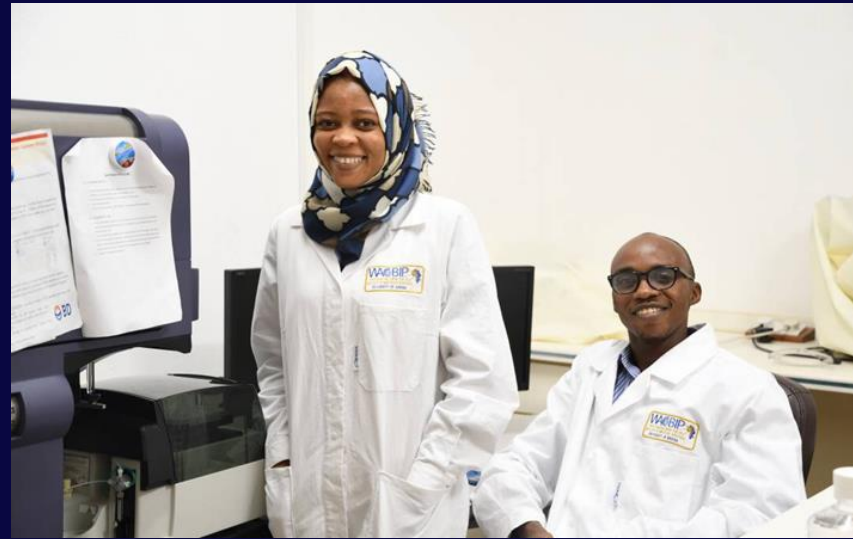


# WACCBIP – Overview



**Dr. Peter Kojo Quashie**  
**Deputy Director, Research**  
(@WACCBIP\_UG; @DrPKQuashie)

**West African Centre for Cell Biology of Infectious  
Pathogens**

Department of Biochemistry, Cell & Molecular Biology

