Leading International Vaccinology Education

Master of Science

Erasmus+

Co-funded by the Erasmus+ Programme of the European Union

VaxInLIVE 2021

e-Symposium

18 - 20 May

Contents

VaxInLIVE Symposia

VaxInLIVE Symposia serve as a dynamic discussion platform providing an opportunity to passionate researchers from all around the globe to get engaged in scientific discourse. VaxInLIVE is a continuation series of Symposia (2013, 2014, 2015, 2018 and 2019), which was conducted in the context of the LIVE (Leading International Vaccinology Education) Master Erasmus+ Mundus Joint Master´s Degree. The 1st promotion of LIVE started in September 2016. As a living story of VaxInLIVE symposia, the VaxInLIVE 2021 symposium is an initiative to build a collaborative discussion platform for Vaccinologists across the globe to induce exciting exchanges of knowledge about vaccines and their development. Similar to one of the objectives of Master LIVE, which focuses on the idea of breaking boundaries by recruiting students from all over the world with different nationalities. VaxInLIVE symposium is an amalgamation of the efforts towards breaking the barriers and putting forth the scientific expertise to engage researchers from different nationalities. VaxInLIVE organizing committee is a group of enthusiastic and passionate scientists who are motivated to expand knowledge by bringing worldwide expertise on one platform. They strongly believe in breaking the barriers.

VaxInLIVE 2021 e-Symposium

The VaxInLIVE 2021 Symposium was prepared in the frame of the Master 2 Semester 3 program by the Junior and Senior Scientific Committees.

Information are published on the

Website of the VaxInLIVE 2021 Symposium:

http://VaxInLIVE.univ-lyon1.fr

VaxInLIVE e-Symposium May 19th, 2021

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VaxInLIVE e-Symposium May 19th, 2021

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EMJMD LIVE COORDINATOR

LIVE (Leading International Vaccinology Education) is a two-year dynamic and multidisciplinary Joint Master Degree co-organized by five European universities bringing forward their technical and diverse teaching expertise together and awarding a distinctive Master degree of excellent quality: Universitat Autónoma de Barcelona (ES), Universitat de Barcelona (ES), Universiteit Antwerpen (BE), Université de Saint-Etienne (FR) and Université Claude Bernard Lyon 1 (Coordinator, FR). The programme welcomes experts in the field of Vaccinology to gather and train the future generation of Vaccinologists. Academic internationality is enriched by a worldwide network of academic universities from Brazil, China, Europe and USA and a worldwide network of Associated Partners from the whole working chain in vaccinology. 25 LIVE Students are recruited each year among more than 1000 registered applicants from 100 nationalities in 2021. During their studies, their mobility involves three different countries helping them to expand their vision and passion. It provides an ideal opportunity for them to improve in foreign languages, English being the language of instruction of the LIVE Master. LIVE programme provides students with an advanced understanding of Immunology, Infectiology, Vaccinology, but also legislation, health policy and humanities around Vaccinology to prepare students for a professional international career and/or continuation with PhD studies. This degree opens a wide array of career opportunities where the graduates can choose a career in big pharma, vaccine manufacturers or in small and medium enterprises specialized in research and development of vaccines or in public organizations dealing with public health policy / clinic / research on vaccines. Graduates are also well prepared for doctorate research in Ph.D. programs.

The Master LIVE is co-funded by:

The Universitat Autónoma de Barcelona, Universitat de Barcelona, Universiteit Antwerpen, Université Jean Monnet de Saint Etienne and Université Claude Bernard Lyon 1 (Coordinator),

Co-funded by the Erasmus+ Programme of the European Union

The European commission (EACEA – 2015-2323 and 2018 -1484 projects), thanks to the Erasmus+ Mundus Joint Master Degrees (EMJMD) label of excellence.

Sanofi Pasteur (2016 to 2024 agreements)

Institut Mérieux (2016 - 2024 agreements

Fondation Mérieux (2016 agreement)

For more, visit: http://live.univ-lyon1.fr/

GENERAL INFORMATION

Registration

Registration is open and can be done via the registration tab on our conference website *http://vaxinlive.univ-lyon1.fr/*

Working language

The working language of the virtual conference will be English.

Useful links

Accessing the conference:	Access from the web via *https://signin.webex.com/join* Or Download for PC here, for android here for Apple IOS here.
Kahoot:	Download mobile app for android here or Apple IOS here. Or via *https://kahoot.it/* and Enter the game pin projected during the Symposium.
Twitter:	**#VaxInLive**

VaxInLIVE 2021: 3-day PROGRAM

Day 1 – May 18, 2021 15:00 – 18:00 CLOSED SESSION, **LIVE STEERING COMMITTEE**.
Day 2 – May 19, 2021 08:30 – 18:15 GENERAL **OPEN SCIENTIFIC DAY**, Detailed program on the next pages.
Day 3 – May 20, 2021 09:00 – 12:30 CLOSED SESSION FOR ACADEMIC & NON-ACADEMIC **LIVE PARTNERS**

May 20, 2021: Aims, Modalities & Schedule

The "Erasmus+ Mundus Joint Master Degrees (EMJMD) Leading International Vaccinology Education (LIVE)" or **"Master LIVE"** (website http://live.univ-lyon1.fr) is funded by the European commission from 2015, thanks to the EMJMD label. The Master LIVE is coordinated by the Université Claude Bernard Lyon 1 and co-organized with 4 other universities, delivering credits: Universitat Autónoma de Barcelona, Universitat de Barcelona, Universiteit Antwerpen and Université Jean Monnet Saint-Etienne.

Aims of the closed session

- to **meet the LIVE Staff**
- to **understand** the ongoing project considering the **partnership points of views**
- to **develop fruitful interactions,** to discuss how to **implement** skills and concerns of partners from clinical and research centres, health organizations and foundations, private or private/public organizations, small and medium size enterprises and big pharma, **sharing their needs** for their **future international development related to vaccines**.
- to plan **evolution** of the EMJMD LIVE Program

Who can participate in the closed session and why?

- the **present and future partners** of the Master LIVE
- **to take part in building the next generation of international vaccinologists**, possibly participating from their selection to their graduation and their "Life after LIVE": promotion and governance of the program, knowledge transfer from research, public health or industrial world to academic world, Master internship opportunity, Master student scholarship, management funding support, PhD and employment opportunities, international real projects: VaxInLive Symposia, MOOC and e-learning development, research instructive workshop, international PhD network… are discussed.

How to participate in the closed session?

To register, please send an email to mylive@univ-lyon1.fr providing your answers to the 5 following points:

1. Your Name, email & Function:
2. The Name, website if applicable & type (Big Pharma, SME, Fundamental or Clinical Research Center, Higher Education Institution, Health organization, other?) of your institution:
3. Do you want to present your institution with a slideshow (5-15min)? Yes (duration?) / No
4. Time constraints on May 20 if applicable, if you have a time shift with French summer time (UTC+2) please indicate your city-country:
5. What are your expectations from your participation?

