye, Emmanuel Nakouné, Philip J. McCall, Roland Ndip Ndip, Charles S. Wondji; Published on August 11, 2022 in *PLOS Neglected Tropical Diseases*.
- Zika vector competence data reveals risks of outbreaks: the contribution of the European ZIKAlliance project, <https://go.nature.com/3e3SILM>, by Thomas Obadia, Gladys Gutierrez-Bugallo, Veasna Duong, Ana I. Nuñez, Rosilainy S. Fernandes, Basile Kamgang, Liza Hery, Yann Gomard, Sandra R. Abbo, Davy Jiolle, Uros Glavinic, Myrielle Dupont-Rouzeyrol, Célestine M. Atyame, Nicolas Pocquet, Sébastien Boyer, Catherine Dauga, Marie Vazeille, André Yébakima, Michael T. White, Constantianus J. M. Koenraadt, Patrick Mavingui, Anubis Vega-Rua, Eva Veronesi, Gorben P. Pijlman, Christophe Paupy, Núria Busquets, Ricardo Lourenço-de-Oliveira, Xavier De Lamballerie & Anna-Bella Failloux; Published on August 02, 2022 in *Nature Communications*.
- Marked aggravation of pyrethroid resistance in major malaria vectors in Malawi between 2014 and 2021 is partly linked with increased expression of P450 alleles, <https://bit.ly/3Ecn21n>, by Benjamin D. Menze, Magellan Tchouakui, Leon M. J. Mugenzi, Williams Tchapgga, Micareme Tchoupo, Murielle J. Wondji, Martin Chiumia, Themba Mzilahowa & Charles S. Wondji; Published on July 30, 2022 in *BMC Infectious Diseases*.
- Fitness cost of target-site and metabolic resistance to pyrethroids drives restoration of susceptibility in a highly resistant *Anopheles gambiae* population from Uganda, <https://bit.ly/3M4hZSo>, by Magellan Tchouakui, Ambrose Oruni, Tatiane Assatse, Claudine R. Manyaka, Micareme Tchoupo, Jonathan Kayondo, Charles S. Wondji; Published on July 26, 2022 in *PLoS ONE*.
- Molecular Drivers of Multiple and Elevated Resistance to Insecticides in a Population of the Malaria Vector *Anopheles gambiae* in Agriculture Hotspot of West Cameroon, <https://bit.ly/3C21ZvW>, by Arnaud Tapa, Jonas A. Kengne-Ouafo, Valdi S. Djova, Magellan Tchouakui, Leon M. J. Mugenzi, Rousseau Djouaka, Constant A. Pieme and Charles S. Wondji; Published on July 06, 2022 in *GENE*.



Partners and funders

