

# STOP EBOLA FEVER!

## SYMPTOMS:

- FEVER
- HEADACHE
- WEAKNESS
- VOMITING
- BLEEDING
- PAIN

## TRANSMISSION:

- DIRECT CONTACT WITH INFECTED PERSON OR CONTAMINATED SUBSTANCE

PREVENTION: WEARING OF PROTECTIVE CLOTHING, ISOLATION OF THE PATIENTS

## EBOLA OUTBRAKE IN AFRICA:



- GUINEA
- SIERRA LEONE
- LIBERIA
- CONGO

**2014 ANNUAL REPORT**



ROOTS FOR LIFE



“

*Infectious diseases cause 17 million deaths each year around the world, predominantly in developing countries.*

*For over 45 years, Fondation Mérieux, an independent family foundation, has been taking action to ensure that every man, woman and child has fairer access to essential healthcare.* ”

CONTENTS



PRESIDENT'S MESSAGE

P.5

PRESENTATION  
OF FONDATION MÉRIEUX  
P.7

EBOLA FOCUS  
P.9

DIRECTOR GENERAL'S  
EDITORIAL  
P.13



SUPPORT FOR  
CLINICAL BIOLOGY  
LABORATORIES  
P.15

P.16 RESAOLAB  
P.19 AFRICA  
P.21 AMERICAS  
P.23 ASIA  
P.25 MIDDLE EAST



COLLABORATIVE  
RESEARCH PROGRAMS  
P.27

P.28 EMERGING  
PATHOGENS  
LABORATORY  
P.30 GABRIEL NETWORK  
P.31 THE 2014  
CHRISTOPHE MÉRIEUX  
PRIZE  
P.33 RESEARCH PROJECTS



KNOWLEDGE-SHARING  
AND PUBLIC HEALTH  
PARTNERSHIPS  
P.39

P.40 TRAINING  
P.42 KNOWLEDGE-SHARING  
P.44 SUPPORT FOR  
INNOVATIVE  
PUBLIC HEALTH  
INITIATIVES



FONDATION MÉRIEUX  
WORLDWIDE  
P.47

P.47 AFRICA  
P.52 AMERICAS  
P.53 ASIA  
P.57 MIDDLE EAST



GOVERNANCE  
P.58

MAIN FINANCIAL  
PARTNERS  
P.59



2014 ACCOUNTS  
& KEY FIGURES  
P.60



PRESIDENT'S  
MESSAGE

**The Ebola epidemic and its devastation in West Africa reminds us of the persistent threat of infectious disease, and with it, the necessity for scientists and doctors the world over to work together.**



ALAIN MÉRIEUX  
● President

“

When the Foundation, presided at the time by my father, Dr. Charles Mérieux, decided to create a BSL4 laboratory in Lyon, it was to give the international research community a state-of-the-art platform for the fight against emerging pathogens. The P4 Jean Mérieux Laboratory was thus born in 1999 and the Foundation handed over its management to Inserm in 2004. The laboratory was later expanded and its extension was inaugurated in 2015.

It is precisely in the P4 Jean Mérieux-Inserm Laboratory that, on March 21, 2014, the Ebola virus responsible for the epidemic was isolated, three days before President Xi Jinping's visit to Lyon.

This epidemiological development and the simultaneity with the Chinese presidential visit made it possible for us to accelerate the completion of the Wuhan BSL4 laboratory in China as part of an unprecedented Sino-French cooperation. The stakes are high for scientific collaboration between these two laboratories: beyond the fight against Ebola there is the challenge of emerging pathogens. Many epidemics, such as avian influenza, are spread from infectious disease outbreaks in Asia.

In 2014, in addition to its engagement in the fight against Ebola, our Foundation continued to develop its network of laboratories of excellence, the Rodolphe Mérieux Laboratories, opening a new laboratory in Bangladesh. We also have plans to create laboratories in Brazil, Myanmar, Iran and in the Democratic Republic of the Congo, with Dr. Jean-Jacques Muyembe Tamfum whose research on Ebola virus disease has just been recognized by the Christophe Mérieux Prize.

Alongside our work to build capacities in diagnostics, an essential tool in the fight against infectious diseases and the control of epidemics, we work in the field to help the underprivileged. In Lebanon, we want the Rodolphe Mérieux Laboratory to meet the needs of a country faced with a massive wave of refugees and therefore a major risk of infectious disease.

In the same spirit, we took action in Kurdistan to help the Christian families who have been displaced, working with the Saint-Irénée, Raoul Follereau and AnBer foundations to create housing and a school.

We adapt to geopolitical and health events and crises. Our Foundation is able to react rapidly and effectively in the field thanks to the commitment of our partners, the professionalism of our teams and a high level of flexibility.

In countries devastated by conflicts and epidemics, where many children, women and men have nothing left, our duty is naturally to meet essential public health needs, but also to restore hope to populations whose courage and dignity are lessons for us all. ”



# CONTRIBUTING TO PUBLIC HEALTH WORLDWIDE BY STRENGTHENING LOCAL CAPACITIES IN DEVELOPING COUNTRIES

FONDATION  
MÉRIEUX

7

## OUR MISSION

*Reduce the impact of infectious diseases*

Since 1967, Fondation Mérioux, an independent family foundation, with public interest status, has fought against infectious diseases in developing countries. Its objective is rooted in strengthening biological diagnostic capabilities, often insufficient in a large number of countries which are victims of particularly tragic and repeated epidemics. Our attention focuses on diagnosis, as this is not only an essential aspect of patient care, but also indispensable for disease surveillance and control.

To accomplish our mission, we work closely with Fondation Christophe et Rodolphe Mérioux, an independent family foundation under the aegis of the Institut de France.

## OUR MODEL

*Capitalizing on networking*

Fondation Mérioux bases its work on historic expertise in clinical biology and a holistic approach to public health issues, combining applied research, training and participation in medical care for patients, taking into account their social and economic well-being. We favor a collaborative approach and develop an active policy of partnerships with health authorities, international organizations, academic researchers, companies, etc. This network-based approach capitalizes on experience and develops local, regional and international synergies.

## OUR OBJECTIVES

*Action focused on three priority objectives:*

- 1. Enhancing local research capabilities** by training researchers, creating diagnostic tools and developing collaborative programs for diseases that affect developing countries;
- 2. Increasing vulnerable populations' access to diagnostics** by strengthening clinical biology capabilities in national healthcare systems;
- 3. Encouraging dialogue and knowledge-sharing** among health professionals to contribute to the dissemination of knowledge and the development of innovative projects.



## KEY FIGURES

**Fondation Mérioux  
in 2014**

**20 countries**  
in which we are active

**13 training and research  
centers**

**17 applied research units**  
federated in the GABRIEL\*  
network

**21 collaborative research  
programs**

**14 conferences and  
11 courses**  
and training sessions  
organized in France and abroad

**More than  
1 000 professionals**  
benefiting from  
our courses worldwide

**27 laboratories renovated,**  
including 6 in 2014

**12 laboratories built,**  
including 2 in 2014

**83 people mobilized**  
in 13 countries

**A budget of 16 million euros**

\* Global Approach to Biological Research,  
Infectious diseases and Epidemics  
in Low-income countries



## OUR INVOLVEMENT DURING THE EBOLA EPIDEMIC

**2014 was marked by a major health crisis related to the Ebola virus, which spread through the countries of West Africa,**

a region where in 2009, Fondation Mérieux, with support from the Agence Française de Développement [French Development Agency], created the RESAOLAB West African network of biomedical analysis laboratories (see p. 16-17). With its partners in RESAOLAB, the Foundation contributed to epidemic surveillance and identification of highly pathogenic agents, an important step in locating new infectious disease outbreaks and taking the necessary preventive measures. The Foundation sent out experts in hemorrhagic fevers to train healthcare professionals in affected areas and engaged in international partnerships to combat Ebola virus disease and other hemorrhagic fevers.

A training module on hemorrhagic fevers and on biosafety was created by the Foundation and RESAOLAB members. It is now offered beyond the network to other affected countries. More than 500 laboratory professionals were trained in 2014.

In Guinea, in addition to these training courses, 2,500 personal protective suits were delivered with accessories to equip most laboratories in the country.

**Emergency training courses for RESAOLAB laboratory personnel**

- ▶ Hemorrhagic fevers, including Ebola
- ▶ Logistics of sample management
- ▶ Specific techniques for handling samples
- ▶ Destruction or storage of samples
- ▶ Means of prevention and protection for laboratory personnel

Through the RESAOLAB network, member countries were able to quickly share their experiences and best practices, which were made available in a dedicated Ebola section on the GLOBE web portal (Global Link for Online Biomedical Expertise), Fondation Mérieux's biomedical expertise platform. This online space enabled the Foundation to establish quick, effective and simultaneous communication with all network professionals.



**Christophe Mérieux Prize awarded to a leading player in the fight against Ebola**

**The winner of the 2015 Christophe Mérieux Prize is Dr. Jean-Jacques Muyembe Tamfum who contributed to the discovery of Ebola virus disease.**

**In 1976, he was the first researcher to travel to Yambuku, in the Democratic Republic of Congo, where the very first outbreak occurred.**

**Since then, his work has been internationally recognized and the Ebola control measures he established are widely used today to manage epidemics in Africa.**

Jean-Jacques Muyembe is honorary Dean of the Faculty of Medicine of Kinshasa and Director of the National Institute for Biomedical Research (INRB) in Kinshasa.

EBOLA  
FOCUS

**Ebola Treatment  
Center in Macenta,  
Guinea  
December 2014**

A laundress  
bringing clean scrubs





## EXPERTS IN THE FIELD

Several scientists were commissioned by Fondation Mérieux to bring their expertise to professionals on the ground who were faced with the outbreak:

**GUINEA** Dr. Christophe Longuet, medical director of the Foundation, was the medical coordinator for the opening of the Macenta Ebola Treatment Center, in partnership with the French Red Cross (November - December 2014).

**GUINEA** Dr. Jean-Louis Machuron, the international coordinator of RESAOLAB, completed a training and advisory mission for Guinea's Minister of Health in August 2014. He was accompanied by Dr. Christophe Peyrefitte, a virologist specialized in hemorrhagic fevers.

**SIERRA LEONE** Dr. Joseph Fair, an American virologist, carried out a mission to improve Ebola diagnostic capacities in Sierra Leone in August 2014.

**BURKINA FASO** Dr. Dominique Peyramond, (Hôpital de la Croix-Rousse - Hospices Civils de Lyon), a Foundation board member and specialist in infectious and tropical diseases, and Dr. Aboubacar Sidiki Diakité, president of Guinea's national RESAOLAB Committee, contributed to the Clinical Biology Days in Ouagadougou July 21-23.

Fondation Mérieux also co-hosted the **Ebola seminar at the Geneva Crans Montana Forum**. Philippe Douste Blazy, United Nations Under-Secretary-General and Benoît Miribel, Director General of Fondation Mérieux, co-chaired the session with notable panelists including Sylvie Briand of the WHO, Thomas Nierle of Médecins Sans Frontières and six African ministers of health.

Daily activities at the Ebola Treatment Center in Macenta, Guinea, run by the French Red Cross - November 2014



## EPIDEMIC SURVEILLANCE

Secure sample kits were sent to all members of the network to enable specimens to be safely transported from peripheral laboratories to reference laboratories. Beginning in June 2014, a system for shipping samples to the P4 Jean Mérieux-Inserm Laboratory in Lyon was set up for countries which were unable to carry out Ebola screening tests. These emergency logistics, funded by Fondation Mérieux and implemented by Bioport, also benefited Cameroon and Guinea Bissau. They allowed the countries to receive diagnostic results in the shortest possible time and to reassure the public in the event of suspected infection. All these actions received operational support from the ministries of health of Benin, Burkina Faso, Guinea, Mali, Senegal, Niger and Togo. With funding from the U.S. Department of State, at the end of 2014, Fondation Mérieux also provided several ambulances, special vehicles and off-road motorcycles for sample transport in Liberia and Sierra Leone.



Children play at the daycare center while they wait for their hospitalized parents

## THE 2014 EBOLA EPIDEMIC

The epidemic was officially declared by the WHO after the virus was identified in a Guinean child by the P4 Jean Mérieux-Inserm Laboratory in Lyon on March 21, 2014. It wrought havoc in Guinea, Liberia and Sierra Leone where about 20,000 cases and 7,800 deaths were reported by late December 2014. In May, Fondation Mérieux organized a meeting at the P4 Laboratory with leading experts in class 4 pathogens from Médecins Sans Frontières, Institut Pasteur and Inserm, members of RESAOLAB and the crisis unit at the Guinea Ministry of Health. This meeting confirmed the importance of establishing secure routing of suspicious samples for a reliable analysis.

Fondation Mérieux's medical director with the first child who recovered from the disease



## DIAGNOSTIC AND TREATMENT INFRASTRUCTURES

The Foundation is involved in deploying two **high-security mobile laboratories**. The first was inaugurated on December 4, 2014, in the Charles Mérieux Infectiology Center of Mali, in partnership with the GIZ (German Federal Enterprise for International Cooperation) and the German Armed Forces Microbiology Institute.

The second was delivered in Guinea in March 2015 as part of the EUWAM Lab project, in partnership with Inserm and Institut Pasteur, under the coordination of France Expertise International (FEI), with European funding. In collaboration with the French Red Cross and Médecins Sans Frontières, Fondation Mérieux also participated in efforts by France, which funded an **Ebola Treatment Center** in Macenta in Guinea, one of the focal points of the 2014 epidemic. The facility has been operational since November 18, 2014.

## ASSESSMENT OF DIAGNOSTIC TESTS

In calling on the RESAOLAB members in Guinea, the Foundation is contributing to the assessment of diagnostic solutions to accelerate the availability of reliable and efficient tests on the ground. The aim is to replace emergency procedures by a permanent system that will give each country the ability to perform its own diagnostic testing. This will be essential in guarding against the spread of epidemics, as sadly recalled by the events of 2014.

## INTERNATIONAL PARTNERSHIPS

🔗 A partnership agreement (Memorandum of Understanding) was signed on September 12, 2014 with Institut Pasteur to develop joint projects in response to the Ebola epidemic and other hemorrhagic fevers.

🔗 A Memorandum of Understanding agreement was signed on September 18, 2014 with the Chinese CDC, Inserm and Institut Pasteur for cooperation in the field of prevention and control of highly pathogenic infectious diseases, such as Ebola.





DIRECTOR  
GENERAL'S  
EDITORIAL

## Make health systems a priority



BENOÎT MIRIBEL  
● Director General

“

**2014 will forever be remembered for the twelfth Ebola epidemic**, causing more than 11,000 deaths and close to 27,000 cases of infection. This health emergency resulted in the deaths of healthcare personnel who were in direct contact with infected patients, without a vaccine and often without appropriate personal protective equipment.

Beyond the unbearable impact on human lives, the entire health, social and economic systems of the affected countries were hard hit. If international attention was focused, as well it should have been, on the lack of a vaccine or treatment, the weakness of health systems in certain African countries and the urgent need to reinforce them should not be overshadowed. Prevention, diagnostics, treatment: the building blocks of the health system in many African countries should be strengthened to ensure that the capacities for testing, treatment, surveillance and alert that are essential to control such epidemics are available throughout the regions.