Schedule

09:00 – 10:00 *General presentation of the Master LIVE, evolution and results of the EMJMD LIVE project*

10:00 – 10:15 *Coffee Break*

10:15 – 12:15 *Presentations from the participants and general discussion. The program is built according to the registered participants.*

12:15 – 12:30 EMJMD project conclusion

VaxInLIVE 2021 e-Symposium

OPEN DAY CONFERENCE PROGRAM

May 19, 2021 – GENERAL OPEN DAY

TRENDS IN VACCINOLOGY FOR (RE)EMERGING PATHOGENS

Website to register: http://vaxinlive.univ-lyon1.fr

SCHEDULE UTC+2	SESSION TITLE
08:30 – 08:45	**Welcome** - Christine Delprat
08:45 – 09:00	**Inés CÓ RIVES (ES) / Zuzanna PIWOWARSKA (PL)**, IVAA, Lyon (FR) MSc, IVAA President / MSc, IVAA Communication Manager Montagu Alumni LIVE 2020 Graduates *International Vaccinologist Alumni Association (IVAA): facts, future, Q & A*
09:00 – 09:15	**Saddam Mohammed IBRAHIM / Anmaw Shite ABAT** DVM, MSc, Vaccinologists, University of Gondar (ET) Jenner Alumni LIVE 2018 Graduates *The first MSc in Veterinary Immunology in Ethiopian Universities*
09:15 – 10:15	**Session 1: Acute emerging disease environment** Sakshi Jindal & Luc Kestens
09:15 – 09:45	**Mark DOHERTY**, PhD, Senior Medical Manager, GSK, Copenhagen (DK) and Wavre (BE) *Downstream effects of vaccination: beyond acute disease*
09:45 – 10:15	**Simon GRAHAM**, Professor & Group Leader, The Pirbright Institute (UK) *Developing a "One Health" Nipah virus vaccine to protect animal and public health*
10:15 – 10:30	**Coffee break**
10:30 – 12:00	**Session 2: Infodemiology – the practice and science** Sakshi Jindal & Tim Nguyen
10:30 – 10:45	**Christine CZERNIAK**, PhD, Technical Lead for Infodemic Management, WHO, Geneva (CH) *Introduction to infodemic management*
10:45 – 11:00	**Sara RUBINELLI**, Professor of Health Communication, Department of Health Sciences and Medicine, University of Lucerne (CH) *Infodemic management competency framework*

11:00 – 11:15	**Lynette PHUONG**, MPH, Technical Officer for Infodemic Management, WHO, Geneva (CH) *Overview of training opportunities*
11:15 – 11:30	**Cherstyn HURLEY**, PhD, National Immunisation programme publications manager, Public Health England (UK) *Applying infodemiology to increase vaccine uptake*
11:30 – 11:45	**Avichal MAHAJAN**, PhD, Technical Officer for Data Management, WHO, Geneva (CH) *Knowledge gaps – Infodemic research agenda*
11:45 – 12:00	**Q & A** on infodemiology
12:00 – 14:00	**Lunch break**
13:00 – 14:00	**Françoise BARRÉ-SINOUSSI**, Senior Scientist, Nobel Prize Laureate in Medicine and Physiology, Pasteur Institute (FR), animated by Stéphane Paul. *Pandemics, Research & Future, Q & A closed session for 50 students.*
14:00 – 15:00	**Session 3 Preclinical and Tech transfer vaccine challenges** Dennis Giron & Thomas Stratmann
14:00 – 14:40	**Rajko RELJIC**, Professor in Immunology, Institute for Infection and Immunity, St George's University of London (UK) *From mice to monkeys: successes and challenges in mucosal TB vaccine development*
14:40 – 15:00	**Tiago ROCCA,** Head of Strategic Partnerships and Business Development, Instituto Butantan, São Paulo (BR) *Tech Transfer agreement and steps for establishment of production of the CoronaVac vaccine*
15:00 – 15:30	**Session 4: Phd student Junior talks** Julie Bigay & Nicolas Rochereau
15:00 – 15:10	**Patrícia GONZALEZ-DIAS**, PhD Student, MSc, School of Pharmaceutical Sciences - Universidade de São Paulo - FCF-USP (BR) *Systems Vaccinology applied to rVSV-ZEBOV Ebola vaccine*
15:10 – 15:20	**Paul ANZIANI**, PhD Student, CIFRE Sanofi - Bioaster – Université de Lyon UCBL (FR) *Multi-omics analyses of Bordetella pertussis fermentation for vaccine bio-production consistency monitoring*
15:20 – 15:30	**Louis BOURLON**, PhD Student, EMJMD LIVE Alumni, CIFRE Sanofi - IAB – CEA-Université Grenoble Alpes (FR) *Vectorization of antigens of interest on lipid nanoparticles for vaccine application*
15:30 – 16:00	**Coffee break & Kahoot** animated by Sakshi Jindal

16:00 – 18:00	**Session 5: Controlled human infection modelling (CHIM)** Dennis Giron & Peter Delputte
16:00 – 16:20	**Hilde DEPRAETERE**, PhD, Director of Operations, European Vaccine Initiative, Heidelberg (DE) *General considerations on human infection studies*
16:20 – 16:40 (Video)	**Eddie SUVARNAPUNYA**, PhD, Infectious diseases researcher/scientist, Walter Reed Army Institute of Research (WRAIR), Rockville, MD (US) *Immune response characterization after controlled infection with lyophilized Shigella sonnei 53G*
16:40 – 17:10	**Jeffrey BETHONY**, Professor, Dpt of Microbiology, Immunology and Tropical Medicine, George Washington University, Washington, DC (US) *Hookworm CHIM & Vaccine Development in Brazil*
17:10 – 18:00	**Adrian WILDFIRE**, Director, Scientific and Business Strategy, Open Orphan / hVIVO, Guildford (UK) *Controlled Human Infection Modelling: Challenges in modelling natural viral diseases*
18:00 – 18:15	**Closure –** Dolores Jaraquemada

VaxInLIVE 2021 SPEAKERS

May 19, 2021 – GENERAL OPEN DAY

Inés CÓ RIVES / Zuzanna PIWOWARSKA

Montagu Alumni LIVE 2020 Graduates

IVAA | LinkedIn linkedin.com/company/international-vaccinologist-alumni-association/

Inés CÓ RIVES, MSc, IVAA President, Lyon (FR)
Special techniques analyst, LABORATORIO ECHEVARNE, Barcelona (ES).
Inés CÓ RIVES | LinkedIn linkedin.com/in/inés-có-rives

Zuzanna PIWOWARSKA, MSc, IVAA Communication Manager, Lyon (FR)
Operations Specialist 1, IQVIA, Warsaw, Mazowieckie (PL). Zuzanna graduated with a BSc in Immunology & Pharmacology from the University of Aberdeen (UK), before joining the Montagu promotion of the Master LIVE. She concluded her MSc with an internship at Instituto Butantan (Brazil), and is currently working in the Lifecycle Safety department at IQVIA. Additionally, she holds the position of Communication Manager within the steering committee of IVAA.
Zuzanna PIWOWARSKA | LinkedIn linkedin.com/in/zuzanna-piwowarska

Saddam Mohammed IBRAHIM / ANMAW SHITE ABAT

Jenner Alumni LIVE 2018 Graduate

Anmaw Shite ABAT, DVM, MSc, vaccinologists, University of Gondar (ET)
Anmaw Shite studied Veterinary Medicine, and joined the University of Gondar as a lecturer in September 2014. He pursued EMJMD LIVE in Spain, Belgium and France from 2016 to 2018. Currently, he is teaching Veterinary MSc Immunology and Microbiology Students. Alongside his academic duties, he is participating in research. His research area focuses on host - pathogen interaction, microbial pathogenesis, immunity to infection and vaccine development.
Anmaw Shite ABAT | LinkedIn linkedin.com/in/anmaw-shite-abat-8107136b

Saddam Mohammed IBRAHIM, DVM, MSc, vaccinologists, University of Gondar (ET)
Saddam is a DVM & vaccinologist from Ethiopia. He is one of the graduates of the LIVE masters, the Jenner cohort (2016-2018). Currently, he is an active member of the college of veterinary medicine, university of Gondar, Ethiopia, engaged in teaching, research, and community service.

Saddam is highly interested in vaccine immunology, efficacy & effectiveness studies, & emerging infectious disease. In addition, Saddam is seeking PhD opportunities to advance his knowledge & skills as well as his career in the field of vaccinology.

