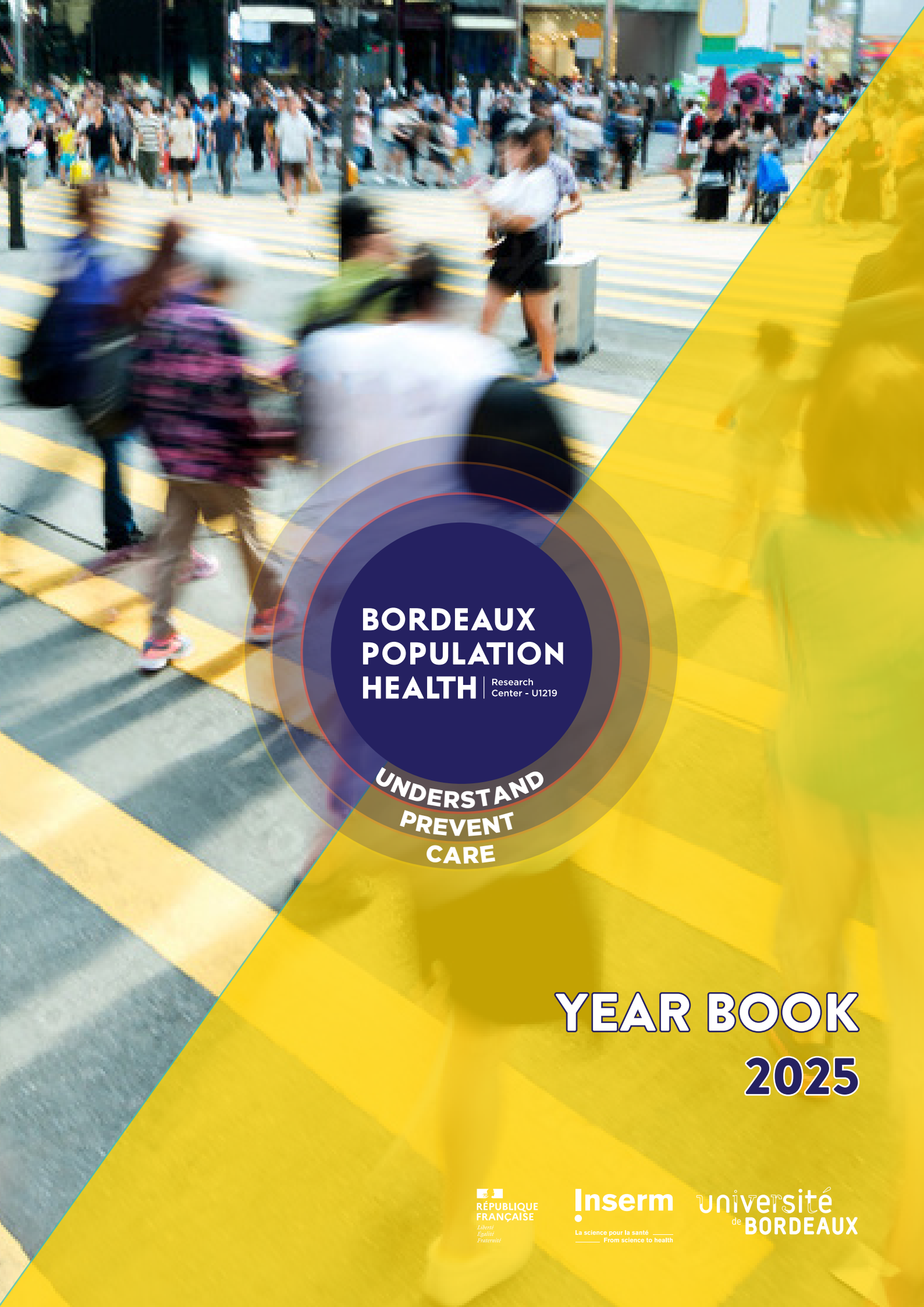


BORDEAUX POPULATION HEALTH | Research Center - U1219

UNDERSTAND
PREVENT
CARE

YEAR BOOK 2025

RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

Inserm
La science pour la santé
From science to health

université de BORDEAUX

CONTENTS

Created in January 2016, under the direction of Prof. Christophe Tzourio, the Bordeaux Population Health Research Centre is a Mixed Research Unit (UMR) affiliated to the National Institute of Health and Medical Research INSERM and the University of Bordeaux. The Centre and its teams are evaluated for renewal every five to six years on the basis of the quality of their activity and the relevance of their scientific projects.

In January 2022, the centre began new 2022-2027 contract under the direction of Prof. Stéphanie Debette until april 2024 followed by Prof. Rodolphe Thiébaut.

FROM THE DIRECTION

Rodolphe Thiébaut

Director, Bordeaux Population Health research centre, 2024-2027

Rodolphe Thiebaut, MD PhD, is professor of Public health and biostatistics at the University of Bordeaux UBx. He serves as current director of the BPH, in which he has created the Inserm/Inria/UBx research team SISTM (Statistics in Systems Biology and Translational Medicine) devoted to the modelling and analysis of high-dimensional data mainly applied to immunology. Main research achievements are the development of innovative biostatistics approaches for the analysis of high-dimensional data including the development of statistical softwares (R packages). Prof Thiébaut has notably contributed to the development of various vaccines (HIV, Ebola, Covid-19) and immunotherapy (IL-7) through the design, the analysis and the modelling of the data. As the chair of the IMI2 EBOVAC2 consortium, he has contributed to the development of the Ebola vaccine (recognised as co-inventor) and received the "European star" award in 2021.
He is leading the Department of Medical Information of the Bordeaux Hospital in charge of the methodological support of the clinical research at the hospital as well as the management and the analysis of medical information including the Hospital Clinical Data Warehouse. Since 2018, he has led the Graduate's program Digital Public Health that includes a new Master program in Public Health data science, a dual degree program with McGill University (https://www.isped.u-bordeaux.fr/Graduate-Programs/Digital-Public-Health/About-us). He has been adjunct professor at the department of Epidemiology, Biostatistics and Occupational Health of McGill University since 2023.
He has created the Department of research in Public Health at the Bordeaux University in 2019, he has served as deputy director of the national institute of Public Health (IReSP) and he is currently member of the Inserm scientific committee.

Co-hosted by the University of Bordeaux and INSERM, the Bordeaux Population Health research centre (BPH) brings together approximately 500 staff members with a common goal: to explore and address major public health challenges and priorities with a multidisciplinary perspective and robust methodological approaches.
Historically, an Inserm unit was created by Pr Roger Salamon in 1990 with 3 research teams: Biostatistics (led by D Commenges), Brain ageing (led by JF Dartigues) and HIV infection (led by R Salamon). In 2007, the unit grew to a research centre of 8 teams and Pr Christophe Tzourio led it from 2013 to 2021. Pr Thiébaut was deputy director between 2010 and 2021. Pr Stéphanie Debette was director of the BPH between 2022 and 2024 and then was the inaugural director of new Institute on Precision and Global Vascular Brain Health (VBHI). Since March 2024 Prof Thiébaut has been director of the BPH.
The centre encompasses ten research teams whose collective expertise spans the fields of data and social sciences, with epidemiology at its core. Topics of research are brain health across the lifecourse, infectious diseases and global health, ageing and resilience, environmental and social determinants of health, with research methods ranging from observational to experimental studies.
This year, Pr Laura Richert agreed to assume the role of deputy director within the centre's governance. She is professor in Public Health and has led the clinical epidemiology of the clinical investigation centre CIC-EC and the EUCLID platform that are now directed by Dr Edouard Lhomme. I want to sincerely thank her for her outstanding commitment.
The BPH administrative team, directed by Isabelle Bely, has a fundamental role for the daily activities of the research centre. Lucie Bonnafous-Besse, who started with the coordination of large events and programs is involved with Isabelle Bely in the strategic and administrative reorganisation of the centre to be adapted to its size. Christine Lopes-Monteiro, in charge of grant management, and Ludivine Christophe, in charge of human resources are playing a key role at the interface between research teams and our institutions. Valérie Garcia, in charge of the communication, has fully coordinated this new edition of the Year Book in collaboration with the scientific team leaders and the administrative team. The BPH central office is reinforced by Marie-Hélène Carere, Sandrine Darmigny and Nadine Simon insuring the coordination with the University Department and with Inserm. The BPH also

benefits from an IT team of around 15 people, the CREDIM (Centre de Recherche et Développement en Informatique Médicale) with a new director (Jérôme Gouaux) who has joined the team this year. Furthermore, a dedicated documentation centre meticulously tracks all scientific publications emanating from the research centre and warmly receives researchers and students seeking to access its resources.

In regards of the organisation of the BPH, this year was marked by the launch of a cycle of courses on management organized by the "Direction de l'Amélioration Continue" (DAC) from the University of Bordeaux. Anyone from the BPH in a manageing position is welcome to these courses where we all learn and exchange together on the most appropriate approaches in regards of various situations. As scientific researchers we are not familiar with the management processes and learning together is a good start before attending specific courses available elsewhere. This successful action would not be possible without the commitment of Laurence Tonderau, Véronique Fonvielle and Morgane Le Pennec from the DAC to whom I extend my sincere gratitude.

The research activity was again very impressive this year and it has been underlined by our Scientific Advisory Board who visited us in May. Beyond the number of publications (an indicator which is far too imprecise), many achievements have been done. New actionable knowledges have been generated on important public health burdens such as student mental health, Alzeihmer disease, cancer or age-related macular degeneration. International collaborations have been reinforced in the Global south with the University of Zambia in IPORA (Interdisciplinary Policy-Oriented Research on Africa programme) and in the North as well with the Bordeaux University International Research Laboratory associated to the Research Institute of the McGill University Health Centre. So, browse through this new edition of the Yearbook to find out more!

I extend a warm welcome to our new researchers (Morgane Linard, Ilaria Montagni, Denis Rustand) and assistant professors (Clémence Thébaut, Déborah Loyal and Louis Gallet) whose contributions will be instrumental in shaping the future of BPH.

BPH General Meeting; april 2025

BPH IDENTITY

ORGANISATION

Director: Prof. Rodolphe Thiébaut
Secretary General: Isabelle Bely

Deputy director: Prof. Laura Richert

Mission and research organisation

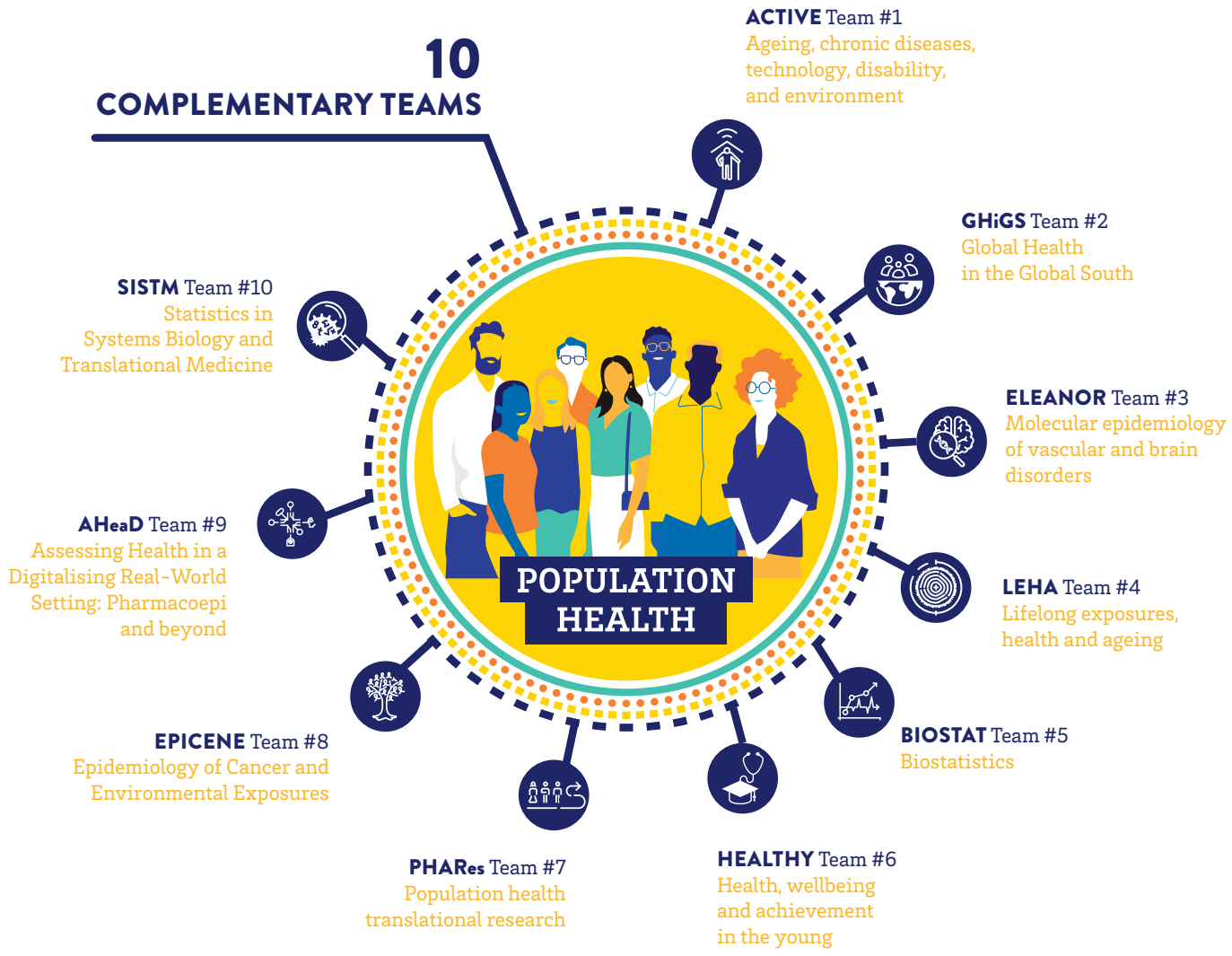
The BPH is devoted to producing innovative research based on robust methodology to address a wide range of public health challenges. The centre is composed of 10 complementary research teams gathering basic and clinician scientists, healthcare professionals, technicians and engineers, postdoctoral fellows, PhD and undergraduate students who work together towards a common goal.

The BPH brings together over 487 staff members with a common goal: to explore and address major public health challenges and priorities with a multidisciplinary perspective and robust methodological approaches. As one of the largest public health research centres in France, the BPH is internationally recognised for its cutting-edge research, the unique, deeply phenotyped cohorts it has created and followed for up to 30 years, the seamless collaboration between data scientists, epidemiologists and clinicians, its leadership role in international consortia, and strong partnerships with the Global South.

DOMAINS OF RESEARCH

Areas of research and teams

The 10 BPH research teams cover a wide array of research domains. "Historical" topics covered since inception include biostatistics, neuroepidemiology, epidemiology of infectious diseases, cancer, ageing, nutrition, and trauma prevention. Subsequently, this focus was broadened to encompass public health data science with artificial intelligence dimensions, real-world data in pharmacoepidemiology and beyond, genetic and molecular epidemiology, global health including for non-communicable diseases, social determinants of health, health economics, and methodological research in prevention.



Appointment of the deputy director of the centre

Professor Laura Richert has been appointed deputy director alongside Professor Rodolphe Thiébaut to support scientific and strategic development of the research centre.

Laura Richert is MD, PhD and professor in public health and biostatistics at the University of Bordeaux, she develops research activities at the BPH SISTM team. She has held positions providing methodological support for clinical and epidemiological research, notably within the Research Methodological Support Unit (USMR) at the University Hospital Centre (CHU). She headed the Clinical Epidemiology module of the Clinical Investigation Centre (CIC1401) and was head of the international clinical trials platform EUCLID/F-CRIN, which has a strong focus on vaccine trials. Her main activity is orientated to the optimisation of clinical vaccine research through integrative statistical approaches and methodological developments. She has participated in H2020-funded research consortia and is a clinical trial methodologist of several national and international vaccine trials. She teaches biostatistics and clinical epidemiology at the Faculty of Medicine and at ISPED School of Public Health, University of Bordeaux.

The BPH Scientific Advisory Board (SAB) has held its meeting at Bordeaux on 12 and 13 May 2025.
This group of 5 experts provides strategic advice and guidance on scientific matters to organisations, enhancing decision making and policy formulation. The BPH SAB is composed of five leading international scientists in public health : Prof. Arnaud Chioléro director of the Population Health Laboratory (#PopHealthLab) at the University of Fribourg, Prof. John Gallacher, head of the Dementia Platform UK (DPUK) at Oxford University, Prof. Anneke Hesseling, director of the Paediatric TB Research Programme at the Desmond Tutu TB Centre (DTTC) at Stellenbosch University in South Africa, Prof. Bertram Müller-Myhsok, head of the Statistical Genetics Research Group at the Max Planck Institute of Psychiatry in Munich and Prof. Sylvia Richardson, professor of Biostatistics at the University of Cambridge and Emeritus director of the Medical Research Council (MRC).

An analysis of the publications where teams are co-authoring shows how they are already highly connected. This visual indicates the degree of collaboration : a thick line indicates a privileged and recurring partnership between teams. Coloured clusters identify areas of collaboration between teams. Teams that share the same colour interact more intensely with each other than with the rest of the network. The size of the bubble is proportional to the number of publications by each team.

Data analysis and visualisation of the collaboration (co-publications) between BPH teams over the period nov. 2024 - nov. 2025

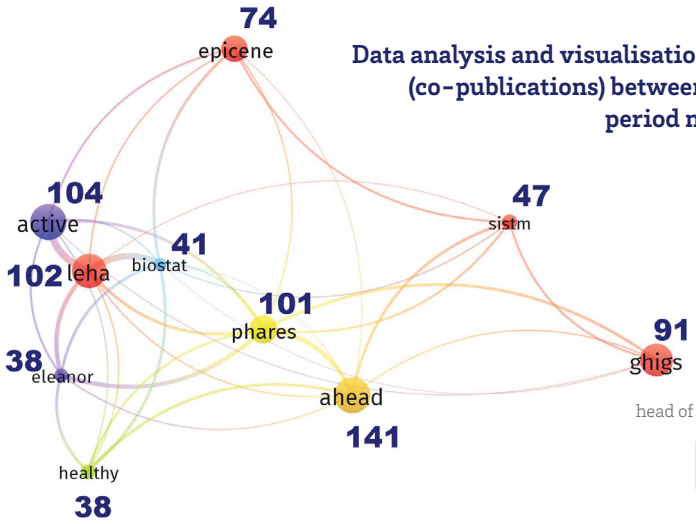


Chart by Coralie Thore, head of the documentation centre

VOSviewer

THE LIFE OF THE CENTRE

The BPH centre presents a vibrant internal life, showcasing the collective spirit through major events such as the General Assembly, the BPH Young Researchers' Day, Sharing Week, and Staff Celebration, as well as welcoming new members. It also highlights our commitment to Equity, Diversity, and Inclusion (EDI), quality and integrity management, and ongoing staff training in leadership and management."

FLAGSHIP EVENTS

The **BPH Young Researchers' Day 2025** aims to provide a moment for graduate and PhD students to present their scientific work and facilitates their inclusion in the research community.

Winners, jury members and organising committee for the 2025 edition

WELCOME TO THE NEWCOMERS

BPH

Dr. Ilaria Montagni,
PhD (Laureate of the CRCN Inserm competition, 2025)

EPICENE

Dr. Louis Gallet,
PhD (transfer of a lecturer-researcher in ergonomics from University Paris Nanterre)

BIOSTAT

Dr. Denis Rustand,
PhD (Laureate of the CRCN Inserm competition, 2025)

LEHA

Dr. Morgane Linard,
MD PhD (Laureate of the CRCN Inserm competition)

ACTIVE

Dr. Déborah Loyal,
PhD (Lecturer-researcher in health psychology from Université Paris Cité)

PHARES

Dr. Clémence THEBAUT,
PhD (transfer of a lecturer-researcher in economics from Limoges)

EDIT UNIT

The Centre has adopted an Equity, Diversity and Inclusion (EDI) Charter based on values such as equality, transparency and mutual respect, addressing crucial issues such as preventing discrimination, harassment and bias, while encourageing inclusive communication and work-life balance. In 2025 a seven-member committee chaired by IB and CF has been set up whose objectives are to implement actions and to measure and continually improve practices through rigorous monitoring.
The role of the unit is also to support staff, provide factual responses based on regulations, and direct them to the appropriate contacts when necessary.

TRAINING IN MANAGEMENT

The BPH governance, in collaboration with the Change Support Unit (DAC) at the University of Bordeaux, has launched a new programme focused on management and interpersonal communication, designed to support managers in carrying out their duties.

- July 2025: The managerial identity (role, approach, purpose, challenges, etc.)
- November 2025: What if there were ways to sustainably motivate our teams (understanding the key drivers of engagement to inspire and boost collective motivation)?

QUALITY-INTEGRITY UNIT

In the field of Quality and Integrity (Q&I) a management process was initiated in 2018. In 2025, the Quality and Integrity committee held meetings and the revision of the guide of the publication of an article. The management's commitment letter was updated in order to strengthen communication, training and document activities. This revision also incorporates the review of how to optimise data management.
Regarding coordination with the Q&I unit, each team has identified a Q&I representative.
This representative's role will be to liaise with the unit (answering questions and requests from the teams; providing information from the committee to the teams via the representative), thereby facilitating communication and monitoring initiatives.

2025 KEY FIGURES

STAFF MEMBERS

487
Staff including...

112
Researcher or teacher clinician researchers

34
Hospital practitioners

31
Permanent supporting staff (study & research engineers, technicians & administrative staff)

174
Non-permanent supporting staff

113
PhD students

23
Postdocs

2025 KEY FIGURES

BIBLIOMETRIC INDICATORS

628
Scientific papers including **589** publications from Scopus databases

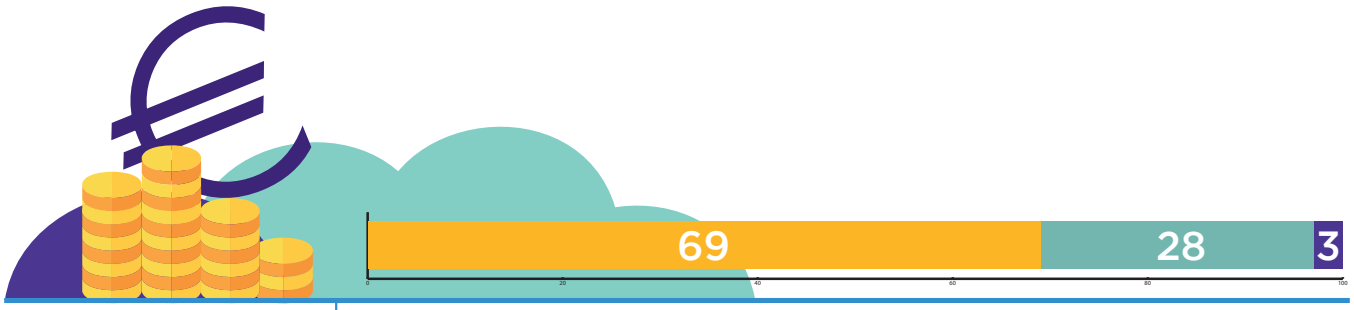
17 %
in top 10% most cited worldwide

37 %
in top 10% journals

71 %
in Open Access journals

56 %
co-authored with institutions in other countries/regions

GRANTS AND FUNDINGS



~28 M€
Yearly budget

66 % from research grants (20 M€/yr)
- 29% European or other international grants (NIH...)
- 15% investment for the future grants RHU, cohorts
- 55% other national grants
- <1% donation

31 %
from salaries of permanent staff

3 %
state allocation

GRANTS AND FUNDINGS

210
Contracts including...

191
National public grants

7
European grants

9
International grants (outside Europe)

3
Grants from foundations and charities or private entities (ARC, FRM, etc...)

KEY FIGURES for past period (2016-2021)

2958
Scientific papers

21 %
Publications

3,04 %
Normalised citation index for the 2013-19 period

300
Others outcomes

>120
Scientific books or monographs

42
Software contributions

13
Patents

3
Start-ups

>120
General public communications

24
Covid projects

> 25
Prizes and/or distinctions

157
National public grants which 102 in coordination

9
National invesment for the future initiative grants (PIA), among which 3 in coordination

42
Local grants (regional governement, among which 30 in coordination

28
European grants among which 7 in coordination

36
International grants (outside Europe), among which 15 in coordination

68
Grants from foundations and charities or private entities (ARC, FRM, etc.) among which 56 in coordination

THE BPH WITHIN THE COMMUNITY

The BPH is co-hosted by the Inserm and the University of Bordeaux. Two BPH research teams have a third host institution: the INRIA (SISTM team) and the IRD (GHiGS team). The centre is located within the campus of the University of Bordeaux (one of the largest in Europe), specifically on the Carreire biomedical campus. The BPH is located within walking distance of the Bordeaux University Hospital, with which it has strong connections.

