

Either



or

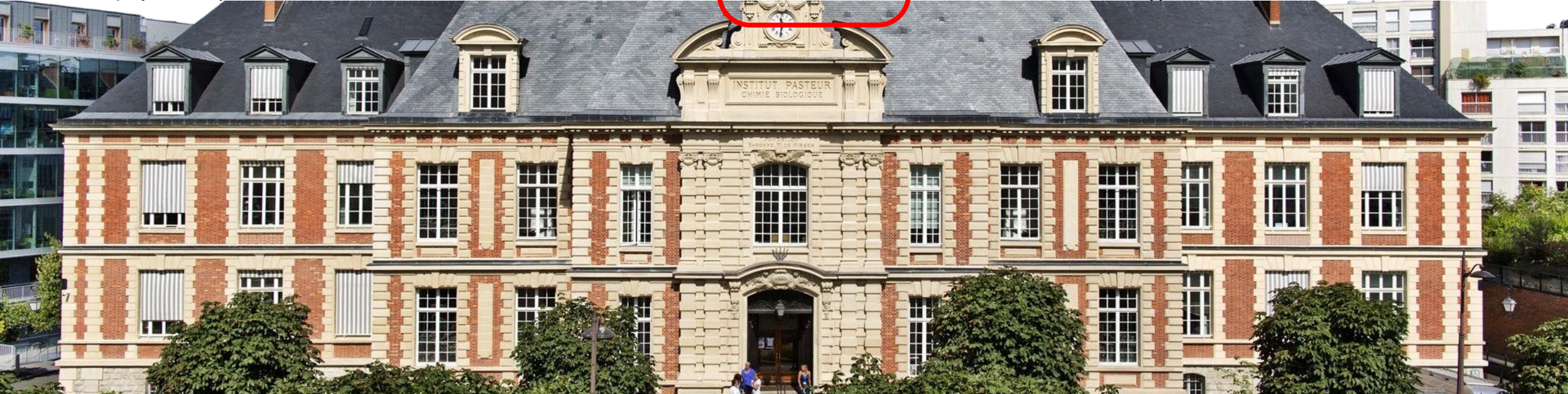
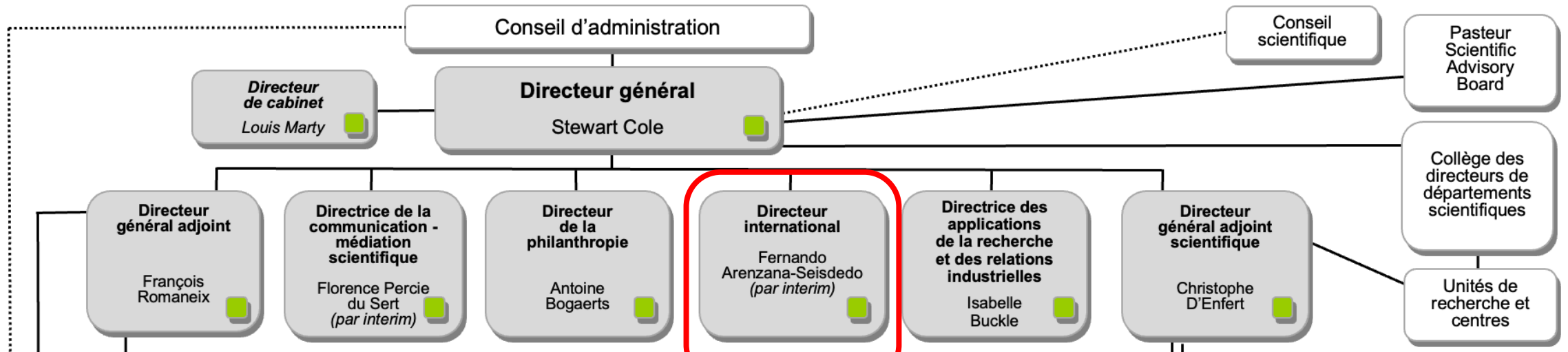


let's walk  
&  
succeed  
together

Direction of  
International Affairs  
(DIA)  
Fernando Arenzana  
Acting director