Saddam Ibrahim | LinkedIn linkedin.com/in/saddam-ibrahim-b0b420102

Mark DOHERTY

Mark DOHERTY, PhD, Senior Medical Manager, GSK, Copenhagen (DK) and Wavre (BE)

Mark Doherty | LinkedIn linkedin.com/in/mark-doherty-1213142

Simon GRAHAM

Simon GRAHAM, Professor & Group Leader, The Pirbright Institute (UK)

I am a veterinary immunologist with an interest in understanding mechanisms of protective immunity and its application to vaccine development. My early career focussed on parasitic diseases, I developed a natural cattle model for testing vaccines against onchocerciasis (river blindness), which provided the first proof-of-principle for vaccine-induced protection. I identified and evaluated vaccine candidate antigens from the apicomplexan parasite Theileria parva, which were designed to induce protective bovine CD8 T cell responses. More recently, my research has focussed on porcine viruses, such as classical swine fever (CSFV) and porcine reproductive and respiratory syndrome (PRRSV) viruses. I informed discussions on the use of emergency vaccination to control future CSF outbreaks by demonstrating that live attenuated CSFV prevented transmission of divergent CSFV strains after only 3 days. I showed that this rapid protection was associated with broadly reactive CD8 T cell responses, opening new avenues to develop DIVA vaccines for outbreak settings. For PRRSV, I contributed to the study of the enhanced pathogenicity of Eastern European strains, highlighting the threat these viruses pose; and contributed to vaccine development efforts through the identification of conserved T cell antigens. My current research is largely focussed on PRRSV and I am pursuing complimentary approaches to improved PRRS vaccine development. In recent months, I have been supporting the development of COVID-19 vaccine candidates by utilising the pig as a preclinical model to study vaccine immunogenicity. I am also leading an international consortium developing a Nipah virus vaccine for use in pigs to protect against infection and transmission thereby reducing the risk to public health, as well as the pig industries and livestock keepers, in South and Southeast Asia.

Christine CZERNIAK

Christine CZERNIAK, PhD, Technical Lead for Infodemic Management, World Health Organization, Geneva (CH)

@chris_creese

Christine is working to advance the science of infodemiology, and innovate new tools and techniques for infodemic managers to better understand and respond to evolving community concerns during health emergencies. A key focus is building capacities for infodemic

management as a core part of national and international health emergency preparedness and response planning. Before joining WHO, she advised UN organizations, government agencies, biotechnology companies, and non-governmental organizations on issues relating to global health, food security, equality, and other development goals.

Sara RUBINELLI

Sara RUBINELLI, Professor of Health Communication, Department of Health Sciences and Medicine, University of Lucerne (CH)

Sara Rubinelli is Professor in Health Sciences with a focus in health communication at the Department of Health Sciences and Medicine of the University of Lucerne (CH). She also leads the Person-Centered Healthcare Group at Swiss Paraplegic Research (CH). She is currently past-President of the International Association for Communication in Healthcare (EACH). Her main research and teaching topics include: interpersonal communication, behaviour change, human cognition, heuristics and biases, social marketing and health campaigns, persuasion research, critical health literacy, health information and disinformation.

Lynette PHUONG

Lynette PHUONG, MSc, Technical Officer for Infodemic Management, World Health Organization, Geneva (CH)

Lynette Phuong is the Technical Officer for Infodemic Management at the World Health Organization in the Global Infectious Hazard Preparedness Department of the WHO Health Emergencies Programme (WHE). In this role, she is supporting the team to grow infodemic management as a discipline as well as tools and approaches for better health preparedness and emergency response to better address and mitigate the current infodemic and promote a more effective future response. She completed her undergraduate studies in Arts/Commerce and master's degree in public health at the University of Melbourne. Her professional experiences span public health promotion and advocacy, and digital health working across Australia and Mongolia.

Cherstyn HURLEY

Cherstyn HURLEY, PhD, National Immunisation programme publications manager, Public Health England (UK)

Dr Cherstyn Hurley is a immunsation communications specialist. Recently qualified as an infodemic manager and applying those skills to the current programme. She leads on the production of immunsation communication publications both digital and analogue with a specific interest in health inequalities. The routine immunisation programme in the UK delivers over 20 million doses to the UK population. A first responder to the pandemic working in infection, prevention and control to develop the current portfolio of laboratory support, PPE training and guidance videos and publications which you can view here. Currently leading on the COVID-19

vaccination programme publications with over 38 million doses given since 7 December 2020. You can view the COVID-19 vaccination publications collection here.

Avichal MAHAJAN

Avichal MAHAJAN, PhD, Technical Officer for Data Management, World Health Organization, Geneva (CH)

Avichal supports the WHO Information Network for Epidemics (EPI-WIN) platform in managing infodemics during emergencies. He completed his PhD at the University of Geneva where his research focused on the areas of urban economics, development economics and climate change. Prior to his doctoral studies, Avichal worked at the Africa Education Unit and the Development Research Group: Finance and Private Sector Development (DECFP) at the World Bank, Washington DC. He has worked on the management and analysis of data for various development projects related to both research and policy for the past 9 years.

Françoise BARRE-SINOUSSI

Françoise BARRE-SINOUSSI, Senior Scientist, Nobel Prize Laureate in Medicine and Physiology, Pasteur Institute (FR)

Françoise Barré-Sinoussi
From Wikipedia, the free encyclopedia

https://en.wikipedia.org/wiki/Fran%C3%A7oise_Barr%C3%A9-Sinoussi

Rajko RELJIC

Rajko RELJIC, Professor in Immunology, Course Director MRes Biomed, Institute for Infection and Immunity, St George's University of London (UK)

Prof Reljic's work focuses on several vaccine delivery systems for tuberculosis, Buruli ulcer and Dengue, including nanoparticles, inactivated bacterial spores, liposomes and self-adjuvanting recombinant immune complexes. He is also focused on immunotherapy as an adjunct treatment for tuberculosis (TB), especially in drug-resistant disease, using monoclonal antibodies of the IgA isotype. Prof Reljic is the Course Director MRes Biomed and the Coordinator of the EMI-TB consortium, a European Union-funded TB vaccine initiative that involves 14 research groups from Europe and Africa. He is Co-Chair of the Bill and Melinda Gates Foundation sponsored CTVD initiative – Aerosol Delivery and Mucosal Vaccine Community. He is also the executive member of the management board of the MRC-funded network for difficult intracellular pathogens (VALIDATE Network) and the Acid Fast Club, UK. Prof Reljic is editorial board member for peer-review journals such as Scientific Reports and Frontiers in Immunology, and an active reviewer for many journals and funding agencies.

Tiago ROCCA

Head of Strategic Partnerships and Business Development, Instituto Butantan, São Paulo (BR)

Mr. Rocca serves as Strategic Partnerships & Business Development Manager at Instituto Butantan. Rocca has been working at Butantan for over 14 years and has assumed responsibilities in several other areas related to vaccines and biopharmaceuticals production, Technology Transfer, Validation, Quality Assurance and Compliance. Pharmacist and post-graduated in Health Law at Public Health School of University of São Paulo (USP) and in Pharma Business Management at Higher School of Advertising and Marketing (ESPM). He completed the course on GMP for Influenza Vaccines Manufacturers at Biomanufacturing Training and Educational Center (BTEC), North Caroline State University. Currently is the Secretary of Emerging Biopharmaceuticals Manufacturers Network (EBPMN) and a member of Executive Committee of Developing Countries Vaccine Manufacturers (DCVMN).

Patrícia GONZALEZ-DIAS

Patrícia Gonzalez-Dias, PhD Student, MSc, School of Pharmaceutical Sciences, University of São Paulo - FCF-USP (BR)

Patrícia Gonzalez-Dias graduated in Biotechnology by Federal University of Grande Dourados (2013). Master in Cellular and Molecular Biology by Oswaldo Cruz Institute/FIOCRUZ (2016). Currently she is completing her PhD at University of São Paulo (2021). She works applying Systems Biology and Machine learning approaches to predict and understand vaccine-induced reactogenicity.

Patrícia Gonzalez-Dias | LinkedIn linkedin.com/in/patricia-gonzalez-dias-22046563

Paul ANZIANI

Paul ANZIANI, PhD Student, CIFRE, Sanofi Pasteur - Bioaster - Université de Lyon UCBL (FR)

After my graduation of the Biotin master's degree from the University of Montpellier, I acquired a short experiment in vaccine bioproduction at Boehringer Ingelheim in Toulouse. In 2019, I started my CIFRE PhD at Sanofi Pasteur in collaboration with Bioaster, at the university of Lyon 1 with Molecular, Integrative and Cellular Biology (BMIC) doctoral school. My thesis subject is "the study of Bordetella pertussis physiology by multi-omics approaches for vaccine bio-production consistency monitoring".