RESEARCH-BASED TEACHING

The University of Bordeaux was one of the first four universities in France to receive the Initiative of Excellence label from the Investments for the Future scheme (PIA). It is recognised as a world class cluster of excellence in higher education and scientific research.

Public health teaching

We are located close to the teaching facilities of the Isped Bordeaux School of Public Health, directed by Prof. Simone Mathoulin-Pelissier, who is also a BPH researcher.
Most Isped teachers conduct their research in a BPH team and 51 researchers from the BPH teach at the Isped on a regular basis. Isped delivers training courses in epidemiology, biostatistics, health promotion, occupational and environmental health, global health, the management of medical and medico-social organisations, public health data science, and medical informatics.

Graduate programs and summer schools

BPH researchers have contributed to developing an international research-based teaching offer supported by PIA3 funding (EUR), including the Digital Public Health Graduate Program (DPH) and the EUR@AFRICA graduate program that respectively address current and future public health challenges related to digital methods and Africa.
BPH researchers also participate in the Isped summer school programs and co-lead several international summer school programs (e.g. Neurepiomics, Africa's populations by 2050: Challenges and potentials) and methodological seminars (e.g. Melodem).

Health sciences and medical curriculum

BPH researchers also make significant contributions to university curricula by teaching (research-based) courses in various disciplines: Health Sciences (Medical Science Faculty, Pharmaceutical Science Faculty) and Social Sciences (Psychology Faculty, Social Sciences, Anthropology and Ethnology Faculty).

UB2030-CAP Digital Health

In April 2025, the team organised the symposium "Training in digital health: Focus on the future", which brought together more than 350 participants from academia, hospitals and institutions. This event was a highlight for discussions on the implementation of core digital health skills in health training programmes and helped to strengthen the momentum for training trainers at the regional and national levels.
In addition, the project has led to the launch of the Public Health Data Sciences (PHDS) University Diploma, an innovative course dedicated to data science methods applied to public health. This diploma, offered in English and mainly taken as part of continuing education, aims to meet the growing need for analytical skills in the field of health data, with the first international cohort welcomed in January 2025. The French version of the diploma is scheduled to open in September 2026. Finally, the project reached an important milestone with the mid-term evaluation organised by the ANR on 22 October 2025. Following this evaluation, the CAP Santé numérique project received a favourable opinion, highlighting the quality of the actions undertaken, the gradual structuring of the training offer and the partnership dynamic that has been established.

Europubhealth+ Consortium Meeting and Research Seminar in Bordeaux

On February 2025, Isped and BPH welcomed the partners of the Europubhealth+ consortium to Bordeaux for its annual consortium meeting and research seminar. Presentations of the different BPH teams ongoing projects and research interests allowed for fruitful exchanges with members of the seven partner universities: EHESP School of Public Health (France), University of Granada / Andalusian School of Public Health (Spain), University College Dublin (Ireland), University of Liège (Belgium), University of Krakow (Poland), University of Sheffield (UK), and University of Maastricht (The Netherlands). Isped joined this Erasmus Mundus programme of excellence in public health in 2024 with its 2nd year Master programme in Public Health Data Science and will welcome the first Europubhealth+ students to Bordeaux in 2026.

Bordeaux University Hospital (CHUB) is one of the largest French University Hospitals in terms of activity, with a total capacity of 3,000 beds.

CLINICAL RESEARCH

The link with the clinical sector of the University Hospital of Bordeaux (CHUB) and the Regional Cancer Centre (CLCC) Institut Bergonie is reinforced by the strong involvement of many BPH researchers in the main methodological and operational structures for clinical and epidemiological research.
Many clinicians (neurologists, psychiatrists, infectious disease specialists, oncologists, emergency medicine specialists, ophtalmologists, etc.) are also involved in BPH research projects, some of them as directors or deputy directors of the research teams.

Hospital units led by BPH researchers

- Departments of Medical Informatics
- Occupational Health Unit for Research Organisations
- Hospital Unit for Innovation in Prevention.

Methodological structures

- CIC-EC (Centre for Clinical Investigations – Clinical Epidemiology)
- Population-based cancer registries
- Clinical trial units in various domains:
  - **EUCLID** (EUropean CLInical Trials Platform & Development) F-CRIN (French Clinical Research Infrastructure Network) platform for international trials
  - **USMR** (Methodological support unit for clinical and epidemiological research) for clinical research at Bordeaux University Hospital.
  - The **UMS 54 MART** Joint Service Unit (Inserm/University of Bordeaux) has taken over from the former CMG-EC (Centre de Méthodologie et de Gestion des Essais Cliniques Inserm/ANRS) for research on HIV and hepatitis.
  - **MEREVA** (Methodology and monitoring of clinical research on HIV and other infectious diseases in developing countries) for clinical research in low-income countries.

Health Data Warehouse EDS@NOVA

The EDS@NOVA project kick-off meeting on 29 January 2025 in Bordeaux, marking the official launch of this ambitious project under the scientific leadership of Professor Thiebaut and the EDS (Health Data Warehouse) teams partnering with the University Hospitals of Bordeaux, Limoges and Poitiers.
In 2022, the EDS@NOVA which brings together university hospitals in the Nouvelle-Aquitaine region (Bordeaux, Poitiers, Limoges) was a winner of the 1st national call for projects 'Support for the establishment of hospital EDSs as part of France's strategy to promote digital health'.
The creation of health data warehouses (HDWs) is an opportunity for population health research and raises new challenges in data processing that engaged researchers from the BPH in medical informatics and data sciences. It is also an opportunity to go beyond clinical research as reflected by the projects TARPON (led by E. Lagarde) and ORCHIDEE (WP2 led by G. Chêne – see more information on the same page).

Advancing Hospital-Based Epidemiological Surveillance:

The First Orchidée Scientific Seminar

Coordinated by Santé publique France, the EU-funded Orchidée project aims to establish a national hospital epidemiological surveillance network by leverageing the secondary use of data from hospital information systems.
In 2025, the Orchidee consortium held its first annual scientific seminar at BPH focused on federated hospital network models for epidemiological surveillance, a key component in strengthening data-driven public health monitoring. The seminar was organised within WP 2 – Methodological and Scientific Developments, led by Geneviève Chêne (BPH).
The event brought together consortium partners as well as external experts, including representatives from the European Centre for Disease Prevention and Control (ECDC) and coordinators of other federated health data networks, notably the DARWIN EU® project and the Dutch National Institute for Public Health and the Environment (RIVM). These contributions provided valuable perspectives on the development and governance of large-scale federated data infrastructures for public health surveillance.
Orchidée aims to produce epidemiological indicators based on data from hospital clinical data warehouses (HCDW) across 26 participating hospitals. By enabling near real-time monitoring of morbidity and mortality, the project will strengthen the capacity to detect and monitor priority health threats and support timely public health responses.

LARGE-SCALE RESEARCH PROJECTS AND PARTNERSHIPS

BPH researchers are leading several ambitious research projects funded by:

the **French government's "Investissements d'avenir" program (PIA3) and France 2030**, including:

- **BCube** (Biobank and Brain Health in Bordeaux, a population-based study among young seniors for deep phenotyping of cerebral ageing: https://cohorte-b-cube.fr/),
- **RHU SHIVA** ("Recherche Hospitalo-Universitaire en santé" on small cerebral vessel diseases)
- **IHU VBHI** awarded the IHU3 programme (France 2030). BPH researchers are closely involved in the VBHI Institute (Precision & Global Vascular Brain Health Institute), which aims to develop a new paradigm integrating population health and therapeutic innovation to fight against the major neurological diseases, particularly stroke and dementia, and to promote healthy ageing of the brain.

the **"Initiative d'Excellence" of the University of Bordeaux, including large research programs** (GPR "Grands Programmes de Recherche"), among which:

- **IPORA** (coord), Interdisciplinary Policy-Oriented Research on Africa (https://ipora.africa/en)
- **HOPE** (WP lead), Understanding Human Well-being and Behavior for better Policies & Societies (https://ecor.u-bordeaux.fr/gpr-hope/presentation-du-projet); Impulse program
- **PHDS** (coord), Public Health Data Science Bordeaux Network
- **The Interdisciplinary observatory on digital technologies for surveillance in democracy – OSD** (co coord) https://observatoire-surveillance-democratie.fr/

- **Drug-Safe®** renewed in 2023 (ANSM), focusing on the risks of medical drugs, https://drugssafer.fr/.

International and European programs including:

- **EHDS-FR-FIN** (co coord) health trajectories between France and the Nordic countries (Norway, Denmark and Finland) leading to cardio-metabolic diseases, to assess the interoperability of European health data

- **Decide-TB** 2023 HORIZON-EDCTP3, aiming to integrate an adaptive platform trial for the development of new interventions to fight Lassa fever in Africa (selected in the HORIZON-JU-GH-EDCTP3-2022-01 call), https://decide-tb.com/
- **NIH, International epidemiology Databases to Evaluate AIDS (IeDEA)** in Western Africa https://www.iedea.org/.

In 2024 BPH researchers developed new ambitious research projects with a coordinating role or as partner :

- **EXPOSIGNALZ** (partner): A new large translational research program on pollutant mixtures in brain ageing and Alzheimer's disease funded under the "Horizon and Health" 2024 call https://cordis.europa.eu/project/id/101156353
- **Memento Cohort** (deterMinants and Evolution of AlzheiMer's disEase aNd relaTed disOrders) (coord) : renewal of the for 5 years with NIA funding from the international MELODEM consortium https://host.credim.u-bordeaux.fr/dnn-memento/Accueil.aspx
- **VITISAFE** (partner) : Ecophyto funding for a multidisciplinary projet "One Health" https://ecophytopic.fr/recherche-innovation/exposition-et-impacts/projet-vitisafe
- **PPR INNOVCARE** project (partner), interesting in technologies (in particular robots, AI, and digital technologies) supporting autonomy and care in France and in Japan, in an objective of overcoming existing limitations of use (design, disconnection with needs, ethical issues Funded by France 2030 call PPR Programme Prioritaire de Recherche https://ppr-autonomie.com/wp-content/uploads/2024/09/INNOVCARE-D.pdf
- **PARTAGES** (partner) supported by a consortium of around thirty partners, including BPH and others research laboratories (from the CNRS, INRIA and various universities), healthcare organisations and deep tech companies, is one of the winners of the France 2030 call for projects on generative AI. https://www.health-data-hub.fr/actualites/democratiser-lia-generative-en-sante-letat-travers-france-2030-selectionne-le-projet
- **EXPOSOME** (partner) Inserm booster program which combines multiple approaches to identify associations between components of the exposome and health events at multiple scales and to better define causal links between them.
- **PIEEC MEDITWIN (partner)**: MEDITWIN is a Projet Important d'Intérêt Européen Commun (PIEEC) part of the France 2030 strategy coordinated by Dassault Systems and Inria. The aim of the MEDITWIN project is to develop and validate digital twins to support personalised medical practices and strengthen the healthcare system in targeted therapeutic areas. These virtual twins will be multi-disciplinary and multi-physiological, and will be based on real clinical data, acquired prospectively and historically, at the molecular, genetic, cellular and tissue levels, right down to the organ, system, individual and population level.

- **MUSICC (partner)** has been selected for funding by CEPI (Coalition for Epidemic Preparedness Innovations). This project will develop and conduct Controlled Human Infection Models for beta-coronaviruses in order to assess vaccine effects.

DigitalPublic Health: Enabling Oncology Clinical Trials Through Multi-Modal Data

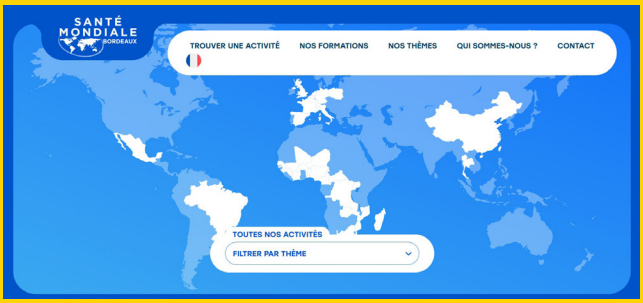
New "Laboratoire International Associé" (UBLIA) to deepen collaboration between the University of Bordeaux and McGill University, building on their existing Digital Public Health Graduate Program and Public Health Data Science Master's program. The focus is on advancing medical informatics research, specifically leverageing clinical data warehouses in Montreal and Bordeaux to support oncology clinical trials using multi-modal data in OMOP CDM format. The project stands out by combining BPH cutting-edge AI techniques (such as transformers and hybrid approaches) with real-world implementation in two operational clinical data warehouses across different countries, ensuring international scalability of methods and software pipelines. Oncology was selected due to the researchers' expertise, ongoing clinician collaborations, and the potential for immediate impact on clinical research at both sites.
This initiative is a proof-of-concept for broader collaborations, with plans to expand into other clinical domains like cardiology and neurology, capitalizing on the research excellence in Montreal and Bordeaux. The project enjoys strong institutional support, reflecting its ambitious vision.

Strong links in Vaccine Research

In 2025, the Vaccine Research Institute (VRI), a LabEx laboratory of excellence in Créteil closely linked to the BPH-SISTM team, was favourably evaluated by the French scientific authorities and had its funding renewed as part of major public programmes (ANR, PIA, France 2030). Within the VRI, the SISTM team leads the data science division, developing statistical and mechanistic modelling methods for early-stage (phase I/II) vaccine trials, with a particular focus on HIV, Ebola and pan-Coronavirus. SISTM is involved in every stage of the process, from the design of vaccine strategies to their in silico optimisation. The team collaborates closely with the Bordeaux teams at UMS 54 MART and methodological platforms (USMR Bordeaux and F-CRIN Euclid) and receives funding for vaccine trials coordinated by the VRI, as well as for Inserm-Inria co-funded theses and CIFREs for methodological development applied to vaccines. The VRI–SISTM collaboration is part of structural funding: LabEx VRI (PIA), major ANRS/VRI projects and national programmes, including the PEPR Santé Numérique (SMATCH project on innovative vaccine trial designs).

Bordeaux Global Health Platforms & FrOGH YearBook 2025 and Websites

Bordeaux is raising the profile of its global health initiatives: launch of the Bordeaux Global Health Platform and involvement in setting up the France One & Global Health (FrOGH) network
In 2025, the Bordeaux Population Health Centre contributed to several initiatives aimed at better structuring and raising the profile of global health activities based in Bordeaux, as well as strengthening collaborations at national and international levels.
As part of this, the Bordeaux Global Health Platform (www.global-health-bordeaux.com) was developed to showcase the diversity of research and training projects carried out in Bordeaux in the field of global health.
The University of Bordeaux, through its Bordeaux Population Health research centre (which it co-supervises with Inserm) and in particular its GHiGS, SISTM and AHeAD teams, its Institute of Public Health, Epidemiology and Development (Isped), the Bordeaux School of Economics (BSE) and the Department of Public Health Research, as well as Sciences Po Bordeaux, are joining forces to make the city a major hub for international public health.
The platform highlights projects addressing key global health challenges — infectious diseases, maternal and child health, environmental determinants of health and the strengthening of health systems — as well as programmes



→ Plateforme Santé mondiale Bordeaux : https://www.global-health-bordeaux.com/

→ Plateforme FrOGH (France One & Global Health) : https://www.frogh.fr/

IPORA Conference 2025: Advancing Africa–Europe Academic Partnerships in Bordeaux

In April 2025, the University of Bordeaux hosted the IPORA (Interdisciplinary Policy-Oriented Research on Africa) Scientific Conference at the Bordeaux School of Economics (BxSE), gathering more than 300 participants from Africa and Europe. Following previous editions held in Abidjan and Rabat, Bordeaux in turn hosted the event. The conference was organized in collaboration with the University of Bordeaux's event management team and coordinated by the Bordeaux Population Health Centre (BPH), its Global Health in the Global South (GHiGS) team, and BxSE, highlighting Bordeaux's strong institutional commitment to global and interdisciplinary research.

IPORA is an international transdisciplinary research network launched in 2023 to address major challenges facing the African continent through policy-oriented research. It is also one of the seven "Grands Programmes de Recherche" selected by the University of Bordeaux following an international evaluation. Supported over eight years through the France 2030 "Initiative d'excellence" framework, the programme fosters collaboration between researchers, policymakers, and civil society actors across disciplines, including public health, economics, social sciences and environmental sciences. Among its institutional partners, Inserm and IRD are both active members of the IPORA network and joint supervisory institutions of the GHiGS research team.

The Bordeaux conference focused on strengthening Africa–Europe academic partnerships to improve cross-sector governance. Through thematic sessions on health and poverty, food and nutrition security, environmental challenges, and social justice, participants explored how interdisciplinary research can better inform public policies and support sustainable development.

By contributing to both the organisation and the scientific content of the event, BPH and the GHiGS team played a central role in positioning Bordeaux as a key hub for global health and interdisciplinary research, reinforcing its commitment to equitable and long-term partnerships with African institutions.

Inserm Exposome Booster Program

In 2025 BPH hosted two major days dedicated to Inserm's EXPOSOME initiative with the First international conference to discuss the theme of 'Social inequalities and the exposome' and a Workshop entitled "Causal Inference in High-Dimensional Setting".

The Exposome Booster Program is a funding initiative launched by Inserm, focusing on this emerging research field. The funding supports three Work Packages including WP3: High-dimensional causal inference coordinated by the BPH Director Rodolphe Thiébaut Director.

BPH has developed a strong research axis on the exposome in public health, involving many of its researchers and academic partners. The main structuring projects cover methodological, fundamental and applied dimensions in the analysis of environmental and societal exposures and their impact on public health.

RESEARCH

RESEARCH TEAMS HIGHLIGHTS 2025

BIOSTATISTICS

Team

BIOSTAT

MIXED RESEARCH TEAM

Inserm université de BORDEAUX

Dr. Hélène Jacqmin-Gadda

PhD, BIOSTAT Director

Hélène Jacqmin-Gadda obtained the "Habilitation à Diriger des Recherches" (HDR) in Biostatistics in 2002 at Bordeaux University (France). She is Director of Research at the French National Institute of Health and Medical Research (Inserm) and head of the Biostatistics team at the BPH since 2014. Her research focuses on statistical methods for the analysis of longitudinal data with complex observation schemes and especially, models for multivariate longitudinal data and joint models for longitudinal data and time-to-event, as well as evaluation of predictive abilities of these models. Her main motivation is the study of cognitive ageing and dementia. Other fields of application are HIV and cancer. She has advised 23 master students and 10 PhD students. She has co-authored about 130 publications in peer-review journals and two books about biostatistical models in epidemiology published in 2015. She is currently associate editor of *Statistics in Medicine* and she was associate editor of Biometrics from 2003 to 2014.

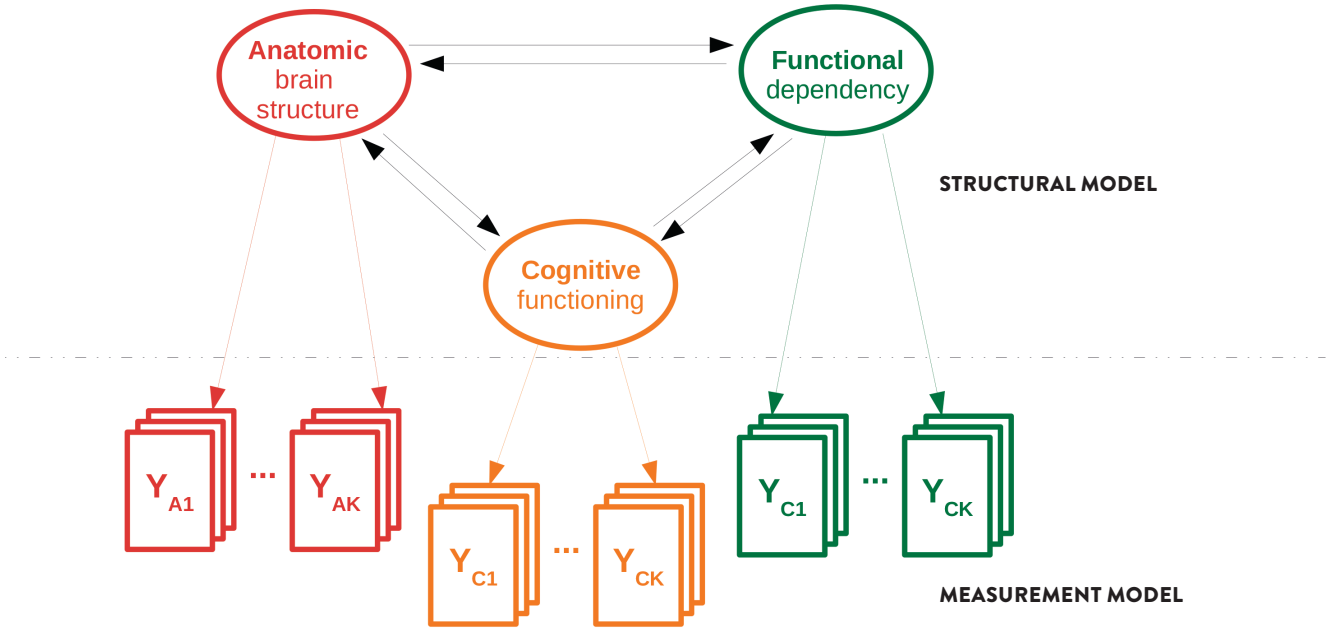
Dr. Cécile Proust-Lima

PhD, BIOSTAT Deputy Director

Cécile Proust-Lima is a Director of Research in Biostatistics at the French National Institute of Health and Medical Research (Inserm).
Her research mainly focuses on the development of longitudinal statistical methodologies to describe, explain and predict chronic disease progression. She has specialized over the years in latent class and latent process models for the joint analysis of correlated longitudinal markers and event time history with applications notably in cerebral ageing and neurodegenerative diseases (Alzheimer's Disease and related dementias, Multiple System Atrophy). The works of her group, made available through open-source software (e.g., R packages lcmm, DynForest), are intended to address Public Health research questions through close collaborations with epidemiologists and clinicians and the analysis of large epidemiological cohort studies.