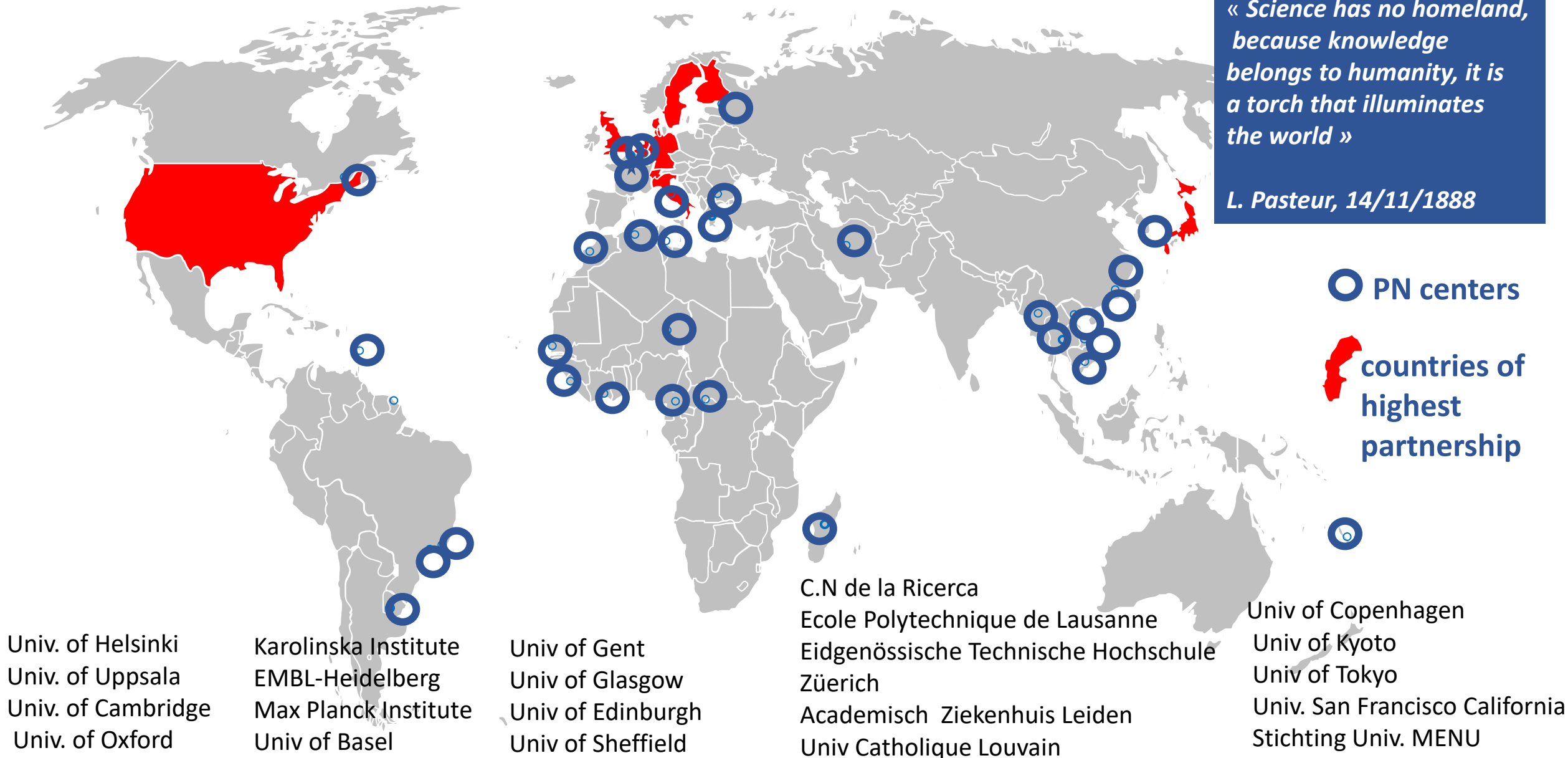
# The DIA in the Institut Pasteur Organigramme



# IP Scientific International Partnerships and PN

« Science has no homeland,  
because knowledge  
belongs to humanity, it is  
a torch that illuminates  
the world »

L. Pasteur, 14/11/1888







# Missions and tasks

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## Missions

- Promotes the development and influence of Institut Pasteur research internationally, within and outside the Pasteur Network (PN)
- Works in close collaboration with the DGAS, the DGA and the DG to co-construct the scientific strategy of the Institut Pasteur internationally
- Is the natural partner of the PN in its historic four-fold mission

# DIA's Specific Tasks (outside PN)

- **Develops, implements & monitors** in conjunction with DGAS, IP **strategic partnerships** with academic, state & supranational actors
- Is the **point of contact** for IP in interactions with national or international organizations involved in **public and global health policies**
- **Ensures** worldwide **respect for the brand and image of "Pasteur"**
- Supports IP's **international philanthropy**
- Coordinates **international mobility of IP workers**



# IP-Specific actions toward/in collaboration with the PN

## PN Development

*Creation of new centers & platforms*

*Capacity building*

IP-DIA

## Governance

*Representation in  
PN governance bodies  
Co-ordinated management*

IP-DIA

## Legal & Political relay

*Focal point for Authorities*

*Cooperation agreements*

IP-DIA



## Professional dev. & Mobility

*Education, training, careers*

*Scientific and  
administration workforce*

DIA-PN

## Project managing

*Lobbying, grant office  
services, financial support*

DIA-PN

## Scientific support

*Scientific expertise, core  
facilities*

*Evaluation*

DIA-PN

# *Articulation between the DIA and the Pasteur Network*

- The 2021 reform has clarified the roles and interactions of the DI and the Pasteur Network
- The DI and PN teams are united by:
  - Trust Collaboration and proximity links (shared premises)
  - Joint work at the service of the Pasteur missions
  - However, the roles and scope of each are different and complementary





The background image shows the Institut Pasteur building, a large, historic structure with a grey mansard roof and multiple dormer windows. The building's facade is made of red brick with white stone accents around the windows and doors. In the foreground, there is a field of tall green grass and numerous bright red poppies. The sky is blue with some white clouds.