**We are not condemned to suffer from these epidemics**, which disregard borders between species and territories. The laboratory capacity building program, RESAOLAB, that we launched in West Africa through a public-private partnership in 2009, showed during this Ebola crisis what a good laboratory network can contribute to limit the spread of an epidemic. The member countries Senegal, Burkina Faso and Mali were able to rapidly take action to control the wave of infections, as compared with Guinea, Sierra Leone and Liberia, whose public health systems were still too weak.

Backed by their network of local partners in West Africa and the progress made through the RESAOLAB program, the Fondation Mérieux teams provided emergency support in Guinea, training health workers and strengthening capacities for pathogen detection in Guinean laboratories.

I would like to highlight the remarkable and substantial action of Médecins Sans Frontières, in particular to fill gaps in the health systems of the three countries struck by Ebola virus disease. The issue of taking ownership for diagnostic and treatment capacities depends on the political will of ministries of health and a long-term partnership to raise the level of skills and equipment.

The international community's realization that developing the health system in Africa is important will enable significant resources to be channeled, especially to biological diagnostics, one of the areas with the greatest need.

**The strengthening of health systems in the least developed countries** is an international health priority on which all inhabitants of the planet are dependent ... Fondation Mérieux's teams are determined to advance towards this global priority. ”





SUPPORT  
FOR CLINICAL  
BIOLOGY  
LABORATORIES

## INCREASING ACCESS TO DIAGNOSTICS FOR VULNERABLE POPULATIONS

Over time, Fondation Mérieux has developed expertise in the construction, renovation and upgrading of clinical biology laboratories, providing local people with testing facilities in keeping with the highest international quality and biosafety standards. We also provide the necessary equipment and train staff in the laboratory techniques needed for the diseases present in developing countries.

We initiate or participate in projects to develop, professionalize and improve access to diagnostic testing, the starting point for effective and responsive patient care.



In the past 10 years, **12 laboratories** have been built, improving local research capacity, and **27 hospital laboratories** have been renovated in 11 countries, giving access to diagnosis to populations living in remote areas, sparsely equipped with healthcare facilities.



# RESAOLAB

## RESAOLAB EXPANDS IN WEST AFRICA

Originally launched in 2009 in Burkina Faso, Mali and Senegal, the RESAOLAB program was extended at the end of 2013 to four new West African countries: Benin, Guinea, Niger and Togo. The objectives are as always to improve the clinical biology system and create an inter-country network to pool lessons learned and initiate harmonization of practices and policies.

### A regional and cross-border approach

The RESAOLAB program is conducted in close collaboration with the health ministries of the member countries. Operational units based in each ministry are responsible for implementing the activities, the guidelines for which are laid down by an International Steering Committee that meets once a year.

This phase 2 of RESAOLAB, Fondation Mérieux's flagship program, owes its existence to renewed support from the Agence Française de Développement, together with some new partners: the Islamic Development Bank, the International Cooperation of the Principality of Monaco and the Stavros Niarchos Foundation. The AFRO WHO and the West African Health Organization are also supporting the program. The assessment of needs in the new countries was jointly funded by the French Ministry of Foreign Affairs under the 5% Global Fund initiative.

## RESAOLAB phase 2

By improving the quality of service provided by local laboratories, phase 2 of RESAOLAB, currently underway, will benefit four new member countries.

## A YEAR OF STRUCTURING FOR NEW MEMBERS

2014 was a foundation year for the institutions representing the four new countries. Coordination units were set up and operating licenses obtained for Niger, Togo, Guinea and in the near future, Benin. Each country will have a National Laboratories Directorate, whose construction plans were defined in 2014.

The second RESAOLAB International Steering Committee met November 18-20, 2014, in Lomé, Togo. Some 70 participants (medical biology professionals from the member countries, partners and financial backers) attended a ceremony to lay the cornerstone of the Laboratories Division of Togo's Ministry of Health, which will have a training center and an external quality control unit. These premises will also house the Department of Pharmacy and Medicine. Similar projects will be set up in Benin, Guinea and Niger, identical to projects already completed in Burkina Faso, Mali and Senegal as part of the program.

## THE SIX PRIORITY AREAS FOR RESAOLAB ARE:

- ➔ Improving laboratory services by setting up a standardized quality system;
- ➔ Strengthening initial and continuing training of laboratory staff (12 theme-based modules created for them);
- ➔ Establishing a Laboratory Information Management System (LIMS) in the network's main laboratories and improving infectious disease surveillance via electronic data transfer;
- ➔ Reinforcing national procurement, maintenance and laboratory management systems, through a regional approach;
- ➔ Obtaining increased funding for laboratory systems;
- ➔ Improving regional and national governance of laboratory systems.

## In 2014, the Foundation focused on:

- ➔ **Training**, with programs for laboratory technicians in Senegal, Mali, Burkina Faso, Benin and Guinea, and several biology scholarships awarded. In 2014, the Foundation also initiated work on harmonizing national policies for initial and continuing training.
- ➔ **Quality assurance**, with design and validation by the member countries of a regional Quality Assurance Plan. Laboratory supervision activities have also been conducted (audit and help with implementing a Quality approach).
- ➔ **Construction** of laboratory directorate structures, training centers and external quality control units.

## RESAOLAB ON THE FRONT LINE OF THE EBOLA CRISIS

RESAOLAB was heavily involved in the response to the Ebola virus disease outbreak and has played an important role in strengthening diagnostic capacities. A training module "Alert and response to the Ebola virus epidemic in the West African Laboratories Network" was produced in Guinea and then dispensed to nearly 500 people throughout the network (learn more about RESAOLAB's role in the response to the Ebola epidemic on p. 9-11)





# AFRICA

## GUINEA

### MOTHER AND CHILD CARE

The **Coronthe Women and Children's Health Center** in Conakry was inaugurated by the President of the Republic of Guinea, Alpha Condé, and Bernard Kouchner, co-founder of Médecins Sans Frontières and former French Minister for Foreign and European Affairs, on March 8, 2014. The laboratory was equipped and its staff trained by Fondation Mérieux. This center now has all the facilities to provide high quality care for mothers and children, with consultations in gynecology, obstetrics and pediatrics.

## MALI

### EBOLA DIAGNOSTIC EQUIPMENT

A **mobile laboratory dedicated to the detection of the Ebola virus** was set up in the Charles Mérieux Infectiology Center in Bamako. It was inaugurated on December 4, 2014, and funded under the German Partnership Program for Excellence in Biological and Health Security, and implemented by the German Federal Armed Forces Institute of Microbiology, the GIZ (German Federal Enterprise for International Cooperation) and Fondation Mérieux, in partnership with the Malian Ministry of Health.

### DEVELOPMENT OF THE CHARLES MÉRIEUX INFECTIOLOGY CENTER

The Charles Mérieux Infectiology Center in Bamako continued to develop, with the appointment in February 2014 of a **Scientific Director** provided by the Government of Mali. In 2014, its medical analysis laboratory, the **Rodolphe Mérieux Laboratory**, undertook the ISO 15189 accreditation process (requirements for competence and quality of medical laboratories). Two training sessions in biological diagnostic techniques applied to HIV were dispensed earlier this year to laboratory employees from Benin, Burkina Faso, Cameroon and the Central African Republic.





### LABOMEDCAMP: SUPPORT FOR THE COMMUNITY HEALTH CENTER LABORATORIES

LABOMEDCAMP aims to **improve the quality of care** in Mali with ten front-line analysis laboratories set up in three pilot regions, integrated into national quality control and epidemiological surveillance systems. The LABOMEDCAMP project was originally programmed for three years from February 2011 to February 2014, and will benefit in 2014/2015 from actions to ensure the follow-up and longer-term sustainability of the project. The laboratory technicians participated in training sessions dispensed in 2014 as part of Ebola crisis management by RESAOLAB. One last quality supervision mission was conducted with the laboratories in January 2014 and a final assessment mission in April. The laboratories are being gradually integrated into the RESAOLAB network initiatives.

### LABOMEDCAMP, piloted by experts on the ground

LABOMEDCAMP (for *Laboratoire Médical de Campagne* – or country medical laboratory) was initiated as part of a partnership signed in 2010 between Fondation Mérieux and the Department of International Cooperation of the Principality of Monaco. This project is being implemented in partnership with the NGO Santé Sud, the Charles Mérieux Infectiology Center of Mali, the Mali National Laboratories Network, RESAOLAB and the Mali National Health Directorate.

## SENEGAL

### SOCIALAB: IMPROVING ACCESS TO TESTING IN THE PRENATAL PERIOD

SOCIALAB is an **academic research project** directed by the AIGHD (Amsterdam Institute for Global Health and Development) and funded by WOTRO (Netherlands Foundation for the Advancement of Tropical Research). The project was launched in 2012 for a period of three years, and is designed to analyze social, cultural and historic factors limiting access to laboratory exams during the prenatal period. Its one aim is to promote **better use of laboratory services** in prenatal consultations and **improve support for pregnant women**. The project was run in Senegal, and is regional in scope. It addresses the issue in all of the countries of West Africa. Fondation Mérieux is a partner for this study through RESAOLAB.

The study is conducted by a cross-disciplinary consortium of Dutch, Senegalese, Malian, Burkinabe and French research institutions, as well as national and international stakeholders. In 2014, surveys were conducted in some **fifteen healthcare structures in Senegal**. Preliminary results were presented during the mid-term review of the program in Dakar, in June 2014, with all parties involved.

## MADAGASCAR

### SUPPORT FOR SETTING UP A LABORATORY NETWORK

Since 2006, Fondation Mérieux has been providing technical support to establish **clinical testing capacity** for diagnosis and surveillance of infectious diseases in twelve public hospitals in Madagascar (three university hospitals and nine Regional Hospital Centers). The Foundation works in partnership with the Laboratories Department of the Ministry of Health in Madagascar, the Agence Française de Développement and the Charles Mérieux Infectiology Center in Antananarivo.

**Three laboratories were renovated in 2014:** the Mahajanga Hospital's bacteriology laboratory, the laboratory of the Tsaralalana Mothers & Children's University Hospital in Antananarivo and the laboratory of the Tsiroanomandidy Hospital Center in the west of the country. They were provided with the equipment, reagents and consumables required to start new analyses on each site. Theoretical and practical training was organized at the Charles Mérieux Infectiology Center, as well as in each laboratory, with support from bacteriology interns. A computerized Laboratory Information Management System was set up in the medical biology laboratory of the Tsaralalana Mothers & Children's University Hospital and eight regional hospital laboratories.



# AMERICAS

## HAITI

### SPHAÏTLAB: IMPROVING THE LABORATORY SYSTEM

In 2014, a project to support the National Public Health Laboratory received 80% of its funding from the European Commission. SPHaïtiLab is coordinated by Fondation Mérieux in partnership with the National Public Health Laboratory, the Department of Epidemiology and Response to Illness in Port-au-Prince, the GHESKIO Centers (Haitian Group for the Study of Kaposi's Sarcoma and Opportunistic Infections) and the African Institute of Public Health. Its objective is to improve the national policy for laboratories in Haiti via support from the National Public Health Laboratory.

### ENHANCING BACTERIOLOGY SKILLS

In 2014, Fondation Mérieux sent a technical assistant in medical biology to the laboratory of the Institute of Infectious Diseases and Reproductive Health (IMIS) at the GHESKIO Centers. Her mission was to improve bacteriology skills in the laboratory and develop surveillance of the sensitivity of different germs to antibiotics.

A partnership was set up with the Médecins Sans Frontières burns hospital, which thus has access to high-quality diagnostics for monitoring its patients. An IMIS maintenance technician also attended a training course at the Lyon-biopôle.







# ASIA

## BANGLADESH

### CONSTRUCTION OF THE RODOLPHE MÉRIEUX LABORATORY

Housed within the Bangladesh Institute of Tropical and Infectious Diseases, the **Rodolphe Mérieux Laboratory** in Chittagong was completed in March 2014. Fondation Mérieux has provided the buildings, the equipment and staff training for this laboratory of excellence dedicated to the training of biologists and applied research into infectious diseases, especially tuberculosis. It has class 2 and 3 biological safety zones.

## CAMBODIA

### Framework partnership agreement

In 2014, Fondation Mérieux signed a Memorandum of Understanding for the period 2014-2016, to govern the Foundation's partnership with Cambodia's Ministry of Health. This important step will strengthen cooperation in the field of prevention and control of infectious diseases.

### RENOVATION OF THE SIEM REAP MICROBIOLOGY LABORATORY

Renovation work on the microbiology laboratory of the Siem Reap provincial hospital began in November 2013, and was completed in 2014, **significantly improving staff working conditions, hygiene and safety**. This project was conducted in partnership with Cambodia's Ministry of Health, the Department of Provincial Hospitals, the WHO and the Microbiology Diagnostics Development Program (MDDP). Since September 2014, the laboratory has worked with continued support provided by the MDDP's experts in microbiology.

### CAMLAB NETWORK: BUILDING THE SKILLS OF LABORATORIES

The "CamLab Network" is the **network of public hospital laboratories** in Cambodia, coordinated by the Medical Laboratories' Department of the Cambodian Ministry of Health, in collaboration with national and international partners. Fondation Mérieux has provided support for the network since its creation in 2013.

In 2014, 19 laboratories took part in the **Quality Control program** "External Quality Audit", which covers hematology, biochemistry, immunoserology and microbiology.

### RAISING AWARENESS OF GOOD HAND HYGIENE

In April 2014, Fondation Mérieux launched a hand hygiene promotion initiative in the Chey Chum Neas hospital in Kandal Province. The initiative included: actions to raise awareness of the importance of hand hygiene in the fight against hospital-acquired infections, training courses and the development of a hydroalcoholic solution production unit.

## LAOS

SUPPORT FOR  
KHAMMOUANE PROVINCE'S  
LABORATORIES

For many years, Fondation Mérieux and the Rhône-Alpes region have been working in Khammouane province to improve laboratory diagnostic capability. In 2012, renovation work was carried out in nine district laboratories. In 2014, the project focused on **increasing knowledge in biology** with training courses in the essential steps of medical diagnosis. Laboratory technicians and laboratory managers were trained in blood groups, erythrocyte constants, diabetes, proper use of microscopes and the importance of the pre-analytical phase in medical analysis.

General training courses held in the hospital laboratory of Thakhek, the province's capital, boosted staff engagement and positioned it as the reference laboratory.

FOR PROPER USE OF  
ANTIBIOTICS

Funded by the European Union, a guide on the use of antibiotics is in the process of being produced for Laotian doctors. The aim of "Antibioguide" is to improve patient care and **contribute to decreasing bacterial resistance** by the targeted use of antibiotics. Laos's most accomplished infectious disease specialists and a panel of international experts contributed to the project, ensuring that recommendations are relevant to local medical practices, both in terms of suitability for present diseases and availability of antibiotics.

## CHINA

IMPROVING ACCESS  
TO TUBERCULOSIS  
DIAGNOSIS

The program to **decentralize the diagnosis of tuberculosis** was launched in 2008 as a partnership between Fondation Mérieux and the Chinese Ministry of Health. The aim is to improve local care capacity in areas where the disease is particularly prevalent.