The main objective of the team is the development of statistical methods for time-dependent data coming from either observational cohort studies, clinical trials or case-control studies, with the aim of answering clinical and public health questions regarding chronic diseases: future burden, risk factors, individual prediction, underlying pathological mechanisms, and treatment effects.

Over recent years the team has worked on two main topics: multivariate models for time-dependent data and model-based estimation of public health indicators. Our main domain of research focuses on the development of multivariate dynamic models for the analysis of censored time-to-events and/or repeated measures of longitudinal data accounting for complex observation schemes. These works are motivated by the study of the natural history of chronic diseases such as Alzheimer's disease or Multi-System Atrophy, the investigation of the impact of time-dependent exposures, or the validation of surrogate markers for clinical trials in cancer research. Parametric and semiparametric estimation procedures for frailty models for correlated time-to-events, clustered data and/or recurrent events as well as joint models for event times and longitudinal markers were implemented in the R-package Frailtypack. Another field of research is the extension of mixed models using latent classes and/ or latent processes for the analysis of multiple longitudinal outcomes with non-standard distributions in heterogeneous populations. We proposed the R-package LCMM, which enables the estimation of latent class mixed models, joint latent class mixed models and mixed models for curvilinear univariate or multivariate longitudinal outcomes. These models were motivated by the analysis of cognitive decline in cohort studies. They account for population heterogeneity and issues raised by the metrologic properties of measurement tools of cognition and autonomy (high correlation between markers measuring one or several underlying processes, ordinal data, non-standard asymmetric distributions with floor and/or ceiling effects and unequal sensitivity to changes). We also designed methods for the estimation of Illness-Death model accounting for interval-censoring (Package SmoothHazard). Tools for computing individual prediction and evaluating predictive abilities of these models were also developed. Relying on multi-state methodology, we propose several approaches to forecast the future burden of neurologic and cardio-vascular diseases and



assess the expected impact of intervention scenarios, targeting their modifiable risk factors. Depending on the complexity of the investigated scenarios, the indicators for the future burden of the disease are computed analytically or using micro-simulations.

Our current projects particularly focus on causal questions and big-data issues in the framework of dynamic models. On the one hand, causal questions are related to our research about the mechanism underlying pathological processes in chronic diseases, the evaluation of surrogate markers, the role of long-term exposure and the impact of social inequalities in health. We investigate the causal interpretation of the multivariate models we developed and we propose new methods for studying causality for censored time-to-events, repeated measures of time-dependent outcome and/or time-dependent risk factors. On the other hand, as technological progress helps collect large amounts of data (genetics, biology, imageing, IoT data), we develop new approaches that tackle high-dimensionality issues with respect to the number of time-dependent predictors, markers and outcomes.

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MOLECULAR EPIDEMIOLOGY OF VASCULAR AND BRAIN DISORDERS

Team

ELEANOR

MIXED RESEARCH TEAM

Inserm université de BORDEAUX

Dr. David-Alexandre Trégouët

PhD, ELEANOR director

Holder of a PhD in Public Health (1999), with strong emphasis on genetic epidemiology, his research career started with the development of statistical methods to analyze family data as well as genetic polymorphisms in the context of candidate association studies. He then turned to the development and application of statistical/ bioinformatics tools for the analysis of high-throughput microarray and next generation sequencing data. In parallel to these methodological developments, he is participating in the design and the analysis of several epidemiological studies aiming at identifying molecular determinants of cardiovascular diseases, his specialty being venous thrombosis (VT). He is joint coordinator of the French EOVT, FARIVE, MARTHA, MARFAST and PILGRIM studies, and joint convener of the International Network of Venous Thrombosis (INVENT) consortium, aimed at identifying genetic factors for VT. Within the F-CRIN supported INNVOTE network that brings together all French clinicians working in the field of VTE, he supervises the re search programs on VT genomics. Over recent years, his interests have extended to molecular epidemiology integrating epigenetics marks, microRNA and proteomic profiling in order to develop a research program on precision medicine in thrombotic disorders.

Dr. Cécilia Samieri

DVM, PhD,
ELEANOR Deputy Director

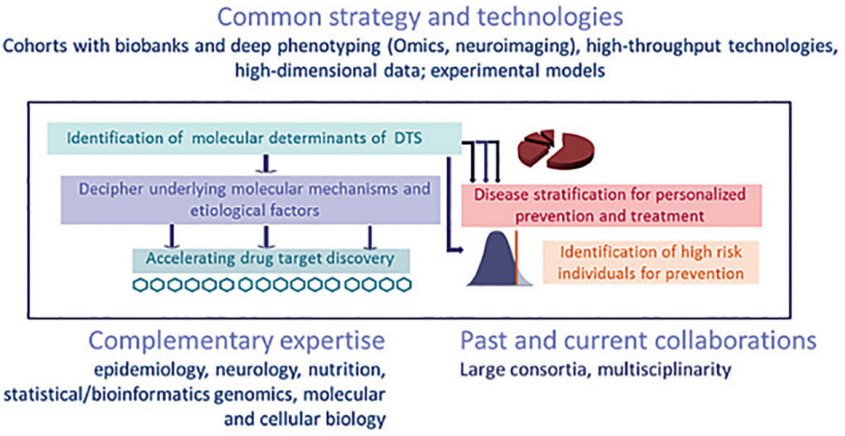
She's a research director at Inserm, specializing in the epidemiology of brain ageing. Her research aims at understanding the role of environmental factors (the exposome) in the onset of age-related brain diseases, in particular dementia and its main form Alzheimer's disease.

The purpose of our research is to identify groups of individuals who are at high risk of developing three common and tightly linked neurological and vascular conditions: (dementia, stroke and venous thrombosis), to discover novel etiological factors and therapeutic targets, and to propose more personalized preventive strategies through improved risk stratification.

Our research program relies on major components:
1/ large-scale epidemiological and clinical cohorts coupled with biosamples;
2/ the deployment of cutting-edge high-throughput technologies for deep molecular phenotyping;
3/ the application of advanced statistical methodologies;
4/ a group of experts in molecular-clinical epidemiology and
5/ a widespread network of collaborators that enables us to contribute to the functional characterization of the identified biomarkers.
Our project is focusing on three inter-related clinical outcomes, cognitive impairment / dementia, stroke, and thrombosis and is organized around 4 themes:

Molecular epidemiology of vascular brain ageing, (PI: Stéphanie Debette)
Using collaborative genome-wide association study meta-analyses and next generation sequencing data we are studying the genetic underpinnings of stroke and MRI-markers of covert cerebral small vessel disease (SVD). We have a growing interest in cross-ancestry studies, as these are crucial to enhance genomic discovery and make results more representative. Through the ERC SEGWAY we are taking a lifespan approach to explore early determinants of brain ageing and the impact of genes predisposing to stroke, dementia and SVD on brain microstructure in young adults (i-Share cohort). In the RHU SHIVA project (national investment for the future funding), following up on efforts that we initiated in the EU-JPND BRIDGET program, we are now expanding our explorations to other omics approaches (epigenomics, transcriptomics, proteomics and metabolomics), focusing in particular on deciphering the molecular underpinnings of covert SVD and its contribution to stroke and dementia. Finally, we are engaged in leverageing these molecular epidemiology studies to accelerate drug discovery and improve risk prediction/stratification for targeted prevention. Our group is also involved in European therapeutic guideline coordination.

INTEGRATIVE RESEARCH:
MOLECULAR EPIDEMIOLOGY OF DEMENTIA, STROKE AND VENOUS THROMBOSIS



Exposome of brain ageing and dementia (PI: Cécilia Samieri)
The network and dynamics of environmental factors leading to age-related brain diseases has yet to be elucidated, in order to identify the most impactful targets for prevention. This exposome research axis leverages molecular epidemiology, brain imageing and advanced statistical approaches deployed to population-based cohorts with biobanks in order to investigate: (1) the exposome of brain health at key ages, and (2) the underlying pathways and life-course dynamics. The general aims are to: refine assessment of already-known exposures (eg, diet biomarkers); explore novel exposures (eg, chemical mixtures); investigate beyond individual exposures (eg, microbiome interactions); and eventually model the global exposome network, to improve etiological modeling of age-related brain diseases. We will capitalize on existing data (e.g. the 3C cohort) and target younger populations, building a new population-based cohort of 2000 participants aged 55-80 years from the community living in Bordeaux metropole, the B cube (Biobank and Brain Health in Bordeaux) study.

Precision Medicine for better prophylaxis & better knowledge on venous thrombosis (PI:David-Alexandre Trégouët)
After spending several years to identify common genetic factors for venous thrombosis (VT) in the general population, we are now embarking into a more integrative analysis of various molecular determinants (genes; epigenetic marks, proteins,...) on specific subgroups of individuals at higher risk of VT including women under oral contraceptives, patients with a previous history of VT and patients with viral infections.
In parallel, building on our recent successes, we will continue our genetic investigations of rare forms of unexplained inherited VT through the application of whole exome/genome sequencing in familial cases.

Integrative approach for vascular and brain disorders (all PIs)
The deep characterization and understanding of the biology of a complex disease requires to integrate results/data from others diseases as they very often share common risk factors and pathophysiological mechanisms. By capitalizing on the existence of complementary and synergistic expertise and bioresources brought by ELEANOR's PIs in different but interrelated diseases, we are implementing an integrative research strategy to optimise the identification and the characterization of molecular determinants associated with some of the most common age-related diseases.

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HEALTH, WELLBEING AND ACHIEVEMENT IN THE YOUNG

HEALTHY

MIXED RESEARCH TEAM

Inserm université de BORDEAUX

Prof. Cédric Galera

MD, PhD, HEALTHY Director

Cédric Galera is a pediatric psychiatrist and epidemiologist. He was resident in child psychiatry at the University of Bordeaux between 2000 and 2004. He did a research fellowship in Montreal (Canada) in 2003 and a clinical fellowship in Montevideo (Uruguay) in 2005. He is professor of Child and Adolescent Psychiatry at the University of Bordeaux and hospital practitioner at Charles Perrens hospital and at Bordeaux University Hospital. He has been a researcher at the BPH since 2008 and an associate researcher at the Research Unit on Children's Psychosocial Maladjustment (Cana da) since 2017.

Dr. Melissa Macalli

PhD, HEALTHY Deputy Director

Her work uses advanced quantitative methods and large population-based cohorts to identify individual, social, and environmental determinants of suicidal risk, with the aim of informing targeted prevention strategies in higher education settings.
Her PhD, which received a national award from the French Ministry of Health, explored suicidal behaviors in the French i-Share student cohort through risk modelling and longitudinal analyses. She then continued her research investigating early detection, access to mental health care, and the reduction of social inequalities in mental health, including in the context of the Covid-19 pandemic and its impact on young people.
In 2024, she was selected as a French Young Talent by the L'Oréal–UNESCO For Women in Science program, recognizing the originality and societal relevance of her research on youth mental health and suicide prevention. Through her scientific contributions, public lectures, and media interventions, she actively participates in raising awareness among policymakers, universities, and the general public about student suicide and the need for comprehensive, evidence-based support systems.

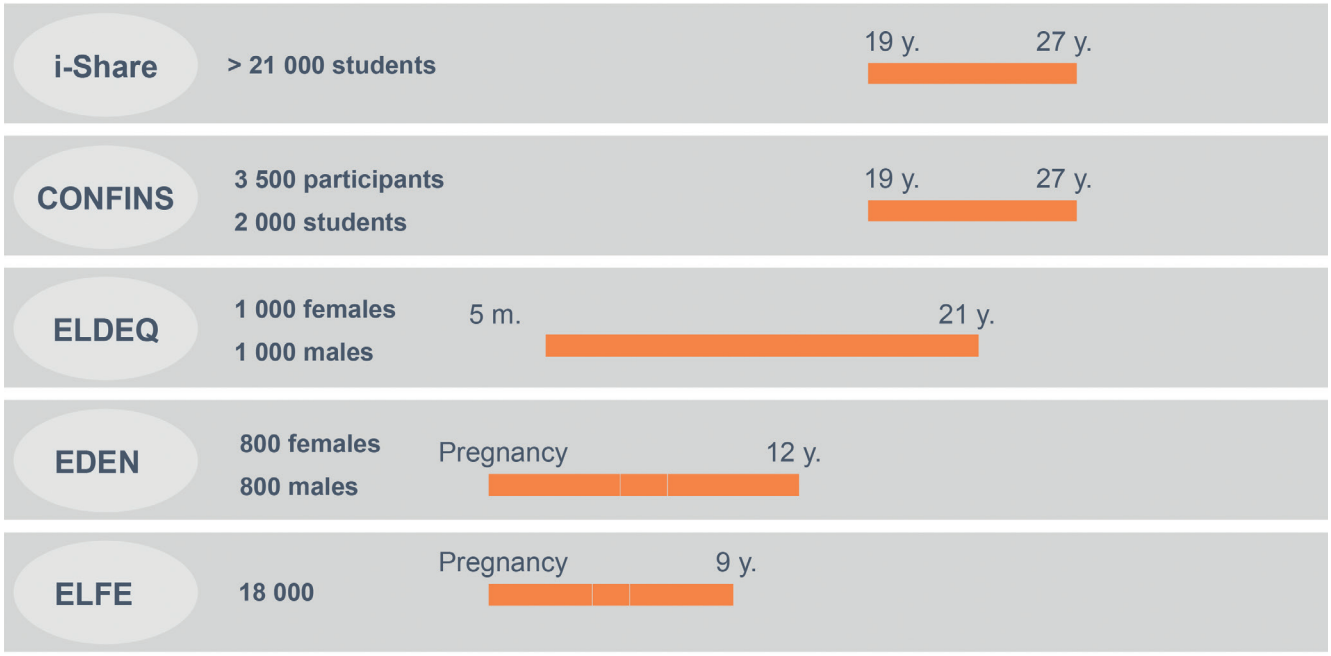
The research focus of our team is to understand and prevent mental health problems in youths.
We aim to:

1. **Investigate the risk and protective factors of Mental, Neurological and Substance use (MNS) problems in young people using a lifespan perspective**
2. **Test the efficacy of strategies to prevent Mental, Neurological and Substance use problems and build resilience to stressors in youths / parents**

Over the past five years, our team has provided relevant evidence on the early contribution of social environment and biological factors on youth mental health (cognition, externalizing behaviors, internalizing problems, ADHD and risk for suicide). Team members have studied the modulation of biological factors by the social environment in relation to externalizing problems and ADHD and the relative contributions of genes and environment on the developmental course of the ADHD phenotype and suicide risk, from the peri-conceptional period to adolescence. Team members have also found that cytokine patterns in the cord blood are associated with childhood anxiety/depression symptoms. Regarding interventions aiming at improving mental health, cognitive development and social outcomes, the team has shown the benefits of early non-parental care and evidenced the moderate efficacy of a multicomponent early intervention program on behavior, cognition and health, in an Irish sample. Team members have developed eHealth tools to be used for MNS in youths, particularly in students. These findings provide key elements to inform public policies and tailor our experimental interventions. Research of our team members takes advantages of various cohorts, including birth cohorts (ex: ELFE and ELDEQ) and young adult cohorts (iShare and CONFINS).

Our future research will rely on 3 axes:
Axis 1 Mental health epidemiology in the youths: understanding the risk and protective factors underlying MNS problems (Cédric Galera)
The HEALTHY team is particularly interested in quantifying (1) the putatively protective role that psychosocial services play on the prevention of MNS problems; (2) the impact of MNS problems on individual functioning, including educational and professional achievement; and (3) the biological and social

COHORTS USED TO INVESTIGATE MECHANISMS UNDERLYING MNS AND THEIR SEQUELAE



mechanisms underlying specific mental health disorders and problems like ADHD, depression, suicidality, pathological low levels of self-esteem, etc.

Axis 2 Exploring social and behavioral features of mental health in the youths (Ilaria Montagni, Christophe Tzourio)
This axis will aim at describing and analyzing health behaviors/lifestyle, health representations, and health literacy of young people, relying on sociological and communication approaches (Humanities and Social Sciences) and mixed-methods studies.

Axis 3 Designing, testing and evaluating interventions preventing MNS problems and promoting mental health in the youths (Cédric Galera, Ilaria Montagni, Christophe Tzourio)
We will conduct (1) specific interventions focusing on a defined mental health problem or disorder (selective and indicated interventions); and (2) general-population interventions targeting health behaviours, e.g., health literacy, healthy lifestyles, life-skills training, psycho-education (universal interventions).

2025 Key publications

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LIFELONG EXPOSURES, HEALTH AND AGEING

Team

LEHA

MIXED RESEARCH TEAM

Inserm université de BORDEAUX

Dr Cécile Delcourt

PhD, LEHA Director

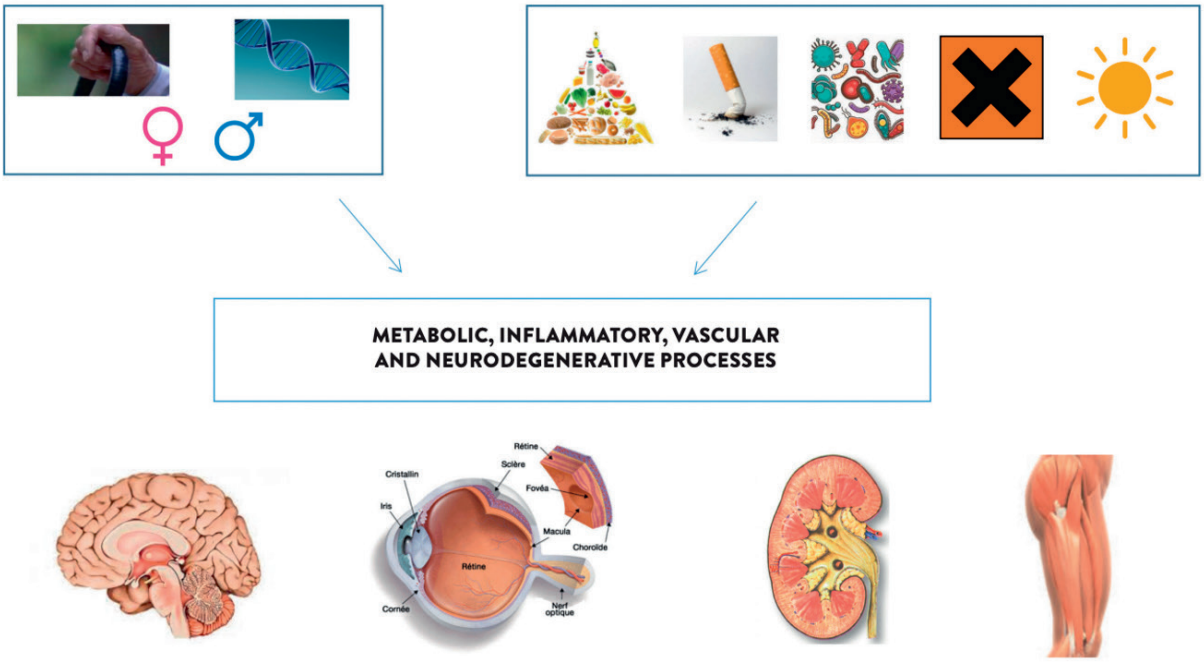
Cécile Delcourt has a PhD in statistics and public health and is a senior researcher at Inserm U1219-Bordeaux Population Health Research Centre, where she leads the LEHA (Lifelong Exposures, Health and Ageing) research group. She has a strong expertise in the epidemiology of eye diseases (in particular AMD, cataract and glaucoma). She is internationally renowned in the identification of risk factors for major eye diseases (in particular smoking, light exposure and nutrition). She has led two major population-based epidemiological studies in the field, since 1995 (POLA and Alienor studies). She has founded and led from 2011 to 2018 the "European Eye Epidemiology" consortium, gathering 32 teams from 12 European countries, and has been workpackage leader in two European projects (Eye-Risk and Sense-Cog), granted in the Horizon 2020 framework. She has published more than 200 scientific articles, with a Factor H of 41. She received the Achievement Award of the American Academy of Ophthalmology in 2019.

The objective of team LEHA is to study age-related diseases, in particular those of the brain (dementia, Alzheimer's disease) and of the eye (age-related macular degeneration, glaucoma), using a lifelong approach and focusing on shared mechanisms and exposures, in order to define strategies for the prevention of age-related functional loss and the promotion of healthy ageing

We study populations of different ages (elderly, middle-aged, young) in prospective designs allowing for the study of slow long-term processes, using early biomarkers (in particular eye and brain imageing) allowing for the early detection of health related effects of exposures. As age-related diseases share common mechanisms and consequences and interact with each other, ageing is considered as a global state promoting the occurrence of diseases. Models of ageing are mainly neurological diseases (cognitive decline and dementia/ Alzheimer's) and eye diseases (mainly age-related macular degeneration (AMD) and glaucoma), but also extend to other health endpoints, such as diabetes, kidney disease or physical performance.

Our research is based on population-based cohorts that we have been conducting in elderly populations for more than 30 years: the PAQUID cohort (n=3777, followed since 1988) and the 3C Study (n=9294 including 2104 in Bordeaux, followed since 1999), and its ancillary ophthalmological study in Bordeaux Alienor (n=963, followed since 2006). We also participate in population-based cohort studies (i-Share, 20,000 students, PI C. Tzourio), Constances (220,000 adults aged 18-69 years, followed since 2012, PI M. Zins, Inserm U1018, Villejuif) and B cube (planned 2000 aged 55-80 years in Bordeaux, PI C Samieri), in particular by generating cutting edge ophthalmological phenotypic information and several ranges of biomarkers. Finally, we collaborate with European and American cohorts, individually or within collaborative projects. Overall, these studies collect information on many aspects of ageing (functions, chronic and degenerative diseases, disability) and their determinants (clinical factors, nutrition, environmental exposures, genetics), which allow a very comprehensive study of the epidemiology of health and ageing in older adults, but also offer a scope for a broader lifelong approach, thanks to the epidemiological and clinical studies conducted in younger individuals.

EXPOSOME AND AGE-RELATED DISEASES



Our research activity is divided in 3 axes:

- Burden of age-related and chronic disorders, which aims at documenting the frequency of age-related and chronic diseases and characterize their burden, in terms of loss of autonomy, impaired quality of life, as well as medical and non-medical costs.
- Mechanisms and processes of age-related diseases, which aims at finely characterizing ageing processes, by collecting detailed clinical, imageing and functional data over long periods of time, with major interest in degenerative and vascular processes as well as inflammatory mechanisms.
- Determinants of healthy ageing, which focuses mainly on the role of nutrition and lifestyle, as well as environmental exposures (sunlight exposure, air pollution…). With regard to nutrition, our approach combines interest in specific dietary intakes and patterns with the use of innovative measurements (lipidomics, metabolomics, gut microbiota…).