**UNIVERSITY OF GHANA**



# Regional distribution of WACCBIP fellows by programme, 2023

FELLOWSHIPS

430

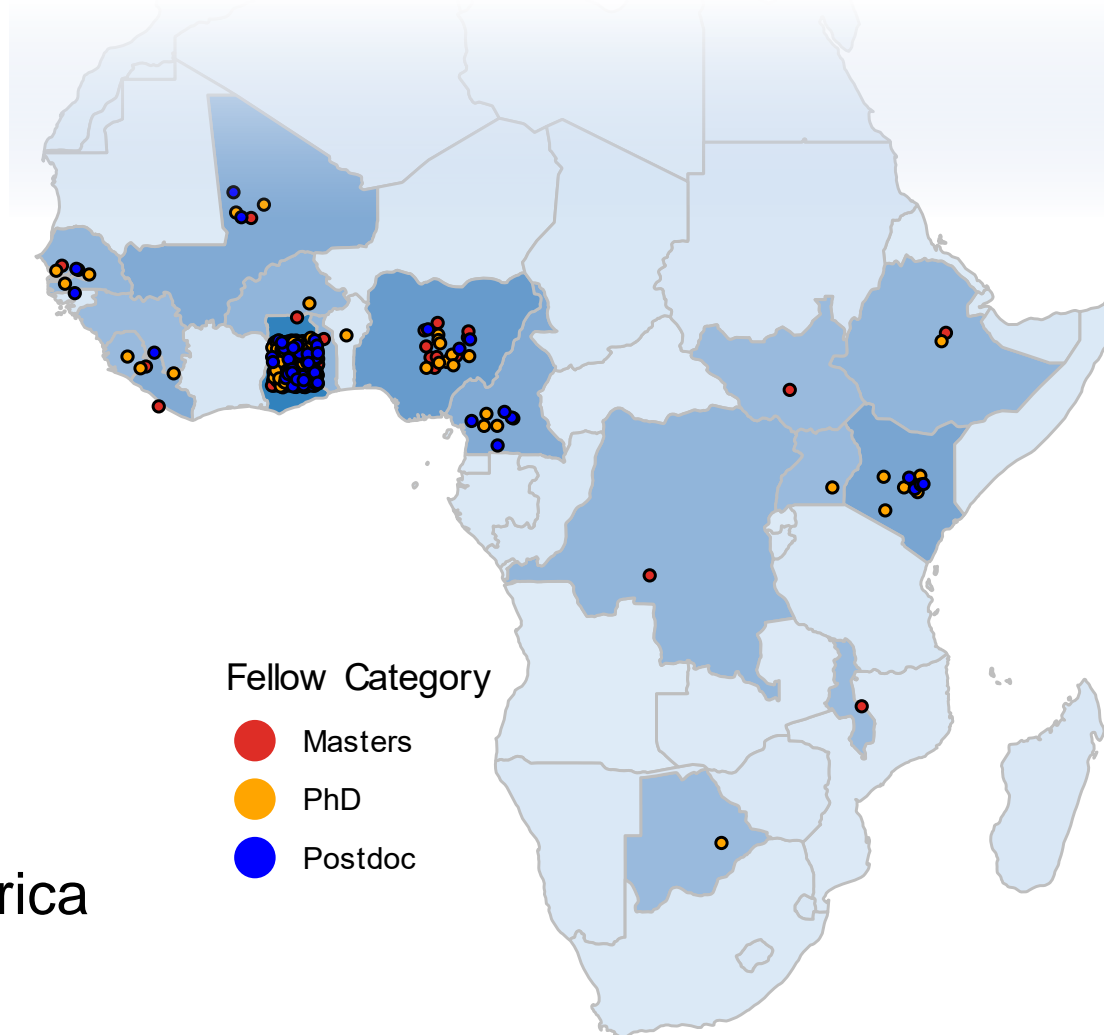


161

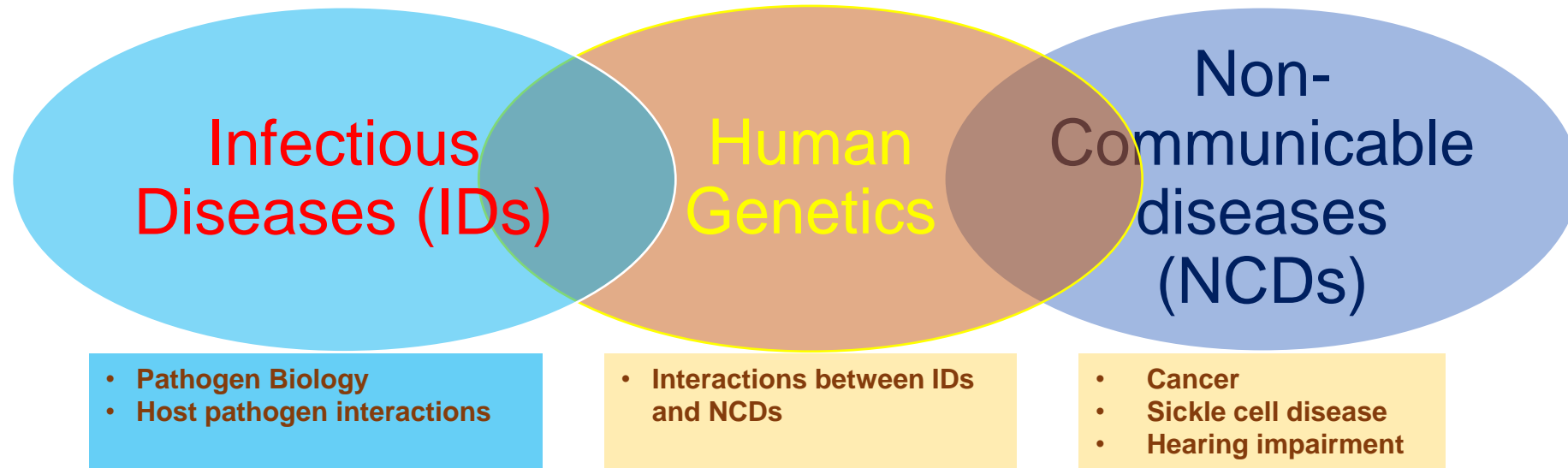


269

Supported long-term training for 430 young scientists from 19 countries across Africa