## IP-supported actions by categories & total funding

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# Support consolidated from IP to PN: own & public funds

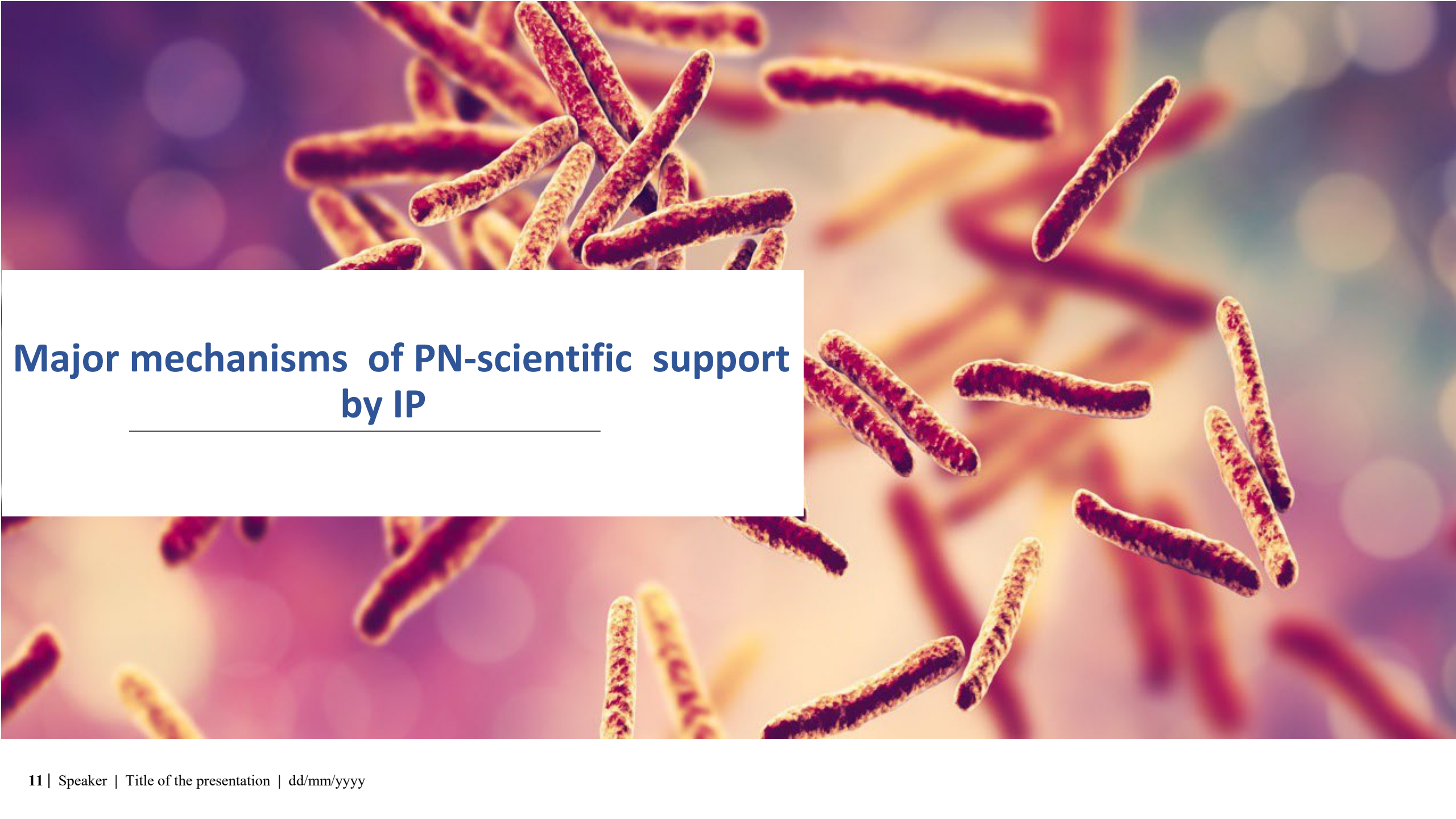
## Financial

## Work Forces

IP	Public
<i>Education</i>	
<i>Training</i>	<i>MESR</i>
<i>Projects</i>	<i>MEAE</i>
<i>Careers</i>	<i>AFD</i>
<i>Research teams</i>	<i>UE</i>
<i>Operating</i>	

Scientific	Administration & Management	Specific support
<i>56 employs in PN centers</i>		

**Total allocated : 19 million euros, 2021**



# Major mechanisms of PN-scientific support by IP

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- Bring together **two or more international research teams**, to pool their complementary skills and expertise
- Each PIU partner is financed by its own institution with an equal annual funding of **15K€**

# PIU

**Pasteur Joint  
Research  
International  
Units**

# PTR

**Collaborative  
Research  
Projects**

- Proposals related to the **three priority scientific areas : EID, AMR, Brain Connectivity and Neurodegenerative diseases**) & the two specific concerted actions (Cancer and Vaccinology)