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STATISTICS IN SYSTEMS BIOLOGY AND TRANSLATIONAL MEDICINE

Team

SISTM

MIXED RESEARCH TEAM

Inserm Inria université de BORDEAUX

Dr. Mélanie Prague

PhD, SISTM Director

Currently Inria Research Fellow she is leading the SISTM team from both Bordeaux Inria Centre and Inserm BPH research centre U1219. She obtained her H.D.R. in 2024. Her research primarily involves developing statistical methods for infectious diseases. She specializes in analyzing longitudinal repeated data, with a particular focus on mechanistic models. She develops methods for inference on non-linear mixed effects models, working on both within-host and between-host models to accelerate the development of treatments and vaccines. Her research projects predominantly focus on HIV, Ebola, Nipah, and COVID-19.
Since 2016, she is tenured faculty. Before that she did a postdoc at the Harvard T.H. Chan School of Public Health in Boston, after obtaining her Ph.D. in Public Health - Biostatistics at ISPED from the University of Bordeaux in 2013. She graduated from the ENSAI (National School for Statistics and Information Analysis) in 2010, where she majored in Biostatistics.

Dr. Boris HEJBLUM

PhD, SISTM Deputy Director

Currently Research Faculty (*Chargé de Recherche*) at Inserm, his main focus is on the development of new statistical methods for the longitudinal analysis of high-dimensional biomedical data in vaccine research. His latest works include approaches for heterogeneous gene set analysis of longitudinal gene expression data, leverageing Bayesian nonparametric modeling and optimal transport for clustering single-cell data, probabilistic matching and forecasting with Electronic Health Records, and identifying and evaluating surrogate markers from high-dimensional data in vaccine trials. He obtained his Accreditation to Supervise Research (*Habilitation à Diriger des Recherches*) in 2024 and have been a tenured associate professor at the Bordeaux School of Public Health until 2021, after a postdoc at Harvard University that followed his Ph.D. obtained in 2015 from the University of Bordeaux. He also holds an engineering degree in Statistics from ENSAI (French National School for Statistics and Information Analysis).

The two main objectives of the SISTM team are: 1) to accelerate the development of vaccines by analysing all the information available in early clinical trials and optimizing new trials ; 2) to develop new statistical methods to analyse and model large high-throughput data.

The relevant information is extracted from large omics data, and this signal is then incorporated into mechanistic models, thanks to prior biological knowledge, to estimate their parameters. Those models can then inform the optimal vaccine strategies to be evaluated in the next clinical trials, through in silico trials, allowing for optimised clinical trial designs and personalized strategies.

The team is structured around three research axes focused on these shared objectives.
The axis on "High-dimensional statistical learning" aims to

- Unlock the analysis of high-dimensional longitudinal data by developing suitable statistical approaches, in particular for applications to longitudinal high-throughput data (e.g. microbiome, transcriptome, cytomics) generated in vaccine trials.
- Leverage prior biological knowledge and formally incorporate it into statistical models to tackle the small n large p setting, one of the characteristics of early phase vaccine trials.
- Advance adaptive clustering methods of high-dimensional data in both supervised and unsupervised settings, especially to infer the proportions of cellular population from gene expression measurements and also to identify gene whose expression is key in segmenting transcriptomic measurements across vaccine arms or disease severity for instance.
- Perform feature selection and dimension reduction of high-dimensional molecular and cellular data based on surrogacy potential and prior biological knowledge, as a first step to feed such information into mechanistic models.

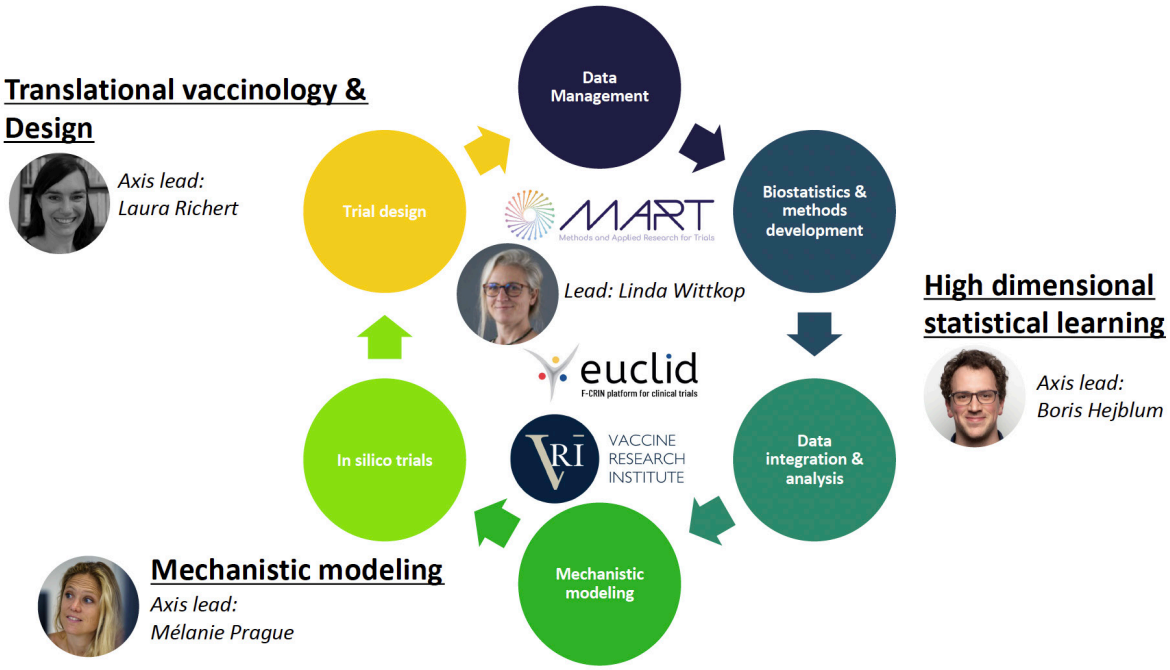
The axis on "Mechanistic modelling" aims to

- Develop methods for statistical inference of differential equations model parameters in population framework.
- Use Artificial intelligence for hybrid modelling and infer unknown mechanisms
- Model within-host immunological and virological dynamics in samples of individuals.
- Model between-host dynamics of epidemics in populations.
- Use mechanistic model as in silico platform for exploration of counterfactual scenarios with application in implementing control strategies toward personalized medicine.

The axis on "Translational vaccinology and design" aims to

- Facilitate secure data sharing, integration, and analysis in collaborative clinical vaccine research projects.
- Accelerate the vaccine development by in depth analysis of data generated in early clinical trials
- Design the next trials with development of new adaptative designs in collaboration with immunologists and clinicians

All this work is done in collaboration with our partners from the Vaccine Research Institute, EUCLID/ANRS-MIE CMG platfor, the UMS MART and the Bordeaux Hospital. The research conducted by the SISTM team is funded through a combination of national, European, and international programs, as well as public-private partnerships. SISTM is involved in two axis of the PEPR Santé Numérique programme (SMATCH ; AI4scMed). The team also secures major European funding as partners through programs such as Horizon Europe (SOLVE ; IP-CURE-B), IMI2 (CARE), and EDCTP2 (PREVAC-UP, ASCENT), which support statistical modelling and data analysis for vaccine research. International collaborations, including with CEPI (MUSICC), UT Austin (RISE), Rand corporation (DESTRIER), and Latin American partners (MATH AmSud), further enhance methodological innovation. The team also engages with industry partners like Johnson & Johnson, Gilead, and Ipsen for clinical trial design and analysis.



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AGEING, CHRONIC DISEASES, TECHNOLOGY, DISABILITY, AND ENVIRONMENT

Team

ACTIVE

MIXED RESEARCH TEAM

Inserm université de BORDEAUX

Prof. Hélène Amieva

PhD, ACTIVE Director

Hélène Amieva has a PhD in neurosciences. After one year of postdoctoral fellowship at the Psychology Department of Aberdeen University (UK), she has been working at the CNRS as a permanent researcher for nine years. She is currently Professor of psychogerontology at Bordeaux University.
Her main expertise is in the field of epidemiology and neuropsychology of ageing, dementia and Alzheimer's disease, in particular psychosocial factors modulating clinical trajectories and cognitive decline in ageing. She has also been involved in clinical studies assessing non-drug treatments. She has conducted the ETNA3 study, a national trial assessing the efficacy of non-pharmacological therapies in Alzheimer's disease, involving 653 patients followed up for three years in 40 French hospital centres. Currently, she is the principal investigator of the study assessing the impact of the French Alzheimer Village in South-western France, an innovative experiment for people suffering from Alzheimer's disease. She is the author or co-author of about 190 articles published in international journals.
She is co-director of the Master of "Psychogerontology and Public Health" at Bordeaux University. Since 2021, she is the general secretary of the French speaking society of Neuropsychology relying on a community of physicians, psychologists, speech therapists and researchers working in French-speaking countries and actively involved in the field of neuropsychology.

Most of the researches conducted within the ACTIVE team aim at studying: (1) intrinsic capacities of individuals and environmental factors contributing to develop / maintain/ reduce functional capacity in the context of acute/chronic disease, disability, and/or old age; and (2) innovative strategies based on the optimization of such factors. The team is composed of epidemiologists, psychologists, cognitive scientists, geriatricians, physical therapists, neurologists and a psychiatrist.

The first research axis is coordinated by Karine Pérès. It investigates to what extent intrinsic capacity and environments contribute to develop / maintain / reduce functional ability. Functional trajectories associated with ageing process are studied through a continuum distinguishing robustness, pre-frailty, frailty, and activity limitation. We examine their determinants through a multidimensional approach considering intrinsic capacities (cognition, depression, sensory impairments, personality traits…) and environmental factors (family support, social network, (un) adapted home, professional assistance, digital technologies) that may influence the sequence and speed of functional deterioration. The heterogeneity of these trajectories is explored in several prospective population-based and clinical studies (PAQUID, AMI, 3C, CONSTANCES, COGLOC…). More recently, taking advantage of the ongoing cohort studies, the PA-COVID survey, set up very shortly after the first COVID-19 lockdown in France, aims at providing valuable knowledge on older adults' social and psychological experiences of the COVID-19 crisis and its impact on cognitive, mental and functional health.

The second research axis coordinated by Hélène Sauzéon focuses on innovative strategies based on the optimization of individuals' intrinsic capacity and/or environments. As an example of strategies based on optimised environments, the French Alzheimer village is an experimental accommodation facility for older adults with Alzheimer's disease built like a traditional village. The team is currently conducting an ambitious multidimensional research program evaluating whether this innovative model is relevant compared to traditional nursing homes (see below). Other researches involve interventions relying on digital technologies. They generally address two main health issues: rehabilitation access and patient agentivity (i.e., active role of the patient). A research

Le village Alzheimer de Dax

project is being conducted on patients with vascular aphasia to evaluate the benefits of tele-rehabilitation compared to a conventional face-to-face rehabilitation. Another research stresses the role of self-determination in cognitive rehabilitation by leverageing recent technological advances. The program includes a large panel of individuals of various ages and with various disability conditions. The goal is to study the impact of the technology properties of adaptability (self-configuration of objectives/ contents of the intervention by the care recipient) and/or adaptivity (self-configuration of intervention by machine learning algorithms) on rehabilitation results.

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ASSESSING HEALTH IN A DIGITALISING REAL-WORLD SETTING PHARMACOEPI & BEYOND

AHeaD

MIXED RESEARCH TEAM

Inserm université de BORDEAUX

Prof. Antoine Pariente

MD, PhD, AHeaD Director

Professor Antoine Pariente, a renowned expert in pharmacoepidemiology, headed the Bordeaux Pharmacovigilance Centre from 2016 to 2021 and chaired the European Medicines Agency's PRAC interest group on the Impact of Regulatory Measures. Coordinator of the DRUGS-SAFE platform from 2015 to 2019, he transformed this initiative into the DRUGS-SAFER Centre, designated by the authorities to provide real-world evidence on the use and safety of medicines. Currently, as director of the BPH AHeaD team, a merger of the Pharmacoépi, ERIAS, and IETO teams, he continues to play a key role in population health research.

Prof. Gayo Diallo

PhD, AHeaD Deputy Director

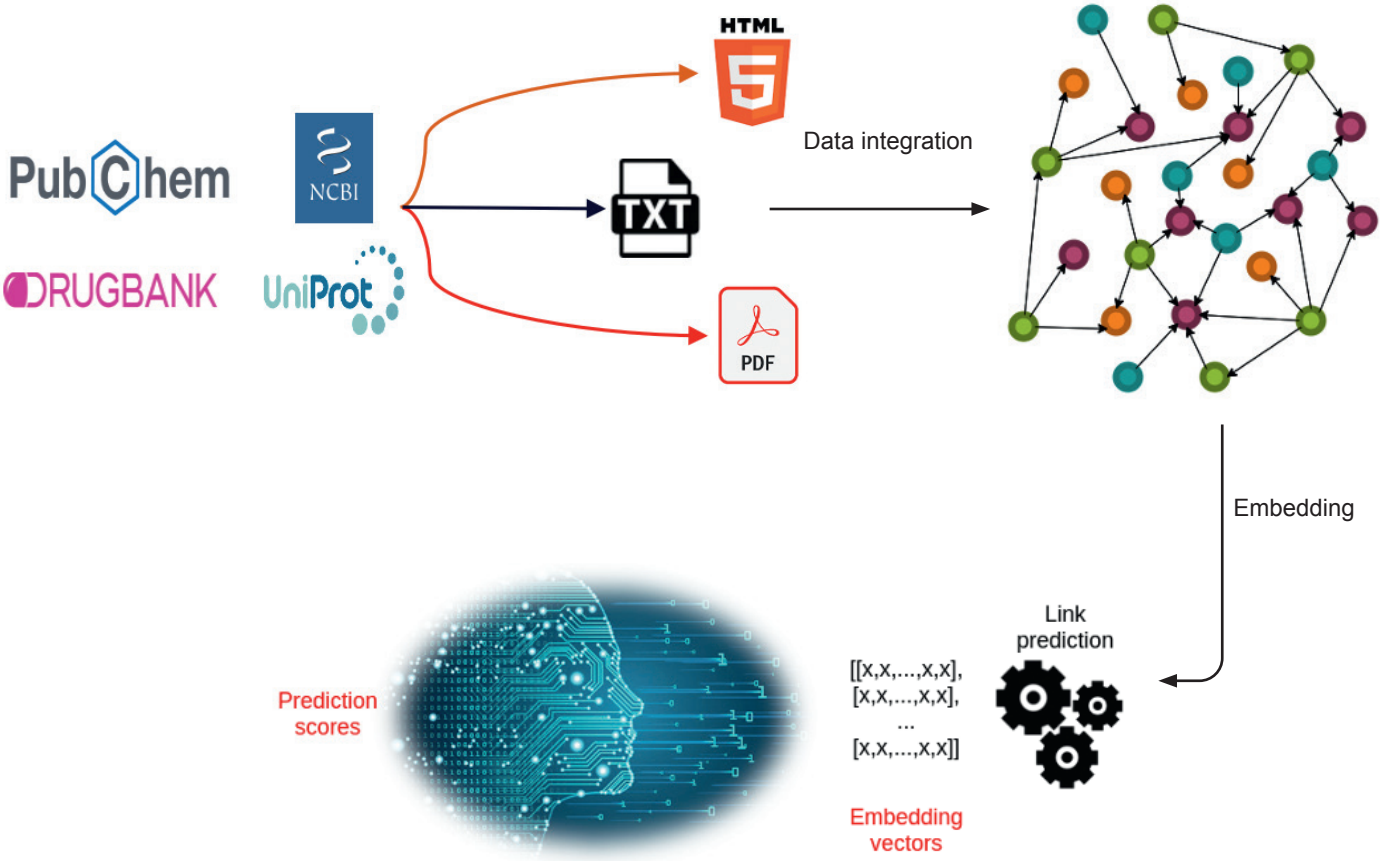
Professor Gayo Diallo is full professor in computer science at Bordeaux University and is based at ISPED. He is deputy director of the AHeaD (Assessing Health in a Digitalising Real-World Setting Pharmacoepi & beyond) research team at the BPH Inserm-1219 and previously, he was the group leader of ERIAS an emerging team of BPH. He holds an Habilitation to Supervise Research from the University of Bordeaux and a PhD in Computer Science from the University of Grenoble Joseph Fourier (Grenoble Alpes). He joined the University of Bordeaux in 2009 after working at City University London and the Laboratoire d'Informatique Appliquée du Futuroscope in Poitiers. He was a Visiting Professor at the University of Minnesota (USA) in 2022. His research focuses on symbolic AI approaches for health data management and ICT for societal development.

We are interested in better understanding healthcare real-world setting and better assessing medicines in this observational environment. In particular, we aim to investigate trajectories of care and their determinants, with a specific interest into emergency care use from one side, and trajectories of care for patients with chronic diseases relating to cardiovascular health or mental health from the other.

AHeaD results from the merging of three different teams ("Pharmacoepidemiology-Pharmacoepi"; "Injuries-IETO"; "Informatics in Health-ERIAS"). The collaborations we developed over the years ultimately concentrated most of our teams' research efforts around the secondary use of electronic databases for the study of health and medicines in a real-world setting. In anticipation of the research challenges that will emerge from the multiplication, diversification, and complexification of digital health data, we decided to join forces with the AHeaD team project. This will combine our originating teams' expertise in electronic health records databases (HERs), hospital data warehouses, ontologies, data visualisation, knowledge representation, machine learning and natural language processing for health research, thus constituting a tremendous research opportunity. The way to answer the questions regarding health assessment in real-world settings is likely to change dramatically. In the coming years, the use of electronic health databases, that developed tremendously over the past 30 years, will need to be complemented using information from other sources that will help strengthen and substantiate the real-world evidence provided. Building bridges between applied health research, already widely using EHRs, and informatics appears as a necessity when envisioning the future development of health assessment in real-world settings.
The research will divide into three axes corresponding to different objectives and methods. The research will divide into three axes corresponding to different objectives and methods:
1. Data & Signals: Structuring and bridging data for hypothesis generating in real-world assessment
Safety signal or repurposing hypotheses are mostly presented or generated from the results obtained from one data source/ type of information analysis. We intend to go further by developing approaches that will combine various types/sources of information for hypothesis-generating research from realworld data.

2. Use & Effectiveness: Stay focused, remain global Medicine & health determinants assessment is better performed when closely focusing on one type of medicine or care.
The downside is to risk losing sight of the overall care environment (therapeutic alternatives; healthcare trajectories). We intend to develop research that will contextualize and characterize overall healthcare surrounding targeted research regarding the use or effectiveness of a given type of medicine or care.

3. Policies & Impact: Assessing the public health impact of regulatory actions
The hypotheses generated/confirmed within the two first research axes can result in official recommendations or regulatory actions aiming to optimise healthcare strategies. Here, our research will assess to what extent these strategies are successfully adopted and beneficial to health, thereby completing our research path from generating a hypothesis to applying it in society



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EPIDEMIOLOGY OF CANCERS AND ENVIRONMENTAL EXPOSURES

EPICENE

MIXED RESEARCH TEAM

Inserm université de BORDEAUX

Prof. Isabelle Baldi

MD, PhD, EPICENE Director

Isabelle Baldi is a Professor in Occupational Health at Bordeaux University, and a member of the Environmental and Occupational Health department at Bordeaux University Hospital. Her research aims at assessing long-term effects of occupational & environmental pesticide exposure through epidemiological studies (especially on cancer and neurological outcomes). She has developed new tools for pesticide exposure assessment, such as crop exposure matrices (PESTIMAT, PESTIPOP) and algorithms (PESTEX-PO, CANEPA) based on field observations, using several epidemiological projects. She is co-leader of the AGRICAN cohort (https://www.agrican.fr/) and responsible for the neurological subgroup of the AGRICOH international consortium (https:// agricoh.iarc.fr/). She is involved in the European SPRINT program (https://sprint-h2020.eu/). She also heads the Registry of Central nervous system tumors, implemented in Gironde in 1999.

Dr. Fleur Delva

MD, PhD, EPICENE Deputy Director

Fleur Delva is a medical doctor specialized in public health and hospital practitioner at the Bordeaux University Hospital and co-director of the INSERM EPICENE "Cancer environment" team. She obtained a PhD in epidemiology in 2014 and obtained an accreditation to supervise PhD research in 2019. Today, her activity is divided between hospital activity where she coordinates the ARTEMIS Centre, an environmental health prevention platform for patients with reproductive disorders, and a research activity on the environment and reproduction themes, with significant research and leadership experiences within global organisations in cancer surveillance, epidemiology and public health.

EPICENE's research is focused on cancers and environmental and occupational determinants of health. Our projects address methodological challenges in a multidisciplinary approach with the aim of expanding knowledge on cancer survival and its determinants, developing new approaches to estimate life-long environmental exposures (Exposome concept), understanding the role of the environment and the occurrence of certain cancers.

Theme 1: Cancer survival: improving knowledge, detecting frail individuals, identifying surrogate endpoints

Although survival rates have improved for the main cancers over the past decades, they remain highly variable depending on the cancer site and on many more individual parameters. We strive to further understand the factors associated with better survival for cancer patients. Thanks to our involvement in population based cancer registries, we generate new data on cancer survival and its determinants (treatments, comorbidities, care practices, palliative care) for several cancer types (hematological cancers, breast cancer…). We pay particular attention to frail people, for whom efforts of detection and prevention are strongly needed, including elderly people whose number will rapidly increase in the coming decades. We develop new tools for detection programs and we investigate cancer literacy in elderly cancer patients.
Our efforts also focus on improving cancer screening strategies (including organized mass screening). We also develop new biostatistical approaches to assess treatment efficacy and patient survival in randomized controlled trials and in real-life settings

Theme 2: Methods in environmental and occupational exposures: the exposome knowledge

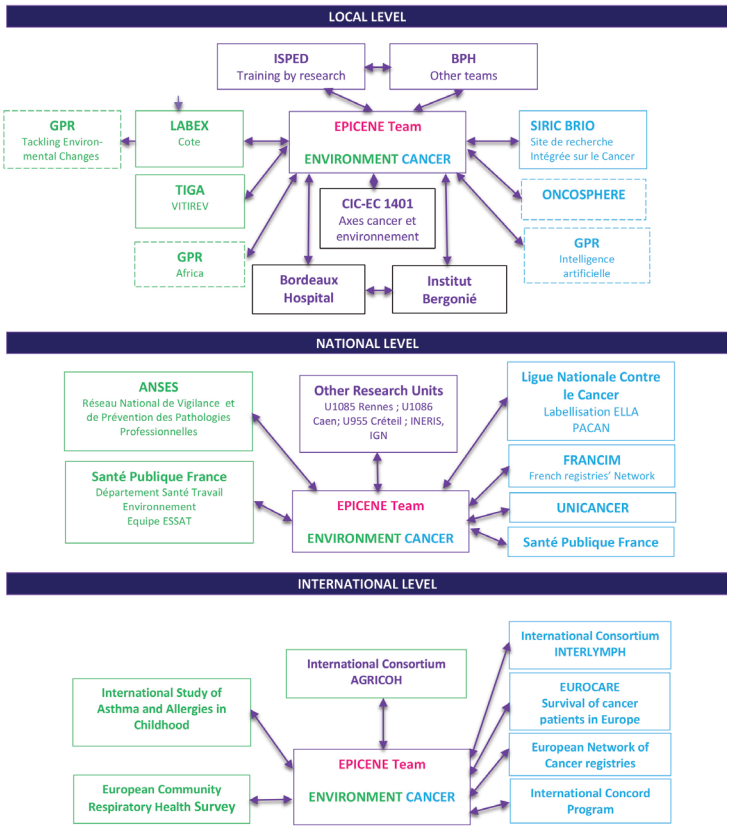
Our research aims to improve the knowledge of levels and determinants of exposure to major contaminants with field measurements in order to identify the main determinants of exposure (usable in retrospective questionnaires and in large population cohorts). Our research on pesticide exposures started 25 years ago and continues to provide many original data through the PESTEXPO program. We now aim to document baseline levels for "everyday" contamination on a farm and explore pesticide exposures in non-farming jobs (i.e., gardening, wood industry…). We also explore the exposures of the general population living near treated fields. We combine field measurements and ergonomic observations. Levels and

determinants of exposures to other pollutants are also studied, such as nanoparticles in the occupational and environmental settings, antineoplastic drugs in healthcare workers, electromagnetic fields... We also develop indirect exposure assessment tools, such as Job Exposure Matrices (PESTIMAT, MATPUF) and spatial modeling. Usable retrospectively in large populations with minimal collection of data (job or residential calendars), they are very useful to our epidemiological studies.