After a first phase of four years for the deployment of screening and care capabilities in two Chinese provinces (Zhejiang and Heilongjiang provinces), a second phase was launched in 2012. Supported by bioMérieux China, it is targeting two new regions: the autonomous Uyghur Region of Xinjiang and the autonomous Zhuang Region of Guangxi.

The Foundation  
focuses its support on  
two areas:

- ▣ Providing advanced diagnostic equipment (LED microscopy, liquid culture, etc.);
- ▣ Training the staff of the tuberculosis care centers.

## MYANMAR

DIAGNOSTICS FOR  
NEWBORNS

Fondation Mérieux supports the Public Health Laboratory, which conducts HIV viral load testing and early HIV diagnosis in neonates of the Mandalay region in Myanmar (formerly Burma). This activity has been implemented with the NGO "The Union" and benefits, in particular, the 20,000 patients who receive care in the public system by this NGO. Fondation Mérieux aims to maintain the quality of the analyses carried out within the laboratory, mainly by setting up external quality controls and diligent equipment maintenance.

The virology laboratory in the Public Health Laboratory (PHL) was also renovated and equipped with an ELISA platform in 2014. This is the third laboratory renovated within the PHL, after the molecular biology laboratory in 2011 and the microbiology laboratory in 2013. The Foundation has also equipped the laboratory, which will perform HIV viral load testing at the National Health Laboratory in Yangon.



## TAJIKISTAN

SUPPORT FOR  
THE NATIONAL PUBLIC  
HEALTH REFERENCE  
LABORATORY

The **Public Health Laboratory of Dushanbe**, designed and equipped by Fondation Mérieux and built with funding from the Global Fund to fight AIDS, tuberculosis and malaria, was inaugurated in 2013. In 2014, the Foundation provided **technical support** for tuberculosis diagnosis activities in partnership with international organizations: the WHO (World Health Organization), USAID (the US Agency for International Development) and the GIZ (German Federal Enterprise for International Cooperation).

**Quality monitoring** was also initiated in 2014 and intensified for the BSL2 and BSL3 laboratories. A training workshop on the diagnosis of urinary tract infections and their resistance to antibiotics was organized for the laboratory's employees.

## MIDDLE EAST

## LEBANON

RODOLPHE MÉRIEUX  
LABORATORY FULLY  
OPERATIONAL

Opened in 2011, the Rodolphe Mérieux Laboratory in Beirut has been fully operational since 2014 after **qualification of its biosafety level 3 zone**. The laboratory is continuing its specialized testing activities (HIV, HBV and HCV viral loads, HCV genotyping and tuberculosis typing) with a priority development focus: resistance to antibiotics.





## ENHANCING LOCAL RESEARCH CAPABILITIES

Fondation Mérieux has built up an applied research system founded on international collaboration. This organization is based on its research unit: the Emerging Pathogens Laboratory in Lyon. As the cornerstone of the GABRIEL network (Global Approach to Biological Research, Infectious Diseases and Epidemics in Low-income Countries), it coordinates and supports the work of other members from Africa, Asia and America. Beijing's Christophe Mérieux Laboratory, a structure shared with the Institute of Pathogen Biology of the Chinese Academy of Medical Sciences, brings its expertise to this unique organization.



### The Rodolphe Mérieux Laboratories

The seven Rodolphe Mérieux Laboratories were created at the center of infectious disease hotspots in developing countries and are part of the GABRIEL network. They are designed to respond to local infection priorities by the development of clinical work or research in biology. They meet the most demanding international standards and have a role in epidemiological surveillance, applied research and training in all regions where they are located.

COLLABORATIVE  
RESEARCH  
PROGRAMS





# EMERGING PATHOGENS LABORATORY

The Fondation Mérieux Emerging Pathogens Laboratory is devoted to public health issues related to infectious diseases, in particular respiratory infections, such as community-based acute pneumonia, tuberculosis, increasingly resistant to antibiotics, and fevers including typhoid. Its team belongs to a number of national and international scientific networks of excellence: in particular the CIRI (International Center for Infectiology Research), AVIESAN (French National Alliance for Life Sciences and Health) and, since 2014, the ISARIC (International Severe Acute Respiratory and Emerging Infection Consortium) and other consortia linked to the European Union's Horizon 2020 research programs, such as GLOPID-R (see p. 45) and COMPARE (see p. 33).

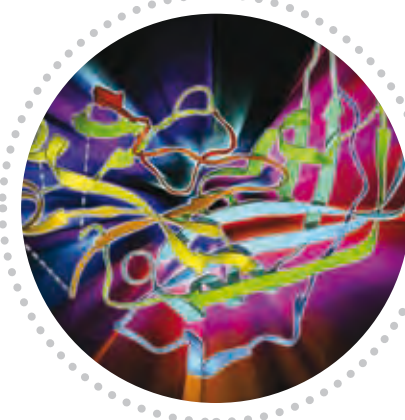
## THE LABORATORY HAS THREE MAIN ACTIVITIES:

- ➔ Developing and transferring technologies for the diagnosis and epidemiological surveillance of infectious diseases;
- ➔ Identifying and characterizing new biomarkers;
- ➔ Training scientists in developing countries.

## P4 Jean Mérieux-Inserm Laboratory

The Foundation's researchers have access to the P4 Jean Mérieux-Inserm Laboratory, created by the Foundation and managed by Inserm, devoted exclusively to research into class 4 pathogens.

In 2014, samples taken during the Ebola epidemic underwent emergency analysis here to isolate the virus and help affected countries to identify outbreaks of infection. This is of fundamental importance in the fight against the spread of the disease.



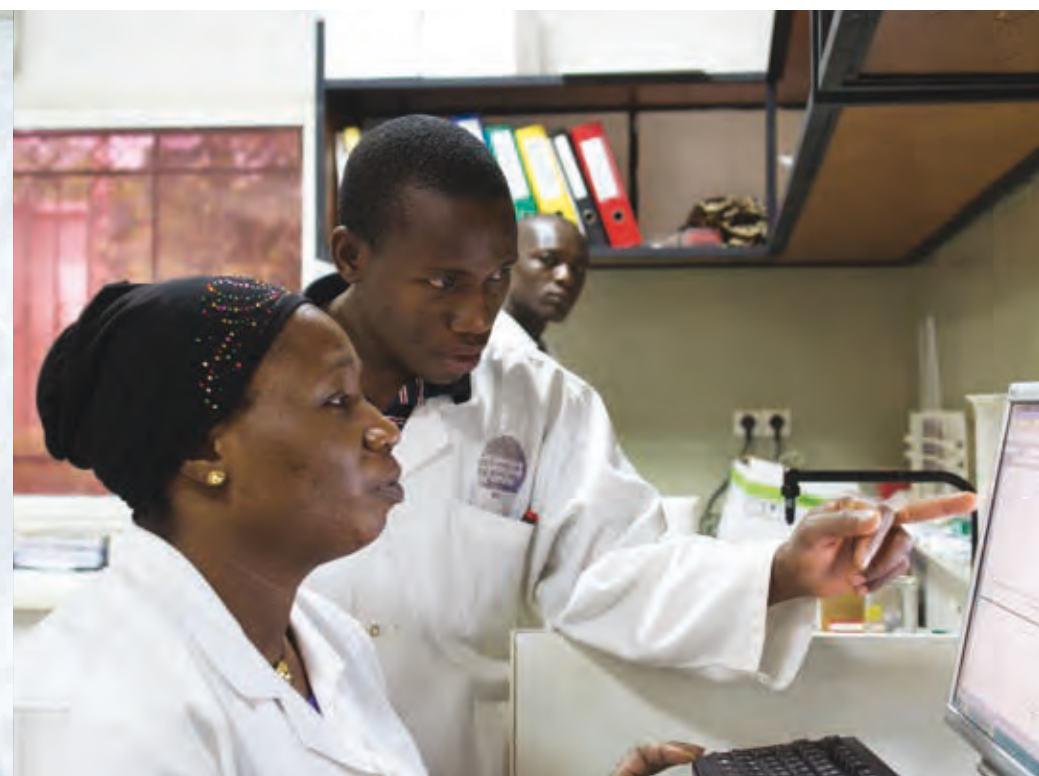
THE EMERGING PATHOGENS LABORATORY IN 2014

11 research programs

8 scientific publications

10 presentations at scientific conferences, including 2 at international meetings sponsored by the EMBO (European Molecular Biology Organization) and the Bill & Melinda Gates Foundation respectively





## CHRISTOPHE MÉRIEUX PRIZE 2014

Dr. Philippe Buchy



# GABRIEL NETWORK

The GABRIEL network is coordinated by the Fondation Mérieux Scientific Department, and brings together the Rodolphe Mérieux laboratories of excellence, local reference laboratories and academic, university and hospital research institutes.

It was created by Fondation Mérieux in 2008 and today comprises 17 members in 15 countries. The GABRIEL network operates in developing countries through research projects covering:

- ➔ Respiratory infections and fevers (pneumonia and tuberculosis)
- ➔ Water and foodborne diseases (typhoid and cholera)
- ➔ Neglected infectious diseases (dengue fever and leprosy)

## THE GABRIEL NETWORK IN 2014

### 3 new members:

- ➔ In Bangladesh, the International Centre for Diarrhoeal Disease Research (ICDDR,B) and the Institute for Developing Science and Health Initiatives (ideSHI),
- ➔ In Brazil, the Bioinformatics Laboratory (LABINFO) of the National Laboratory of Scientific Computation.

### 2 new financial partners:

- ➔ **Fast-track Diagnostics**, which develops molecular tests for detecting infectious diseases,
- ➔ **Bioaster**, the Technology Research Institute devoted to microbiology and infectious diseases.

### More than 50 articles

in international peer-reviewed scientific magazines

## YOUNG RESEARCHERS' PRIZE

In 2014, two Young Researchers' Prizes were awarded for the first time to GABRIEL network scientists by its Research Committee. These prizes will enable them to complete their research projects and present their work at international scientific conferences. The recipients in 2014 were: **Tahinamandranto Rasamoelina in Madagascar** (development of diagnostic techniques for two subcutaneous fungal infections) and **Cynthia Rivière in Haiti** (research on HPV infections and cervical cancer).

## TRAINING

In 2014, the Emerging Pathogens Laboratory trained seven scientists from the Lebanon, Bangladesh, Ukraine and Georgia to implement research projects conducted with GABRIEL network members. One-week workshops on bioinformatics and the analysis of genomic data were held by network members: at the ICDDR,B in Bangladesh for some fifteen scientists and at the Christophe Mérieux Laboratory in China for two scientists from Mongolia and Brazil.

## QUALITY ASSURANCE

In 2014, Fondation Mérieux launched a Quality initiative to enable GABRIEL member laboratories to meet the requirements of the international standard ISO 15189. Four pilot sites have begun the accreditation process: the Christophe Mérieux Infectiology Center in Laos, the Charles Mérieux Infectiology Center in Mali, the Rodolphe Mérieux Laboratory in Haiti and the Department of Biology and Molecular Genetics of the University of Asunción in Paraguay.



The 2014 Christophe Mérieux Prize, worth 500,000 euros, was awarded by Institut de France on behalf of Fondation Christophe et Rodolphe Mérieux, to Dr. Philippe Buchy, Institut Pasteur du Cambodge, for his research on infectious diseases in tropical climates (dengue fever, avian influenza and tropical fevers) in Southeast Asia, and in particular in Cambodia.

For more than 15 years, within the International Institut Pasteur network, and since 2004 at the Institut Pasteur du Cambodge, Dr Buchy has devoted his time to improving patient care, to the development of vaccine prevention, and to training young Cambodian scientists.





# RESEARCH PROJECTS

## FOODBORNE DISEASES

### SURVEILLANCE OF DIARRHEAS IN MADAGASCAR

In Madagascar, two projects are being conducted in collaboration with the Tsaralalana Mothers & Children's University Hospital.

■ The first is designed to **determine the prevalence of the bacteria** involved in foodborne diseases. It will define specific analyses to be performed at the University Hospital Centre of Antananarivo and recommendations to the authorities to improve the food safety of the livestock industry causing the contamination. The program is led by the Charles Mérieux Infectiology Center of Madagascar in partnership with the Cirad (Centre for International Cooperation in Agricultural Research for Development) of Réunion, the Tsaralalana Mothers & Children's University Hospital and the University Hospital Center in Saint-Pierre, Réunion.

■ The objective of the second project is to **determine the part rotavirus** plays in diarrhea affecting children under five years of age. Funded by the WHO and Fondation Mérieux, this study is being conducted by the Charles Mérieux Infectiology Center of Madagascar and the Tsaralalana Mothers & Children's University Hospital. The results will help to improve pediatric care and guide local decision-makers in the implementation of a vaccine.

### DIAGNOSIS OF CYSTICERCOSIS IN MADAGASCAR

Cysticercosis, caused by the larval form of *Taenia solium*, is the most common parasitic infection. In Madagascar, its prevalence varies from 7 to 21% and its diagnosis is based on tests that are accessible in the country only with difficulty. The project aims to introduce a fast and reliable screening technique in the Regional Hospital Center located in the endemic area. The project is led by the Foundation in partnership with the University Hospital Center of Réunion and LDBIO Diagnostics.

### NEXT GENERATION SEQUENCING

Under the **COMPARE (COllaborative Management Platform for detection and Analysis of (RE-) emerging and foodborne outbreaks) project, funded by the European Union's Horizon 2020 program**, Fondation Mérieux is taking part in two initiatives for screening and characterizing the intestinal bacteria *Escherichia coli* and *Salmonella enterica* Typhi, sources of foodborne infection. From complete sequencing of the pathogen, the aim is to improve clinical diagnosis. The Foundation is working with three partners in Bangladesh: the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), the Institute for Developing Science and Health Initiatives (ideSHi) and the Child Health Research Foundation.

### TYPHOID SCREENING IN BANGLADESH

Since 2011, the Emerging Pathogens Laboratory has been working on the development and validation of a molecular test for the diagnosis of typhoid from patients' blood samples.

In 2014, validation of the test was initiated on 1,000 blood samples from patients with a fever. Testing was performed on low volumes of blood, consistent with the quantities which can be taken from both children and adults. This validation was performed using samples from four clinical sites in Bangladesh, including two in the slums of Dhaka. The study is funded by the Bill & Melinda Gates Foundation.



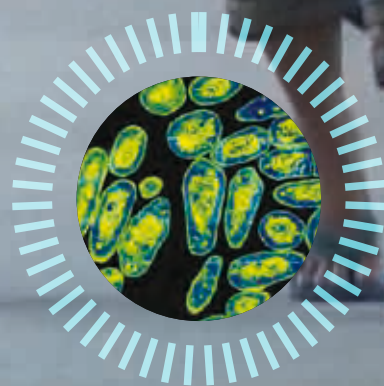


## TUBERCULOSIS AND OTHER MYCOBACTERIAL DISEASES

### Tuberculosis and resistant forms

As the main cause of infectious death worldwide, tuberculosis is the subject of several research projects initiated by the Foundation.