- Funding for up to **250 k€**

# ACIP

**Incitative  
Actions for  
Collaborative  
Research**

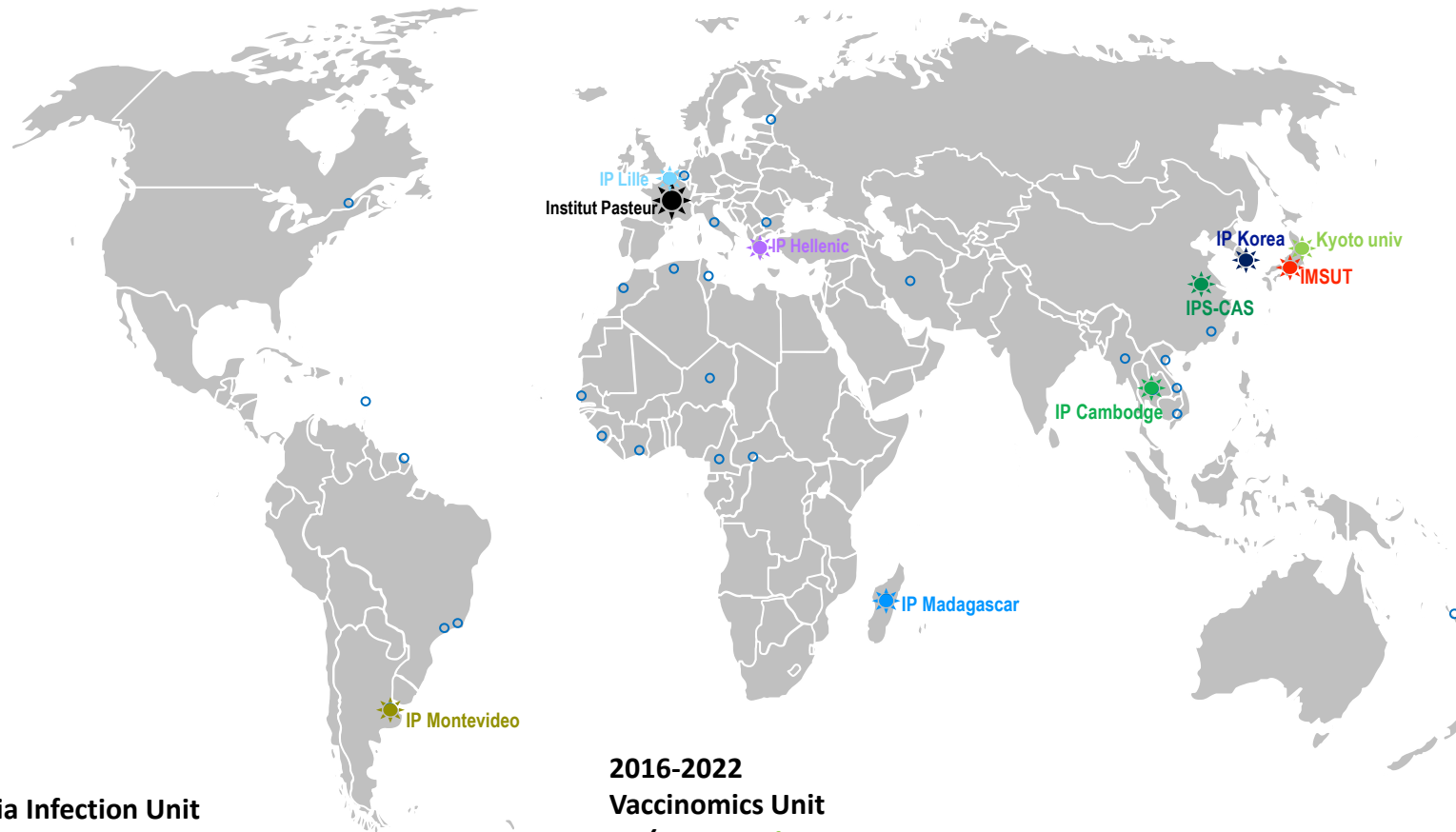
- Incitative research actions to prepare future projects with **at least 3 partners from PN**
- Up to **50 k€** for running costs only funded by Paris

# G4

**Young Research  
Groups**

- To encourage the development of ambitious research programs across the Network
- Funding for **up to 400,000 €** (100 000 € / year)