Theme 3: Environmental Etiology of Cancer

For more than 20 years, we have studied the etiology of CNS tumors, hematological malignancies and mesothelioma thanks to registries that we set up in this domain and our collaborations at both national and international levels. Recently, we also developed studies on sarcomas. As etiological research, including the role of the environment, remains scarce for most rare cancers, we intend to analyze the role of environmental determinants in the occurrence of these cancers, for which the role of environmental factors is suspected. Our efforts rely on cohorts (AGRICAN, LUCSO, REALYSA), case-control studies (CERENAT, ETIOSARC), and data from international consortia (AGRICOH, INTERLYMPH). We attempt to better understand cancer risks in specific populations, suspected to be more vulnerable because of individual conditions or comorbidities (e.g., allergies, immunological disorders), genetic characteristics (polymorphisms of detoxification genes,...) or specific exposures (women, smokers...

EPICENE'S ECOSYSTEM: main collaborations



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GLOBAL HEALTH IN THE GLOBAL SOUTH

GHiGS
MIXED RESEARCH TEAM

Inserm IRD Institut de Recherche pour le Développement FRANCE université de BORDEAUX

Dr Olivier Marcy

MD, PhD, GHiGS Director

Olivier Marcy is a clinical epidemiologist and research director at the IRD (French Institute for Research and Sustainable Development), posted at the University of Bordeaux. He worked for more than 10 years as a clinician and public health program manager in sub-Saharan Africa (Republic of Congo) and South East-Asia (Cambodia). His research focuses on diagnosis of tuberculosis (TB) in children and TB-HIV co-infection in adults and children. He was the project leader of the Unitaid-funded TB-Speed project on childhood TB diagnosis, which included several research studies on the decentralisation and implementation challenges of diagnostic services, as well as on the accuracy of diagnostic algorithms for vulnerable children. He is co-leading the EDCTP-funded Decide-TB project with Dr. Chishala Chabala from UNZA, implemented in Mozambique and Zambia in partnership with the National Tuberculosis Programs (https://decide-tb.com/). He is the current chair of the NIAID-funded TB-SRN international cohort on pulmonary TB in adults. He is also a principal investigator in the IPORA interdisciplinary and policy-oriented research platform where he is developing research on impact of air-pollution on respiratory health in urban settings in Africa.

Dr Renaud Becquet

PhD, GhiGS Deputy director

Renaud Becquet is an epidemiologist and a Director of Research at Inserm. After his PhD in Abidjan, Côte d'Ivoire, and a two-year post-doctoral fellowship at the University of KwaZulu Natal, South Africa, he was recruited in 2008 as senior scientist at the Bordeaux Population Health Research Centre. His early research focused on the prevention of mother-to-child transmission of HIV in Africa. He later participated in the creation of a research platform with the humanitarian organisation ALIMA and the PACCI research programme in Abidjan to develop innovative and transformative research in sub-Saharan Africa, focusing on improving maternal and child health outcomes in complex humanitarian situations. He authored and co-authored more than 100 articles published in international journals, all related to maternal and child health in Africa. He has served as an expert in various committees and guideline development groups (WHO, UNICEF, UNAIDS). He is also the coordinator of the Master Global Health in the Global South at the Bordeaux School of Public Health (ISPED).

Purpose and aims

Our purpose is to conduct research that contributes to improving health at both individual and population levels in countries from the Global South and contributes to reducing health inequities between and within countries.
We aim to:
• produce data on health issues affecting the Global South, their epidemiology, risk factors and consequences;
• design and evaluate innovative interventions at both individual and population levels, which are effective, equitable and sustainable, and contribute to the advancement of global health.

Per the definition of Koplan et al. (The Lancet 2009; 373(9679): 1993-5), global health is an area for study, research, and practice that places a priority on improving health and achieving equity in health for all people worldwide. Global health emphasizes transnational health issues, determinants, and solutions; it involves many disciplines within and beyond health sciences and promotes interdisciplinary collaboration; and it is a synthesis of population-based prevention with individual-level clinical care. According to the UN Trade and Development (UNTADE) the Global South is made up of Africa, Latin America and the Caribbean, Pacific Islands, and the developing countries in Asia, including the Middle East.

Research themes

Low-and middle-income countries, particularly in Sub-Saharan Africa, are going through major changes including epidemiologic, sociodemographic, economic, agronomic, technological and climatic transitions. At the same time, they are carrying the triple burden of: 1/ infectious diseases including HIV, tuberculosis, malaria, hepatitis and a number of other emerging infectious disease threats (hemorrhagic fevers, dengue, and other epidemics); 2/ growingly prevalent non-communicable diseases (NCDs; diabetes, cancers, hypertension, obesity), and 3/ unprecedented outdoor pollutions and environmental threats.
The GHiGS team responds to these major transitions and new challenges through integrated, multi-level and interdisciplinary research approaches in the context of the Global South. This research is built on equal partnership and co-construction with scientific partners, clinicians, policymakers from the Global South countries.
Research activities within GHiGS are organized around 5 research themes that correspond to major global health challenges: HIV, tuberculosis, malaria, hepatitis & sexually transmitted infections ("Big 5"); emerging infectious diseases; maternal and child health; non-communicable diseases; models of care, implementation, and health systems.
Research implemented within GHiGS is supported by scientific engineering capacities from several research platforms: the MEREVA joint clinical research unit between GHiGS and PACCI, Abidjan, Côte d'Ivoire, supported through the PRISME-CI ANRS funding; the GHiGS Implementation research platform, and the interdisciplinary research platform IPORA (Interdisciplinary Policy-Oriented Research for Africa; UBx/IdEx funding 2022-2029).

Major achievements

Over the past 3 decades, the GHiGS team contributed to research that led to several major revision in the international HIV treatment, tuberculosis, and childhood malnutrition guidelines issued by the World Health Organisation (Danel et al. NEJM 2015, Marcy et al. Pediatrics 2019, Cazes et al. Lancet Glob Health 2023). GHiGS was among the rare research teams worldwide to have conducted a treatment trial to reduce mortality during the Ebola epidemic in West Africa (Sissoko et al. Plos Medicine 2016).

Focus on IPORA (Interdisciplinary Policy-Oriented Research for Africa): From 2022 to 2025, GHiGS coordinated the IPORA project funded by UBx/IdEx during its 1st phase (2022-2025) and developed research projects on air pollution and respiratory health in children with University Felix Houphouët Boigny, Abidjan, Côte d'Ivoire, and food systems and malnutrition with University of Addis Ababa, Ethiopia. The IPORA project (https://ipora.africa/en/) has been approved for a second phase (2026-2029). GHiGS remains fully active in the project and ensures leadership of communication (Work Package - WP2), interdisciplinary research (WP3), research by training (WP4) aspects with other research partner teams at UB (Bordeaux School of Economics and LAM) and partner universities in Africa (Côte d'Ivoire, Ethiopia, Morocco, and Zambia).

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POPULATION HEALTH TRANSLATIONAL RESEARCH

PHARes

MIXED RESEARCH TEAM

Inserm université de BORDEAUX

Dr. Carole Dufouil

PhD, PHARes director

Carole Dufouil PhD is a research director at Inserm and lead the PHARes team. She is also deputy director for international and overseas relations at Bordeaux School of Public Health (ISPED). She has received training in biostatistics and public health. Her early publications were on methods to handle missing data in longitudinal studies. More recently, her research has focused on the determinants of neurological diseases, including Alzheimer's disease. She is particularly interested in the role of vascular risk factor exposure and cognitive stimulating activities, and imageing markers (PET, MRI) of brain ageing and disease. She is co-PI of the 3C-Dijon study and co-PI of the MEMENTO study, a national clinical cohort, which was set up in the context of the French Alzheimer Plan 2008-2013, and aims to improve the understanding of the natural course of Alzheimer's disease and related disorders. She is also strongly involved in international scientific programs such as the Framingham Heart study, or co-leading of the Melodem initiative which aims at harmonizing analytical approaches in longitudinal studies on dementia (www. melodem.org).

Pr Geneviève Chêne

MD-PhD, PHARes Deputy director

Geneviève Chêne, MD, PhD, is a professor of medicine in public health at the University of Bordeaux and Bordeaux University Hospital. She is co-PI of the Memento cohort, aimed at improving our understanding of the progression from cognitive complaints or disorders to Alzheimer's dementia. Her interests also extend to leverageing health or environmental and social data for public decision-making. As the deputy director of the Vascular and Brain Health Institute (IHU VBHI, France 2030), she actively contributes to its strategic development. During the Covid-19 pandemic, she held the position of Director General of Public Health France. Previously, she led the School of Public Health (ISPED) at the University of Bordeaux, as well as the Public Health Department of Bordeaux University Hospital. She also contributed to the development of the 2013-2017 national health strategy and served as director of the Inserm Public Health Institute.

The PHARes Team aims to improve our understanding of and act upon the greatest risks and threats to population health, representing a large share of morbidity and mortality as well as social determinants of health and healthcare expenditure. Through this translational approach, We seek to reduce, the impact of these risks and treats (taking into account social and environmental inequalities, including inequalities in access to healthcare) by

- **improving risks factors and inequalities measurement with real-world data and methods developed for and applied to observational studies and thus providing the evidence based for a critical building block for action,**
- **developing innovative methods (observational and experimental) for the development and evaluation of complex population health interventions,**
- **analysing of social and political processes underlying the unequal distribution of risks and health inequities in order to influence decision-making.**

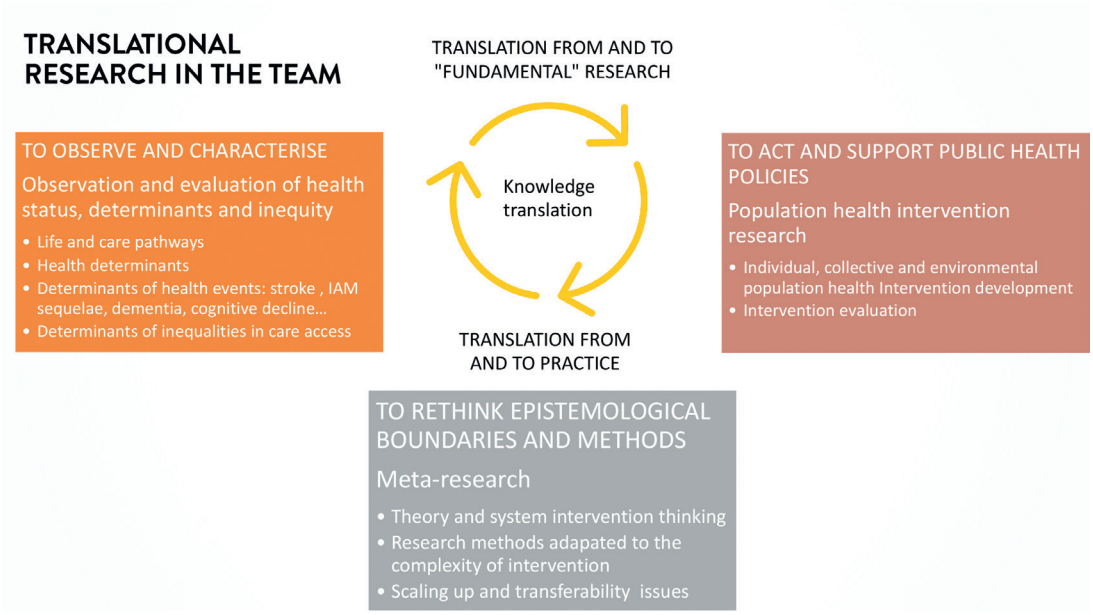
The team works on five principal research axes:

1. Methods for population health intervention research.
This axis involves conducting research on research (meta-research), on concepts and methods for the evaluation of prevention and health promotion interventions. The questions cover all stages of the approach, from the development to the scaling-up of interventions

2. Social determinants, migration dynamics, environment & health.
This research axis relies on a strong interdisciplinary convergence on the cross-cutting themes of social inequalities, deprived populations, environmental risks and their relation to population health and health inequalities. Our research addresses the following issues:
- Social determinants of maternal, child, sexual & reproductive health among vulnerable populations
- Health status and healthcare access of vulnerable populations.
- Innovative approaches to improve health and health equity in decision-making processes at the territorial level.

3. Pathways and determinants of health.
The concept of pathway has been developed to respond to the need to make our health system and society evolve in the face of increased life expectancy, chronic illnesses and the complexity of managements. The identification of interventions to improve pathways and reduce inequalities in access to care is another major issue, leading to significant improvements in population health and focusing on three main goals :
- Characterization of pathways
- Identification of determinants of health
- Optimisation of care pathways and reduction of health inequalities,

4. Innovations for prevention in the healthcare system.
The growing prevalence of chronic diseases is a major challenge for the sustainability of health systems. There is a need to transform health systems by increasing prevention and by implementing innovative organisations in the management of these diseases. This transformation will require the development and the analysis of research-and field-based



interventions. Transforming the health system also requires transferring innovative models into public decisions and practice. The objective of this theme is to identify, develop and/or evaluate technological (such as mobile health in prevention strategies) and organisational innovations (such as interprofessional collaboration to improve professional practice and health-care outcomes) in terms of prevention (or "preventive clinical practices "), at the hospital or in outpatient healthcare. Research covers all stages of innovation, from development to scale-up.

5. Economics and management of healthcare organisations. The aim of this axis is to conduct research projects that evaluate health policies and interventions using an applied and multidisciplinary approach, involving economists, management researchers, health professionals (doctors and nurses and other social science researchers with expertise in health services. This research relies on a variety of perspectives, depending on the object studied (healthcare utilisation, healthcare pathways, technological or organisational innovations ...), the relevant evaluation outcome (take-up of public programs, efficiency, healthcare access inequalities, staff turnover, rehospitalisation...), the available data and the appropriate methods (econometrics using administrative data, experimental studies, medico-economic modelling of clinical data and registry data, qualitative interviews...).

Our team conducts research that takes into account:

• the characteristics of surveillance of health determinants (including social, environmental and cultural factors),

• the system in which the interventions are implemented, whether they are in or out of the health care environment (public domain: media, opinions, policies, professional practices, etc.),

• the complex nature of population health interventions (individual, ecological, collective, regulatory). Within this framework, our team focuses on 3 research objects that we believe to be at the heart of translational population health research:

1. Health status, health determinants and social inequalities (Research object "TO OBSERVE AND CHARACTERISE")
2. Population health interventions, whether they be policy, outreach, or organisations within and outside the healthcare setting (Research object "TO ACT ON AND SUPPORT PUBLIC HEALTH POLICIES")
3. Methodological research to better apprehend the complexity of the two first objects (Research object "TO RETHINK EPISTEMOLOGICAL BOUNDARIES AND METHODS") The association of these three research objects (observational, interventional and meta-research) is fundamental to the development of translational research and mobilizes the principles of knowledge transfer between disciplines and between researchers and decision-makers to make it work.

2025 Key publications

• Bouteloup V, Villain N, Vidal JS, Gonzalez-Ortiz F, Yuksekel I, Santos C, Schraen-Maschken S, Pellegrin I, Lehmann S, Blennow K, Chene G, Hanon O, Dufouil C, Planche V, Memento, the BSG. Cognitive Phenotyping and Interpretation of Alzheimer Blood Biomarkers. JAMA Neurol. 2025;82(5):506-15. https://doi.org/10.1001/jamaneurol.2025.0142

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• Daly T. Brain health is a human right: Implications for policy and research. Neuroscience. 2025;569:147-54. https://doi.org/10.1016/j.neuroscience.2025.01.063

• Grasset L, Bouteloup V, Cacciamani F, Pellegrin I, Planche V, Chene G, Dufouil C, Memento study group. Associations Between Blood-Based Biomarkers and Cognitive and Functional Trajectories Among Participants of the MEMENTO Cohort. Neurology. 2024;102(9):e209307. https://doi.org/10.1212/wnl.0000000000209307

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• Pelat C, Bernadou A, Fraisse P, Delpierre C, Kherabi Y, Guthmann J-P, Vandentorren S. Area-level socioeconomic variables associated with territorial disparities in tuberculosis notification rates in metropolitan France: a Bayesian ecological analysis. Infect Dis Poverty. 2025;14(1):94. https://doi.org/10.1186/s40249-025-01354-0

• Quattrone F, Lesaine E, Domecq S, Legrand J-P, Miganeh Hadi S, Coste P, Couffinhal T, Saillour-Glenisson F. Socio-geographical factors associated with cardiac rehabilitation participation after percutaneous coronary intervention: A registry-based cohort study from France. Eur J Prev Cardiol. 2025. https://doi.org/10.1093/eurjpc/zwaf087

• Richard E, Ramiz L, Martin Fernandez J, Cambon L, Vandentorren S. Health mediation mechanisms influencing healthcare utilization of underserved populations: a qualitative study in 2 districts in France. BMC Health Serv Res. 2025;25(1):1437. https://doi.org/10.1186/s12913-025-13618-4

2025 RESEARCH HIGHLIGHTS

2025 RESEARCH HIGHLIGHTS

Launch of the Horizon Europe EXPOSIGNALZ project : A new large translational research program on pollutant mixtures in brain ageing and Alzheimer's disease

ELEANOR / Molecular Epidemiology Of Vascular And Brain Disorders

New project - Large scale partnership

EXPOSIGNALZ (2025-2030) is a new Horizon Europe project funded under the Horizon and Health call (coordinator V. Perrier, INSERM and Montpellier Institute of Neurosciences). Using interdisciplinary approaches that combine experimental and epidemiological studies, the project aims to determine the impact of selected environmental pollutants on brain health throughout life and their role in dementia, particularly Alzheimer's disease, which accounts for around 70% of dementia cases. Cécilia Samieri has received €1.4 million in funding under this programme to lead, with her group within the ELEANOR team, the part of the work devoted to epidemiological research on new mixtures of pollutants associated with brain ageing. They will draw on several French/European cohorts, including two cohorts set up at the BPH, the Trois-cités (3C) and B cube studies, to characterise, in several biological matrices on more than 3,500 samples, the biological signatures of pollutants associated with brain ageing and Alzheimer's disease. The mechanisms of action of the identified pollutant signatures will then be deciphered, from neurodevelopment to neurodegeneration, in various preclinical models. This project is part of Inserm's scientific strategy (Impulsion Exposome programme, WP3, international symposium organised in Bordeaux in September 2025), as well as European and international initiatives (EREIN, NEXUS, IHEN). In June 2026, we are co-organising the 4th Europe-USA symposium 'Mapping the Exposome to Prevent Alzheimer's Disease and Related Dementias' in Bordeaux, with the IT de Santé Publique, the Icahn School of Medicine at Mount Sinai and the NIA.

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Venous thrombosis: predicting the risk of recurrence

ELEANOR / Molecular Epidemiology Of Vascular And Brain Disorders

Major publication

Every year in France, there are between 50,000 and 100,000 cases of phlebitis and 40,000 cases of pulmonary embolism. These cardiovascular incidents are characterised by the formation of a blood clot that blocks circulation in a vein in a lower limb or a pulmonary artery. The risk of recurrence within five years is close to 20%. By studying the genetic data of 6,355 patients of European origin with venous thromboembolic disease, including 1,775 recurrence victims, we have identified, with our national (FCRIN-INNOVTE network) and international partners (INVENT network), we identified 28 markers of recurrence risk. Some differ between men and women and depending on the circumstances of the first incident. This opens up the possibility of personalised treatment, thereby reducing the risk of haemorrhage associated with the anticoagulant drugs currently used to prevent recurrence.

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A location-scale joint model for studying the link between the time-dependent subject-specific variability of blood pressure and competing events Major publication

Biostatistics

This work was carried out as part of Léonie Courcoul's PhD thesis, co-supervised by Antoine Barbieri and Hélène Jacqmin-Gadda and funded by the ANR JMECR project (ANR-21-CE36). We propose a new joint "location scale" model that allows us to study the association between the risk of competing clinical events and the mean or slope of an individual's trajectory of a marker, as well as the individual variability around this mean trajectory. Its estimation on data from an international clinical trial has shown that individual variability in blood pressure is a risk factor for cardiovascular and cerebrovascular events and death, independently of the blood pressure value itself. The estimation algorithm for this model and its extensions is implemented in the R package LSJM, which is freely available at https://github.com/LeonieCourcoul/LSJM. Numerous applications of this approach to medical research are being considered, for example, to explore the link between emotional variability and psychiatric events, or blood glucose variability and diabetes prognosis. These studies are made possible in particular by the spread of digital measurement tools that allow frequent measurements of markers

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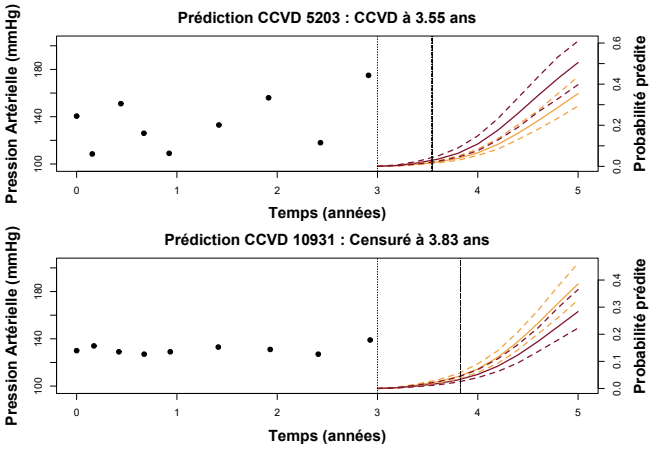

Collaborative ANR project EDYLES: Dynamic Models and Estimands for Longitudinal Epidemiological Studies

New project - Large scale partnership

Biostatistics

EDYLES aims to develop, apply, and promote flexible dynamic models for analyzing complex longitudinal data available in cohorts, thereby answering more precise epidemiological questions on mechanisms, risk factors, and disease progression. The project is motivated by questions in three main pathologies: brain ageing, multiple system atrophy, and chronic kidney disease, and it will leverage data from large French cohorts, 3C, FMSA, and CKDrein, to answer these questions. The consortium will develop two types of approaches, biostatistical models and machine learning techniques using neural networks and random forests, to accurately analyze the complex interrelationships between time-varying processes and clinical events. A major focus will be on translating these numerical approaches into relevant estimands such as mediation contrasts, epidemiological indicators, and measures of explainability. The project results will also include software and educational materials. EDYLES is a collaborative project. It brings together 11 research teams (including 4 from the BPH) with complementary expertise in biostatistics, data science, epidemiology, and neurology. The consortium includes 6 French partners (Inria, Inserm, University of Bordeaux) and 2 foreign partners (Columbia University and Freiburg).