The objective is to understand the transmission paths of tuberculosis and its resistant forms, which is a key factor for the implementation of effective prevention and control measures.



34.

### GENOTYPING OF TUBERCULOSIS IN LAOS

Launched in 2013, the planned molecular typing of tuberculosis strains in Laos has begun. This study will provide information on the lines and genotypes of *M. tuberculosis* circulating in the various regions of Laos and the Mekong region, and improve the integration of the Christophe Mérieux Infectiology Center of Laos with other Southeast Asian research institutes. This work is being done under the aegis of the Groupement de Recherche International-Bio (molecular epidemiology of tuberculosis in Southeast Asia), which includes the Institut de Recherche pour le Développement (IRD), the Vietnam National Institute of Hygiene and Epidemiology and Institut Pasteur du Cambodge. Typing of the first 100 strains was conducted in 2014.

### STUDY OF INTRA-HOUSEHOLD TRANSMISSIONS IN GEORGIA

Families in which one of the members is affected by tuberculosis are a population at high risk of contamination. This project aims to assess direct transmission in the homes of a Georgian cohort. The genotypic typing and sequencing methods implemented at the Emerging Pathogens Laboratory are used to compare different strains of the disease. Initial results indicate that the disease is transmitted outside the immediate family circle for a majority of patients and that research (contact surveys) should not be limited to a single source of infection. This project is conducted in partnership with the National Centre for Tuberculosis and Lung Disease, a member of the GABRIEL network, ProfileXpert, the genomics platform of the University of Lyon, the Grenoble-based company Genostar Bioinformatics Solutions and the National Laboratory of Scientific Computation of Petropolis in Brazil.

35. COLLABORATIVE RESEARCH PROGRAMS

### Applied bioinformatics

In 2014, Foundation researchers designed and developed a database to collect and manage clinical and biological data from patients suffering from tuberculosis.

This work was done in partnership with the Grenoble-based company Genostar Bioinformatics Solutions. The epidemiological research system will be used by GABRIEL network laboratories.

### IMPROVING LEPROSY DIAGNOSIS IN MADAGASCAR

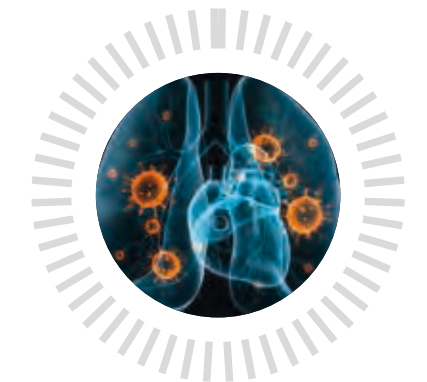
Leprosy is a neglected tropical disease, the prevalence of which in Madagascar is about 0.85/10,000 inhabitants with a diagnostic error rate of up to 62%. This research project is designed to institute early screening techniques for more effective treatment of the disease. This work is conducted in partnership with the Department of Dermatology of the Befelatanana University Hospital Center in Antananarivo, the Fondation Raoul Follereau, the Charles Mérieux Infectiology Center, the National Leprosy Program, and the National Center for Mycobacterial Reference and Resistance of Mycobacteria to Tuberculosis Antibiotics of the Pitié-Salpêtrière University Hospital Center.

## PNEUMONIA



### ANALYSIS OF THE RESULTS OF THE MULTI-CENTER STUDY

Conducted by members of the GABRIEL network in 9 countries, a multi-center epidemiological study covering 2,200 children aged under five was launched in 2010 to identify the viral and/or bacterial agents responsible for severe pneumonia. The results are currently being analyzed in collaboration with Professor Philippe Vanhems' team of epidemiologists from the Université Claude Bernard in Lyon. They will contribute to **greater knowledge of the pathogens** responsible for pneumonia in children in developing countries, and to understanding their interactions and mechanisms. Characterization of the **micro-organisms associated with the severity of pneumonia** will help facilitate treatment and prevention of the disease.



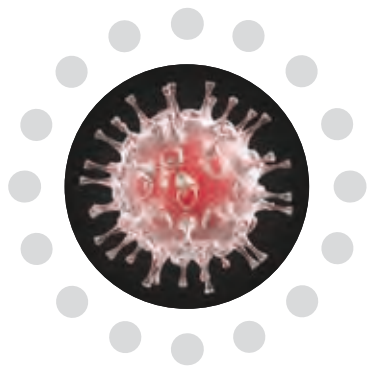
### International scope

The multi-center study on pneumonia has been recognized by the international scientific community.

In 2014, the WHO co-opted Fondation Mérieux's Scientific Department into its working group on pneumonia.

In Paraguay, the GABRIEL member laboratory won a National Sciences Prize in 2014, recognizing the impact of the study on the country's public health. The experimental protocol for the study was also published in the *BMC Infectious Diseases* journal in 2014.





### BACTERIAL AND VIRAL CO-INFECTION

This is a thesis project whose aim is to **identify prognostic biomarkers of the severity** of respiratory co-infections in children. The study is based on an understanding of the modulation of the immune system during a multiple infection - viral and bacterial - to identify biomarkers involved in the control of inflammation. In 2014, the results obtained by this *in vitro* study modeling co-infection by influenza A(H1N1) and *S. pneumoniae* identified two potential biomarkers to predict the severity of infection.

### RESPIRATORY INFECTIONS IN LAOS

The Lalris project, initiated in 2013, was developed to **investigate cases of respiratory infections** unrelated to the A(H1N1) influenza virus. It transpires that most respiratory infections circulating in Vientiane, the capital of Laos, are caused by the bacterium *Streptococcus pneumoniae*. The final analysis is under way and the results will be covered during 2015 in a publication signed jointly by the Emerging Pathogens Laboratory and the Christophe Mérieux Infectiology Center of Laos.

### MENINGITIS



### DIAGNOSIS OF MENINGITIS IN MADAGASCAR

As part of the monitoring of meningitis in Madagascar, a **technology transfer** was launched in 2013, in collaboration with the Charles Mérieux Infectiology Center of Antananarivo. It covers the transfer of a real-time PCR molecular biology technique, developed by the Foundation's Emerging Pathogens Laboratory. In collaboration with the Tsaralalana Mothers & Children's University Hospital, a WHO sentinel site for monitoring meningitis, this project will give the hospital the means for better patient care and an epidemic response capacity.

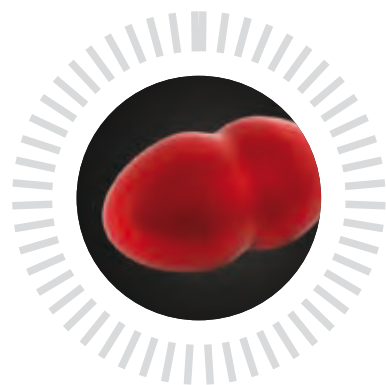
### Diagnostic tools for the bacterium responsible for pneumonia

Pneumonia is an acute respiratory infection which is the primary cause of infant mortality worldwide.

Although the bacterium *Streptococcus pneumoniae* is the main agent responsible, there are more than 90 serotypes.

The Fondation Mérieux Emerging Pathogens Laboratory has developed **two molecular tools to identify serotypes** from a clinical sample: a typing test by multiplex real-time PCR which has already been made available to the GABRIEL network, and a molecular typing test based on the Luminex® xTAG® technology, under development.

These tools play a pivotal role in epidemiological studies, and in determining the impact of the introduction of vaccines (which target the most virulent and prevalent serotypes) in developing countries.



### HEMORRHAGIC FEVER

### CRIMEAN-CONGO VIRUS

Since 2009, in collaboration with the French Armed Forces Biomedical Research Institute and Inserm, Fondation Mérieux's Emerging Pathogens Laboratory has been conducting a research project on Crimean-Congo hemorrhagic fever, a viral disease transmitted by ticks. The causative agent, a highly pathogenic virus, induces severe hemorrhagic fever in infected patients. In the absence of data on the pathogenesis of the virus, the purpose of the project is **to characterize the defense mechanisms (innate immunity)** involved in the infection to identify potential targets and treatment strategies.

### CERVICAL CANCER

### BETTER SCREENING IN LAOS

Initiated in 2013 in Laos, after approval by the country's National Ethics Committee, the LaoCol-VP project aims to **compare the effectiveness and efficiency of two solutions for screening** cervical cancer: a simplified test, careHPV™, for detecting papillomavirus DNA and the cervical smear. Jointly funded by the National Institute for Cancer (INCA) and Fondation Mérieux, the project receives operational support from the Charles Mérieux Infectiology Center of Laos. This is a **multi-center cross-sectional study** conducted among 600 women living with HIV, and monitored in the four main HIV/AIDS support centers in the country. Recruitment in the centers began in late January 2014 and the first examination and sampling session was held on February 5, 2014. The project is expected to be completed during 2015.

### LaoCol-VP intervention unit

An Action Committee was created to analyze results from patients with precancerous and cancerous cervical lesions. The Committee is responsible for defining a care protocol suitable for each of them. Surgery costs are borne by the project





KNOWLEDGE-SHARING AND PUBLIC HEALTH PARTNERSHIPS



## PROMOTING KNOWLEDGE-SHARING AND PUBLIC HEALTH INITIATIVES

Since its inception, Fondation Mérieux has played an active role in knowledge-sharing by organizing seminars and conferences, in France and abroad, on public health issues. This action is inseparable from its long-standing ambition to disseminate information and scientific innovation worldwide, without any borders between North and South.

Training those involved in healthcare - laboratory technicians and the future scientific and medical elite - is also a priority for the Foundation. This is a necessary condition for strengthening the capacities of developing countries in the long term.

The Foundation is also the driving force behind numerous innovative and structurally important initiatives to advance public health.

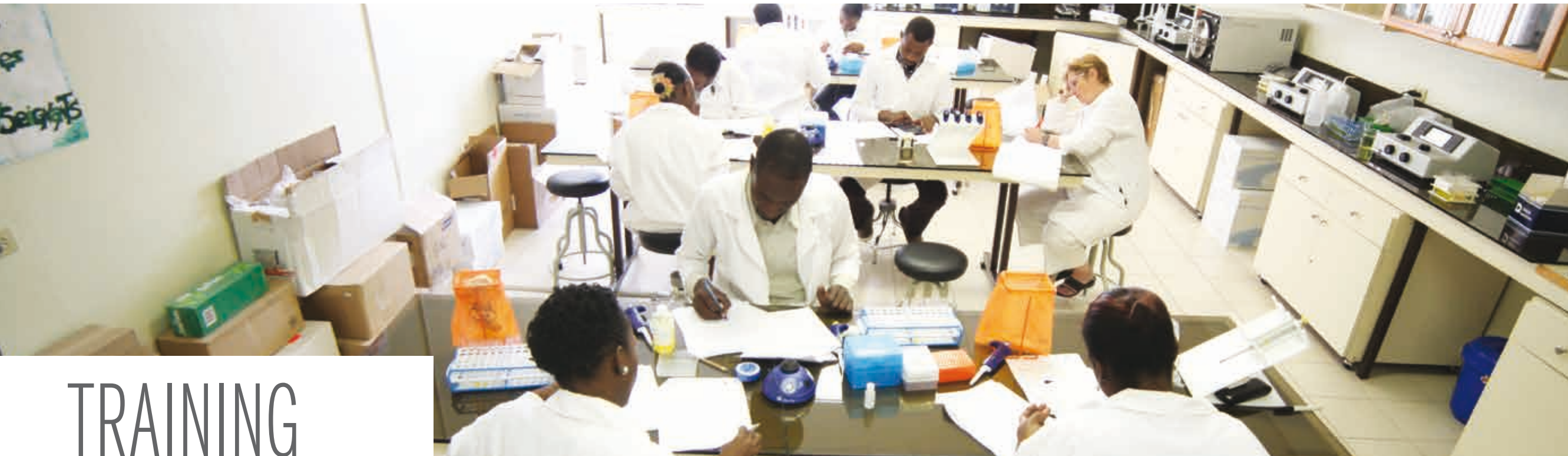


### Les Pensières conference center

Located on the shores of Lake Annecy, Les Pensières conference center was designed as a place for work and discussion in the interest of global public health.

In 2014, over 90 courses and conferences were organized there, hosting almost 3,500 people working in healthcare (researchers, clinicians, biologists, pharmacists, veterinarians, health and regulatory body representatives, etc.) from developed and developing countries.





# TRAINING

To accomplish its mission in developing countries, Fondation Mérieux runs major training programs. These are intensive degree courses, as well as short, theme-based training courses organized locally or regionally. They meet a healthcare priority or provide support for a transfer of skills and technology, particularly within the GABRIEL and RESAOLAB networks. In 2014, training sessions were held to respond urgently to the Ebola epidemic in West Africa: sampling techniques, secure delivery of samples, personal protection, hygiene and biosafety measures.

## INTENSIVE COURSES AND DEGREE COURSES IN 2014:

- ▀ 211 participants
- ▀ 40 nationalities trained
- ▀ Organized in 5 countries

## VACCINOLOGY

In 2014, Fondation Mérieux celebrated the **15<sup>th</sup> Advanced Vaccinology Course (ADVAC)** held at Les Pensières and organized in partnership with the University of Geneva. Vaccination remains the most effective tool for protecting the health of populations. In addition to the vaccine itself, ADVAC deals with all aspects that impact vaccination: medical, cultural, logistic and technical, etc.

The 2014 course attracted 67 students and 52 teachers. Six meetings and discussions were held in 2014 by the very dynamic “ADVAC Alumni Network” during international congresses.

The ADVAC program receives support from the Bill & Melinda Gates Foundation, the European Commission, the WHO, the CDC (U.S. Centers for Disease Control and Prevention), the ESPID (European Society for Paediatric Infectious Diseases), the ECDC (European Centre for Disease Prevention and Control), the Johns Hopkins Bloomberg School of Public Health, the National Foundation for Infectious Diseases (NFID), the Fogarty International Center and the NVPO (National Vaccine Program Office).



### ADVAC in 15 years

Nearly **900** alumni  
from about **100** countries

A scientific committee  
and a committed  
teaching team

Some **65** participants  
per year

**10** interactive modules

**11** training days

## MEDICAL BIOLOGY

The Bachelor of Science in Biological and Applied Medical Sciences (BAMS) degree course is available in West Africa, Mali and Haiti in partnership with the École Supérieure de Biochimie-Biologie-Biotechnologies de Lyon (ESTBB - Université Catholique de Lyon - the School of Biology, Biochemistry and Biotechnology of the Catholic University of Lyon). BAMS aims to train senior medical laboratory technicians and improve the quality of diagnosis. In 2014, 28 students from West Africa and 11 Haitians graduated.

In Cambodia, Fondation Mérieux has supported since 2003 the **Diploma of Specialist Studies (DES) in Medical Biology** awarded by the University of Health Sciences, open to physicians and pharmacists going into careers as medical biologists. In January 2014, eight students were recruited for the 9<sup>th</sup> year of this diploma. The DES receives support from the Institut Pasteur du Cambodge, the French Cooperation in Cambodia Priority Solidarity Fund and French universities from which lecturers are seconded.