Louis BOURLON

Louis BOURLON, Pasteur Alumni LIVE 2019 Graduate, PhD Student, CIFRE, Sanofi - IAB – CEA, Université Grenoble Alpes (FR)

Louis Bourlon | LinkedIn linkedin.com/in/louis-bourlon-vaccinology

Hilde DEPRAETERE

Hilde DEPRAETERE, PhD, Director of Operations, European Vaccine Initiative, Heidelberg (DE)

Dr. Depraetere obtained a PhD in Biochemistry from the University of Leuven. Following her doctoral studies, she worked as a postdoctoral scientist before transitioning into industry, as senior scientist at the diagnostic company RSR, Cardiff UK. Subsequently, Dr. Depraetere worked as senior scientist preclinical development at Thrombogenics, Belgium. She joined the global regulatory affairs department of GSK Biologicals in 2006 where she led an international team. Dr. Depraetere has extensive experience in vaccine development and regulatory affairs, having worked for more than 15 years in the pharmaceutical industry. In 2016, she joined the European Vaccine Initiative, where she coordinates several projects and is committed to strengthen EVI's position as a solid and sustainable organization, with the main focus on supporting the development of vaccines for diseases of poverty, neglected and emerging diseases. In March 2019 she took up the position of Acting Executive Eirector at EVI and since January 2020 is Director of Operations.

Eddie SUVARNAPUNYA

Akamol Eddie SUVARNAPUNYA, PhD, Infectious diseases researcher/scientist, Walter Reed Army Institute of Research (WRAIR), Rockville, MD (US)

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Adrian WILDFIRE

Adrian WILDFIRE, Director, Scientific and Business Strategy, Open Orphan / hVIVO, Guildford (UK)

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EMJMD LIVE MAIN PARTNERS

The Universities of Barcelona (Spain)

Immunology is the branch of biomedical sciences concerned with the study of the physiopathology of the immune system. The study of immunology seeks to solve problems posed by complex pathologies of particular importance to public health. The master's degree Immunology provides knowledge and skills that offer students a wide range of opportunities in many areas, such as research and education, biotechnology, medicine and veterinary science. A comprehensive understanding of the immune system also equips students to evaluate pathological processes that directly involve the immune system or are associated with other physiological systems. The Master in Advanced Immunology is shared between the Universitat de Barcelona (current coordinator center) and the Universitat Autònoma de Barcelona.
http://www.uab.cat/ ; http://www.ub.edu/
http://www.ub.edu/estudis/mastersuniversitaris/immunologia/

The University of Antwerp (Belgium)

The University of Antwerp is a young, dynamic and forward-thinking university. It integrates the assets of its historical roots with its ambition to contribute positively to society.
The University of Antwerp develops, provides access to and disseminates scientific knowledge through research, teaching and academic service to the community and accomplishes these tasks in a spirit of academic freedom and responsibility.
The University of Antwerp espouses active pluralism. In that spirit, it stimulates critical research and teaching, reflection and debate on scientific, social, philosophical and ethical questions.
Our university has nine faculties, a host of centres and institutes, several decision-making and advisory bodies and eleven central departments. The University of Antwerp has almost 5,000 members of personnel in various layers, organised according to basic academic and administrative structures. The University of Antwerp does not operate alone. We have close ties with Antwerp University Hospital (UZA), Antwerp Management School (AMS) and other higher education institutions in Antwerp that belong to the Antwerp University Association. These relationships and our partnerships with the City of Antwerp and the port continuously create win- win situations. Our university is embedded in an extensive socioeconomic network, which ensures that we are engaged in intensive dialogue with society.
https://www.uantwerpen.be/en/

The University of Lyon (France)

The Université de Lyon is located at the heart of the Auvergne-Rhône-Alpes region, in Lyon & Saint-Étienne and represents the most important French University site outside the Paris Region. The Université de Lyon is a world-class academic site of excellence composed of 12 member institutions including the Université Claude Bernard Lyon 1 and the Université Jean Monnet de Saint-Etienne, 154,000 students, 6,800 researchers and teacher-researchers, 17 doctoral schools, 5,400 PhD students, 1,000 theses defended each year.

The University of Lyon obtained the label "Initiative of Excellence / Initiative d'excellence (IDEX)" in 2017 to develop three major axes, which are in resonance with the socio-economic assets of our territory: Humanities and Urbanity, Sciences and Engineering, BioHealth and Society. The Université de Lyon provides several programs that aim to help strengthen entrepreneurship and innovation in Lyon and Saint-Étienne: The PEPITE Beelys to support students in projects setting up or taking over companies; The Innovation Factory, to use the university's talents in the creation of start-ups and local companies; The SATT PULSALYS (Technology Transfer Acceleration Company), to develop research findings at the Université de Lyon and to promote their transfer to socio-economic sectors; Doctor'Entreprise, to bring together companies, research laboratories and PhD students.

To expand abroad and welcome talents from abroad, the International Alliance of the Université de Lyon is an integrated platform for research and training involving ten universities spread over 5 strategic geographical zones (Brazil, Canada, China, Japan, Europe). A keystone to our education policy, the Université de Lyon offers 20 IDEXLYON-labelled Master's programs that are jointly organized by several institutions, and grant accredited diplomas. With strong international focus, these Master's programs, including the EMJMD LIVE, are part of our 140 Master's degrees.

Its ambition is to make from the «university » – in the broad sense – an active player and contributor to the development of the society.

https://idexlyon.universite-lyon.fr/idexlyon/version-anglaise/

https://www.univ-lyon1.fr/ ; https://www.univ-st-etienne.fr

EMJMD LIVE ASSOCIATED AND SUPPORTING PARTNERS

Advanced Bioscience Laboratories (France)

Founded in 2011, ABL Lyon (formerly Platine Pharma Services) is a global leader in immunobiology, offering expert analytical services to advance innovative therapies from discovery to clinical testing. It was acquired in 2014 by ABL Inc., a global contract manufacturing and laboratory research service provider. ABL combines its expertise in translational science together with operational excellence to solve the challenging product development problems that are often faced by our clients as they bring their life-changing technologies to the world.

With cGMP facilities located in the U.S. and Europe, ABL is well positioned to provide comprehensive development and manufacturing support for protein and virus production utilizing single-use bioreactor platforms and other disposable technologies. ABL provides our clients with a fully integrated solution that includes cell line and process development, GMP manufacturing, QC release testing and QA/Regulatory support.

ABL's contract research teams have decades of experience with immunoassays, developing custom assays and panels to support human clinical trials and preclinical animal studies. We routinely work with clients to design and run biomarker analyses to better understand the impact of cutting-edge therapies: the mechanism of action, correlates of protection, pharmacokinetic/pharmacodynamics studies and other critical safety and efficacy data.

ABL is a subsidiary of the Institut Mérieux, a global organization committed to serving medicine and public health across the globe. Since 2011, ABL Lyon is accredited for the French research tax credit scheme (CIR).

https://www.abl-immuno.com/

Amal Therapeutics (Switzerland)

AMAL Therapeutics (AMAL) is a biotech, developing unique therapeutic vaccines and a distinct unit of the Discovery Research organization of the Boehringer Ingelheim group of companies.

Our aim is to overcome the challenges around effective anti-cancer therapy by stimulating a patient's immune system in a unique way, in order to create immunological memory, as well as target a broad range of patients.

We have developed KISIMA®, a novel peptide/protein-based immunisation technology platform, which is self-adjuvanting and enables the assembly within one chimeric fusion protein of three elements essential to generate potent immunity: a proprietary cell-penetrating peptide for antigen delivery, a proprietary TLR- peptide agonist as adjuvant and a modulable multi-antigenic cargo that can be tailored for various indications. While the power of KISIMA® can be harnessed to discover and develop therapeutic vaccines for different indications, our vision is to transform the prospects of cancer patients.