# PASTEUR INTERNATIONAL JOINT RESEARCH UNITS (PIU)



**New call 2023**

**2016-2022**

**Inflammation and Leishmania Infection Unit**

**IP / IPS-CAS**

*G Spaeth / G Meng*

**2016-2022**

**Integrative Microbiol. of Zoonotic Patho Unit**

**IP / IP Montevideo**

*M Picardeau / A Buschiazzo*

**2016-2022**

**Vaccinomics Unit**

**IP / Kyoto univ.**

*A Sakuntabhai / F Matsuda*

**2018-2022**

**Mucosal Immunomics Laboratory**

**IP / IMSUT**

*J Di Santo / K Ishii*

**2021-2025**

**Neurodegenerative Diseases**

**IP / IP Hellenic**

*C Zurzolo / R Matsas*

**2021-2025**

**Ai3D (Artificial intelligence)**

**IP / IP Korea**

*C Zimmer / S Shorte*

**2021-2025**

**Emergence, maintenance and spread of plague**

**IP / IP Lille / IP Madagascar**

*J Pizzaro-Cerda / F Sabbane / M Harimalala, M Rajerison*

*From Coresif PN group*

**EvoLeish** *Fiocruz\**, I. A. Frappier, IP  
*Leishmania Infantum evolution*

**Mtb-HCS-LoC.** IP, IP Lille, IP Shanghai  
*Phagosome & M. Tuberculosis*

**ADAR-RADAR** *IP-Cenzi Bolognetti F.\**, IP  
*Regulation Innate immunity HPV malignancies*

**Dengue- HITtoLEAD** *IP Korea ( 3)\**, IP  
*Dengue NS1 & Pathogenesis*

**SPILOVER-MADA** IP, IP Madagascar(4)  
*Mosquitoes Virome*

**RModSignaling** IP, IP Korea  
*RNA modif in PPRs signaling*

**INITIAL** IP, IP Madagascar  
*In vitro P. Vivax cycle*

**EMYR Candida** *IP Tunis\**, IP, IP Korea, IP Shanghai  
*Multi-drug resistant Candida*

**OmiProMarCC** *IP Shanghai (2)\**, IP, CP Cameroon  
*Biomarkers HPV oncogenesis*

**PTRs\***  
**lead by**  
**PN members**  
**(50%)**

**ACIPs**  
**Call 2021, 4**  
**Call 2022, 6**

**AntiPPI-Biotics** IP, IP Lille  
*Targeting AMR mechanisms prot/prot complex*

**Afribiota-2** *IP Bangui\*(3)*, IP  
*Oral dysbiosis & environ. enteric dysfunction*

**MitoCruzi** IP, IP Montevideo(2)  
*Mitochondria wall integrity & Chagas*

**BacWallScreen** IP, IP Korea (2)  
*Targeting peptidoglycan assembly*

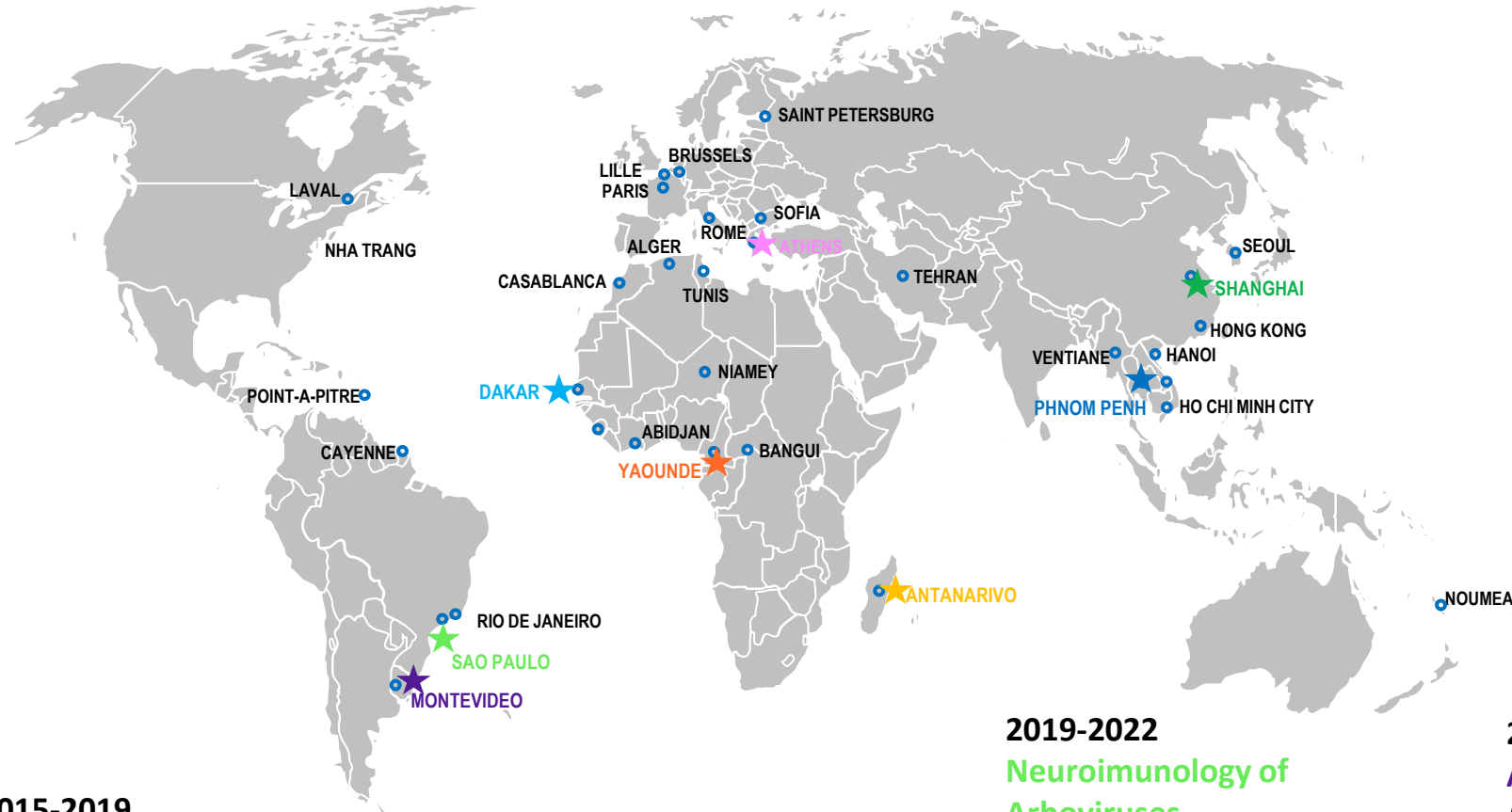
**Hu-mo-MILC** IP, IP -Cenzi Bolognetti F.  
*ILC infiltrating metastasis*

**RIIPbiota** *IP Montevideo\**, IP Guyane, SPPU-Brasil,  
Hellenic PI , IP Angeloff , IP Dakar, IP, IP Morocco  
**AMR reservoirs & Microbiota**



# Careers: G4 groups in PN, 2013 - 2022

Funding for up to  
400,000 €  
(100 000 € / year)