## PHARMACY IN MADAGASCAR

Since 2007, Fondation Mérieux has supported a training course designed to **improve the capacities of hospital pharmacies in Madagascar**. This is the first Pharmacy training course in the Indian Ocean. It is held at the Department of Pharmacy at the University of Antananarivo Faculty of Medicine. Students are awarded the diploma of pharmacist (hospital or pharmacy) in 6 years. This initiative also receives backing from the Pierre Fabre Foundation, the Joseph Fourier University in Grenoble, the Rhône-Alpes region, the French International Cooperation and the University of Antananarivo.

In Madagascar, the Foundation also leads health education work for school medicine and child protection associations (assistance with screening, training of trainers, setting up pharmacies, etc... see p. 49).





# KNOWLEDGE-SHARING

One of the aims of Fondation Mérieux is to promote knowledge-sharing and meetings between scientists and healthcare professionals from all disciplines and all countries, fostering, in particular, “North-South” exchanges. The Foundation organizes and participates in international conferences and symposia and through the GLOBE web portal provides a space for sharing resources, collaborative work and discussion used by healthcare professionals the world over.



## GLOBE WEB PORTAL

Fondation Mérieux's biomedical expertise portal continues to develop and in 2014 celebrated its 5th anniversary.

GLOBE - for Global Link for Online Biomedical Expertise - was created to train, inform, share and promote the improvement of biomedical skills in developing countries. GLOBE also hosts expertise networks which have a dedicated collaborative space. Nine networks are currently active. The 9<sup>th</sup>, on biomedical waste management, was created in 2014.

[www.globe-network.org](http://www.globe-network.org)

**Happy Birthday  
GLOBE !**

**5 years**

**9 expertise networks**

**12 distance-learning  
modules**

**23,000 visitors  
from 184 countries in 2014**

**1,385 members**

## CONFERENCES AND SEMINARS

Fondation Mérieux organizes scientific conferences in France and abroad on themes related to global public health. The content of each of these events is defined in collaboration with a network of international experts. These are unique opportunities to learn about the latest scientific advances and to create networks and synergies among public health professionals. In 2014, the Foundation organized five international meetings in its Les Pensières conference center near Annecy, and nine thematic seminars in the countries where it operates. Almost 1,350 people took part in these events in 2014.

### GLOBE in the context of the Ebola crisis

A special “Ebola” section was created when the epidemic began to provide all available resources in real time to professionals in affected countries. The space is updated daily with the latest news about the disease, the activities of the West African RESAOLAB network and the Ebola response procedures and plans from different countries.

### Conferences at Les Pensières

- Virus-like particles as vaccines, vectors and adjuvants, April 2014 - in partnership with Sanofi Pasteur
- Perspective on benefit-risk decision-making in vaccinology, June 2014 - in partnership with Sanofi Pasteur
- Innovation days in diagnostics, September 2014 - in partnership with the London School of Hygiene & Tropical Medicine
- From packaging to protection: how do we close global coverage gaps to optimize the impact of vaccination?, September 2014 - in partnership with Sanofi Pasteur
- 14th “Cent Gardes” conference on HIV/AIDS research, October 2014 - with support from the Bill & Melinda Gates Foundation



## Conferences organized locally

- National workshop on the prevention of contamination by hazardous biological agents and biomedical waste management - Mali, August 2014
- Biodiversity and Health Conference - Cambodia, November 2014 - in partnership with the Agence Française de Développement, the CNRS, Centre de coopération internationale en recherche agronomique pour le développement (Cirad - Centre for International Cooperation in Agronomic Research for Development), the Institut de Recherche pour le Développement (IRD) and Mahasarakham University
- 7<sup>th</sup> National HIV Workshop: "Treatment and monitoring of HIV infected infants and adults with virological escape" - Laos, November 2014 - in partnership with the national HIV program, ESTHER (Together for a networked hospital therapeutic solidarity)
- 3<sup>rd</sup> National Hepatitis Workshop: "Toward more extensive access to diagnosis and treatment of viral hepatitis in Lao PDR" - Laos, November 2014 - in partnership with the Université Paris 13, the Lyon Cancer Research Centre, the IRD and the Chiang Mai University of Thailand
- World Rabies Day - Laos, September 2014 - organized by the Laos Ministry of Health with the participation of Fondation Mérieux
- Workshop on Cholera (IDEA) - Philippines, January 2014 - in partnership with Sanofi Pasteur
- 9<sup>th</sup> Vaccinology Latin America - Mexico, November 2014 - in partnership with Sanofi Pasteur
- Life Sciences and Society Conference: "The silent inflammation" - France, December 2014 - in collaboration with the Fondation Léa et Napoléon Bullukian
- Global Laboratory Initiative (GLI) - Geneva, April 2014 - in partnership with the WHO, Stop TB, and with support from USAID

# SUPPORT FOR INNOVATIVE PUBLIC HEALTH INITIATIVES

Fondation Mérieux supports initiatives that bring innovative and structurally important solutions to public health issues in developing countries. Today, the Foundation is coordinating three projects based on network dynamics and complementary skills, the only way to create synergies, speed up decision-making and provide relevant answers to the health needs of vulnerable populations.



## PARTNERSHIP TO CONTROL DENGUE FEVER

The Partnership for Dengue Control (PDC) is a unique initiative that brings together international organizations, dengue fever experts and public health leaders. The PDC supports the WHO's "Global Strategy 2012-2020 for the Prevention and Control of Dengue Fever". It was created in 2013, with the aim of combatting dengue fever by integrating innovative prevention and control approaches and by bringing together experts from the world community to support countries where dengue fever is endemic. 2014 was devoted to setting up this initiative and fundraising. The PDC was supported in 2014 by the Bill & Melinda Gates Foundation, the Carlos Slim Foundation, the Sabin Vaccine Institute, Sanofi Pasteur and Bayer.

### Dengue fever, a growing concern

- Dengue fever is a viral infection with high pandemic potential transmitted by mosquitoes.
- It causes a flu-like syndrome that can evolve into potentially fatal complications.
- The incidence of dengue fever has increased by a factor of 30 over the past 50 years. It is estimated that half of the world's population is now at risk.

## CONTROL OF ENTERIC DISEASES

The Initiative against Diarrheal and Enteric Diseases in Africa and Asia (IDEA - Cholera) is a network of practitioners in the field who are engaged in contributing to the fight against cholera and other enteric diseases. This independent multi-disciplinary group is hosted by Fondation Mérieux and supported by Sanofi Pasteur. It is a partner to the Organizing Committee of the Coalition for Cholera Prevention and Control (CCPC) funded by the Bill & Melinda Gates Foundation and the WHO's Global Task Force for Cholera Prevention and Control. Recognized as one of the important operators in the fight against this scourge, IDEA contributed to the round table on cholera organized by the National Institute of Biomedical Research of the Democratic Republic of Congo in December 2014. This meeting led to an appeal document entitled "Kinshasa Declaration", distributed to more than 120 opinion leaders, institutions, and local and national organizations involved with cholera.

### Enteric diseases worldwide

Enteric diseases represent the 2<sup>nd</sup> most frequent cause of mortality among children under 5. Among these enteric diseases, cholera, typhoid fever and rotavirus are still major public health issues in several countries of Asia, Africa, and South America.

## GloPID-R: RAPIDLY MOBILIZING RESEARCH IN THE EVENT OF AN EPIDEMIC

The Ebola crisis has shown the need to mobilize research teams rapidly in the event of an epidemic. This is the reason for GloPID-R (Global Research Collaboration for Preparedness for Infectious Disease Research), the first initiative to bring together research funding bodies worldwide to facilitate a rapid response in the face of an epidemic with pandemic potential. The launch and management of the secretariat of the GloPID-R initiative, funded by the European Union's Horizon 2020 program, was entrusted to Fondation Mérieux and the University of Oxford in late 2014.





## AFRICA AMERICAS ASIA MIDDLE EAST

BENIN

BURKINA FASO

CAMEROON

ETHIOPIA

GUINEA

MADAGASCAR

MALI

NIGER

SENEGAL

TOGO

BRAZIL

HAITI

BANGLADESH

CAMBODIA

CHINA

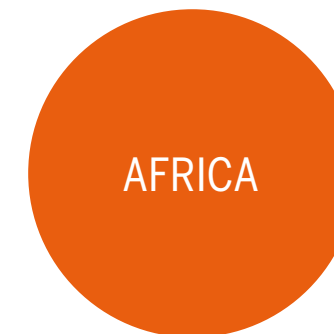
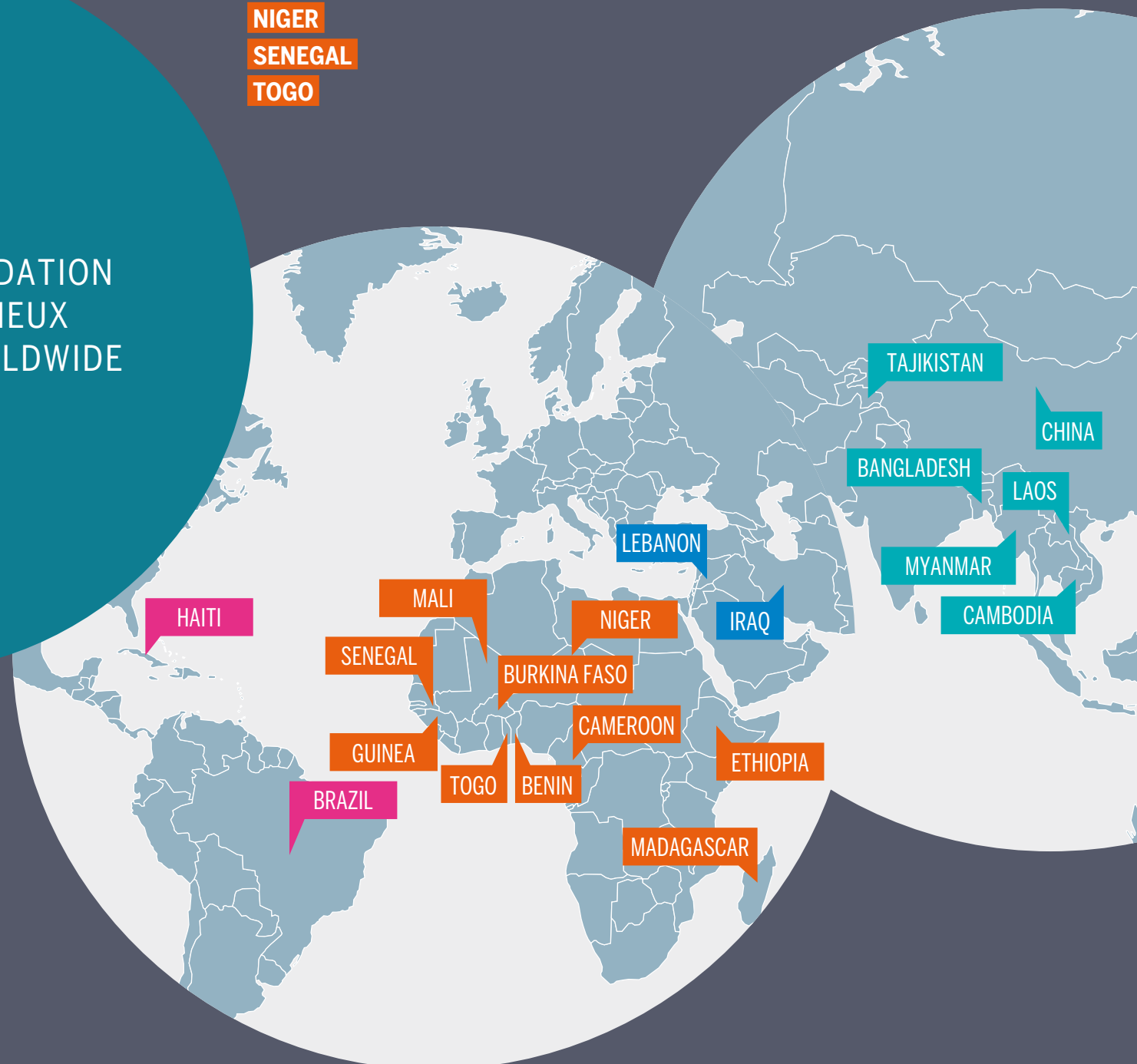
LAOS

MYANMAR

TAJIKISTAN

IRAQ

LEBANON

FONDATION  
MÉRIEUX  
WORLDWIDE

## BENIN

- Fondation Mérioux office:  
1 Beninese employee
- RESAOLAB network member  
since 2013

## IN 2014

RESAOLAB PROGRAM  
ACTIONS

- Creation of a national RESAOLAB steering committee
- Supervision of 20 Beninese laboratories to assess their level and needs
- A national workshop on quality and training for laboratory technicians on quality assurance (17 participants)
- Selection of the construction site for the External Quality Control and Training Center on the grounds of the Ministry of Health of Benin
- In response to the Ebola virus epidemic: donation of kits for secure sample collection and transport



## BURKINA FASO

- Fondation Mérioux office:  
1 Burkinabe employee
- RESAOLAB network member  
since 2009
- RESAOLAB program achievements:
  - Construction of the Continuing Training Center and External Quality Control Unit in Ouagadougou, next to the General Directorate of Pharmacy, Drugs and Laboratories, inaugurated in 2013
  - Renovation and equipment of 3 other continuing training centers: Bobo-Dioulasso (DRS), Ouahigouya (Lazaret Medical Center) and Fada N'Gourma (Regional Hospital)



## IN 2014

SUPPORT TO CLINICAL  
BIOLOGY LABORATORIES

- Rehabilitation of the laboratory and practical workrooms of the Faculty of Pharmacy of Ouagadougou (with the support of Fondation Christophe et Rodolphe Mérioux)

RESAOLAB PROGRAM  
ACTIONS

- Supervision of 52 health facilities and launch of the quality assessment process with public and private laboratories
- Training on inventory management for 88 laboratory technicians and pharmacists from public and private health facilities
- In response to the Ebola virus epidemic: donation of kits for secure sample collection and transport, training for 126 laboratory personnel on biosafety and Ebola virus disease

TRAINING AND  
KNOWLEDGE-SHARING

- Participation in the "Clinical Biology Days" in Ouagadougou in July

SUPPORT  
TO LOCAL INITIATIVES

- Support to the NGO Djantoli: maternal and child health surveillance and care in Burkina Faso\*

\*With support from  
Fondation Christophe et Rodolphe Mérioux



## CAMEROON

- ▣ First Fondation Mérieux mission in 2010
- ▣ GABRIEL network member: the Biotechnology Center at the University of Yaoundé since 2010

## IN 2014

## SUPPORT TO CLINICAL BIOLOGY LABORATORIES

- 2 laboratories renovated: the public laboratory and the blood bank of Garoua in northern Cameroun (with the support of Fondation Christophe et Rodolphe Mérieux)
- Partnership with Institut Pasteur for the renovation of the Garoua hospital laboratory
- In response to the Ebola virus epidemic:
  - Donation of kits for secure sample collection and transport sent through the RESAOLAB network
  - Renovation of an isolation and treatment center for Ebola virus disease in Douala