# Research & training @WACCBIP



## Multi-disease, multi-dimensional research using a consistent approach:

1. Using molecular and cellular approaches to understand disease mechanisms
2. Generating knowledge to guide new strategies for diagnostics, vaccines and drugs

# Research & training @WACCBIP



2023 Human Cell Atlas Workshop



2023 Human Cell Atlas Workshop



2022 Opentrons Robotics for Sequencing Workshop



2022 Opentrons Robotics for Sequencing Workshop



NIHR Genome Sequencing Workshop 2023



NIHR Genome Sequencing Workshop 2023

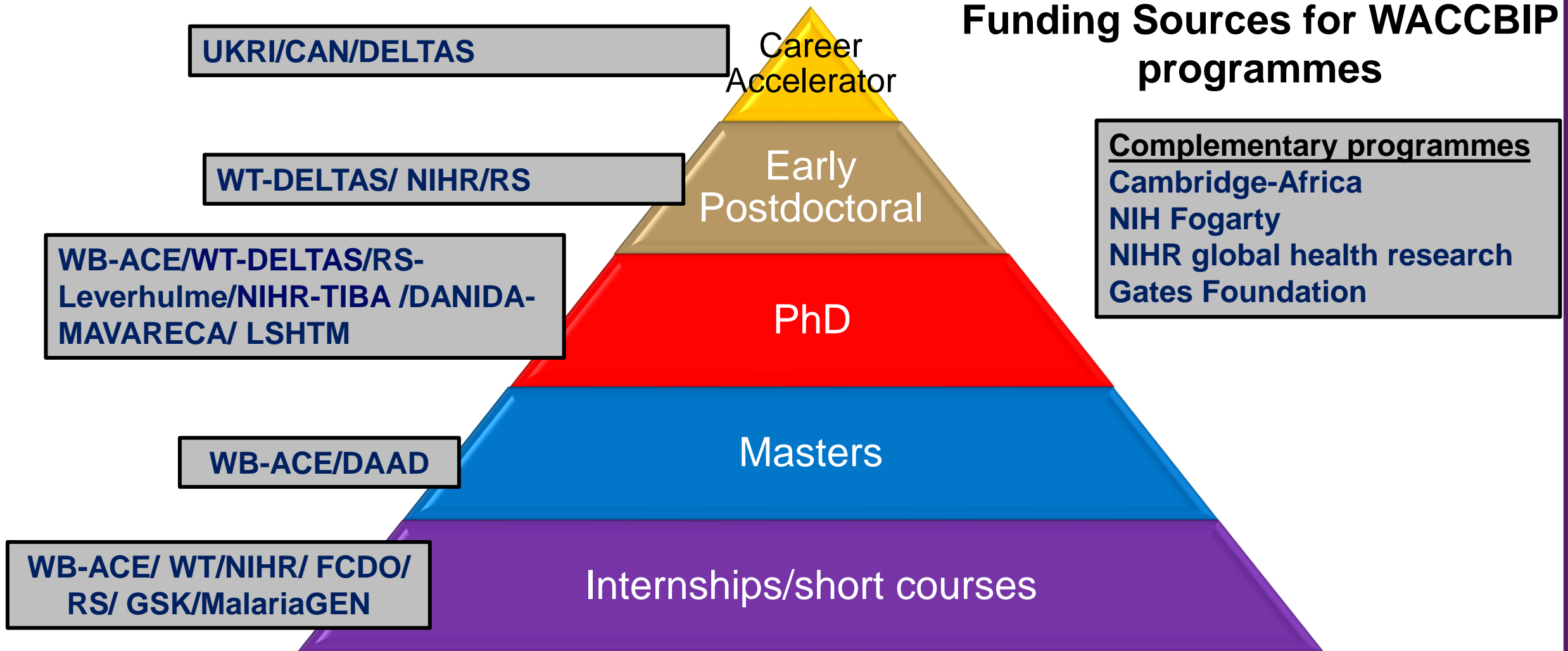


GSK Advanced Bioimaging Workshop 2024



GSK 2024 Advanced Bioimaging Workshop

# Sustainability through multiple funding partnerships



# M.Sc. Infection Biology and Control



EBERHARD KARLS  
UNIVERSITÄT  
TÜBINGEN

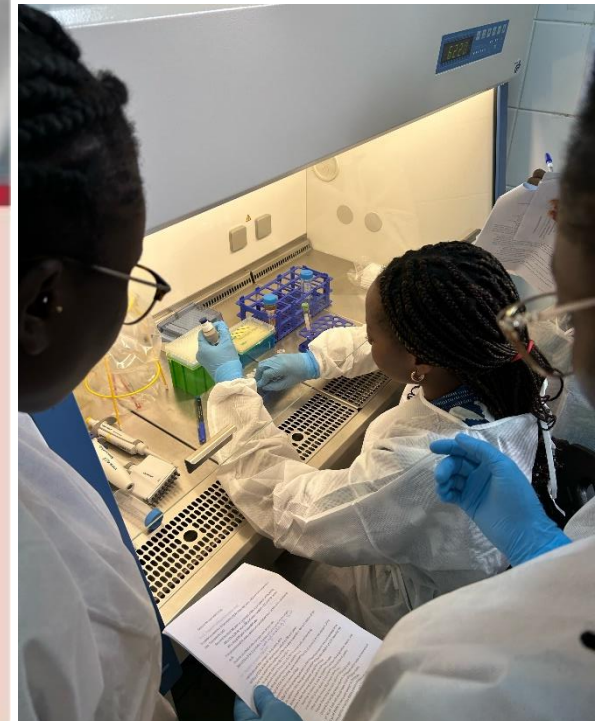


**CAIDERA.**

Central African Infectious Diseases & Epidemics Research Alliance  
Alliance Scientifique contre les Infections & Épidémies en Afrique Centrale