We aim to offer effective cancer therapies by complementing existing standards of care (e.g. chemo-and radiotherapies) without adding to their known toxicities, and by working in synergy with them, including with immune-checkpoints inhibitors. ATP128, our lead program in metastatic colorectal cancer has entered into the clinic in July 2019.
https://www.amaltherapeutics.com/

Association Lyon Biopole (France)

Accredited as a world competitive cluster by the French State in 2005, Lyonbiopole focuses on the global fight against human and animal infectious diseases and cancers, from diagnostic and prevention to treatment, including innovative delivery systems. Lyonbiopole is the gateway to healthcare innovation in the Auvergne-Rhône-Alpes region. We support ambitious projects and innovative companies in the healthcare & life sciences' sector. Our aim is to help innovators develop new technologies, products and services in a push toward a more personalized medicine and better treatments for patients.
According to our 4 strategic areas: Human medicine, Veterinary medicine, in vitro diagnostics, Medical devices and medical technologies, we gather a 200 members community: 6 founders including 4 word class industrials (Sanofi Pasteur, bioMérieux, Bohringer Ingelheim Animal Health, BD), CEA and the Fondation Mérieux, 180 innovative companies, 14 research and clinical centers. We support innovation and SMEs development. We strengthen the cluster's international position and develop a high-level infrastructure offer.
https://lyonbiopole.com/

Baylor College of Medicine*National School of Tropical Medicine (US)

Baylor College of Medicine is a health sciences university that creates knowledge and applies science and discoveries to further education, healthcare and community service locally and globally. The school applies strong traditions in basic, translational and applied biotechnology research. NSTM will launch a variety of basic, clinical and biotechnology educational programs to train a new generation of scientists and health professionals.
The depth and breadth of the Texas Medical Center and Baylor College of Medicine in concert with resources made available by the Houston location provide the foundation and the model for the establishment of the National School of Tropical Medicine.
https://www.bcm.edu/education/schools/national-school-of-tropical-medicine

BIOASTER (France)

BIOASTER is an independent institute dedicated to infectious diseases and microbiology. Created in April 2012 by l'Institut Pasteur and Lyonbiopole health competitiveness cluster, following the initiative of the French government, BIOASTER Technology Research Institute (TRI) is working to develop a unique technological and innovative model to support the latest challenges in

microbiology, in particular to: fight antimicrobials resistance, improve vaccines safety and efficacy, quickly diagnose infections at patient bedside, take full advantage to human and animal microbiota.
BIOASTER was established as a foundation for scientific cooperation based on an innovative public/private partnership model with eight funding members: Lyonbiopole and the Institut Pasteur, three major industrial companies - Sanofi, Institut Mérieux, Danone Research - and three academic research centers - INSERM, CNRS, and CEA - as well as a group comprising 40 SMBs (small- and medium-sized businesses) from the Rhône-Alpes and Paris areas. BIOASTER conducts independent and collaborative interdisciplinary R&D activities on the frontier between basic and industrial development to ensure optimal alignment between research and innovation through five programs: vaccines, antimicrobial, microbiota, diagnostics, translational science, in the fields of infectious diseases and microbiology and its impact on health.
https://www.bioaster.org/

BioMérieux (France)

BioMérieux is first and foremost a human and scientific adventure that began more than 55 years ago, yet its roots reach back to the tradition of Louis Pasteur and the fight against infectious diseases. In 1897, Marcel Mérieux, who had studied with Pasteur, founded a laboratory in Lyon where he developed the first anti-tetanus sera.
A global leader in in vitro diagnostics for over 55 years, BioMérieux has always been driven by a pioneering spirit and unrelenting commitment to improve public health worldwide. The Company is present in 44 countries and serves more than 160 countries with the support of a large network of distributors. It provides diagnostic solutions that improve patient health and ensure consumer safety.
BioMérieux develops and produces in vitro diagnostic solutions (systems, reagents, software and services) for private and hospital laboratories, mainly for the diagnosis of infectious diseases. The results obtained from a patient sample (blood, urine, stool, cerebrospinal fluid, saliva, etc.) provide doctors with information to support their decisions.
https://www.biomerieux.com/en

Boehringer Ingelheim Animal Health / Merial (France)

The Boehringer Ingelheim Animal Health business is a global leader in the animal health industry and part of family-owned Boehringer Ingelheim, founded in 1885.
Our work is guided by a passionate belief in a future in which no animal suffers from a preventable disease. We discover, develop and manufacture vaccines, parasiticides and therapeutics, complemented by diagnostics & monitoring platforms. We strive to go beyond medicine to better predict, detect and prevent animal diseases before they arise.
Across the globe, we work to meet the growing demand for protein and the increasing needs for animal companionship. With our innovative solutions, we support farmers, veterinarians and pet owners who raise and deeply care for their animals.

Designing even more effective medicines for humans and animals is at the heart of our work. Our mission is to create innovative therapies that have the potential to change patients' lives. Boehringer Ingelheim has been an independent family business since its inception in 1885. We have the freedom to pursue our own long-term vision, to look to the future to identify the health issues of tomorrow and to focus our efforts in areas where we can make a real contribution.
We are a world leader in the research-driven pharmaceutical industry. Our 51,000 employees create value every day through innovation in our three areas of activity: human health, animal health and the manufacture of biopharmaceutical products on behalf of third parties.
Improving the health and quality of life of humans and animals is the goal of the research-driven pharmaceutical company Boehringer Ingelheim. The focus in doing so is on diseases for which no satisfactory treatment option exists to date. The company therefore concentrates on developing innovative therapies that can extend patients' lives. In animal health, Boehringer Ingelheim stands for advanced prevention.
https://www.boehringer-ingelheim.com/animal-health/overview
https://www.boehringer-ingelheim.fr/qui-sommes-nous/qui-sommes-nous

Centre for the Evaluation of Vaccination*Universiteit Antwerpen

Centre for the Evaluation of Vaccination
Vaccine & Infectious Disease Institute
University of Antwerp

The CEV is a multidisciplinary research group, participating on a regular basis in (inter)national scientific vaccine research. The available expertise of the CEV holds a platform for conducting vaccine trials (phase 1-4) and is involved in policy research projects related to vaccination.
Research mission:

- Improve knowledge in several vaccine-related fields by performing different research projects, including clinical vaccine trials, epidemiological surveys and economic evaluations and infectious disease modelling.
- Spread knowledge on all aspects of vaccination by publishing results of the research projects, both through scientific and vulgarised publications, by offering teaching and training to (para)medical students and by organising vaccine-related courses to health care professionals.
- Support public health policy making, based on our expertise in Public Health, Youth Health, Social Medicine, Epidemiology, and Vaccinology.
- Support and help target vaccination policy and public health in Flanders, Belgium, and Europe, by written as well as oral communications.
- Offer consultancy services in vaccine-related fields, such as vaccine research, vaccine administration, vaccination programmes, and epidemiology of vaccine-preventable diseases.

https://www.uantwerpen.be/en/research-groups/centre-for-evaluation-vaccination/

Centre Muraz (Burkina Faso)

MURAZ Centre is a national health research institution. It has the status of a non-hospital public health facility. The Centre's activities are guided by an International Scientific Council. The ambition of the MURAZ Centre is to become a regional centre of excellence and innovation in research, training and expertise in the public health service. Its mission is to contribute, mainly to Burkina Faso, to the prevention, diagnosis and control of communicable and non-transmissible diseases by promoting and carrying out health research, training and expertise in medical biology, the humanities and public health.

http://www.centre-muraz.bf/

Cancer Research Center of Lyon (France)

The Cancer Research Center of Lyon (CRCL, UMR Inserm 1052 CNRS 5286 - Center Léon Bérard) is a research structure affiliated with the University Claude Bernard Lyon 1, the national health and research bodies (Inserm and CNRS), the Léon Bérard Comprehensive Cancer Center (CLB) and with the Lyon University Hospitals (HCL) as clinical partners. The CRCL was officially created in January 2011 and its 5-year contract was recently renewed for the 2016-2020 period. It comprises 24 teams, totalling over 480 members, including 138 researchers and lecturers. The CRCL aims at increasing its international visibility and the attractiveness of the Lyon cancer research cluster, at facilitating the transfer of knowledge from fundamental cancer research to clinical applications in oncology, and at developing teaching and training in oncology.