**2013-2017**  
**Malaria Research Group**  
*L. Ayong*

**2013-2017**  
**Malaria – Vector Control**  
*O. Ndiath*

**2015-2019**  
**Immunology Group**  
*T. Cantaert*

**2015-2019**  
**Biostat, Bioinfo and Modeling**  
*C. Loucoubar*

**2018-2022**  
**Enhanced Coop. on Emerging  
and Inf. Diseases.**  
*G. Wong*

**2019-2022**  
**Neuroimmunology of  
Arboviruses**  
*JP Peron*

**2019-2023**  
**Malaria Exp. Genet. Approach  
& Vaccines**  
*A. Bei & A. Mbengue*

**2022-2026**  
**Apicomplexan Life cycle**  
*M. Francia*

**2022-2026**  
**Cortical inhibitory circuit  
dynamics**  
*F. Koukouli*

*Under evaluation, call 2023 : 3 G4 ( CPC, SPPU, IP Guinea)*



# Education, training, professional development

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# Education and Training in PN

## Calmette & Yersin mobility and training Programme (C & Y P)

**C & Y P**

**PhD**  
3 years

**C & Y P**


**Post-Doc**  
2 years

**C & Y P**

**Short term mobility**  
3 months

## International courses

**28 PIC**  
**3 in PN**



DIA, IP Education Dept., PN

## Talent Awards

**2021**  
Gregorio Iraola, IP Montevideo  
Nathalie Vandeveld, Sciensano

**2022**  
Norosoa H Razanajatovo  
IP Madagascar



Aïda Bouratbine, IP Tunisia  
Gerald Späth, IP

## E-Learning

**Massive Open On-Line Courses (MOOCs)**

**Institut Pasteur's PhD Graduation Ceremony on December 9th , 2022**





## Multidisciplinary & collaborative projects in priority areas of intervention for PN



ONE HEALTH APPROACH & CLIMATE CHANGE

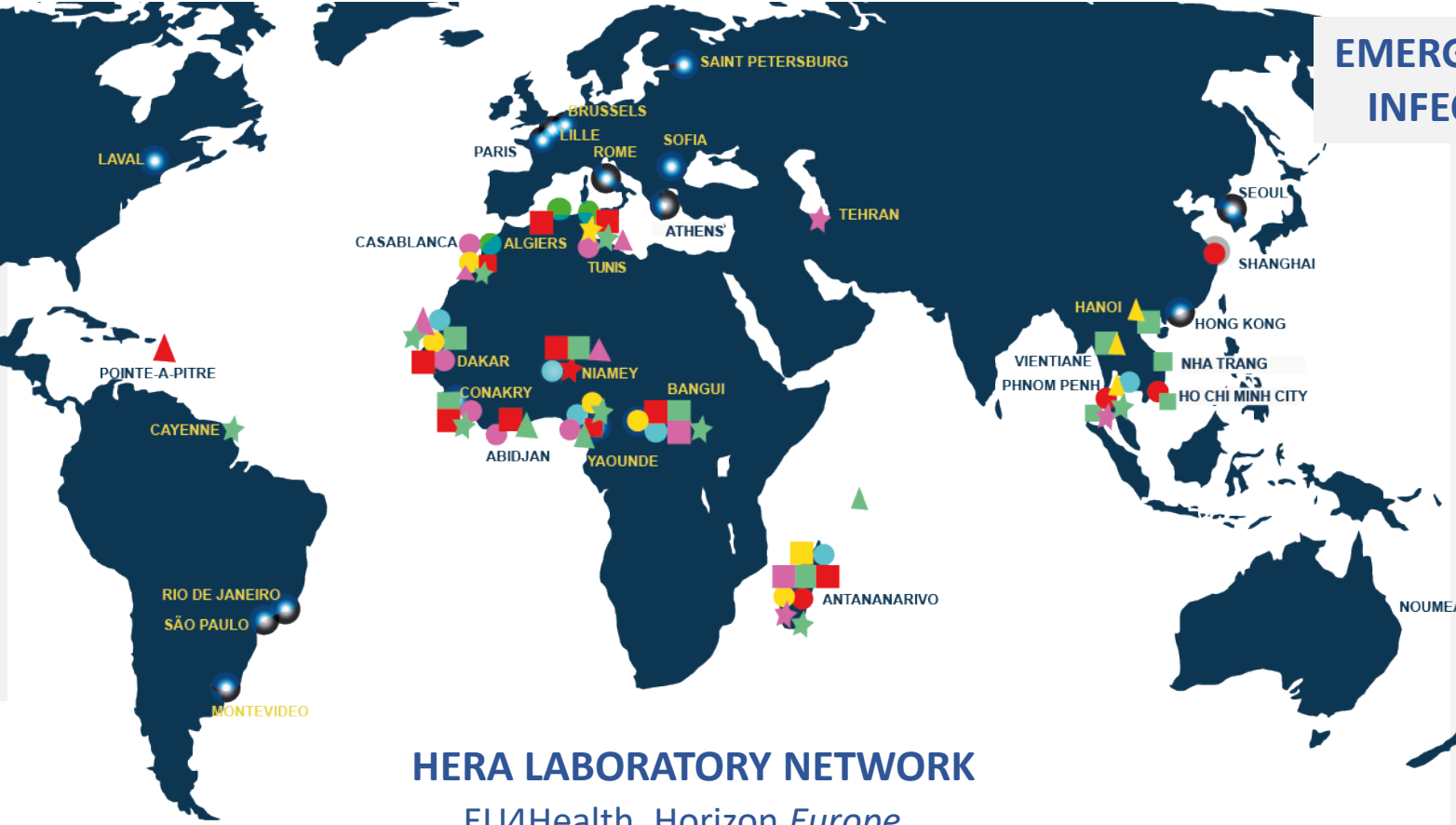
- ▲ **ECOMORE** Dengue & Leptospirosis vector control strategy climate change -One Health
- ▲ **MediLabSecure** Vector-borne diseases climate change One Health