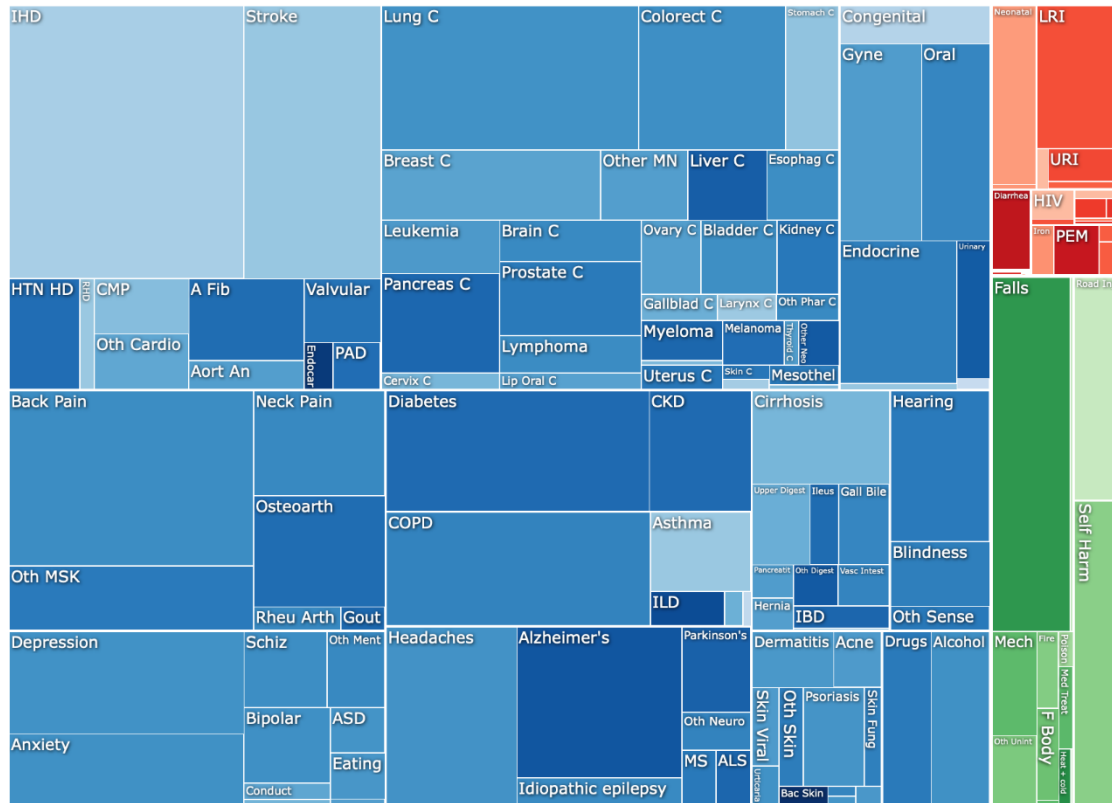


Sem.	Study area Fundamentals	Study area Consolidation	Study area Subsidiary fields
1		Immunology (6 CP)	Laboratory Rotations (3 CP)
	Introduction to Infectious Diseases (6 CP)		Introduction to Scientific Literature (3 CP)
	Introduction to Infectious Diseases Epidemiology and Control (6 CP)		Current topics in infectious diseases (6 CP)
2	Tutorial: Molecular and Cellular Biology (3 CP)	Virology (6 CP)	Mathematical Modelling and Statistics (6 CP)
		Parasitology (6 CP)	Laboratory Rotations (3 CP)
		Microbiology (6 CP)	
3		Emerging Viral Diseases & One Health (6 CP)	Laboratory Rotations (3 CP)
		Principles of Pathogen Genomics (6 CP)	Study Design, Analysis and Research Ethics (6 CP)
		Medical Entomology (6 CP)	Effective Scientific Writing (3 CP)
4	Master's Thesis (30 CP)		