## ETHIOPIA

- ▣ First Fondation Mérieux mission in 2007

## IN 2014

## SUPPORT TO CLINICAL BIOLOGY LABORATORIES

- Support to Inter Aide to strengthen tuberculosis diagnosis capacities (with the support of Fondation Christophe et Rodolphe Mérieux):
  - 5 LED fluorescence microscopes provided
  - Continued training of community health workers
  - Active tuberculosis screening among rural communities and monitoring of patients on tuberculosis treatment until healed



## GUINEA

- ▣ First Fondation Mérieux mission in 2010
- ▣ Fondation Mérieux office: 2 expatriates and 1 Guinean employee
- ▣ RESAOLAB network member since 2013

## IN 2014

## SUPPORT TO CLINICAL BIOLOGY LABORATORIES

- Inauguration of the Coronthie Women and Children's Health Center in Conakry, with a laboratory fully equipped and the staff trained by Fondation Mérieux

## RESAOLAB PROGRAM ACTIONS

- Authorization obtained for Fondation Mérieux to operate and organization of the coordination unit



- In response to the Ebola virus epidemic:
  - Creation in Guinea of the training module "Warning and response to the Ebola virus disease epidemic in the West African network of laboratories" followed by deployment to 500 laboratory personnel in the network
  - Donation of kits for secure sample collection and transport, training and audits for laboratories concerned by the epidemic
  - Training and advice to the Guinean Minister of Health and his crisis unit
- Medical advisor for the opening of an Ebola treatment center in Macenta, in partnership with the French Red Cross and Médecins Sans Frontières (MSF), in operation since November 2014

## MADAGASCAR

- ▣ First Fondation Mérieux mission in 2006
- ▣ Fondation Mérieux office: 1 expatriate and 1 Malagasy employee
- ▣ Construction of the Charles Mérieux Infectiology Center within the University of Antananarivo in 2010, with a Rodolphe Mérieux Laboratory (with the support of Fondation Christophe et Rodolphe Mérieux), GABRIEL network member since 2010
- ▣ 6 laboratories renovated since 2007

## RODOLPHE MÉRIEUX LABORATORY RESEARCH FOCUS

- ▣ Leprosy
- ▣ Neglected tropical diseases
- ▣ Diarrheal diseases
- ▣ Meningitis



## IN 2014

## SUPPORT TO CLINICAL BIOLOGY LABORATORIES

- Renovation of 3 laboratories: Mahajanga Hospital bacteriology laboratory\*, the Tsaralalana Mothers & Children's University Hospital laboratory and the Tsiroanomandidy Hospital Center laboratory)
- Technical support for the establishment of a network of public hospital laboratories (RESOILAB)\*
- Deployment of a Laboratory Information Management System and training in 9 laboratories

## CURRENT RESEARCH PROJECTS

- 2 surveillance programs on diarrhea in children: study of the prevalence of bacteria involved in food poisoning (to improve food safety in livestock farming) and study on rotavirus (to guide local decision-makers on implementing a vaccine)
- Research project for early screening of leprosy and surveillance of resistance to leprosy treatment
- Surveillance of pediatric bacterial meningitis at the Tsaralalana Mothers & Children's University Hospital laboratory
- Diagnosis of human cysticercosis: implementation of a screening test in a regional laboratory in an endemic area
- Epidemiological study of 2 endemic tropical mycoses (chromomycosis and sporotrichosis) to facilitate access to treatment, identify pathogenic fungi and prevent contamination
- Launch of a study on prevalence and risk factors for cryptococcosis in patients infected with HIV

## GABRIEL network multi-center studies:

- Epidemiological study to identify the pathogens responsible for severe pneumonia in children under 5 years of age
- Development of diagnostic tools for pneumonia: *Streptococcus pneumoniae* strain typing
- Young Researchers' Prize: Tahina-mandranto Rasamoelina received the award for the best scientific presentations selected by the Research Committee at the 7<sup>th</sup> GABRIEL network meeting

## TRAINING AND KNOWLEDGE-SHARING

- Support to the pharmaceutical studies program: training to strengthen the capacity of hospital pharmacies
- Training on health education for the most vulnerable families, in partnership with school medical services and child protection associations

## SUPPORT TO LOCAL INITIATIVES

- Purchase and delivery of medicine to dispensaries, renovation of the local association Akamasoa's shelter\*
- Support for a health insurance plan in Antsirabe with the Vahatra association

\*With support from Fondation Christophe et Rodolphe Mérieux





## MALI

- ▀ First Fondation Mérieux mission in 2004
- ▀ Fondation Mérieux office: 1 expatriate and 3 Malian employees
- ▀ Inauguration of the Charles Mérieux Infectiology Center in Bamako in 2005, with a Rodolphe Mérieux Laboratory (with the support of Fondation Christophe et Rodolphe Mérieux), GABRIEL network member since 2008
- ▀ RESAOLAB network member since 2009
- ▀ RESAOLAB program achievements: Renovation and equipment of training sites (in 2010):
  - Kayes and Mopti regional hospital laboratories
  - The laboratory of the National Institute of Training in Health Sciences (INFSS) in Sikasso
  - Multimedia rooms at the INFSS in Kayes (with support from the International Cooperation of the Principality of Monaco) and in Sikasso
  - National Quality Control Unit (UNEEQ) at the National Institute of Research in Public Health (INRSP)

 RODOLPHE MÉRIEUX  
LABORATORY RESEARCH  
FOCUS:

- ▀ Tuberculosis
- ▀ Hepatitis B
- ▀ Respiratory Infections

## IN 2014

SUPPORT TO CLINICAL  
BIOLOGY LABORATORIES

- Inauguration of a mobile laboratory for Ebola virus detection at the Charles Mérieux Infectiology Center, in partnership with the GIZ (German Federal Enterprise for International Cooperation) and the Bundeswehr Institute of Microbiology\*
- Training and quality supervision for the LABOMEDCAMP project which established 10 front-line laboratories in community health centers in 3 Malian regions
- ResoABio project: prevention of infections by managing biomedical waste in Mali (with support from the GIZ)
- Development of activities at the Charles Mérieux Infectiology Center with the Rodolphe Mérieux Laboratory engaged in the ISO 15189 accreditation process and the establishment of research topics (tuberculosis and hepatitis)

RESAOLAB PROGRAM  
ACTIONS

- Training for 76 laboratory technicians (epidemic-prone diseases and quality assurance)
- Supervision of 68 laboratories
- Workshops on regional harmonization for the members of the network: quality approach and initial and continuing training of laboratory personnel
- In response to the Ebola virus epidemic: donation of kits for secure sample collection and transport, training and audits for laboratories concerned by the epidemic

CURRENT RESEARCH  
PROJECTSGABRIEL network  
multi-center studies:

- Epidemiological study to identify the pathogens responsible for severe pneumonia in children under 5 years of age
- Development of diagnostic tools for pneumonia: *Streptococcus pneumoniae* strain typing
- Quality initiative: Mali is one of 4 pilot sites for an initiative designed to help GABRIEL member laboratories meet the requirements for international ISO 15189 accreditation

TRAINING  
AND KNOWLEDGE-SHARING

- Training in Mali on biological diagnostic techniques applied to HIV for laboratory personnel from Benin, Burkina Faso, Cameroon and the Central African Republic
- 8<sup>th</sup> class of the Bachelor of Science in Biological and Applied Medical Sciences (BAMS): 28 students graduated\*
- National workshop on "The prevention of contamination by hazardous biological agents and biomedical waste management"

SUPPORT TO LOCAL  
INITIATIVES

- Partnership with Samusocial Mali, which provides assistance to children living in the streets of Bamako\*
- Support to the NGO Djantoli: maternal and child health surveillance and care in Mali\*

## NIGER

- ▀ First Fondation Mérieux mission in 2013
- ▀ Fondation Mérieux office: 1 Nigerian employee
- ▀ RESAOLAB network member since 2013

## IN 2014

RESAOLAB PROGRAM  
ACTIONS

- Authorization obtained for Fondation Mérieux to operate and organization of the coordination unit
- Dissemination of the national laboratory policy and the national quality assurance plan to every public and private laboratory in the country
- Training of trainers in the RESAOLAB network
- 2 supervision sessions for 53 laboratories
- Renovation of the National School of Public Health (École Nationale de Santé Publique) which will become the initial training facility for Nigerian healthcare personnel
- In response to the Ebola virus epidemic: donation of kits for secure sample collection and transport



## SENEGAL

- ▀ First Fondation Mérieux mission in 2009
- ▀ Fondation Mérieux office: 1 expatriate and 1 Senegalese employee
- ▀ RESAOLAB network member since 2009
- ▀ Fondation Mérieux RESAOLAB office being created
- ▀ RESAOLAB program achievements:
  - Support for the creation of a National Laboratories Directorate (2013)
  - Renovation of training centers in Thies, Kaolack, Kolda and Saint-Louis

## IN 2014

RESAOLAB PROGRAM  
ACTIONS

- 119 laboratories audited according to the SLIPTA grid proposed by WHO
- 3 training sessions for antibiotic susceptibility testing with 78 participants
- In response to the Ebola virus epidemic: 13 training sessions on Ebola virus disease with 300 health professionals from 14 regions, donation of kits for secure sample collection and transport

CURRENT RESEARCH  
PROJECTS

- Mid-term review of SOCIALAB, an academic research project that aims to identify barriers (social, cultural, historic or political) that affect medical biology services and impact the quality of prenatal care

SUPPORT  
TO LOCAL INITIATIVES

- Partnership with Samusocial Senegal, which provides assistance to children living in the streets of Dakar\*

## TOGO

- ▀ First Fondation Mérieux mission in 2013
- ▀ Fondation Mérieux office: 1 Togolese employee
- ▀ RESAOLAB network member since 2013

## IN 2014

RESAOLAB PROGRAM  
ACTIONS

- Authorization obtained for Fondation Mérieux to operate and organization of the coordination unit
- 2<sup>nd</sup> International Steering Committee held in Lomé in November
- Foundation stone laid for the Division of Laboratories of the Ministry of Health of Togo
- Scholarships: 4 given for the DES in Clinical Biology in Senegal, 2 for the Master in Quality, Hygiene, Safety and Environment in Burkina Faso, 1 for the Master in Hospital Biomedical Engineers in France
- In response to the Ebola virus epidemic: donation of kits for secure sample collection and transport, training for laboratory personnel

CURRENT RESEARCH  
PROJECTS

- PneumoTone study on etiologic agents responsible for pneumonia in a cohort of patients with respiratory diseases in the city of Dapaong



## AMERICAS

## BRAZIL

- First Fondation Mérieux mission in 2011
- 2 GABRIEL network members: Fondation Oswaldo Cruz, since 2008, and the Bioinformatics Laboratory (LABINFO) of the National Laboratory of Scientific Computation (Laboratório Nacional de Computação Científica), since 2014

## IN 2014

## SUPPORT TO CLINICAL BIOLOGY LABORATORIES

- Rodolphe Mérieux Laboratory construction project in Rio Branco (state of Acre in northwestern Brazil)

## CURRENT RESEARCH PROJECTS

- Launch of a surveillance program on severe influenza cases at 3 clinical sites in Brazil: Fortaleza (state of Ceará), Rio de Janeiro and Porto Alegre (state of Rio Grande do Sul). The goal is to document severe influenza cases, identify the influenza strains that are responsible and evaluate the effectiveness of vaccination (GABRIEL network project).

## GABRIEL network multi-center studies:

- Epidemiological study to identify the pathogens responsible for severe pneumonia in children under 5 years of age
- Development of diagnostic tools for pneumonia: *Streptococcus pneumoniae* strain typing

## HAITI

- First Fondation Mérieux mission in 2002
- Inauguration of the Rodolphe Mérieux Laboratory in Port-au-Prince in 2009 (with the support of Fondation Christophe et Rodolphe Mérieux) as part of GHESKIO's Institute of Infectious Diseases and Reproductive Health (IMIS), GABRIEL network member since 2008



## RODOLPHE MÉRIEUX LABORATORY RESEARCH FOCUS:

- Tuberculosis
- HIV/AIDS
- Bacterial resistance

## IN 2014

## SUPPORT TO CLINICAL BIOLOGY LABORATORIES

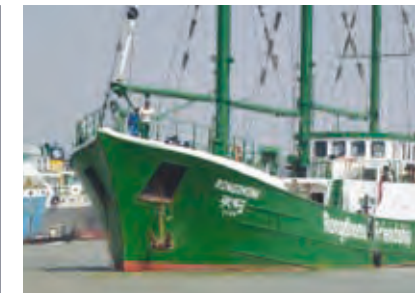
- The SPHaitiLab project: European Commission funding (80%) obtained; the project aims to improve the network of public health laboratories by strengthening skills in bacteriology and a partnership with the Médecins Sans Frontières (MSF) hospital
- Laboratory staff skills strengthened in bacteriology and a technical assistant in medical biology dispatched to the laboratory of the Institute of Infectious Diseases and Reproductive Health\*
- Partnership with the Médecins Sans Frontières hospital for the analysis of their samples determine the susceptibility of different microbes to antibiotics

## CURRENT RESEARCH PROJECTS

## GABRIEL network multi-center studies:

- Epidemiological study to identify the pathogens responsible for severe pneumonia in children under 5 years of age
- Development of diagnostic tools for pneumonia: *Streptococcus pneumoniae* strain typing
- Quality initiative: Haiti is one of 4 pilot sites for an initiative designed to help GABRIEL member laboratories meet the requirements for international ISO 15189 accreditation
- Young Researchers' Prize: Cynthia Rivière received the award at the 7<sup>th</sup> GABRIEL network meeting for her work on papillomavirus infections and cervical cancer in Haiti

## ASIA



## BANGLADESH

- First Fondation Mérieux mission in 2009
- Rodolphe Mérieux Laboratory within the Bangladesh Institute of Tropical and Infectious Diseases (BITID) in Chittagong: construction completed in 2014 (with support from Fondation Christophe et Rodolphe Mérieux)
- 2 new GABRIEL network members in 2014: the International Centre for Diarrheal Disease Research (ICDDR,B) and the Institute for Developing Science and Health Initiatives (ideSHi)

## RODOLPHE MÉRIEUX LABORATORY RESEARCH FOCUS:

- Tuberculosis
- Typhoid



## IN 2014

## SUPPORT TO CLINICAL BIOLOGY LABORATORIES

- Construction completed in March of the Rodolphe Mérieux Laboratory in the BITID, in Chittagong; equipment and qualification of BSL2 and BSL3 laboratories\*
- Partnership with the NGO Friendship: equipment of laboratories and training of technicians for 2 hospital-boats\*

## CURRENT RESEARCH PROJECTS

- Study of the transmission of tuberculosis in prisons to improve early detection and control of the epidemic in Bangladeshi prisons
- Diagnosis of typhoid fever: evaluation of a new molecular test that could be integrated into the Bill & Melinda Gates Foundation's surveillance network

## TRAINING AND KNOWLEDGE-SHARING

- Training on biosafety carried out with ideSHi, member of the GABRIEL network
- Workshop on bioinformatics and analyzing genomic data organized in Dhaka for the GABRIEL network