One of the main goals of the CRCL is to support the development of strong translational research to enable patients to rapidly benefit from breakthroughs in basic research. This bridge from "bench to bedside" was rendered possible due to the strong collaboration between clinicians and pathologists of the CLB and HCL and scientific teams of the CRCL, creating a continuity between basic research and clinical applications.

http://www.cnrs.fr/en , *http://www.crcl.fr/* , *https://lbti.ibcp.fr/* , *http://www.ipbs.fr/fr*

Center National de Recherche Scientifique et Technologique - IRSS (Burkina Faso)

Founded in 1997, the Institute of Research in Health Sciences (Institut de Recherche en Sciences de la santé - IRSS) is one of the 4 specialized units of the National Center of Scientific and Technologic Research. The research unit on HIV/AIDS and reproductive health is part of IRSS and was created in 2006. It aims to ensure coherence in and to provide support to research on HIV/AIDS and reproductive health.

In the field of reproductive health IRSS conducted a study on female genital mutilation practices in collaboration with ICRH. It also did research on the impact of the abolition of user fees on the

utilization of health services and the impact of the gratuity of emergency neonatal and obstetric care on maternal mortality.
IRSS also implemented a Demographic and Epidemiologic Surveillance System in Kaya (KaDESS) in the northern part of Burkina Faso. This surveillance system covers a population of 54,785 people and serves as a platform for research on HIV, reproductive health and health systems.
http://irss.bf/

Center Pasteur du Cameroun (Cameroon)

The Pasteur Center of Cameroon (CPC) is a technical body of Cameroon's Ministry of Public Health, a hospital institution with financial autonomy and legal personality. It was established in 1959 in Yaounde; it has had an annex in Garoua (CPCAG) since 1985, and since 2004 it has had an office in Douala.
The CPC is a member of the International Network of Pasteur Institutes (RIIP), whose main mission it shares, the fight against infectious diseases. To this end, it carries out four missions: services, public health, research and training. The objective of each of these missions is to best meet the scientific expertise needs and response needs of the Ministry of Public Health by building on the Sectoral Health Strategy and the Poverty Reduction Document, thus integrating into the United Nations Millennium Development Goals.
http://www.pasteur-yaounde.org/

Commissariat à l'Energie Atomique (France)

The Office of the Commissioner for Atomic Energy and Alternative Energy (CEA) is a public scientific, technical and industrial research organization (EPIC).
A major player in research, development and innovation, the CEA operates in four areas: defence and security, low-carbon energy (nuclear and renewable), technological research for industry and basic research (material sciences and life sciences). Drawing on a recognized capacity of expertise, the CEA participates in the implementation of collaborative projects with numerous academic and industrial partners.
The CEA is located in 9 Centers throughout France. It develops numerous partnerships with other research organizations, local communities and universities. As such, the CEA is part of the national alliances coordinating French research in the fields of energy (ANCRE), life sciences and health sciences (AVIESAN), digital science and technology (ALLISTENE), environmental sciences (AllEnvi) and humanities and social sciences (ATHENA).
Recognized as an expert in its areas of expertise, the AEC is fully integrated into the European research area and has a growing presence at the international level. The CEA is the only French research organization to be included in the Clarivate 2020 ranking and is the first research organisation to apply for patents in Europe, according to the 2019 European Patent Office (EPO) ranking.
https://www.cea.fr/english

Consortium de Recherche en Vaccinologie: CoReVac (France)

CoReVac is a national vaccine research consortium that aims to facilitate, coordinate and stimulate vaccine research at the national level and in close collaboration with European partners. It brings together partners from across disciplines involved in vaccine research. This includes basic, pre-clinical, translational, clinical, epidemiological and social sciences, as well as industries, research and development, stakeholders and public health institutions involved in vaccine implementation and immunization.

CoReVac operates under the auspices of Aviesan, the French National Alliance for Life Sciences and Health, in close cooperation with its institutional members:

- **Inserm** (National Institute for Health and Medical Research)
- **CEA** (Alternative Energies and Atomic Energy Commission)
- **Cirad** (National Agricultural Research Center for International Development)
- **CNRS** (National Center for Scientific Research)
  - CPU (Conference of University Presidents)
  - Inra (National Institute for Agricultural Research)
  - Inria (National Research Institute for Digital Sciences)
  - Pasteur Institute
  - IRD (National Research Institute for Development)
  - Chu (University Hospital Network) Network

CoReVac was established in 2012 under the coordination of Brigitte Autran in partnership with the Institute for Immunology, Inflammation, Infectious Diseases and Microbiology, (ITMO I3M) under the auspices of Aviesan.

CoReVac is a consortium dedicated to vaccine research, with the mission of stimulating and facilitating the coordination of research activities both at national level and in close collaboration with European partners. CoReVac brings together experts and partners from all disciplines involved in this field of research, including basic, preclinical, translational, clinical, epidemiological and human and social sciences, as well as private research actors and public health institutions involved in the implementation of vaccines andvaccinations.

CoReVac operates under the auspices of Aviesan, the National Alliance for Life and Health Sciences, in close cooperation with the institutional members listed above.

http://www.corevac.org/

Centre International de Recherche en Infectiologie: CIRI (France)

The Centre for Research in Infectious Diseases (CIRI) was created in 2013 by the Inserm, CNRS, ENS Lyon and University Claude Bernard Lyon 1. Along with these trustees and with its other partners, i.e., the Institut Pasteur, the Fondation Mérieux and the Hospices Civils de Lyon, the CIRI comprises over 20 teams behind one goal: the fight against infectious diseases, the second cause of death worldwide. Through a multidisciplinary approach combining microbiology (bacteriology and

virology), immunology, cell biology, clinical research and epidemiology, plus a strong interface with the industry, the CIRI intends to be a research Centre opened to therapeutic innovation and to act a major player in the areas of medical prevention and treatment of infectious diseases.
The CIRI is meant to implement an essential further step of the development of the research in Infectiology in Lyon through a highly structured co-operation between academic and clinical research communities, on the Charles Mérieux campus. It will play a pivotal role by structuring the interactions between academic and private research, and by promoting socio-economic opportunities through strong partnerships with operators involved in the innovation or pre-industrial development, including the Lyon Biopôle and the IRT BioAster. The CIRI will thus constitute a strong interface with industry, with increased collaborations with key actors in the domain of human and animal health on the Lyon area and optimal potential for valorization of results.
The CIRI currently includes nearly 300 researchers, faculty members, graduate students, engineers and technicians in ca. twenty teams that have been enrolled because of their strong expertise in key basic disciplines for the study of infectious diseases (i.e., microbiology, immunology and cell biology) and also of their capacity or specific interest to translate novel knowledge, of scientific or technological nature, in translational research programs and applied research. It is a joint research Unit (INSERM U1111 – CNRS UMR5308 – ENS Lyon – UCB Lyon 1), which brings together research teams from the Human Virology Unit (Inserm U758 – ENS Lyon, Dir FL Cosset) from the I2V Unit (Inserm U851 – UCB Lyon 1, Dir Marvel J) and three teams from the CNRS, the Fondation Mérieux and the Institut Pasteur.
http://www.ens-lyon.fr/en/
https://ciri.ens-lyon.fr/

Etablissement Français de Sang (France)

EFS is the French blood transfusion organisation, guaranteeing France's self-sufficiency in blood supply for a million patients each year, thanks to the generosity of donors. EFS, manages the collection, processing, screening and distribution activities of blood products, and supplies over 2000 health establishments throughout France. EFS is also the leading supplier of cell and tissue therapy products to health-care establishments, with its network of 18 dedicated platforms and tissue banks. Every year, 60% of the tissues (corneas, bones, heart valves, vessels, skin, etc.) collected by health-care establishments are processed and stored at the EFS's tissue banks. Beyond its core purpose, EFS also develops innovative research projects, in the field of blood transfusion, immunology, cell therapy and advanced cell medicinal products. The up-grading of five cell therapy facilities to reach GMP grade is planned, and EFS should soon become a pharmaceutical company for the manufacturing of cell therapy products.
https://dondesang.efs.sante.fr/

European Vaccine Initiative (Germany)

The European Vaccine Initiative (EVI) is a leading European non-profit Product Development Partnership (PDP) that is supporting global efforts to develop effective and affordable vaccines against diseases of poverty and emerging infectious diseases.

EVI openly provides its expertise and supports vaccine research and development (R&D), helping them to advance and accelerate their vaccine candidates.