VECTOR BORNE DISEASES

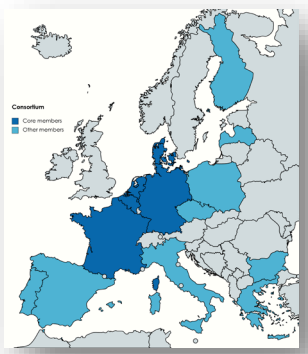
- ▲ **FEXTE Cuba** – capacity building – vector-borne diseases

MOTHER-CHILD HEALTH & YOUNG CHILDREN

- **AFRIBIOTA** Chronic infantile malnutrition – microbiota
- ▲ **TB KIDS** TB paediatric diagnostic
- ★ **DIPs** Hereditary genetic disorder – sequencing – capacity building – children
- ★ **PROPOMEN** Bacterial meningitis
- ★ **PERILIC** Pertussis, immunization study - children
- **BIRDY** Neonatal infections - AMR
- **HFMD** Hand Foot Mouth Diseases –



HERA LABORATORY NETWORK  
EU4Health, Horizon Europe



DURABLE PROJECT

Health threat assessment, intelligence, counter measures  
**WP10 led by Pasteur Network**

EMERGING, REEMERGING INFECTIOUS DISEASES

COVID-19

- **Covid-19 support** Virological lab operating
- **AFROSCREEN** – Genomic & epidemic surveillance – SHS
- ★ **Wastewater Surveillance**
- **MediLabSecure** COVID-19 serology
- ▲ **REPAIR** Multidisciplinary investigations

REFERENCE BACTERIOLOGY LABS

- **RESER** – bacterial labs capacity building – networking
- AMR**
- **SARA** – AMR surveillance – networking – One Health

CANCER

- **PerMedina** – cancer – personalized medicine

# Regional collaboration and scaling lead to successful scientific results

PLOS MEDICINE

## RESEARCH ARTICLE

### An algorithm applied to national surveillance data for the early detection of major dengue outbreaks in Cambodia

Julia Lédien<sup>1\*</sup>, Kimsan Souv<sup>1,2</sup>, Rithea Leang<sup>2</sup>, Rekol Huy<sup>2</sup>, Anthony Cousien<sup>1,3</sup>, Muslim Peas<sup>1</sup>, Yves Froehlich<sup>1</sup>, Raphaël Duboz<sup>1,4</sup>, Sivuth Ong<sup>5</sup>, Veasna Duong<sup>5</sup>, Philippe Buchy<sup>6</sup>, Philippe Dussart<sup>5</sup>, Arnaud Tarantola<sup>1,7</sup>

**1** Epidemiology and Public Health Unit, Institut Pasteur du Cambodge, Phnom Penh, Cambodia, **2** Centre National de Malariologie (CNM), Phnom Penh, Cambodia, **3** Mathematical Modelling of Infectious Diseases

Science

## RESEARCH ARTICLES

Cite as: H. Tegally *et al.*, *Science* 10.1126/science.abq5358 (2022).

### The evolving SARS-CoV-2 epidemic in Africa: Insights from rapidly expanding genomic surveillance

All authors and their affiliations appear at the end of this paper.

Investment in SARS-CoV-2 sequencing in Africa over the past year has led to a major increase in the number of sequences generated, now exceeding 100,000 genomes, used to track the pandemic on the continent. Our results show an increase in the number of African countries able to sequence domestically, and highlight that local sequencing enables faster turnaround time and more regular routine surveillance. Despite limitations of low testing proportions, findings from this genomic surveillance study underscores the heterogeneous nature of the pandemic and shed light on the distinct dispersal dynamics of Variants of Concern, particularly Alpha, Beta, Delta, and Omicron, on the continent. Sustained investment for diagnostics and genomic surveillance in Africa is needed as the virus continues to evolve, while the continent faces many emerging and re-emerging infectious disease threats. These investments are crucial for pandemic preparedness and response and will serve the health of the continent well into the 21st century.

## THE LANCET Global Health

Volume 10, Issue 7, July 2022, Pages e989-e1002

## Articles

### Childhood encephalitis in the Greater Mekong region (the SouthEast Asia Encephalitis Project): a multicentre prospective study

Jean David Pommier MD <sup>a, b, c, d\*</sup>, Chris Gorman PhD <sup>e\*</sup>, Yoann Crabol MD <sup>a\*</sup>, Kevin Bleakley PhD <sup>f</sup>, Heng Sothy MD <sup>g</sup>, Ky Santy MD <sup>g</sup>, Huong Thi Thu Tran MD <sup>h</sup>, Lam Van Nguyen MD <sup>h</sup>, Em Bunnakea MD <sup>g</sup>, Chaw Su Hlaing MD <sup>i</sup>, Aye Mya Min Aye MD <sup>i</sup>, Julien Cappelle DVM <sup>a, j</sup>, Magali Herrant PhD <sup>k</sup>, Patrice Piola MD <sup>a</sup>, Bruno Rosset <sup>j</sup>, Veronique Chevalier DVM <sup>a, j</sup>, Arnaud Tarantola MD <sup>a</sup>, Mey Channa MD <sup>e</sup>, Jerome Honnorat MD <sup>l</sup>, Anne Laure Pinto MSc <sup>l</sup> ... Malavanh Vongsouvath