## CAMBODIA

- ▶ First Fondation Mérieux mission in 2001
- ▶ Fondation Mérieux office: 2 Cambodian employees
- ▶ Inauguration of the Rodolphe Mérieux Laboratory in the Faculty of Pharmacy in 2005 (with the support of Fondation Christophe et Rodolphe Mérieux)
- ▶ Inauguration of a new regional platform for research on infectious diseases on the Institut Pasteur campus in Phnom Penh on March 11, 2014 (as part of Fondation Mérieux's membership in the AVISEAN Sud scientific network)
- ▶ Reconstruction of the Faculty of Pharmacy in Phnom Penh in partnership with the Pierre Fabre Foundation in 2003
- ▶ 7 laboratories renovated since 2007
- ▶ 1 GABRIEL network member: the University of Health Sciences in Phnom Penh since 2008
- ▶ Renewal of a Memorandum of Understanding (MOU) to reinforce the collaboration between Fondation Mérieux and the Ministry of Health of Cambodia for 2014-2016

### RODOLPHE MÉRIEUX LABORATORY RESEARCH FOCUS:

- ▶ Respiratory infections
- ▶ Relationship between pathogens and the environment

### IN 2014

#### SUPPORT TO CLINICAL BIOLOGY LABORATORIES

- Renovation of the Siem Reap hospital microbiology laboratory\*
- Support to the public hospital laboratory network "CamLab Cambodia" since 2013\*
- Organization of the external quality control program, EQA 2014, for 19 public laboratories in Cambodia

#### CURRENT RESEARCH PROJECTS

- BiodivHealthSEA project on zoonotic infectious diseases, which represent 60% of emerging diseases
- Medcam project: screening Cambodian plants selected for their antimicrobial effect

#### GABRIEL network multi-center studies:

- Epidemiological study to identify the pathogens responsible for severe pneumonia in children under 5 years of age
- Development of diagnostic tools for pneumonia: *Streptococcus pneumoniae* strain typing

#### TRAINING AND KNOWLEDGE-SHARING

- Participation in the organization of the Biodiversity and Health Conference (November 2014)
- 9<sup>th</sup> year for the Diploma of Specialist Studies (DES) in medical biology open to physicians and pharmacists (8 students)
- An e-learning module, "Biosafety and management of biomedical waste", translated into Khmer and posted on the Camlab website on the GLOBE web portal
- Organization of the workshop "Revising the National Strategic Plan for Medical Laboratory Services 2010-2015"
- Hand hygiene promotion initiative with the development of hydroalcoholic solution production in the Chey Chum Neas hospital in the Kandal Province

#### SUPPORT TO LOCAL INITIATIVES

- Support to the NGO 1001 Fontaines for its research on pesticide levels in clean water production in Cambodia\*
- Support to the NGO Magna - Children at Risk for the treatment of HIV-positive orphans and prevention of mother to child transmission\*
- Support to the children's home "Dr. Christophe Mérieux Center" in Phnom Penh\*

ASIA



## CHINA

- ▶ First Fondation Mérieux mission in 2006
- ▶ Fondation Mérieux office: 1 Chinese employee
- ▶ Construction of the Christophe Mérieux Laboratory in Beijing in 2008 (with the support of Fondation Christophe et Rodolphe Mérieux), as part of the Institute of Pathogen Biology at the Chinese Academy of Medical Sciences (CAMS), GABRIEL network member since 2008
- ▶ 3<sup>rd</sup> international foundation to be officially recognized by the Chinese Ministry of Health

### CHRISTOPHE MÉRIEUX LABORATORY RESEARCH FOCUS:

- ▶ Pneumonia
- ▶ Tuberculosis

### IN 2014

#### SUPPORT TO CLINICAL BIOLOGY LABORATORIES

- Continuation of the program launched in 2008 to decentralize tuberculosis diagnosis in China through a partnership between Fondation Mérieux and the Chinese Ministry of Health: training of 36 healthcare professionals from Guangxi region hospitals; 12 LED microscopes installed and personnel trained in the Kashi hospitals\*

#### CURRENT RESEARCH PROJECTS

##### GABRIEL network multi-center studies:

- Epidemiological study to identify the pathogens responsible for severe pneumonia in children under 5 years of age
- Development of diagnostic tools for pneumonia: *Streptococcus pneumoniae* strain typing

#### TRAINING AND KNOWLEDGE-SHARING

- GABRIEL training on bioinformatics and analyzing genomic data organized at the Christophe Mérieux Laboratory in Beijing

\*With support from Fondation Christophe et Rodolphe Mérieux



## ASIA

## LAOS

- ▶ First Fondation Mérieux mission in 2005
- ▶ Fondation Mérieux office: 2 expatriates
- ▶ Inauguration in 2009 of the Christophe Mérieux Infectiology Center within the University of Health Sciences in Vientiane, with a Rodolphe Mérieux Laboratory (with the support of Fondation Christophe et Rodolphe Mérieux)
- ▶ 9 laboratories renovated, including 8 in the Khammouane province in 2013
- ▶ 1 GABRIEL network member: the Ministry of Health since 2008

**RODOLPHE MÉRIEUX  
LABORATORY RESEARCH  
FOCUS:**

- ▶ Respiratory infections and tuberculosis
- ▶ HIV/AIDS and human papillomavirus (HPV)
- ▶ Hepatitis

**IN 2014****SUPPORT TO CLINICAL BIOLOGY LABORATORIES**

- Memorandum of Understanding with the Ministry of Health for the extension of the Christophe Mérieux Infectiology Center and the construction of the Food Safety Laboratory\*
- Continuation of the project to improve diagnostic capacities of laboratories in the Khammouane province and increased training
- Development of hydroalcoholic solution production units in the Luang-Prabang and Sekong province hospitals

**CURRENT RESEARCH PROJECTS**

- Lalris project: study of cases of respiratory infections not caused by the influenza A(H1N1) virus
- Continuation of the LaoCol-VP project: cost-effectiveness study of techniques to detect cancerous lesions\*
- ID-Bio International Research Group study in Southeast Asia: molecular typing of tuberculosis strains
- Quality initiative: Laos is one of 4 pilot sites for an initiative designed to help GABRIEL member laboratories meet the requirements for international ISO 15189 accreditation

**TRAINING AND KNOWLEDGE-SHARING**

- Diploma of Specialist Studies (DES) in Medical Biology from the University of Health Sciences for physicians and pharmacists\*
- 7<sup>th</sup> National HIV Workshop and 3<sup>rd</sup> National Hepatitis Workshop
- Participation in the World Rabies Day organized by the Ministry of Health
- Antibiguide: a guide on the proper use of antibiotics published for Laotian doctors

## MYANMAR

- ▶ First Fondation Mérieux mission in 2010

**IN 2014****SUPPORT TO CLINICAL BIOLOGY LABORATORIES**

- Renovation of 3 units in the Public Health Laboratory (PHL) of Myanmar: after the renovation of the molecular biology unit in 2011 and the bacteriology unit in 2013, the virology laboratory was renovated in 2014\*
- Support to maintain the quality of testing at the laboratory that performs HIV viral load testing and early diagnosis in newborns in the Mandalay region\*
- Equipment of the National Health Laboratory (NHL) in Yangon to set up the virology laboratory that will perform HIV viral load testing\*
- Training in bacteriology to strengthen surveillance capacity and outbreak investigation in the northern part of the country\*



## MIDDLE EAST

## TAJIKISTAN

- ▶ First Fondation Mérieux mission in 2009
- ▶ National Public Health Reference Laboratory (NPHRL) in Dushanbe designed and equipped by Fondation Mérieux in 2013

## NPHRL RESEARCH FOCUS:

- ▶ Tuberculosis

**IN 2014****SUPPORT TO CLINICAL BIOLOGY LABORATORIES**

- Technical assistance to the National Public Health Reference Laboratory for tuberculosis diagnosis in partnership with WHO, USAID and GIZ
- Training and coaching of technicians working at the NPHRL\*
- Workshop on the diagnosis of urinary tract infections and their resistance to antibiotics\*
- Development of quality assurance in the laboratory and strengthening of the BSL2 and BSL3 laboratories\*

## IRAQ

- ▶ First Fondation Mérieux mission in 2014

**IN 2014****SUPPORT TO LOCAL INITIATIVES**

- 2014 was marked by the humanitarian crisis in Iraq due to the displacement of hundreds of thousands of people to Kurdistan. Fondation Mérieux contributed to 2 initiatives:
  - Delivery of medicine and food: a ton of medicine and first aid medical and surgical supplies from the NGO Tulipe (International Emergency and Solidarity by Healthcare Companies) and 13 tons of food through a partnership with the Rhône-Alpes Region\*
  - Construction of housing for 250 families in Erbil (Iraqi Kurdistan) in partnership with Fondation Saint-Irénée, Fondation Raoul Follereau, the Rhône-Alpes Region and City of Lyon\*



## LEBANON

- ▶ First Fondation Mérieux mission in 2008
- ▶ Inauguration of the Rodolphe Mérieux Laboratory in Beirut within the Technology Center of the Saint Joseph University in 2011 (with the support of Fondation Christophe et Rodolphe Mérieux), GABRIEL network member since 2010

**RODOLPHE MÉRIEUX  
LABORATORY RESEARCH  
FOCUS:**

- ▶ Bacterial resistance

**IN 2014****SUPPORT TO CLINICAL BIOLOGY LABORATORIES**

- Qualification of the biosafety level 3 zone in the Rodolphe Mérieux Laboratory: the laboratory is fully operational and meets ISO 14144-1 standards\*
- Development of research activities and continuation of specialized testing activities (HIV, HBV, and HCV viral load, HCV genotyping, tuberculosis strain typing)



## GOVERNANCE

### SCIENTIFIC COMMITTEE

Prof. Françoise BARRÉ-SINOUSSE  
*Institut Pasteur (France)*

Prof. Christian BRÉCHOT  
*Institut Pasteur (France)*

Prof. Stewart COLE  
*École Polytechnique Fédérale de Lausanne (Switzerland)*

Prof. Ogobara DOUMBO  
*Malaria Research and Training Center Bamako (Mali)*

Prof. Pierre-Marie GIRARD  
*Institut de Médecine et d'Épidémiologie Appliquée - Hôpital Bichat, Paris (France)*

Prof. David L. HEYMANN  
*Public Health England (United Kingdom)*

Dr. Kai Man KAM  
*Tuberculosis Reference Laboratory, Ministry of Health, Hong Kong (China)*

Prof. Arnold S. MONTGOMERY  
*University of Michigan (United States)*

Prof. Johan NEYTS  
*Faculté de Médecine de l'Université de Louvain (Belgium)*

Prof. Albert OSTERHAUS  
*Erasmus University Rotterdam (The Netherlands)*

Prof. Fabien ZOULIM  
*Inserm - Lyon (France)*

### FONDATION MÉRIEUX USA

#### TEAM

Dr. Louise GRESHAM  
*President and CEO*

Emily PENROSE  
*Program Manager*

#### BOARD OF DIRECTORS

Prof. David L. HEYMANN  
*Chairman  
Public Health England (United Kingdom)*

Dr. Jon ANDRUS  
*Sabin Vaccine Institute (United States)*

Stéphane BANCEL  
*Moderna (United States)*

Didier CHERPITEL  
*Fondation Mérieux Board of Directors (France)*

Dr. Kevin DE COCK  
*Center for Global Health, U.S. Centers for Disease Control and Prevention (United States)*

Dr. Warren JOHNSON  
*Weill Cornell Medical College (United States)*

Karine MEHLER  
*Fondation Mérieux Board of Directors (France)*

Dr. Stanley PLOTKIN  
*Vaxconsult (United States)*

### MANAGEMENT COMMITTEE

Benoît MIRIBEL  
*Director General*

Emmanuel DE GUIBERT  
*Secretary General*

Prof. Hubert ENDTZ  
*Scientific Director*

Dr. Christophe LONGUET  
*Medical Director*

Dr. François-Xavier BABIN  
*International Development Director*

### BOARD OF DIRECTORS

#### REPRESENTATIVES OF THE FOUNDING MEMBERS

Alain MÉRIEUX - *President*  
Claudine FRIEH  
Karine MEHLER  
Alexandre MÉRIEUX  
Sophie MÉRIEUX

#### QUALIFIED PERSONS

Prof. Christian BRÉCHOT  
Didier CHERPITEL  
Prof. François GROS  
Prof. David L. HEYMANN  
Dominique PELLA  
Prof. Dominique PEYRAMOND  
Dr. Robert SEBBAG

#### GOVERNMENT REPRESENTATIVE

The Prefect  
of the Rhône-Alpes Region

## MAIN FINANCIAL PARTNERS

Fondation Mérieux would like to thank its partners for their continued trust and commitment.

In 2014, their support made it possible to initiate and reinforce numerous capacity-building and research projects which help local stakeholders in their fight against infectious diseases.

### FOUNDATIONS

Bill & Melinda Gates Foundation

Bioaster

Carlos Slim Foundation

Fondation AnBer

Fondation Bullukian

Fondation Christophe et Rodolphe Mérieux

Fondation de France

Fondation La main à la pâte\*

Fondation Pierre Fabre

Fondation Raoul Follereau

Fondation Saint-Irénée

Fondation Veolia

Fonds Decitre

Fundação de Amparo à Pesquisa do Estado do Rio de Janeiro (FAPERJ)

Skoll Global Threats Fund

Stavros Niarchos Foundation

Wellcome Trust

### GOVERNMENT INSTITUTIONS

Agence Française de Développement (AFD)

Armed Forces Health Surveillance Center (AFHSC/GEIS)

City of Lyon

Defense Threat Reduction Agency (DTRA)

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

Direction de la Coopération Internationale (DCI) de la Principauté de Monaco

European Centre for Disease Prevention and Control (ECDC)

European Union (7th Framework Programme, ACP Science and Technology)

Greater Lyon

European Union (7th Framework Programme, ACP Science and Technology Programme, H2020, Research and Innovation (RTD) and the International Cooperation and Development (DEVCO)

Fogarty International Center

Greater Lyon

Hospices Civils de Lyon

Ministère des Affaires étrangères et du Développement international (MAEDI) (through Expertise France, Global Fund 5%)\*

Greater Lyon

Hospices Civils de Lyon

Ministère des Affaires étrangères et du Développement international (MAEDI) (through Expertise France, Global Fund 5%)\*

Greater Lyon

Hospices Civils de Lyon

Ministère de l'Enseignement Supérieur et de la Recherche (Programme d'Investissement d'Avenir, LabEX ECOFECT)

Ministère de la Santé malgache National Institute of Allergy and Infectious Diseases (NIAID) / National Institutes of Health (NIH)

Rhône-Alpes Region

U.S. Department of State

### INTERNATIONAL ORGANIZATIONS & NGOS

Agence de Médecine Préventive (AMP)

Global Fund to Fight AIDS, Tuberculosis and Malaria

Handicap International\*

Islamic Development Bank (IDB)

Red Cross

Special Programme for Research and Training in Tropical Diseases (TDR) - UNICEF, UNDP, WHO, the World Bank

World Bank - through the West African Health Organisation (WAHO)