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Recruitment of Denis Rustand as full time Inserm reseracher

Recruitment

Biostatistics

Denis Rustand joined the BPH-BIOSTAT team in July 2025 as a research scientist at Inserm. After completing his PhD in Biostatistics in 2020 at the University of Bordeaux, with a thesis on the development of joint models for assessing therapeutic strategies in advanced cancers, he undertook a four-year postdoctoral fellowship in Prof. Håvard Rue's group at KAUST university in Saudi Arabia. In 2021, he was awarded the Norbert Marx Thesis Award, which is a biennial prize awarded by the French Statistical Society. Denis is developing a research program on statistical models for the joint analysis of complex longitudinal and survival data in health.

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Organisation of the 19th Francophone Conference on Clinical Epidemiology and 32nd Meeting of the Statisticians from Comprehensive Cancer Centres

Event

EPICENE / Epidemiology of cancer and environmental exposures

A new edition of the EPICLIN conference and the Meeting of Statisticians from Comprehensive Cancer Centres took place from May 14 to 16, 2025, at the University of Bordeaux. This marked the 19th and 32nd editions of these jointly organized conferences. They provided a unique opportunity to share methodological advancements in clinical epidemiology and biostatistics, as well as their practical applications.

Supported by Inserm and the F-CRIN infrastructure, through the national network for Clinical Epidemiology and Public Health Research (RECaP), the Association of Francophone Epidemiologists (ADELF), and the network of the statisticians from Comprehensive Cancer Centres (UNICANCER), this annual conference has become an essential event, bringing together over 280 participants in 2025: clinical research method specialists, both junior and senior, from various French-speaking countries. It was a privileged moment to exchange on new methods in clinical epidemiology, biostatistics, health economics, and data science

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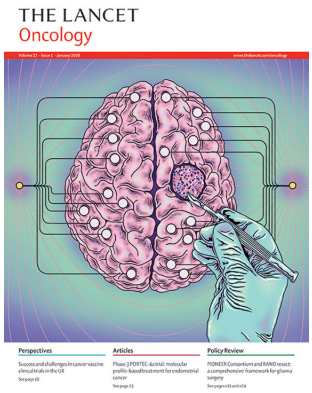
Contribution to IARC Monograph 140 (atrazine, alachlor and vinclozolin), with publication of the summary in Lancet Oncology Major publication

EPICENE / Epidemiology of cancer and environmental exposures



From October to November 2025, a working group of 22 scientists from 12 countries met at the International Agency for Research on Cancer (IARC) in Lyon, France, to finalise its assessment of the carcinogenicity of atrazine, alachlor and vinclozolin.

Atrazine and alachlor were classified as 'probably carcinogenic to humans' (Group 2A), based on a combination of 'limited' evidence of cancer in humans, "sufficient" evidence of cancer in laboratory animals, and 'strong' mechanistic evidence in experimental systems. Vinclozolin has been classified as 'possibly carcinogenic to humans' (Group 2B), based on "sufficient" evidence of cancer in laboratory animals and 'strong' mechanistic evidence in experimental systems. These evaluations will be published in Volume 140 of the IARC Monographs.

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International Agency for Research on Cancer

World Health Organization

Building an international consortium on the Alzheimer Village model and launching a consensus study

Large scale partnership

ACTIVE / Aging, Chronic diseases, Technology, disability, and Environment

The ACTIVE team, in collaboration with the PHAREs team, played a leading role in the establishment and structuring of an international consortium dedicated to the Alzheimer Village model, a project supported by an ANR MRSEI grant. This consortium brings together academic researchers and field-based stakeholders (labs, Alzheimer Villages, local authorities, and health and social care organisations) from several European and non-European countries, with the shared ambition of better understanding, comparing, and structuring this innovative model of care for people living with Alzheimer's disease. The central scientific objective of the network is to conduct an international consensus study involving a broad panel of experts, with the aim of reaching a shared, operational, and reproducible definition of the "Alzheimer Village" concept. This approach seeks to identify the fundamental characteristics of the model (i.e. organisational, architectural, ethical, and social), which are essential for its evaluation and for supporting its transferability across different national contexts. The year 2025 marked a key milestone with the consortium's first in-person meeting, held in November at the University of Bordeaux. This meeting enabled the launch of thematic working groups and the definition of the overall methodology for the consensus study, based on the Delphi method. It highlights the team's ability to sustainably federate a structuring European network around a major public health and social innovation challenge. The continuation of the project is supported by funding from the France Alzheimer Association.

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anr agence nationale de la recherche AU SERVICE DE LA SCIENCE

FRANCE ALZHEIMER & MALADIES APPARENTÉES

International Symposium at the Osaka World Expo: Moving towards more human and homelike elder care environments

Event

ACTIVE / Aging, Chronic diseases, Technology, disability, and Environment

In July, a symposium entitled "Rethinking Elder Care: From Institutional to Homelike Environments" was held at the World Expo in Osaka, Japan, with the support of the Belgian, Canadian, and French embassies. The event brought together international experts, including Stéphane Adam (University of Liège), Carol Hudon (Université Laval), Tomoko Wakui (Université of Tokyo) and Hélène Amieva in the pavilions of the three respective countries, to discuss new approaches to elder care focused on residents' quality of life, autonomy, and dignity, particularly for those living with dementia. The symposium highlighted the need to rethink care environments, which are often overly medicalized and institutional, in favor of models designed to create a familiar, "homelike" atmosphere. These initiatives demonstrate the potential benefits for emotional well-being, autonomy, social participation, and caregiver satisfaction. The event combined both scientific and public dimensions, with an emphasis on the importance of reshaping public perceptions of long-term care facilities, while underscoring the central role of research in supporting and guiding this transformation of practices and living environments. This symposium contributes to the international recognition of innovative models of elder care, reflecting the commitment of the research community to promote care that respects the dignity and autonomy of residents.

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Stéphane Adam, Hélène Amieva, Carol Hudon, Tomoko Wakui, Pavillon du Canada © Gautier Dufau

Custom-made oral protection: Reducing brain and cognitive Impacts from soccer heading

Major publication

ACTIVE / Aging, Chronic diseases, Technology, disability, and Environment

This study, coordinated by Hélène Cassoudesalle and published in EBioMedicine, assessed the effectiveness of a custom-made oral protection device patented by Philippe Poisson, in reducing head impacts during soccer heading and limiting their acute effects on the brain in male amateur players. Eighteen participants performed series of headers using a ball-launching device, with and without the oral protection. The researchers measured head linear acceleration, neck muscle strength, as well as cognitive and electrophysiological parameters. Wearing the custom-made oral protection significantly reduced head linear acceleration and increased the strength of the neck flexor muscles. Players wearing the protection showed fewer electrophysiological changes and smaller declines in cognitive performance after heading compared to the condition without protection. These results suggest that the oral protection could safeguard the brain against the acute effects of repeated impacts by improving cervical stabilization and reducing neuronal stress.

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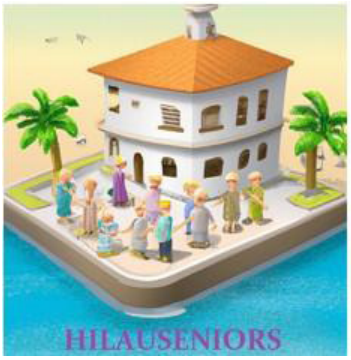
Launch of a national survey on housing, autonomy and quality of life in older adults within the HILAUSENIORS PPR Framework

ACTIVE / Aging, Chronic diseases, Technology, disability, and Environment

Project Launch



The HILAUSENIORS project (Intermediate Housing – Dwellings – Autonomy – Seniors) is one of the 11 projects selected under the PPR Autonomy programme funded by the French National Research Agency (ANR). Its objective is to analyse how housing and the residential environment contribute to the maintenance of autonomy as people age, a key issue for the development of future housing solutions for older adults. The project brings together 11 partner institutions, including the ACTIVE research team, and is based on a strongly interdisciplinary approach, combining health sciences, sociology, urban planning, and other disciplines within the social sciences and humanities. The year 2025 marked a major milestone with the launch of a large-scale longitudinal survey involving 15,000 older adults living either in intermediate housing or in ordinary housing across the entire French territory. Participants will be followed over a three-year period. The survey focuses on housing conditions, neighbourhood characteristics, access to services and infrastructure, social participation, and autonomy in its various dimensions. The data collected will make it possible to identify factors that promote autonomy, well-being, mobility, social inclusion, and quality of life among older adults, while also highlighting unmet needs in diverse urban and rural contexts.

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Epiclin 2025 » and « Workshop on Virus dynamics 2025 » in Bordeaux

SISTM / Statistics in Systems biology and Translational Medicine

Events

The EPICLIN/JSCLCC 2025 conference, organised by Laura Richert in Bordeaux from 14 to 16 May 2025 at the University of Bordeaux, brought together the French clinical epidemiology community (around 300 French-speaking participants). It covered methodological advances in clinical trials, causality, artificial intelligence and biomedical data. Discussions focused on the integration of new quantitative approaches to improve clinical evaluation and health research.

The Workshop on Virus Dynamics 2025, organised by Mélanie Prague at the University of Bordeaux, was held from 14 to 16 October 2025 (approximately 150 international participants). This workshop brought together virologists, immunologists and mathematical modellers to discuss viral dynamics and immune responses. This edition placed particular emphasis on vaccine development, adaptive and innate immunity, modelling of chronic, emerging or viral infections, and host-pathogen interaction.

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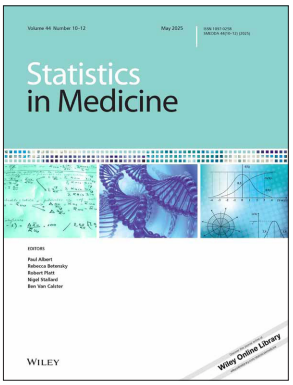
RISE: Identification of high-dimensional surrogate markers applied to vaccinology Major publication

SISTM / Statistics in Systems biology and Translational Medicine



This work proposes a new method – called RISE – for identifying surrogate markers from very high-dimensional biological data in vaccine trials. The method combines a non-parametric rank-based test to select candidate variables, followed by validation of the selected markers on independent data. Simulations show that RISE correctly controls the type I error rate while maintaining good power, even in low-sample, high-dimensional contexts. The application of RISE to an influenza vaccination trial, using gene expression data to identify candidate genes as surrogates for immune responses, highlights a set of genes, particularly in pathways related to interferon and innate antiviral activation, that may predict early vaccine-induced immune responses. These surrogate markers could enable faster and less costly evaluation of vaccine immunogenicity

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Comparative evaluation of methodologies for estimating the effectiveness of non-pharmaceutical interventions in the context of COVID-19

Major publication

SISTM / Statistics in Systems biology and Translational Medicine

The article analyses the reliability of methods used to estimate the effectiveness of non-pharmaceutical interventions implemented during the COVID-19 pandemic, such as lockdowns and mask wearing. The authors carry out a series of simulations that reproduce different transmission dynamics and varying levels of contact heterogeneity. They show that certain approaches can produce biased estimates when models oversimplify the temporal evolution of the epidemic or neglect the diversity of social behaviours. The study highlights that confidence intervals are highly dependent on structural assumptions. It thus emphasises that rigorous methodological analyses, particularly those based on mechanistic models, are essential before using these estimates to inform public health decisions

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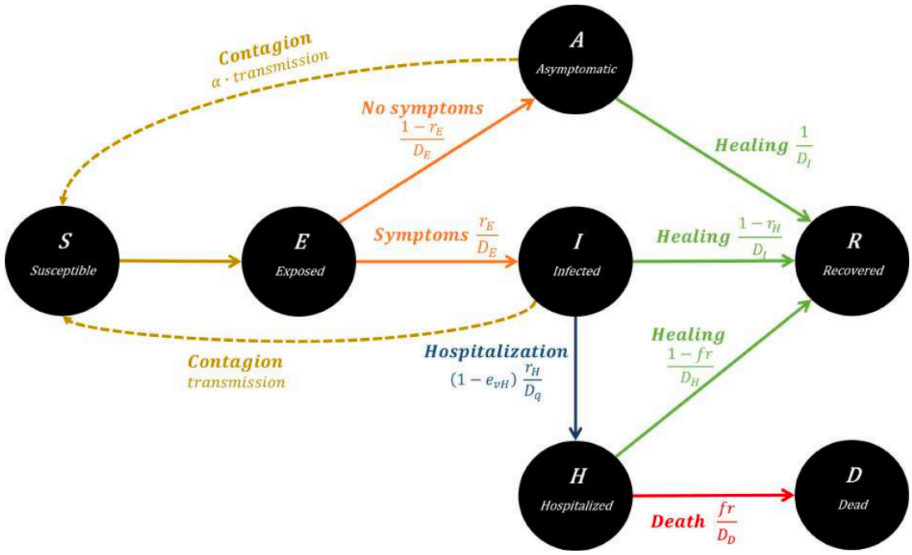

Validation of self-collected capillary blood samples for gene expression profiling

Major publication

SISTM / Statistics in Systems biology and Translational Medicine

This article shows that a simple capillary blood sample taken from the fingertip by the patient themselves can provide reliable information on the expression of immune system genes. This approach offers a practical alternative to venous blood sampling for closely monitoring the immune response during an infection or after a medical procedure. Integrated into the COVERAGE protocol for elderly patients with mild COVID-19, this approach has enabled close monitoring at home and accurate description of very early immune responses. The analyses reveal transient activation of interferon-induced genes from day one, prolonged activation of neutrophil-associated genes, and a gradual increase in erythroid signatures. These results show that the immune trajectories observed in severe forms also exist in mild forms but resolve more quickly.

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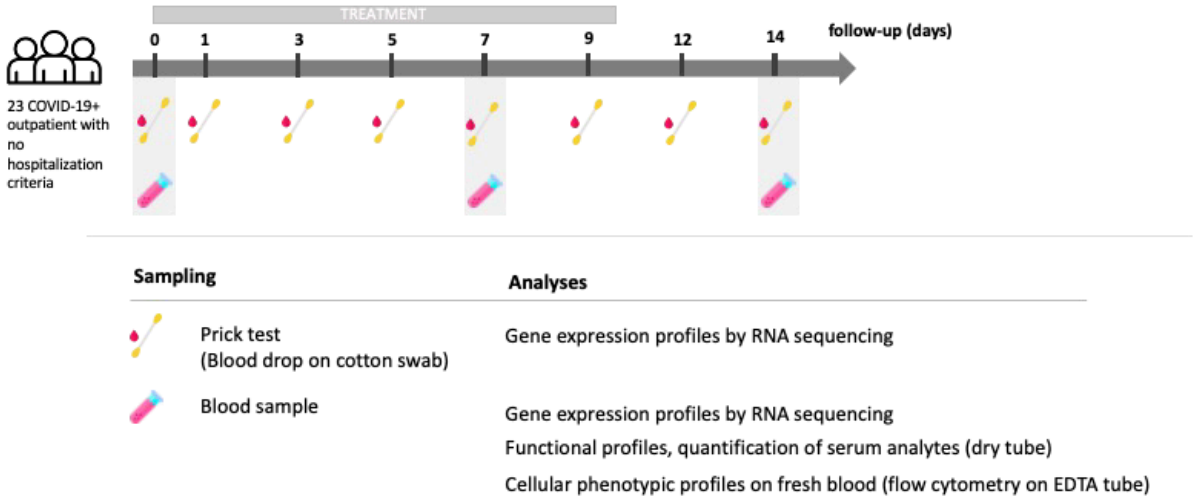

Launch of ANRS PEPR MIE Previx (WP leader within-host modelling); Inserm MESSIDORE CAIR (WP leader in silico clinical trials)

Project Launch

SISTM / Statistics in Systems biology and Translational Medicine

Previx (2025-2028): The Previx project, funded by the ANRS MIE PEPR, aims to strengthen national preparedness for a future unknown virus ('virus X') by developing quantitative methods for early risk assessment, modelling and decision support. It is led by Mircea Sofonea, University of Montpellier. It focuses on six areas of work relating to pathogen characterisation, intra-host dynamics, phylodynamics, epidemiological inference, behavioural responses and hospital preparedness, with a view to producing operational tools for surveillance and control. It will provide methodological advances, interoperable tools and trained specialists to support public health agencies and optimise real-time responses to future health crises. Mélanie Prague (SISTM) is leading the intra-host modelling component.

CAIR (2025-2028): The CAIR project aims to improve the efficiency of randomised clinical trials by integrating real-world data to increase control groups. It is led by Yohann Foucher, University of Poitiers. It develops methods based on G-computation, mechanistic models and reinforcement learning to reduce the sample sizes required. Linda Wittkop (SISTM) is leading the section on the use of mechanistic models.

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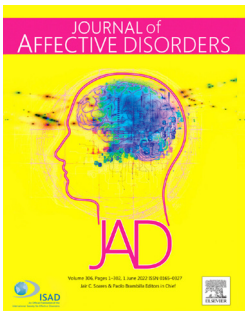
Depressive symptoms and suicidal ideation among university students before and after the COVID-19 pandemic

Publication

HEALTHY / Health, Well-Being and Achievement in the Young



In this comparative study, 4463 students were recruited during the pre-COVID-19 pandemic period (2013-2020) and 1768 students, during the post-COVID-19 pandemic period (2022-2023). Compared to participants from the pre-pandemic sample, participants from the post-pandemic sample had higher standardized rates of depressive symptoms (40.6 % vs 25.6 %) and suicidal ideation (29.3 % vs 21.1 %). Segmented logistic regression showed an about 50 % increased risk of depressive symptoms (aOR, 1.47; 95 % CI, 1.01–2.13) and a 100 % increased risk of suicidal ideation (aOR, 2.00; 95 % CI, 1.33–3.00) in the postpandemic period. Before the pandemic, there was no significant time-trend for depressive symptoms (aOR, 1.002; 95 % CI, 0.999–1.006) and suicidal thoughts (0.999–1.006; aOR, 0.999; 95 % CI, 0.995–1.002). These findings reveal an alarming deterioration of students' mental health in the post-pandemic period compared to the pre-pandemic era.

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Launch of a new recruitment wave for the PRISME study

Project Launch

HEALTHY / Health, Well-Being and Achievement in the Young

PRISME
PAR L'ESPACE SANTÉ ETUDIANTS

The PRISME project, led by the ESE (Student Health Centre) in collaboration with the Healthy team of the BPH, is an initiative aimed at gaining a better understanding of students' health status and developing innovative tools for health prevention and promotion. The PRISME ESE project is based on the annual recruitment of at least 2,000 students per year across three recruitment waves until the end of 2027, in order to collect data on their mental health and involve them in the design and testing of preventive interventions for mental health disorders. These data will, on the one hand, allow monitoring of mental health issues in comparison with previous studies, particularly i-Share, but will mainly serve to build a cohort of participants who will be involved in several projects focused on the design and testing of preventive intervention studies.

Study objectives:

- Describe the mental health status of the student population
- Analyze the determinants of students' mental health
- Develop tools for future prevention and health promotion interventions

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Attention deficit hyperactivity disorder symptoms and risky sexual behaviours in university students: the i-Share study

HEALTHY / Health, Well-Being and Achievement in the Young

Publication

BMJ Journals

In this study conducted among 13 085 French students enrolled in the i-Share study, a high level of ADHD symptoms was observed in 5.3% of students. In multivariable models, ADHD symptoms were associated with a wide range of RSB, including early first sexual intercourse (adjusted odds ratio (aOR) 1.26; 95% CI 1.06 to 1.51), inconsistent condom use in the last 12 months (aOR 1.26; 95% CI 1.05 to 1.51), diagnosis of a sexually transmitted infection in the last 12 months (aOR 1.49; 95% CI 1.08 to 2.07) and having had a higher number of sexual partners in the last 12 months (adjusted incidence rate ratio 1.20; 95% CI 1.14 to 1.27). Among female students, ADHD symptoms were associated with lower current use of any form of contraception (aOR 0.59; 95% CI 0.48 to 0.71), and higher odds of having ever used emergency contraception (aOR 1.22; 95% CI 1.02 to 1.47), and having ever had an abortion (aOR 1.77; 95% CI 1.21 to 2.58). University students with a high level of ADHD symptoms are at increased risk of engageing in a wide range of RSB. Targeted preventive strategies may be particularly beneficial for this population.

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Strengthening the research partnership with the pediatric infectious disease team at the University of Zambia/School of Medicine

GHiGS / Global Health in the Global South

Large scale partnership

A memorandum of understanding (MOU) was ratified on 12 September 2025 between the University of Bordeaux (UBx), and the University of Zambia (UNZA). This MOU builds on nearly 10 years of collaborative research projects in the field of childhood tuberculosis between the GHiGS team and the Pediatric Infectious Disease research team of UNZA School of Medicine. It aims to further strengthen the academic and research collaboration between the two academic institutions.

UNZA representatives attended the IPORA (Interdisciplinary Policy-Oriented Research on Africa programme; www.ipora.africa) conference on Strengthening Africa-Europe academic partnership (SAEAP) for improving intersectoral governance organised in Bordeaux early 2025, which provided an opportunity to formalize several joint initiatives. UNZA thereafter received IPORA support for a PhD seed project and a postdoctoral contract, embedded within the IPORA research axis on Global Health inequities and Poverty Related Diseases. In December 2025, was launched the SPADE-KZ project (2025-2027), funded by IRD as a "Jeune Equipe Associée à l'IRD" initiative (JEAI; young team associated to IRD). This interdisciplinary project bringing together the UNZA Schools of Medicine, of Public Health and of Humanities and Social Sciences, and GHiGS, LAM/Science Po Bordeaux, and Bordeaux School of Economics, and aims to build capacity to conduct research on poverty-related diseases, including TB, in children in Zambia.