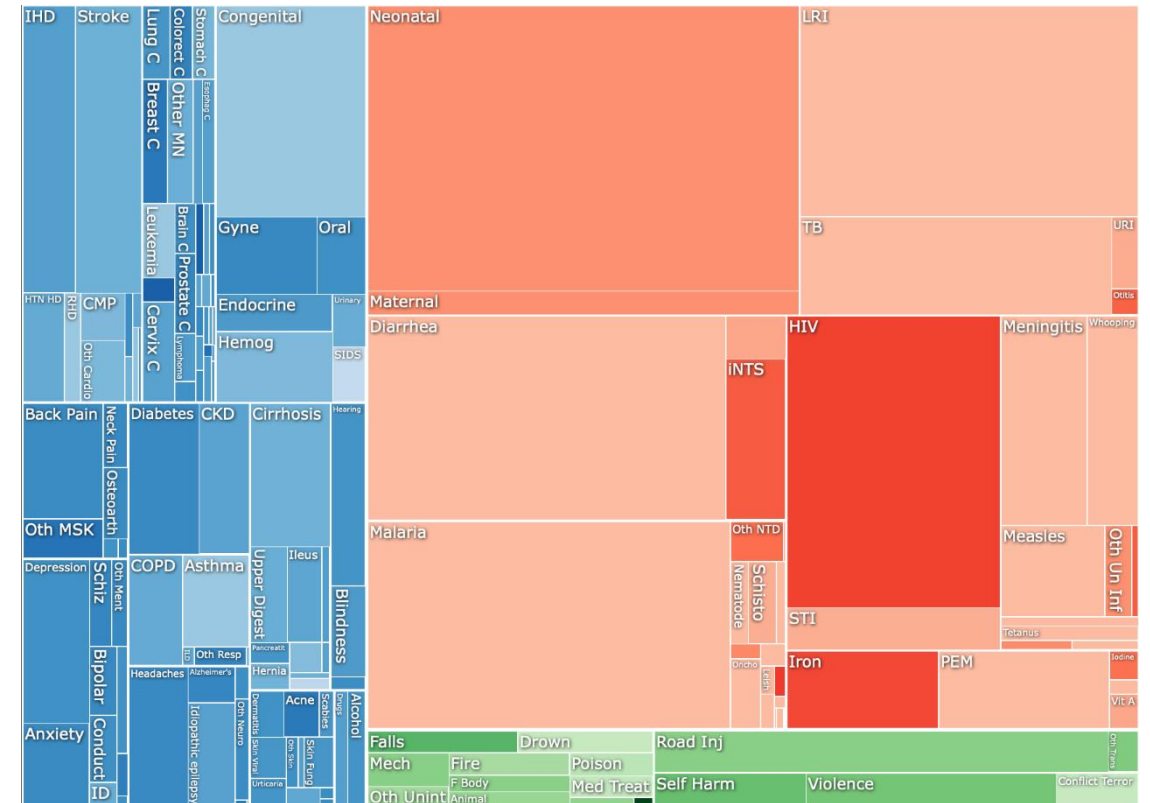


INFECTION BIOLOGY  
AND CONTROL  
Master of Science

# Disparity in infectious disease burden disease burden (DALYs), all ages, 2019



**> 700 DALYs per 100,000 lost to IDs in Germany**



**> 50,000 DALYs per 100,000 lost