The European Vaccine Initiative (EVI) supports global efforts to develop effective and affordable vaccines against diseases that disproportionately affect low- and middle-income countries. Through constructive collaboration and exchange with academia, pharmaceutical and biotechnology companies, policy makers, donors and other product development partnerships (PDPs), EVI is building a vaccine portfolio that proactively addresses critical challenges and opportunities and is promoting innovative solutions in vaccine research and development.

EVI recognises the power of partnerships and engages with partners worldwide to harness the best knowledge and expertise from leaders in the field of vaccine R&D. We aim to spearhead global vaccine development efforts by engaging with partners from academia and other research institutions, the private sector, governments, and civil society organisations, including partners from low- and middle-income countries affected by diseases of poverty.

EVI´s activities are diverse. EVI supports and coordinates research into individual vaccine candidates, works across Europe to harmonise processes and protocols for vaccine development, and to build capacity, and EVI supports the strengthening of capacity for vaccine Research and Development in low- and middle-income countries.

http://www.euvaccine.eu/

Fondation Mérieux (France)

Fondation Mérieux, an independent family foundation with public interest status, is committed to fighting, in the field, the infectious diseases that affect developing countries by building capacities, particularly in clinical laboratories.

With its network of laboratories, the foundation's work is focused on diagnosis, an essential aspect of patient care and an indispensable tool for disease surveillance and control. Taking a global health approach, the foundation also works in the field to help the most vulnerable, with a strong emphasis on mothers and children.

From its very beginning in 1967, the Mérieux Foundation has united public and private sector partners around a common mission. Active today in over twenty countries, the Foundation works to strengthen the skills of healthcare professionals in the field to ensure its programs have a long-lasting impact. It catalyses local and international initiatives to help the most vulnerable populations gain fairer access to healthcare. Our philosophy of action:

- A collaborative dynamic driven by partnerships with local healthcare stakeholders, international organizations, academic research, companies and NGOs,
- A long-term vision with sustained support leading to autonomy and local ownership of infrastructures and programs,

- Building networks for international cooperation to share experience and pool skills,
- A global health approach from humans to animals, taking into account healthcare, but also nutrition, environmental safety, education and socio-economic support for patients.

http://www.fondation-merieux.org

Fudan University Medical school (China)

Over the past decade, the Fudan University's medical school has actively explored running a medical school within a comprehensive university, with important work in promoting all branches of basic and clinical medicine, as well as collaboration between medicine and other areas of study, with positive results. Funds for medical research and the number of projects have increased from about 25% when the two schools were combined, to half of the school's total. Clinical medicine is close to ranking in the ESI's top 0.1%, and the school is ready to begin competing as a world-class institution.

Currently the medical parts of Fudan University include Basic Medical School, Clinical Medical School, School of Public Health, School of Pharmacy, School of Nursing, Institute of Biomedical Science, Institute of Brain Science, Institute of Radioactive Medicine and Department of Laboratory Animal Science, and 11 affiliating hospitals. Shanghai Medical School as an extension of the University is authorized to manage all medical parts in terms of education, research, discipline development, exchanges and development and planning.

Shanghai Medical College's near- to mid-term goals are to effectively promote the synthesis of basic medicine with clinical and medical science, as well as the interdisciplinary study of medical and non-medical domains, persistently transforming medical concepts, consolidating the leading role of medicine and life medicine in China and making a core contribution to the key city of Shanghai by building a medical centre which ranks among the best in Asia.

https://www.fudan.edu.cn/

Fundación Privada Instituto de Salud Global Barcelona (ISGlobal)

The Barcelona Institute for Global Health, ISGlobal, is the fruit of an innovative alliance between the "la Caixa" Foundation", academic institutions and government bodies to contribute to the efforts undertaken by the international community to address the challenges in global health. ISGlobal is a consolidated hub of excellence in research that has grown out of work first started in the world of health care by the Hospital Clínic and the Parc de Salut MAR and in the academic sphere by the University of Barcelona and Pompeu Fabra University. The pivotal mechanism of its work model is the transfer of knowledge generated by scientific research to practice, a task undertaken by the institute's Education and Policy and Global Development departments.

Its ultimate goal is to help close the gaps in health disparities between and within different regions of the world.

https://www.isglobal.org/en/about-us

GlaxoSmithKline Vaccines (Belgium)

We are a science-led global healthcare company with a special purpose: to help people do more, feel better, live longer. We aim to bring differentiated, high-quality and needed healthcare products to as many people as possible, with our 3 global businesses: pharmaceuticals - vaccines - consumer healthcare, scientific and technical know-how and talented people. We invest in scientific and technical excellence to develop and launch a pipeline of new products that meet the needs of patients, payers and consumers. £3.9bn R&D investment and 3 major launches in 2017: Shingrix, a vaccine for shingles, Trelegy Ellipta for COPD and Juluca for HIV. Our Vaccines business has a broad portfolio and innovative pipeline of vaccines to help protect people throughout life. We deliver over two million vaccine doses per day to people living in over 160 countries.

http://www.gsk.com/

Immuno Valley (The Netherlands)

Immuno Valley is a business driven public-private consortium of over forty scientific and business partners. Operating at the interface of human and animal health, Immuno Valley is the premier One Health consortium for recognising science and business opportunities and combining R&D expertise in the field of infectious diseases.

Immuno Valley monitors trends in research & development and matches scientific findings with business and funding opportunities. The ultimate aim is to translate R&D expertise into new products for the diagnosis, prevention and treatment of infectious diseases.

Consortium partners: Amsterdam Academic Medical Centre, Amsterdam Economic Board, Central Veterinary institute of Wageningen, GD animal health, Intravacc, Research Ant, Sanquin Bloedvoorziening, Task Force Innovation Utrecht, TNO innovation for life, Utrecht University, Utrecht University Medical Centre, VU Medical Centre, Ardol, BioXpert, Ceva Santé Animale, Crossbeta biosciences, DaaVision, Dechra Veterinary Products, De Stolle Kracht, Dopharma, Eli Lilly Elanco Animal Health, EpiVax, Farma Research Animal Health, Greenvalley International, InnatOss, InnoServ, Merial, Metabolon, Micreos, MSD Animal Health, Nizo, Nutriad, Nytor, OMFL, Perstorp, Prionics, Purac Corbion, Schothorst Feed Research, U-Protein Express BV, Zoetis B.V., Ministry of Economics Affaires Agriculture and innovation, Municipality of Amsterdam-Lelystad-Utrecht, Province of Flevoland-Noord-Holland-Utrecht

http://www.immunovalley.nl/

Incepta Vaccine Ltd (Bangladesh)

Incepta Vaccine Ltd is the first human vaccine manufacturing company in Bangladesh. The manufacturing unit is situated at Zirabo, Savar which is conveniently located at the outskirt of Dhaka city. It is established with an objective to introduce modern concepts in manufacturing vaccine by acquiring advanced

knowledge and technique. Prime objective of this company is to protect vast populations of Bangladesh as well as developing world from various infectious diseases at an affordable cost. It has a vision to develop novel vaccines against diseases of the developing world.
Incepta Vaccine Ltd, a state-of-the-art facility fully compliant with WHO GMP requirements, is a large vaccine manufacturing facility that has the capacity to manufacture 180 million single dose vials and ampoules per year. A large pool of scientists are engaged in different areas of specialties like research and development, quality control, quality assurance, production and other related areas.
http://inceptavaccine.com/

Innovative clinical research network in vaccinology : i-reivac (France)

I-REIVAC is the only French network for clinical research in vaccinology. It has been labeled a network of excellence within the framework of the F-CRIN project. The network is part of the Vaccinology Research Consortium (CoReVac) created by the Institute of Microbiology and Infectious Diseases (IMMI). It was first composed of four Clinical Investigation Centres (CIC) (Cochin and Bichat in Paris, Clermont-Ferrand and Montpellier), which constituted the network managing board. The network then grew to include 18 centres including 7 CICs, 2 Clinical Research Centres (CRC), 1 immunology clinical research unit, 3 infectious disease services, 1 epidemiology and prevention service and 2 labelled laboratories in immunology for the extraction of PBMC, situated at Cochin and St-Etienne.
The I-REIVAC main goals are to sustain the "proof of concept" studies, increase the numbers of clinical trials in vaccinology in France and in the European Community, recruit the research participants to be effective, harmonize procedures and tools for administrative and financial management within the quality approach and establish a biobank available to partners. Our Objectives is to enhance the visibility and competitiveness of France in vaccination research, to develop a quality and attractive scientific program for industrial and university partners, to promote French excellence and to develop European and international strong and efficient collaborations. In partnership with F-CRIN, I-REIVAC offers a training program in clinical research and vaccinology for medical staff (young physicians and experienced investigators) and paramedics (clinical research technicians, nurses, clinical trial coordinators, project managers ...).
https://www.ireivac.org/