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Members of the JEAI team meeting at the SAEAP conference, April 2025
Peter Hangoma, UNZA/School of Public Health; Marc d'Elbee, Joanna Orne-Gliemann, Olivier Marcy, Clementine Roucher, GHiGS team; Chishala Chabala, UNZA/School of Medicine; Delphine Boutin, Bordeaux School of Economics

Strengthening ethical and regulatory governance in international health research: MEREVA 2025 Seminar on Data Protection & Ethics

Event

GHiGS / Global Health in the Global South

From 3 to 8 April 2025, the Franco-Ivorian MEREVA team — jointly coordinated by the Global Health in the Global South (GHiGS) team at Bordeaux Population Health and PACCI (Côte d'Ivoire), with support from ANRS MIE — held its annual seminar in Bordeaux under the theme: "Data & Ethics in Health Research: Navigating between Innovation and Responsibility."
Gathering researchers, regulatory authorities, and institutional partners from France and West Africa, the seminar addressed key challenges in data protection, participant information, and regulatory harmonization in international clinical research, particularly in low- and middle-income countries. Discussions emphasized the growing complexity of aligning the European GDPR with evolving legal frameworks in partner countries, highlighting the need for adaptable, context-sensitive methodologies.
A high-level roundtable with representatives from the French data protection authority (CNIL) and regulatory agencies from Côte d'Ivoire and Senegal promoted dialogue on streamlining authorization procedures while safeguarding participants' rights. Special focus was placed on informed consent in contexts of high illiteracy, encourageing innovative communication tools such as visual materials, multilingual videos, and stronger engagement of patient associations.
An internal strategic session also enabled MEREVA to refine its operational model and define priorities for the years ahead, reaffirming its role as a key platform for ethical and equitable global health research.
Contact: renaud.becquet@u-bordeaux.fr

The MEREVA Team, April 2025

Morphological changes of the retina and AMD

Major publication - Nomination

LEHA / Lifelong exposures, health and aging

CFSR
CLUB FRANCOPHONE DES SPÉCIALISTES DE LA RÉTINE

Optical coherence tomography (OCT) is a cutting-edge imageing technology that has revolutionized the diagnosis and monitoring of retinal diseases, including AMD. Recently, the automated segmentation of retinal layers in OCT examinations has made it possible to study in detail the morphological changes in the different macular layers, particularly the photoreceptor layer and the retinal pigment epithelium and Bruch's membrane (RPE-BM) layer, which lies beneath the photoreceptor layer and performs many functions (light absorption, external blood-retinal barrier, phagocytosis of photoreceptor debris, regulation of the visual cycle). In this article, we evidenced a strong association between RPE-BM thickness and the incidence of intermediate and advanced AMD in the Alienor cohort (risk of advanced AMD multiplied by 3.43 for a BM-RPE thickness of 15 microns and by 11.8 for a thickness of 20 microns, compared to a thickness of 10 microns). RPE-BM thickness also increased more rapidly during follow-up in individuals with a high genetic susceptibility to AMD. This could lead to a better understanding of the natural history of AMD and could potentially be incorporated into the ophthalmological follow-up of patients.
This article received the prize of the best article for 2024-2025 from the French-speaking club of retina specialists.

Alienor study, final curtain: 1000 looks on eye health

Event

LEHA / Lifelong exposures, health and aging

On October 9, 2025, on World Sight Day, the closing ceremony of ALIENOR, an epidemiological cohort study dedicated to ocular ageing, was held after 18 years of follow-up, data collection and analysis. This study involved more than 1,000 residents of Bordeaux Métropole and led to major advances in the understanding of age-related eye diseases (age-related macular degeneration (AMD), glaucoma, and cataracts), particularly regarding the importance of diet in preserving good vision, the potential role of air pollution in accelerating ocular ageing, and the identification of retinal biomarkers associated with brain ageing. More than 60 scientific articles and 100 conference presentations, as well as 8 Phd theses and 13 medical theses, have resulted from this study. Although the ALIENOR study ended in the field in 2024, the data collected during the 18 years of follow-up will continue to be used and analyzed for several years to come.

Contact: cecile.delcourt@u-bordeaux.fr

F-SWIFT project

New project

LEHA / Lifelong exposures, health and aging

The health-related quality of life (HRQoL) of dialysis patients is low, with perceived health estimated at only 40–60% of full health, while symptoms in chronic kidney disease (CKD) remain frequently underrecognised and undertreated. This project aims to evaluate the impact of systematic electronic symptom collection, with structured feedback to healthcare teams, on HRQoL improvement at 12 months. It will also analyze F-SWIFT implementation mechanisms, including contexts and impact pathways, and assess intervention efficiency through a 12-month cost-utility analysis. For the first time in France, F-SWIFT will deploy sustainable electronic patient-reported outcome (PRO) collection using tablets in dialysis patients, supporting integration into registries and routine care. By aligning PRO measures with standard clinical indicators, the intervention is expected to strengthen patient-clinician communication and drive research and quality improvement. The project is coordinated by Mathilde Prezelin-Reydit for Nouvelle-Aquitaine, in collaboration with Nancy University Hospital and the French Biomedicine Agency, and is funded by the 2022 MESSIDORE call for projects.

Contact: mathilde.reydit@maisondurein-aurad.fr

Julien BEZIN appointed member of the CESREES

Nomination

AHeaD / Assessing Health in a Digitalizing Real-World Setting

Julien BEZIN, Associate Professor of Universities and Hospital Practitioner at the University of Bordeaux and member of the AHeaD team, was appointed as a member of the Ethical and Scientific Committee for Research, Studies and Evaluations in the Field of Health (CESREES) by the Minister for Research in July 2025.

This appointment is a new recognition of his expertise and commitment to the reuse of health data for research purposes, an expertise he already shares as a member of the Scientific Board of the Health Data Hub.

CESREES is responsible for assessing the public interest, scientific interest, and ethical relevance of research projects involving the reuse of health data. Within this committee, his role is to contribute his methodological expertise in pharmacoepidemiology to the evaluation of research projects reusing health data, particularly national databases such as the French National Health Data System (SNDS).

Contact: julien.bezin@u-bordeaux.fr

CESREES
Comité Éthique et Scientifique pour les Recherches, les Études et les Évaluations en Santé

SNDS
Système national des données de santé

Securing main funding for the TARPON project

New project

AHeaD / Assessing Health in a Digitalizing Real-World Setting

Emmanuel Lagarde secured €2.45 million in funding in 2025 from the Health Modernization and Investment Fund (FMIS) for the TARPON project. This funding will support the deployment of a national trauma observatory based on the large-scale reuse of healthcare data, particularly emergency department visits, with the aim of improving epidemiological surveillance of injuries and the evaluation of road safety public policies.

The TARPON project relies on an innovative methodological framework combining clinical expertise, epidemiology, and automated data analytics tools. It seeks to establish a sustainable national reference infrastructure for analyzing post-trauma care pathways and their medium- and long-term consequences

Contact: emmanuel.lagarde@u-bordeaux.fr

Study analyzing national digital health strategies in Africa

Major publication

AHeaD / Assessing Health in a Digitalizing Real-World Setting

This article published in NPJ Digital Medicine analyzes the quality and consistency of national digital health strategies in Africa across 54 countries in order to assess four dimensions (context, content, priority actions, and emerging technologies). The results reveal some significant shortcomings: only one strategy presents comprehensive socioeconomic and health data, more than half do not clearly describe the challenges facing health systems, and there are recurring gaps in human resources, the legal framework, financing, and interoperability. While universal health coverage and improving the quality of care are often cited as objectives, the planned interventions mainly target providers rather than patients, and their link to identified needs remains limited. Finally, no strategy explicitly integrates emerging technologies or local innovation

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Appointment of Clémence Thébaut as tenured Lecturer at University of Bordeaux – September 2025

Recruitment

PHARES / Population Health Translational Research

Clémence Thébaut was appointed as tenured lecturer (MCF) in health economy in the PHARes team of Bordeaux Population health (research) and ISPED (teaching). Clémence did get her PhD from Paris-Dauphine University in 2012. Her research focuses on methods for the economic evaluation of health strategies. It is structured around two complementary perspectives. First, she examines the normative principles underlying the tools commonly used in public decision-making. Second, she develops innovative methods that incorporate redistributive justice principles in order to enrich the evaluation of health policies
Clémence teaches Health Economics, Economic Evaluation Methods in Health, Ethics, Economics of Ageing, and Economics of Social Policies. Her teaching activities are delivered within the various programs of the ISPED, including Master's programs (Year 1 and Year 2) and postgraduate diploma courses.
She is also actively involved in national advisory bodies. Since 2025, she has been a member of the Comité consultatif national d'éthique (CCNE). Since 2024, she has served on the Economic and Public Health Evaluation Committee of the Haute Autorité de Santé. She has also been Vice-Chair of the PRME jury at the Ministère de la Santé et des Affaires sociales since 2021.

Cognitive Phenotyping and Interpretation of Alzheimer Blood Biomarkers – Major publication

PHARES / Population Health Translational Research

JAMA Neurology

As part of his PhD, under the supervision of Carole Dufouil and Vincent Planche, Vincent Bouteloup (Phares team) conducted a study to assess the positive predictive value of the blood biomarker pTau-217 for detecting Alzheimer's disease brain lesions. The findings were published on April 4, 2025, in JAMA Neurology and presented the same day at the AD/PD Conference in Vienna. The researchers used data from the large French MEMENTO cohort (2,323 patients with memory complaints or mild cognitive impairment, followed for five years across 26 memory centres). They also replicated their results in the BALTAZAR cohort. While blood-based biomarkers offer a less invasive alternative to lumbar puncture, their interpretation in clinical practice remains challenging.
The study shows that pTau-217's predictive value strongly depends on patients' initial clinical presentation. False positives occurred in about 50% of cognitively normal individuals and 30% of those with nonspecific symptoms, but predictive value was high in patients with memory, language, or visuospatial impairments suggestive of Alzheimer's disease. The authors conclude that blood biomarkers should not be used indiscriminately; combined with careful clinical and neuropsychological assessment, however, they could provide a reliable, accessible alternative to lumbar puncture.

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Dynamics of social inequalities in severe COVID-19 outcomes in metropolitan France from 2020 to 2022 – Major publication

PHARES / Population Health Translational Research

The COVID-19 pandemic has exacerbated social inequalities in health, yet how these inequalities changed across successive waves and stages of disease severity remains poorly understood. Sabira Smaïli, as part of her PhD under the supervision of Stéphanie Vandentorren, has analyzed the link between neighborhood social deprivation and the risk of hospitalization, ICU admission, and in-hospital death using national hospitalization data from metropolitan France across five pandemic waves (July 2020–August 2022). The findings reveal that individuals living in disavantaged neighborhood faced significantly higher risks of severe outcomes, even after widespread vaccine rollout. These inequalities intensified among infected individuals over waves, while partially declining in the general population. The findings suggest that structural factors—such as comorbidity burden, occupational exposure, and healthcare access—play a major role and highlight the need to integrate equity considerations into pandemic preparedness and routine health policies.

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Santé publique France

Inserm

université de BORDEAUX


Cérémonie
des DOCTEURS
Graduation Ceremony
universite

PHD THESES DEFENDED

PHD THESES DEFENDED ON 2025

AKPATA ROBERT
Factors and Markers of Tuberculosis Severity in HIV-infected Adults
Public Health Epidemiology option supervised by MARCY Olivier and ZANNOU Marcel

AKTAS MELEK
Participation of the population to improve the conditions for effectiveness of digital interventions in prevention and health promotion in primary health care.
Public Health Option: Health Intervention and Economics supervided by CAMBON Linda

AMARI BOUCHRA
Exposure to ultraviolet radiation and estimation of the impact on skin and eye health
Public Health Epidemiology Option supervised by COUGNARD GREGOIRE Audrey and DELCOURT Cécile

ARIKAWA SHINO
Effectiveness of perennial malaria chemoprevention: Insights
Public Health Epidemiology Option supervised by BRIAND Valérie and EKOUEVI Didier

AWUKLU KOKOU
Reasoning with imperfect and temporal clinical data: logic-based approaches for phenotyping and medical event inference
Public Health Option: Information Technology and Health supervised by MOUGIN Fleur and BIENVENU Meghyn

BOGNINI DOFINISSERY
Antenatal care coverage within the framework of the 2016 WHO recommendations: recent patterns, individual and contextual determinants, and impact of a community-based intervention in Burkina Faso and Mali
Public Health Epidemiology option supervised by BRIAND Valérie and TINTO Halidou

BORDES CONSTANCE
Multi-omics as a tool to explore the lifetime impact of cerebral small vessel disease on dementia
Public Health Epidemiology option supervised by DEBETTE Stéphanie

BOUDIN MARINA
Computational approach for drug repositioning: towards an holistic perspective with knowledge graphs(OREGANO)
Public Health Option: Information Technology and Health supervised by DIALLO Gayo and MOUGIN Fleur

BOURGUIGNON SANDRINE
Evolution of the Framework for Health Economic Evaluation
Public Health Option: Health Intervention and Economics supervised by WITTWER Jérôme

BOUTELOUP VINCENT
Validity and relevance of blood biomarkers for Alzheimer's disease in a national clinical cohort
Public Health Epidemiology option supervised by DUFOUIL Carole and PLANCHE Vincent

D'AOUST TIMOTHY
Developing precision prevention strategies utilizing genomic risk prediction for dementia and cerebrovascular disease
Public Health Epidemiology option supervised by DEBETTE Stéphanie and y SIMON Gravel

DA MWINMALO
Therapeutic research on COVID-19 in Sub-Saharan Africa: lessons learned from the implementation of an adaptive clinical trial; analysis of short-, medium-, and long-term morbidity in an at-risk population
Public Health Epidemiology option supervised by DUVIGNAUD Alexandre and PODA Armel

DARI LOUBNA
Real-life benefit of antithrombotic drugs for the treatment of lower limb peripheral artery disease (PAD)
Pharmacology - Option in pharmacoepidemiology, pharmacovigilance supervised by PARIENTE Antoine and CONSTANS Joël

FERTE THOMAS
Short-Term COVID-19 Forecasting Using Bordeaux University Hospital Data Warehouse and Reservoir Computing
Public Health Biostatitics option supervised by THIEBAUT Rodolphe and JOUHET Vianney

GABAUT AURIANE
Regularization methods for high-dimensional data integration into mechanistic models : application for vaccine development.
Public Health Biostatitics option supervised by PRAGUE Mélanie and PROUST-LIMA Cécile

JESTIN-GUYON NOLWENN
Epidemiology of chronic respiratory diseases and environmental factors
Public Health Epidemiology option supervised by RAHERISON Chantal

LE GALL LISA
Anemia, iron deficiency and major adverse cardiovascular events in chronic kidney disease
Public Health Epidemiology option supervised by LEFFONDRE Karen and PREZELIN-REYDIT Mathilde

MOUSSAOUI SOHELA
Health status and access to preventive care of undocumented

migrants in France: role of migration, living conditions in France and comparison with legal immigrants
Public Health Option: Health Intervention and Economics supervised by WITTWER Jérôme

NOUAMAN N'ZÉBO MARCELLIN
Evaluation of sexually transmitted infections in an advanced combined sexual health care strategy including pre-exposure prophylaxis among female sex workers in Côte d'Ivoire
Public Health Epidemiology option supervised by DABIS François

OLIVA ANDREA
Evaluation of trastuzumab safety profile: analysis of ADRs occurred in the EU countries during years 2018-2024 after the availability of biosimilars
Pharmacology - Option in in pharmacoepidemiology, pharmacovigilance supervised by SALVO Francesco and CAPUANO Annalisa

PAJOT AURIANE
An interdisciplinary approach to respiratory health in African children exposed to urban indoor and outdoor air pollution
Public Health Epidemiology option supervised by MARCY Olivier and YOBOUE Véronique

PLAISY MARIE
Contribution of metabolic disorders in liver disease among HIV-infected adults in low and middle-income countries.
Public Health Epidemiology option supervised by JAQUET Antoine and Perazzo Pedroso Barbosa Hugo

POUPARD MATISSE
Curious and therefore not overloaded: Towards an integrated understanding of curiosity and cognitive load in XR learning environments
Cognitive Science and Ergonomics - Cognitive Science option supervised by SAUZEON Hélène and TRICOT André

PREKA EVGENIA
Understanding the fate and related risk factors in European children on kidney replacement therapy through epidemiological studies and registry data
Public Health Epidemiology option supervised by HARAMBAT Jérôme and BONTHUIS Marjolein

RAKEZ MANEL
Joint models and deep learning neural networks for the longitudinal analysis of mammography images in screen-detected breast cancer risk prediction
Public Health Biostatitics option supervised by RONDEAU Virginie and AMADEO Brice

SADIO TIOKANG ARNOLD
Differential profiles of morbidity among adolescents in togo: a contribution to the study of the triple burden through different contexts of vulnerability
Public Health Epidemiology option supervised by KOUMAVI EKOUEVI Didier

SERIAU MARILÈNE
Identify and understand the different types of learning and their developmental potential in an action-based training program aimed at the professional integration of young people who are far from employment
Cognitive Science and Ergonomics - Ergonomics option supervised by GARRIGOU Alain

TAHAN KEREM
The pet robot as an institutional remediation tool
Cognitive Science and Ergonomics - Ergonomics option supervised by N'KAOUA Bernard

TANDZI TONLEU FLORENTINE
The impact of psycho-affective factors on pain at emergency department discharge, on its chronicisation, and on the misuse of opioids
Public Health Epidemiology option supervised by GALINSKI Michel and LAFONT Sylviane

TARTAGLIA MARIE
Maternal occupational multi-exposures during pregnancy and foetal growth
Public Health Epidemiology option supervised by DELVA Fleur and GARLANTEZEC Ronan

WALLERICH LOUISE
Urban environments and nature: understanding the conditions that support children's play and well-being
Public Health Option: Health Intervention and Economics supervised by CAMBON Linda

EVENTS 2025

Exposome : first international conference 'social inequalities and Exposome, September 2025, Bordeaux, France

JOINT PUBLIC HEALTH SEMINARS 2025

Grand rounds jointly organized with Bordeaux School of Public Health ISPED and Public Health Department of university of Bordeaux

JANUARY

• Randomised Clinical Trials: adapt or perish?
Prof. Laurent BILLOT, MSc MRes AStat ; Director, Biostatistics and Data Science Division ; Conjoint Professor, School of Medical Sciences, UNSW Medicine ; Adjunct Professor, Digital Public Health Graduate Program, University of Bordeaux

The George Institute for Global Health

• Commercial determinants, or how the lure of profit affects cancer prevention, screening and treatment.
Marilys Corbex , Senior Technical Officer at WHO Regional Office for Europe, Copenhagen, Denmark

FEBRUARY

• M2 PROMS 2025 Webinar "What role does health promotion play in medical deserts?"
On the agenda :

- Testimony from **Mr ROUCHON**, Mayor of the town of AJAIN (Creuse)
- Speech by **Dr Martial JARDEL**, President and co-founder of the Médecins Solidaires association
- Presentation by the **Collectif Santé LNSC**, with the participation of Ms Anne Marie BRUNERIE and other members of the collective
- Presentation by **Ms Elodie de la GRANGE**, Deputy Director of Local Development, Health and Economy, South

• Urban greening and vector risks
Florence FOURNET, PhD, MIVEGEC (UM, CNRS 5290, IRD 224), Maladies Infectieuses et Vecteurs : Ecologie, Génétique, Evolution et Contrôle - Institut de Recherche pour le Développement (IRD), Montpellier

MiVEGEC

MARCH

• The limitations of large-scale volunteer databases to address inequalities and global challenges in health and ageing
Carol BRAYNE, Professor of Public Health Medicine
Co-director of Cambridge Public Health
University of Cambridge, United Kingdom

Cambridge Public Health

• Dynamiques urbaines et santé des populations: Concepts et méthodes
Yan KESTENS, PhD, Associate professor, School of Public Health of the University of Montréal (ESPUM) Sphere Lab, Research Laboratory, Urban Interventions and Population Health

APRIL

• Workshop « Nursing homes: contrasting perspectives on available, constructed and useful data »
Co-organisé par **Matthieu SIBÉ** et **Jérôme WITTWER**

• HIV cohorts and the development of methods to make causal inferences from observational data
Pr Jonathan STERNE, Professor of Medical Statistics and Epidemiology Bristol Medical School (PHS) Bristol, UK

• The role of target trials in studies making causal inferences about effects of health care interventions
Pr Jonathan STERNE, Professor of Medical Statistics and Epidemiology Bristol Medical School (PHS) Bristol, UK

• ROBINS-I tool for assessing risk of bias in results of non-randomized studies of interventions
Pr Jonathan STERNE, Professor of Medical Statistics and Epidemiology Bristol Medical School (PHS) Bristol, UK

University of BRISTOL

• Demystifying Long COVID: The NIH RECOVER Initiative.
Dr. Igho Ofotokun, MD, MSc Professor of Medicine Emory University School of Medicine
Co-Director of the Emory Centre for AIDS Research Clinical Core
Atlanta, Georgia, USA

EMORY UNIVERSITY SCHOOL OF MEDICINE

• Development of a training approach for the use of motorised wheelchairs for people with cognitive impairments
Alice PELLICHERO, Associate Lecturer (Occupational Therapist, PhD), University of Bordeaux University Institute of Rehabilitation Sciences ACTIVE Team - BPH, INSERM U1219

BORDEAUX POPULATION HEALTH Research Center - U1219

MAY

• Public health seminar: The Interprofessional Reach of Narrative practices - Beyond Medicine into Patient-Centreed Care - Theme: "Narrative medicine in crisis situations"
Rita CHARON, M.D., Ph.D. Professor of Medicine at Columbia University Columbia University New York, USA

COLUMBIA NARRATIVE MEDICINE

SÉMINAIRES DE SANTÉ PUBLIQUE

JUNE

• Dementia risk reduction: From temporal trends to population-based prevention strategies)

Leslie GRASSET, Chargée de recherche, PhD
Bordeaux Population Health (BPH), Inserm U1219
Equipe PHAReS, Recherche translationnelle sur la santé des populations / Population Health trAnslational Research

• Réponse aux pandémies : quelle gouvernance internationale en 2024 ?

Anne-Claire AMPROU, Ambassador for Global Health, Ministry of Europe and Foreign Affairs as part of ISPED's international summer school

• Webinar ECOLE ETE

Opportunities offered by the reuse of health data

• Moving Data to Public Health Action – Canada's Vision 2030 and the Example of Serosurveillance

David L. BUCKERIDGE, MD PhD FRCPC, Professor of Epidemiology and Biostatistics, School of Population and Global Health McGill University, Montréal (Québec), Canada

McGill

OCTOBER

• Youth Mental Health Literacy in Action: Empowering Youth, Parents, and Teachers to Build Mentally Healthy Communities

Dr Christine GROVÉ, PhD, MAPS, FCEDP
Educational & Developmental Psychologist, Fulbright Fellow
Adjunct Associate Professor, Monash University, Faculty of Medicine, Nursing and Health Sciences, Eastern Health Clinical School, Clayton Campus, Australia
Associate Professor, School of Health and Biomedical Sciences, Department of Health Sciences, Psychology RMIT University, Melbourne, Australia

RMIT UNIVERSITY

• Social and Structural Drivers of Cognitive Ageing and Dementia

Jennifer J. Manly, PhD
Professor of Neuropsychology (the Gertrude H. Sergievsky Centre and the Taub Institute for Research on Alzheimer's Disease and the Ageing Brain) Neurological Institute of New York, Columbia University, New York, USA

COLUMBIA
COLUMBIA UNIVERSITY
DEPARTMENT OF NEUROLOGY

• Promoting mental health in schools: scales and interventions on children's mental health literacy

Ilaria MONTAGNI, / INSERM researcher in Public Health
Bordeaux Population Health Research Centre, University of Bordeaux - Inserm U1219

NOVEMBER

• Infant feeding in HIV: Learning from 25 years and thinking what the future brings

Nigel Rollin, Professor, School of Nursing and Midwifery - Queen's University, Belfast, Northern Ireland

QUEEN'S UNIVERSITY BELFAST

• Everything you need to know about the health equivalent income approach

Clémence Thébaut, Maitre de conférences, HDR, Economie de la santé
Bordeaux Population Health Inserm U1219
Chercheure associée, LEDA-Legos Paris Dauphine, PSL

DECEMBER

• Conflicts of interest and Cognitive dissonance: the challenge of commercial interests for health professionals and policy makers

Nigel Rollin, Professor, School of Nursing and Midwifery - Queen's University, Belfast, Northern Ireland

QUEEN'S UNIVERSITY BELFAST

• The Pasteur Institute and the Pasteur Network facing global health challenges

Vincent RICHARD, MD, HDR
Institut Pasteur

INSTITUT Pasteur

BIOSTATISTICS SEMINARS 2025

These events are intended for researchers in statistics interested in recent developments and their methodological aspects as well as for practitioners using statistical methods in the health field.