to IDs in CA**

# Disparity in health care research

## Example: clinical trials

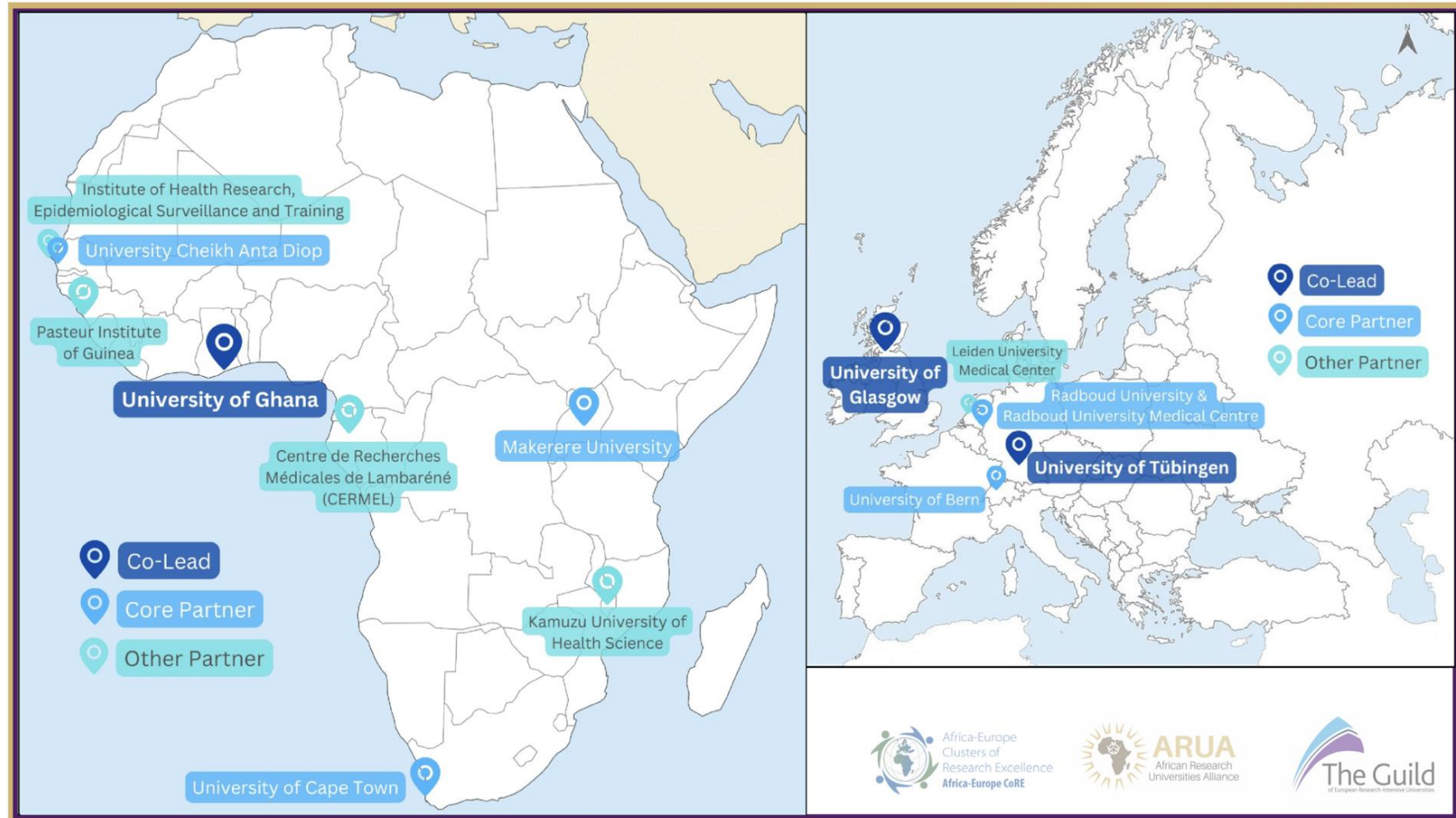
Ongoing clinical trials (clinicaltrials.org)	
Germany	Cameroon, Gabon, Congo, Central African Republic combined
~3,200	~30 (>10 at CERMEL alone)