### UNIVERSITIES & RESEARCH INSTITUTES

Académie nationale de médecine

American Society for Microbiology

Centre International de Recherche en Infectiologie

Centre national de recherche scientifique (CNRS)

Conférence Internationale des Ordres de Pharmaciens Francophones (CIOPF)

Ensemble pour une Solidarité Thérapeutique en Réseau (ESTHER)

Erasmus Medical Centre

Institut national de la santé et de la recherche médicale (Inserm)

Institut National du Cancer (INCa)

Institut Pasteur

Institut de recherche biomédicale des armées (IRBA)

Institut de Recherche pour le Développement (IRD)

International Development Research Centre (IDRC)

Jacques Cartier Centre

Johns Hopkins Bloomberg School of Public Health

London School of Hygiene and Tropical Medicine (LSHTM)

Naval Health Research Center (NAMRU-2)

Royal Tropical Institute (KIT)

Serum Institute of India

Université Claude Bernard Lyon 1

University of Geneva

University of Oxford

### INDUSTRY

Bayer

Beckman Coulter

Biocentric

bioMérieux

Caprion

Cepheid

European Diagnostic Manufacturers Association (EDMA)

Fast-track Diagnostics

Feinstein Kean Healthcare

Genostar

GlaxoSmithKline Biologicals

Image 7

Institut Mérieux

Ipharmex\*

Janssen Research & Development\*

Luminex

Merck

Mérieux Nutrisciences

Novartis Vaccines

Orrick

Pfizer

Qiagen

Rokon

Sanofi Pasteur

Sanofi Pasteur MSD

Takeda\*



## BALANCE SHEET

ASSETS (K€)	NET DEC. 31, 2014	NET DEC. 31, 2013
<b>FIXED ASSETS</b>		
Intangible fixed assets	10	12
Property, plant and equipment	2,023	2,518
Investments and other financial assets	24,582	22,639
<b>Total</b>	<b>26,615</b>	<b>25,169</b>
<b>CURRENT ASSETS</b>		
Inventories	4	5
Payments on account	34	3
Accounts receivable	885	1,092
Other receivables	13,045	8,492
Marketable securities	53,177	56,273
Cash and cash equivalents	4,945	1,398
Prepaid expenses	599	630
Unrealized exchange losses	2	0
<b>Total</b>	<b>72,692</b>	<b>67,893</b>
<b>TOTAL ASSETS</b>	<b>99,307</b>	<b>93,062</b>
<b>LIABILITIES AND FUND BALANCE (K€)</b>	<b>DEC. 31, 2014</b>	<b>DEC. 31, 2013</b>
<b>FUND BALANCE</b>		
True endowment	64,916	64,916
Reserves	884	884
Retained earnings	17,749	23,610
Net income / loss for the period	(4,934)	(5,860)
<b>Total</b>	<b>78,616</b>	<b>83,550</b>
<b>QUASI ENDOWMENT</b>		
Allowances for contingencies	2	0
Funds reserved for future engagements	2,035	415
<b>Total</b>	<b>2,037</b>	<b>415</b>
<b>LIABILITIES</b>		
Loans	3	80
Accounts payable	2,941	1,039
Investment payable	750	0
Other payable	1,822	1,645
Deferred income	13,001	6,333
Unrealized exchange gains	137	0
<b>Total</b>	<b>18,654</b>	<b>9,097</b>
<b>TOTAL LIABILITIES AND FUND BALANCE</b>	<b>99,307</b>	<b>93,062</b>

## INCOME STATEMENT

(K€)	ACTUAL 2014	ACTUAL 2013
<b>INCOME</b>		
Services revenue	233	226
Grants	28	41
Reverse on operating allowances	10,235	6,391
Expenses refund	545	395
Other operating income	119	22
<b>Total income</b>	<b>11,161</b>	<b>7,075</b>
<b>EXPENSES</b>		
External purchases and expenses	5,364	4,727
Taxes and duties	822	728
Salaries and social contributions	3,177	3,032
Depreciations	579	737
Donations and subsidies received	6,472	5,709
Grants awarded	-	4
Net book value of sold assets	-	-
Other operating income	13	23
<b>Total expenses</b>	<b>16,426</b>	<b>14,961</b>
<b>CURRENT INCOME</b>	<b>-5,265</b>	<b>-7,886</b>
<b>FINANCIAL INCOME</b>		
Dividends	904	881
Other financial income	1,618	1,872
Reverse on financial allowances	213	154
Net income from marketable securities	1,122	678
<b>Total financial income</b>	<b>3,856</b>	<b>3,585</b>
<b>FINANCIAL EXPENSES</b>		
Financial allowances	520	378
Other financial expenses	1,272	2,373
<b>Total financial expenses</b>	<b>1,792</b>	<b>2,751</b>
<b>FINANCIAL RESULT</b>	<b>2,064</b>	<b>835</b>
<b>EXCEPTIONAL INCOME</b>		
Exceptional income	2	-
Exceptional reverse on allowances	-	241
<b>Total exceptional income</b>	<b>2</b>	<b>241</b>
<b>EXCEPTIONAL COSTS</b>		
Exceptional expenses	115	30
Exceptional allowances for contingencies	-	-
<b>Total exceptional costs</b>	<b>115</b>	<b>30</b>
<b>EXCEPTIONAL RESULT</b>	<b>-113</b>	<b>211</b>
Income tax	-	-
<b>TOTAL INCOME</b>	<b>15,019</b>	<b>10,901</b>
<b>TOTAL EXPENSES</b>	<b>18,333</b>	<b>17,741</b>
<b>INTERMEDIATE BALANCE</b>	<b>-3,314</b>	<b>-6,841</b>
Prior funds carried forward	415	1,396
Funds reserved for future engagements	2,035	415
<b>NET INCOME / LOSS FOR THE PERIOD</b>	<b>-4,934</b>	<b>-5,860</b>



## 2014 ACCOUNTS & KEY FIGURES

# USE OF FUNDS STATEMENT

EXPENSES (USES) (€)	ACTUAL 2014	INCOME (FUNDS) (€)	ACTUAL 2014
<b>MISSIONS</b>	<b>11,960,279</b>	<b>DONATIONS AND LEGACIES</b>	<b>126,373</b>
Clinical biology laboratories	1,406,461	Donations	28,373
Collaborative research programs	3,256,870	Legacies	98,000
Training and knowledge sharing	4,500,247	<b>OTHER PRIVATE FUNDS</b>	<b>8,239,520</b>
Support for local initiatives	1,559,115	Sponsorship/ Patronage	2,386,800
Support for Laboratories and Mérieux Centers	145,201	Grants from Fondation Christophe et Rodolphe Mérieux	3,819,499
International expertise (including Quality)	1,039,947	Other grants	2,033,221
Development of innovative public health initiatives	52,438	<b>GRANTS AND OTHER PUBLIC FUNDING</b>	<b>1,995,902</b>
		<b>OTHER INCOME</b>	<b>3,440,253</b>
<b>FUND-RAISING EXPENSES</b>	<b>1,208,616</b>	Services revenues	232,962
		Refund of expenses	557,206
<b>OPERATING EXPENSES</b>	<b>3,061,090</b>	Other financial income	1,737,926
		Dividends	912,158
<b>TOTAL EXPENSES FOR THE PERIOD</b>	<b>16,229,985</b>	<b>TOTAL INCOME FOR THE PERIOD</b>	<b>13,802,049</b>
<b>ALLOWANCES</b>	<b>519,910</b>	<b>REVERSE ON ALLOWANCES</b>	<b>212,527</b>
<b>DEPRECIATION</b>	<b>578,624</b>		
<b>FUNDS RESERVED FOR FUTURE ENGAGEMENTS</b>	<b>2,035,233</b>	<b>PRIOR FUNDS CARRIED FORWARD</b>	<b>415,115</b>
<b>ACCOUNTING RESULTS (PROFIT)</b>	<b>-</b>	<b>ACCOUNTING RESULTS (DEFICIT)</b>	<b>4,934,061</b>
<b>GRAND TOTAL</b>	<b>19,363,751</b>	<b>GRAND TOTAL</b>	<b>19,363,751</b>
Evaluation of in-kind patronage	3,756	Evaluation of in-kind patronage	3,756

### FONDATION MERIEUX

Fondation reconnue en tant que d'utilité publique

17 rue Soufflot  
69002 LYON

#### Statutory auditors' report on the financial statements Year ended December 31, 2014

This is a free translation into English of the Statutory auditors' report issued in French and is provided solely for the convenience of English speaking users. The Statutory auditors' report includes information specifically required by French law in such reports, whether audited or not. This information is presented in the explanatory paragraphs discussing the auditors' assessments of certain significant accounting and auditing matters. These assessments were considered for the purpose of issuing an audit opinion on the Foundation's financial statements, and are not intended to provide separate assurance on individual account captions or on information taken outside of the financial statements.

To the Directors,

In accordance with our appointment as statutory auditor by your board of directors, we hereby report to you for the year ended December 31, 2014 on:

- the audit of the accompanying financial statements of FONDATION MERIEUX;
- the justification of our assessments;
- the specific verifications and disclosures required by law.

These financial statements have been approved by the Committee. Our role is to express an opinion on these financial statements, based on our audit.

#### I. OPINION ON THE FINANCIAL STATEMENTS

We conducted our audit in accordance with professional practice standards applicable in France. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, using sample testing techniques or other selection methods, evidence supporting the accounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made, as well as evaluating the overall financial statement presentation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a reasonable basis for our opinion.

For identification purposes, we also confirm that the financial statements of FONDATION MERIEUX for the year ended December 31, 2014 show:

- revenues of 11,132,769 euros;
- operating income of -5,297,719 euros;
- net income of -4,934,061 euros;
- shareholders' equity of 18,613,803 euros;
- total assets and liabilities of 69,107,227 euros.

This is a free translation into English of the statutory auditors' report on the financial statements issued in the French language and is provided solely for the convenience of English speaking users.

The statutory auditors' report includes information specifically required by French law in such reports, whether audited or not. This information is presented above the opinion on the financial statements and includes an explanatory paragraph discussing the auditors' assessments of certain significant accounting and auditing matters. These assessments were considered for the purpose of issuing an audit opinion on the financial statements taken as a whole and not to provide separate assurance on individual account captions or on information taken outside of the financial statements.

This report should be read in conjunction with, and is contained in accordance with, French law and professional auditing standards applicable in France.

In our opinion, the financial statements give a true and fair view of the financial position and the assets and liabilities of the Foundation as of December 31, 2014 and the results of its operations for the year then ended in accordance with accounting principles generally accepted in France.

#### II. JUSTIFICATION OF OUR ASSESSMENTS

In accordance with the requirements of article L.823-9 of the French Commercial Code (code de commerce) relating to the justification of our assessments, we hereby inform you that our assessments covered the appropriateness of the accounting policies adopted.

These assessments were performed as part of our audit approach for the financial statements taken as a whole and contributed to the expression of our opinion in the first part of this report.

#### III. SPECIFIC VERIFICATIONS AND DISCLOSURES

We have also performed the specific verifications provided for by law, in accordance with the professional practice standards applicable in France.

We have no comment to make as to the fair presentation and consistency with the financial statements of the information given in the financial report and in the documents addressed to the Directors with respect to the financial position and the financial statements.

Villeurbanne, June 8, 2014

The Statutory Auditor

DELOITTE & ASSOCIÉS

French original signed by Nathalie LORENZO CASQUET

Villeurbanne, June 8, 2014

The Statutory Auditor

DELOITTE & ASSOCIÉS



Nathalie LORENZO CASQUET



# 2014 ACCOUNTS & KEY FIGURES

## BREAKDOWN OF 2014 EXPENSES

(Excluding provisions and exceptional expenses)

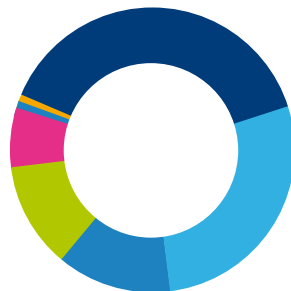
Missions	76%
Administration	16%
Fundraising expenses	8%



## BREAKDOWN OF EXPENSES BY ACTIVITY

(Excluding provisions and exceptional expenses)

Training and knowledge-sharing	38%
Collaborative research programs	28%
Support for local initiatives	13%
Clinical biology laboratories	12%
International expertise	7%
Support for local structures	1%
Development of innovative public health initiatives	1%



## BREAKDOWN OF 2014 INCOME

(Excluding provisions and non-recurring items)

Endowment income & investment	31%
Fondation Christophe et Rodolphe Mérieux	25%
Sanofi Pasteur sponsorship and partnership	21%
Private partnerships	7%
Public partnerships	6%
Real estate income	6%
Other income	2%
Other sponsorships	1%
Donations and legacies	1%



## GEOGRAPHICAL SEGMENTATION OF ACTIVITIES

(Excluding funds carried forward to 2015)

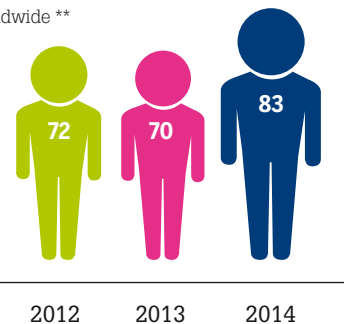
Asia	22%
Africa	21%
South America	9%
The Caribbean	4%
Indian Ocean	3%
Europe <sup>(1)</sup>	41%



(1) Missions (including coordination) based out of Europe to benefit developing countries

## GEOGRAPHICAL SEGMENTATION OF EMPLOYEES\*

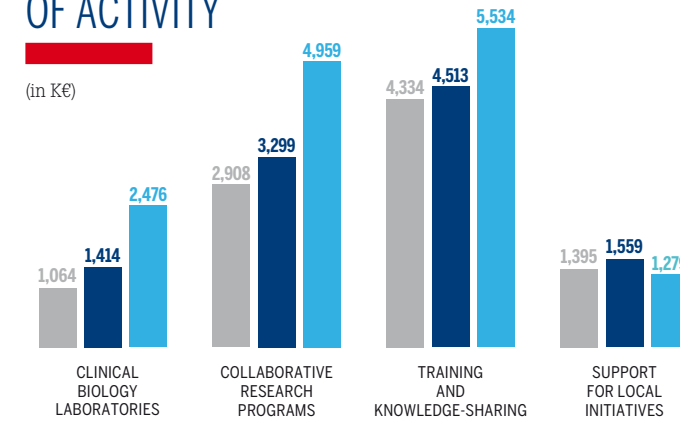
83 employees worldwide \*\*



\* Full-time equivalents  
\*\* Excluding interns, temporary employees and workforce of local research and training centers

## EVOLUTIONS IN EXPENSES BY FIELD OF ACTIVITY

(in K€)



■ 2013 ■ 2014 ■ 2015 Estimate





17, rue Bourgelat  
69002 Lyon • France  
Tel: +33 (0)4 72 40 79 79  
Fax: +33 (0)4 72 40 79 50  
[fondation.lyon@fondation-merieux.org](mailto:fondation.lyon@fondation-merieux.org)  
[www.fondation-merieux.org](http://www.fondation-merieux.org)