JANUARY

- **Space models for neuropsychological outcomes**
  Yorghos Tripodis (Boston University)

MARCH

- **Deep learning approaches for handling longitudinal image data: Enhancing breast cancer prediction**
  Manel Rakez (BPH)

- **Record linkage and analysis of linked data with application in French national health data system**
  Valérie Garès (INSA Rennes)

APRIL

- **Random forests using longitudinal predictors**
  Justine Remiat (BPH)

- **Causal Inference and Target Trials**
  Jonathan Sterne (University of Bristol)

- **Comparing flexible modelling approaches: the varying-thresholds model versus quantile regression**
  Leonardo Grilli (University of Florence)

- **Identification of high-dimensional surrogate markers in vaccinology**
  Arthur Hughes (BPH SISTM)

MAY

- **Regularized multi-state model for covariate selection with interval-censored survival data**
  Ariane Bercu (BPH)

JUNE

- **Evaluating high-dimensional surrogate markers of the yellow fever vaccine response**
  Théodora Georgakopoulou (BPH SISTM)

SEPTEMBER

- **A Unified Framework for Bayesian Survival, Longitudinal, and Joint Modeling with INLA**
  Denis Rustand (BPH BIOSTAT)

NOVEMBER

- **Unleashing the Potential of Spatial Transcriptomics: Statistical Innovations for Translational Research**
  Raphael Gottardo (Hospital and University of Lausanne)

- **Modeling Ageing Trajectories Through Multistate and Latent Models**
  Caterina Gregorio (Karolinska Institute)

- **A comparative overview of win ratio and joint frailty models for recurrent event endpoints with applications in oncology and cardiology**
  Adrien Orué (BPH BIOSTAT)

DECEMBER

- **Interpretation measures in Random Survival Forests (RSF) with longitudinal predictors**
  Lise Gamboa (BPH BIOSTAT)

- **Multivariate quantiles, optimal transport and applications**
  Gauthier Thurin (ENS Paris)

YOUNG RESEARCHERS' SEMINARS

Association of Young researchers BBPH Blooming members of Bordeaux Population Healthoffers a range of activities aimed at strengthening cohesion and encourageing scientific exchanges. Every week, the "Young Researchers' Wednesdays" (MJC) seminars allow young researchers to present their work and discuss topics of common interest in a supportive environment.

JANUARY

- **Mental health and suicide risk among transgender and non-binary students in higher education**
  Tiffany BOURGEOIS (BPH HEALTHY Team)
- **Early biological and psychosocial factors causing mental health problems in children**
  Charline GALESNE (BPH HEALTHY Team)
- **Nutrition, physical activity and risk of age-related macular degeneration (AMD)**
  Alicia BARQUERO (BPH LEHA team)

FEBRUARY

- **Gender differences and survival in COPD patients in France: the Palomb cohort**
  Nolwenn JESTIN-GUYON (BPH EPICENE team)
- **HILAUSENIOR Project: Intermediate Housing, Accommodation, Independence, Seniors**
  Jeanne BARDINET (BPH ACTIVE team)

MARCH

- **HSV-1/CMV and MRI markers of Alzheimer's disease**
  Marie-Anne PIETROWSKI (BPH LEHA team)
- **Potential of polygenic risk scores to inform direct anticoagulant use in ICH survivors with atrial fibrillation**
  Timothy D'AOUST (BPH ELEANOR team)
- **Trajectory of neuroinflammation in the preclinical stages of dementia**
  Audrey PIMENTA DE MIRANDA (BPH LEHA/ ELEANOR teams)
- **Correction of time to diagnosis in cancer screening studies**
  Marius Robert (BIOSTAT team)

APRIL

- **Longitudinal evolution of macular layers and age-related macular degeneration**
  Petra LARSEN(BPH LEHA team)
- **The One Health concept in action on the West Nile virus: Development of operational research activities in collaboration with public health stakeholders in Nouvelle-Aquitaine**
  Clément BIGEARD (BPH GHiGS team)
- **Digital Health Technologies to Optimise the Use of Treatment Decision Algorithms (TDAs) for Childhood Tuberculosis at lower levels of healthcare settings**
  Cléia ETAO BEKONO (BPH GHiGS team)

MAY

- **Statistical approaches in the event of a change in the determination technique for the longitudinal study of biomarkers: experience of the MEMENTO cohort**
  Vincent BOUTELOUP (BPH PHARes /AHEAD teams)
- **Development of an algorithm to estimate utility based on data from the National Health Data System**
  Alexandre CATHERINEAU (BPH PHARes /AHEAD teams)
- **Long-term PM and NO2 air pollution exposure patterns and their association with breast cancer risk**
  Blandine Le Provost (BPH BIOSTAT team)

JUNE

- **Upcycling RNA-sequencing leftovers in the context of microbial translocation: benchmarking methods to detect the metatranscriptomics signature**
  Antonin COLAJANNI (BPH SISTM team)
- **Modelling care pathways for patients with type 2 diabetes**
  Romane LE GOFF (BPH AHEAD team)
- **Identification of a Molecular Signature of the Risk of Venous Thromboembolism in Women using Combined Oral Contraceptives**
  Reese LI (M2 ISPED)
- **Attention deficit disorder with or without hyperactivity and risky sexual behaviour among students: the i-Share cohort**
  Chloé BECKER (M2 ISPED)
- **Air pollution and job insecurity: integrated study of exposure, conditions and health effects among bicycle couriers**
  Morton KHUNGA (GHIGS team - M2 ISPED)

• **Accounting for multi-funder environment for priority setting in resource limited countries: The case of childhood TB treatment decision algorithms implementation in Zambia and in Mozambique**
Maoulida MONDOHA (GHIGS team - M2 ISPED)

JULY

• **Variability in practices and efficiency of care pathways for patients diagnosed with chronic coronary syndrome**
Myriam BIAIS (BPH PHARes team)

• **Epidemiology of pancreatic cancer: analysis of cohort data to identify risk factors and new biological targets**
Clémence ANOUMBA NDIAYE (ACTIVE/GIGHS/LEHA teams)

• **Residential Locations and Disparity in Ease of Access to Essential Urban Services as a Tool of Assessment of Socio-spatial Injustice**
Dula DINKU (ACTIVE/GIGHS/LEHA teams)

• **Associations between exposure to chemical contaminants in food and age-related eye diseases and morphological changes in the retina**
Rémy FOUGERAY (ACTIVE/GIGHS/LEHA teams)

SEPTEMBER

• **Presentation of the EBO-PEP (Ebola Post-Exposure Prophylaxis) project: Evaluation of the effectiveness of a post-exposure prophylaxis strategy in contacts at high risk of developing Ebola virus disease.**
Alice MONTOYO (BPH GHIGS team)

• **Associations between atopic diseases in early childhood and emotional disorders in childhood within the EDEN cohort.**
Maeva ANDRE (M2 ISPED)

• **Identification of high-dimensional surrogate markers : methodology and application to vaccination**
Arthur HUGHES (SISTM team)

OCTOBER

• **Mechanistic modeling of the humoral response against SARS-CoV-2 : application on pre-clinical trials with mice**
Anne-Andrée RUIZ (SISTM/GIGHS teams)

• **Feasibility of implementing Treatment Decision Algorithms to improve childhood TB diagnosis at low levels of health care in Southern Africa. Multidisciplinary evaluation**
Natacha LEBRUN (SISTM/GIGHS team)

• **Longitudinal analysis of the association between caregiver burden and behavioural and psychological symptoms in older adults with Alzheimer's disease or related conditions: preliminary findings from ETNA3 study data**
Morgane ROSAY (BPH ACTIVE team)

• **Cost-benefit analysis of a model of social inclusion and personalised care for people with Alzheimer's disease and other related conditions – the 'Village Landais Henri Emmanuelli' as an alternative model to nursing homes**
Damien KRIER (BPH PHARes team)

• **Genetic association of the 5p13.3 locus with residual vascular obstruction in patients with unprovoked pulmonary embolism**
Floriane SAMARIA (BPH ELEANOR team)

NOVEMBER

• **the LETMEAGE project: Developing statistical methods for ageing research with a Marie Curie Postdoctoral Fellowship**
Caterina GREGORIO (BIOSTAT team)

• **Circadian rythms and vaccine responses: Investigating time-of-day effects on Ebola vaccine immunity**
Daniela Gouna (SISTM team)

• **Interdisciplinary approach to respiratory health in African children exposed to indoor and outdoor air pollution in urban areas**
Auriane PAJOT (GIGHS team)

• **Potentially inappropriate prescriptions in elderly dialysis patients based on data from the REIN registry linked to the SNDS**
Léa FAURE (BPH BIOSTAT / LEHA teams)

DECEMBER

• **Overview of RNA-seq data analysis in differential analysis and its application in vaccine research**
Quentin LAVAL (BPH SISTM team)

SUMMER SCHOOLS AND OTHER EVENTS 2025

JANUARY

• 14th meeting of the Statistics and Mathematics Applied to Cancer Club (SMAC)

• Young Researchers' Day of the French Biometrics Society (SFB)

FEBRUARY

• Interdisciplinary symposium: "Surveillance in a democracy. What conclusions can be drawn? What are the prospects?"

APRIL

• IPORA Conference : SAEAP 2025 Bordeaux Strengthening Africa-Europe academic partnership to improve cross-sector governance

MAY

• EPICLIN 2025 / 31st CLCC Statisticians' Conference

• Meeting of the BPH Scientific Advisory Board (SAB) – 12 and 13 May 2025

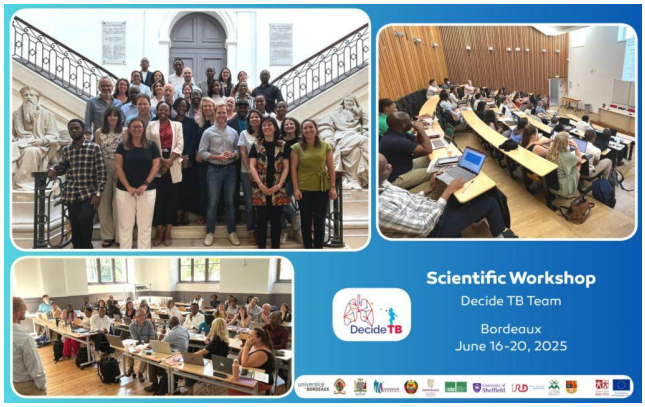
From left to right : Pr Rodolphe Thiébaut, Prof. Arnaud Chioléro, Prof. Laura Richert, Prof. Sylvia Richardson, Prof. Bertram Müller-Myhsok, Prof. John Gallacher and Prof. Anneke Hesseling

OTHER EVENTS 2025

JUNE

• International summer school from 2 to 20 June 2025

• Decide TB project – Internal SCIENTIFIC WORKSHOP 16 and 20 june 2025



JULY

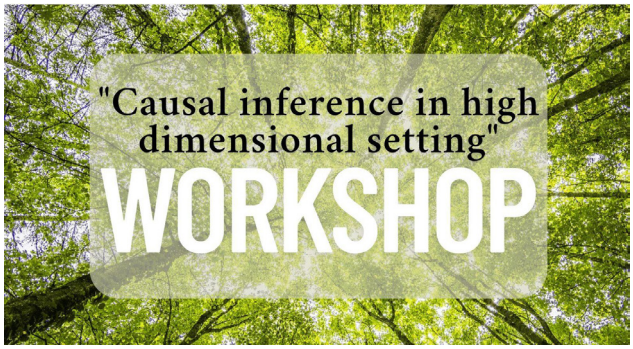
• Workshop 'In silico case studies: from research to educational innovation'

SEPTEMBER

• ADEA 19th Public Health Symposium 'Mental Health'

• Exposome : first international conference 'social inequalities and Exposome'

• Workshop "Causal Inference in High-Dimensional Setting"



OCTOBER

• The patient as a partner in research: experiences and innovations

• Alienor study, final curtain: "1,000 perspectives on eye health"

• FroGH Forum – Lyon – 3 October

• Big Welcome Week Young researchers at the Bordeaux Population Health Centre (BBPH) from 7 to 11 October

• The BPH at the "Fête de la science" 2025

• MOOC Environmental Health

OTHER EVENTS 2025

NOVEMBER

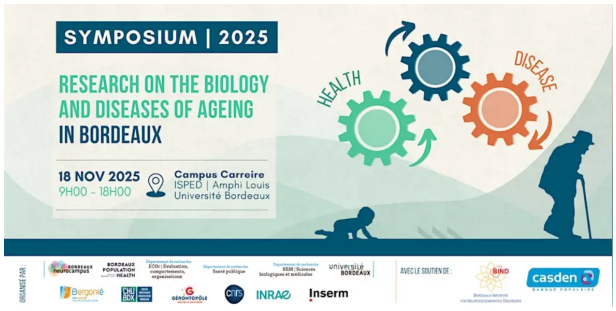
• Society and researchers: Co-constructing the science of tomorrow

• From the DREAM challenge to 1 million mammograms a year: The journey of a start-up that built an AI for breast cancer detection

• 2025 BPH Young Researchers' Day

• Lecture series 'Anthropology and Public Health : which common future ?'
First session Mental Health

• Symposium | Research on the Biology and Diseases of Ageing in Bordeaux



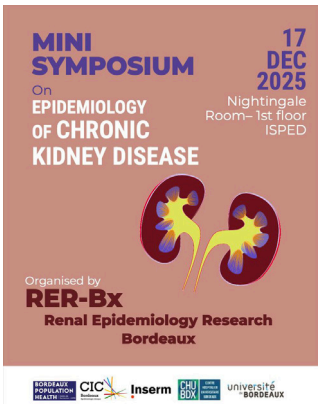
DECEMBER

• ADELF-EPITER 2025 International Congress on Epidemiology and Public Health

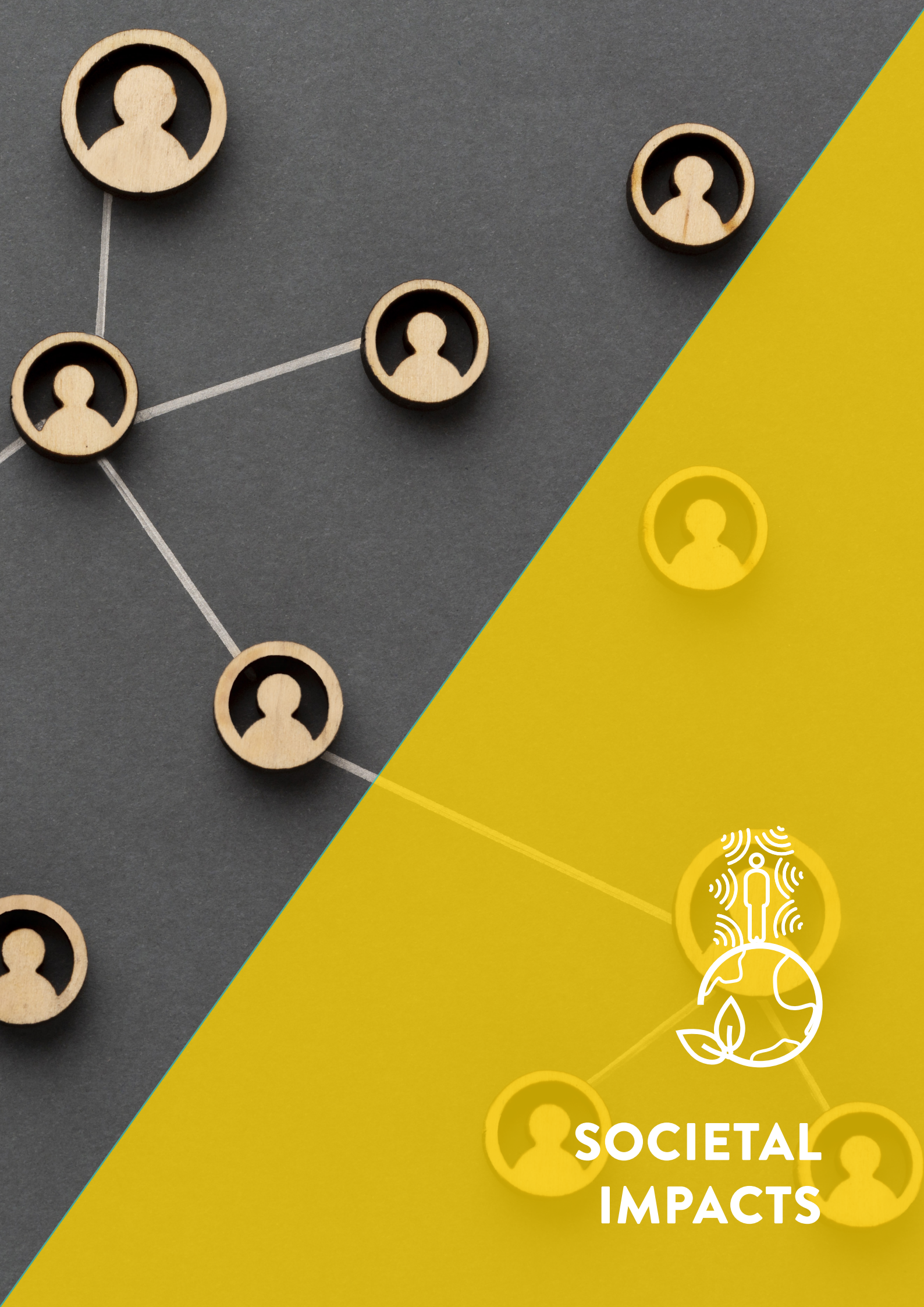
• Webinar – Environment and Society: Building Equity from the First 1,000 Days

• Workshop AI & Health: Rethinking Medicine : at the Human–Machine Frontier

• Mini-symposium in honour of Professor Philippe Morlat



• Mini-symposium on chronic kidney disease dec 2025



SOCIETAL IMPACTS

SOCIETAL IMPACTS

The work carried out by BPH researchers has a significant impact on society, helping to improve disease prevention and treatment, inform evidence-based health policy, and develop international guidelines aimed at protecting people from environmental and occupational risks.

Researchers at the BPH have taken part in several studies whose findings have influenced public health recommendations, particularly those from international organisations such as the WHO and the IARC, or through collective expert reports in which they are involved. The main areas of focus are public health and prevention, environmental exposure and oncology, infectious diseases and global health, ageing, disability and brain health, epidemiological methodology and health data.

Studies carried out by BPH researchers have led to a better understanding of the effects of environmental exposure on the prevention of cancer or other environment-related diseases. In particular, they analysed the risks associated with the use of phytochemical products in the context of occupational and environmental exposure which has influenced international recommendations on the prevention of work-related cancers. The studies conducted by BPH researchers also formed the basis for the development of recommendations focusing on Africa and Europe's population health relating to the prevention of chronic diseases or maternal and child healthcare. In 2025, researchers from the BPH-AHeaD team also conducted a study on cognitive biases in healthcare and how generative AI could help improve patient care and promote equity in hospital emergency departments. Our researchers are also studying the impact of social factors on population health and the economic impact of diseases and prevention.

The BPH centre has seized its responsibility in major **transition challenges** through its research-related activities: **quality and integrity, equity, diversity and inclusion and environmental and societal transitions**. Since 2019, some BPH members and researchers have been committed to **climate action (SDG13)** by founding a committee the "Action Climat Environnement" (ACE) collective, which aimed to carry out an inventory of the actions implemented in various research and teaching units on the UBx university hospital campus, and to develop joint strategies for transition challenges. Some of them have joined the UBx active network of student and staff ambassadors for the environmental and societal transition ('Référents Transitions') to contribute to the reflection on the university's strategy and implement concrete awareness and integration actions. Within the Bordeaux public health community the **Public Health Transitions Committee** has been created in 2023 working in focus groups on various themes to reflect on new strategies for reducing our carbon footprint (**waste management, purchasing policies, neutral mobility and the impact of digital technology**). In addition, **social and societal concerns** have become more prominent, with new themes

COMITÉ des
TRANSITIONS en
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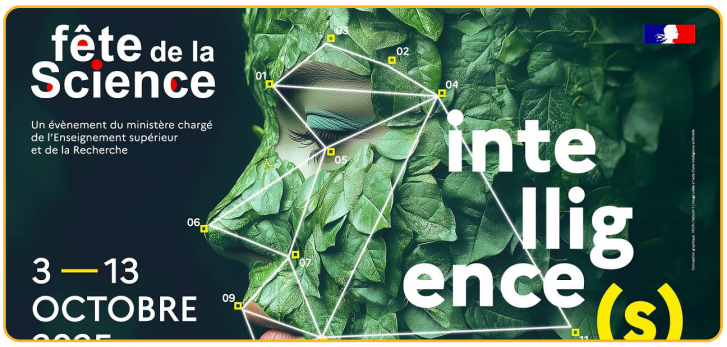
such as equality, diversity and inclusion. In 2025, our teams advanced their environmental and societal commitments by quantifying the carbon footprint of research activities through the GHIGS team's work, implementing comprehensive waste management and selective sorting in all break rooms, and promoting composting initiatives at the Carreire site—including the 'Tous au compost' event and germinated seed workshops. Additionally, we conducted a gender and cognitive bias analysis of INSERM recruitment competitions to enhance parity among Technical, Engineering, and Administrative staff (ITA).

The Centre has adopted an **Equity, Diversity and Inclusion (EDI) Charter** based on values of equality, transparency and mutual respect. A committee has been set up whose objectives are to implement actions and to measure and continually improve practices through rigorous monitoring.

They also use new tools like **CTRL+S** : it is a new podcast produced in 2025 by the BPH's communications team to share the results of their research. They discuss key public health issues resulting from the wide variety of topics we study at BPH, ensuring that scientific knowledge is accessible and understandable through interviews accessible to everyone

Finally, although it is a less prominent tradition in public health than in other disciplines, BPH researchers are increasingly involved in innovation and technological transfer activities. In the past five years, BPH researchers have produced over **15 patent invention disclosures**. They have obtained **15 Cifre fellowships** (joint academic-industry fellowships) and have concluded **25 industrial and R&D contracts**, both with SMEs and large multinational pharmaceutical companies, particularly in the context of vaccine trials.
Since 2016, **four start-ups** have emerged from BPH teams including Synapse, UT4H, Tricky and RetiNet in 2022, which offers a personalised medical service for the prevention of AMD via a digital platform. This new BPH spin-off has been selected by Microsoft to join the Microsoft for Startups Founders Hub, which aims to accelerate the development and growth of startups.



BPH researchers are involved in a range of outreach activities to bring the world of science closer to a large public. These initiatives include presentations and interviews that enable the public to discover research projects and develop education on health-related issues. (Bordeaux Research Night). They also use networks to share the results of their research and engage in dialogue with the public, ensuring that scientific knowledge is accessible and understandable to all. These efforts not only promote scientific literacy, but also strengthen trust and cooperation between researchers and the wider community.

In 2025 our scientists also took part in events to inspire young people and raise interest in science, in particular the Fête de la Science, a national event that celebrates scientific research and dialogue between science and society.

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