> ~200-fold gap on a per capita basis.





**AFRICA-EUROPE CoRE  
ARUA / The Guild**



Bottom-up, academic-led and aligned with the AU-EU Innovation Agenda from the start

## Status quo: unsustainable

- Vaccine and therapeutic innovations in fighting infectious diseases are mainly happening in EU
- AU countries are funded for instance via EU/EDCTP to test new interventions, i.e., are relying almost entirely on outside innovations
- Examples include malaria, pneumococcal vaccines, Covid, Mpox etc etc

## Successes from past initiatives

- [Biomalpar](#)/Evimalpar: EU funded/based PhD programme with participating PIs/students also from AU countries – discovery of attenuated live malaria vaccines, now in Phase II clinical development

## Our challenge

To overcome the pronounced innovation/discovery research and knowledge-based skills gap in the countries most affected by the burden of infectious diseases

## Our ambition

- To significantly increase capacity to allow training and research using state-of-the-art technology, thereby establishing regional **lighthouses**
- To advance/accelerate vaccine development, especially for emerging and neglected infectious diseases on the African continent
- **In other words, we propose to invest in fundamental research and a pipeline of infection biology experts based in Africa with strong links to Europe.**

# How will we achieve our mission as a cluster of different forms of alliances

Human controlled infections and vaccine development



Africa-Europe and intra-Europe alliance

Intra-Africa alliance

Bioinformatics and Genomics



Pathogen and infection cell and molecular biology



Africa-Europe and intra-Europe alliance

Not all partners in our CoRE listed here

# Our CoRE integrates different types of activities to achieve its mission



## Alliance

A global network of excellent researchers ready to work on ambitious projects with a long-term plan and equitable participation of early career researchers from Africa and Europe

**Outcome:** growth of regional research communities



## Training programmes

Annual thematic workshops

Regular online and cohort sessions



## “Revolving Door”

Hubs in Africa and Europe with matched research capabilities (facilities and staff) with mobility programmes over the long-term