## RESEARCH ARTICLE

### Severe bacterial neonatal infections in Madagascar, Senegal, and Cambodia: A multicentric community-based cohort study

Bich-Tram Huynh<sup>1,2\*</sup>, Elsa Kermorant-Duchemin<sup>3</sup>, Rattanak Chheang<sup>4</sup>, Frederique Randrianirina<sup>5</sup>, Abdoulaye Seck<sup>6</sup>, Elisoa Hariniaina Ratsima<sup>5</sup>, Zafitsara Zo Andrianirina<sup>7</sup>, Jean-Baptiste Diouf<sup>8</sup>, Armya Youssouf Abdou<sup>1,2</sup>, Sophie Goyet<sup>9</sup>, Véronique Ngo<sup>9</sup>, Siyin Lach<sup>9</sup>, Long Pring<sup>9</sup>, Touch Sok<sup>10</sup>, Michael Padgett<sup>1,2</sup>, Fatoumata Diene Sarr<sup>11</sup>, Laurence Borand<sup>9</sup>, Benoit Garin<sup>12a</sup>, Jean-Marc Collard<sup>12c-b</sup>, Perlinot Herindrainy<sup>13c</sup>, Agathe de Lauzanne<sup>9c</sup>, Muriel Vray<sup>11c-d</sup>, Elisabeth Delarocque-Astagneau<sup>1,14</sup>, Didier Guillemot<sup>1,2,14</sup>, On behalf of the BIRDY study group<sup>11</sup>

Only based on this portfolio,  
more than **70** internationally  
peer-reviewed publications



## PNAS

ARTICLES FRONT MATTER AUTHORS TOPICS +

Access Provided By  
Institut Pasteur -  
CeIRIS

f t in e

### Stunted children display ectopic small intestinal colonization by oral bacteria, which cause lipid malabsorption in experimental models

Pascale Vonaesch<sup>✉</sup>, João R. Araújo, Jean-Chrysostome Gody, <sup>+18</sup>, and The Afribiota Investigators [Authors Info & Affiliations](#)

Contributed by Philippe J. Sansonetti; received June 6, 2022; accepted August 26, 2022; reviewed by Carrie Cowardin, François Leulier, Sean Moore, and Sven Pettersson

October 5, 2022 | 119 (41) e2209589119 | <https://doi.org/10.1073/pnas.2209589119>

PMCID: PMC5875259

PMID: [29553325](#)

[Emerg Infect Dis.](#) 2018 Apr; 24(4): 754–757.

doi: [10.3201/eid2404.171783](#)

### Genetic Characterization of Enterovirus A71 Circulating in Africa

[María Dolores Fernandez-García](#),<sup>✉ 1</sup> [Romain Volle](#),<sup>1</sup> [Marie-Line Joffret](#), [Serge Alain Sadeuh-Mba](#), [Ionela Gouandjika-Vasilache](#), [Ousmane Kebe](#), [Michael R. Wiley](#), [Manasi Majumdar](#), [Etienne Simon-Loriere](#), [Anavaj Sakuntabhai](#), [Gustavo Palacios](#), [Javier Martin](#), [Francis Delpeyroux](#), [Kader Ndiaye](#),<sup>2</sup> and [Maël Bessaud](#)<sup>2</sup>





## Ongoing & New IP International Partnership

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# IP PARTNERSHIP IN BRESIL

## Toward an Institut Pasteur of São Paulo



IP, Univ. of São Paulo, Govt. of São Paulo

USP and IP will propose their common model to the government of São Paulo by the end of the year

## New Partnership



Campus FIOCRUZ, Fortaleza, Ceara  
Bio-Physics & Engineering of Proteins



# IP-new international collaboration projects

UCSF

Quantitative  
Biosciences  
Institute



## Infectious Diseases

Virology  
Bacteriology  
Mycology  
Parasitology

Pasteur-QBI  
Center

## Quantitative Biology

Mass Spec  
CRISPR  
CryoEM  
Bioinformatics / AI

ABU DHABI PUBLIC  
HEALTH CENTRE | مركز أبوظبي  
للصحة العامة



*Emerging infectious diseases*

*Mutual capacity building)*

*Public Health oriented*

*Onsite (IP) training*

*Hub for international courses*



*Emerging infectious diseases*

*Centre for Cellular &  
Molecular Biology (CCMB)  
Hyderabad*

## LOOKING FORWARD

- To develop IP-strategic international partnerships with new, major foreign research and public health institutions
  - *Emphasis in scientific programs with potential contribution to PN*
- To reinforce contribution and promote IP leadership in initiatives arising from French institutions
  - *ANRS-MIE and its partners, AFD, MEAE*
- To reinforce or consolidate, coordinated with PN, our participation in international governance of Global Health
  - *WHO, ONG-initiatives*
- In collaboration with DS, to optimize IP scientific teams and platforms contributions to collaborations with PN
  - *Close-up & customized approach of identified partners*
- Along with PN, to identify priorities in the network for intervention and bring financial and work force support
  - *The paradigms of talents training and professional development*
- In cooperation with PN, to seek for and eventually extend, international partnership
  - *With French and/or foreign operators, including no-PN regions or countries*



# ACKNOWLEDGEMENTS

*To the members of DIA , PN, SPAIS, IP Grant Office and IP support services  
for sharing data and graphic material*