**Outcome:** equitable research capabilities between the locations.

## Open labs

Trusted access to existing facilities and tech for all CoRE partners

**Outcome** - the emergence of new collaborative studies of integrative nature and with African leadership.





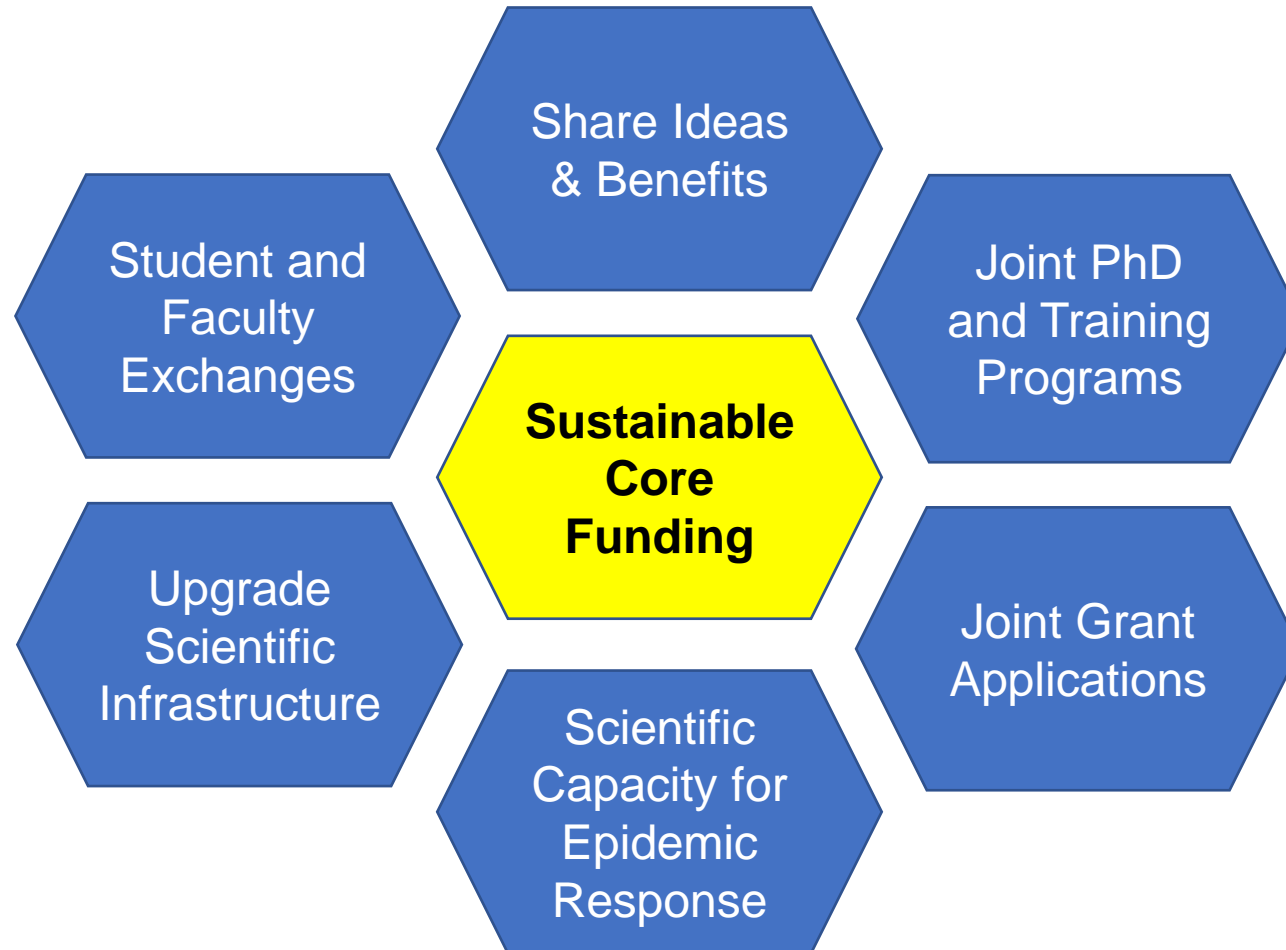
## Africa - Europe CoRE

# Potential of CoREs: Beacons of Excellence in research and education

Clusters are seed funded by our own institutions and seeking funding for our ambitious 10-year plans

### Africa

- ✓ Become true beacons of Excellence
- ✓ Increased mentorship & scientific quality
- ✓ Increased brain repatriation and circulation



### Europe

- ✓ Ready-made for Team Europe investment
- ✓ Increased access to African experts
- ✓ Greater understanding of local context and cutting-edge
- ✓ Address shared challenges with mutual benefit



**Africa - Europe  
CoRE**

# Why is sustainable funding for university-led research and education alliances important?

**Africa needs new drugs**

**Africa should develop new drugs**

**Africa should produce and distribute those drugs**

**We have knowledge-based alliances of colleagues across Europe and Africa to carry out missions like this in new ways that are more equitable and resilient**

**#AfricaEuropeCoRE**



**Click or scan to find out how to engage with Africa-Europe Clusters of Research Excellence**