Instituto de Investigación Germans Trias i Pujol (IGTP) (Spain)

The Institute for Health Science Research Germans Trias i Pujol (IGTP) is a public research centre in the Autonomous region of Catalonia in Northern Spain dedicated to increasing scientific knowledge and transferring it to improve the care and lives of patients.
The institute is attached to one of the large teaching hospitals in the Barcelona area; the Germans Trias University Hospital (HUGTP), and is located on the biomedical campus that surrounds it, Campus Can Ruti. It is a CERCA centre; a member of the biocluster supported and supervised by

the Autonomous Catalonian Government. It is also accredited as a Centre of Excellence by the Instituto Carlos III (Spanish Government) and in this capacity acts as an umbrella organization for scientific research on the campus, where it works closely with the other centres located there.
The mission of the IGTP is to create a multi-disciplinary and multi-institutional environment that opens the gates to highly efficient translational research with a view to improving people's heath and quality of life.
The Germans Trias Institute carries out research within 9 areas:

- Science of Behaviour and Substance Abuse
- Immunology and Inflammation
- Cardiovascular and Respiratory Diseases
- Infectious Diseases
- Endocrine and Diseases of the Metabolism, Bones and Kidneys
- Diseases of the Liver and Digestive Tract
- Cancer
- Neuroscience
- Community Health

Scientists working in these areas publish an average of over 500 papers a year, contribute to improved treatment and healthcare protocols, produce patents and set up spin-off companies in order to improve the lives of patients.
http://www.germanstrias.org/

Institut Mérieux (France)

INSTITUT MERIEUX

Institut Mérieux is contributing its experience in biology to improve medicine and public health across the globe. To fight against infectious diseases and cancer, the Institute imagines and develops new approaches in the fields of diagnostics, immunotherapy, food safety, and nutrition.
Its three bio-industrial companies (bioMérieux, Transgene and Mérieux NutriSciences), working closely with its entities devoted to innovation (such as ABL Inc. and Mérieux Développement), have contributed to major advances in medicine and public health.
Institut Mérieux employs nearly 20,000 people around the world and is present in nearly 45 countries, with almost 3,2 billion euros in sales.
http://www.institut-merieux.com/en/home/

Inserm – CIC-EC – CIIL (France)

Inserm
La science pour la santé
From science to health

CENTRE D'INVESTIGATION CLINIQUE
EPIDEMIOLOGIE CLINIQUE
(CIC-EC)

The CIC-EC of Saint-Etienne was created in February 2003. The major assignments entrusted were to develop the methodological aid and IT support to multicentric clinical trials and clinical epidemiological research taking on all or part of this research work. The CIC-EC was therefore aimed at clinical research development particularly within labelled teams of the CHU of Saint-Etienne. In 2008, the CIC-EC has been expanded to new fields of clinical research as cancer and vaccinology. The

CIC-EC Vaccinology has been developed by the Pr. F. Lucht (medical doctor in infectious diseases) and the Dr. S. Paul (immunologist and expert in vaccinology). In 2009, the CIC-EC Vaccinology has been labelled by ANRS (French network for HIV vaccine research) and REIVAC (French network of clinical investigators in Vaccinology). The CIC has participated in more than 20 clinical trials in the field of vaccine development both with academic labs and companies. The expertise of the CIC-EC Vaccinology renamed as CIC1408 in 2013 is the evaluation of mucosal vaccines. In 2014, the REIVAC network has been labelled by the F-Crin network to develop excellence in the field of Vaccinology in Europe.

https://www.inserm.fr/en

http://www.chu-st-etienne.fr/Professionnels/Recherche/Presentation_DRCI/Pro_CIC_EC.asp

https://www.ciil.fr/

Instituto Butantan (Brazil)

Instituto Butantan supplies the Brazilian public health system with 90% of the antivenin and 65% of all vaccines distributed in the country. Out of the 170 million doses of vaccines dispensed annually by the Brazilian immunization program, 100 million are produced Butantan.

In particular, Instituto Butantan manufactures 100% of the influenza vaccine doses used by the Ministry of Health. Presently, we are the largest flu vaccine manufacturer in the Southern Hemisphere. The current manufacturing capacity is the result of an internal development of processes to obtain vaccine antigens, as well as technology transfer processes and Productive Development Partnerships between Butantan and external Laboratories.

As the largest and most qualified provider of vaccines and antivenom for the country's public health system, as from 2017, Butantan adopted a strategy to strengthen its position in Brazil and gain a foothold in the world market via collaborations and partnerships, at the same time promoting important adjustments in its industrial park.

All 2019 infrastructure projects have been reviewed to match the short and mid-term strategies to increase the nominal output capacity. A new Business Unit is in place, dedicated to building partnerships with a view to accelerate the absorption of new technologies and to provide a wider product and services portfolio to meet increasing public health demands.

https://butantan.gov.br/instituto-butantan

International Vaccine Institute: (South Korea)

The International Vaccine Institute (IVI) is a non-profit International Organization established in 1997 as an initiative of the United Nations Development Programme (UNDP). We are among the few organizations in the world dedicated to vaccines and vaccination for global health.

Our mission is to Discover, develop and deliver safe, effective and affordable vaccines for global public health. IVI is headquartered in Seoul, Republic of Korea, as our host country. The Republic of Korea, Sweden, and the World Health Organization (WHO) are among the 36 signatories to our international treaty.

IVI focuses on vaccines against infectious diseases affecting the World's most impoverished. We aim to make vaccines available and accessible for vulnerable populations in developing countries. We live in an increasingly globalized world where new and emerging infectious diseases can become global health threats. IVI also focuses on vaccines against infectious diseases of major global health concern.
http://www.ivi.int/

Intravacc (The Netherlands)

Even the most promising vaccines don't always make it out of the laboratory into large-scale production. We at Intravacc are fully aware of the challenges on the long road of vaccine development. We substantially reduce the risks and costs involved with developing vaccines. How? By bridging the gap between your concept and late stage clinical studies. The Netherlands-based Intravacc part of the Utrecht Science Park location Bilthoven. is one of the world's leading organizations with many years of experience in translational vaccinology. As an established independent clinical development and manufacturing organization (CDMO) in the vaccine industry, Intravacc offers a wide range of expertise and is the bridge between your discovery and the start of your phase I/II clinical trials in humans.
http://www.intravacc.nl/

Janssen Vaccines & Prevention (The Netherlands)

Janssen's work in the Netherlands covers everything that comes with making medicines and vaccines: from research to disease prevention and from the development of new medicines and vaccines to the production and making them available. Every day we are committed to a future in which disease is a thing of the past.
Janssen in the Netherlands is an innovative pharmaceutical company with more than 2000 employees, who work every day with dedication to everything that comes with making medicines: from research to disease prevention and from the development of new medicines to the production, marketing and sale of them. We want to continue to develop medicines that make a difference to patients and society: that means improving the quality of life of patients and their loved ones, extending life expectancy and contributing to the productivity and prosperity of our country.
https://www.janssen.com/netherlands/

Karolinska Institutet*Department of Medicine_Solna (Sweden)

Karolinska Institutet (KI) is one of the world's leading medical universities. Our vision is to advance knowledge about life and strive towards better health for all. As a university, KI is Sweden's single largest centre of medical academic research and offers the country's widest range of medical courses and programmes. Since 1901 the Nobel Assembly at Karolinska Institutet has selected the Nobel laureates in Physiology or Medicine.

In Sweden, KI accounts for the single largest share of medical academic research and has the largest range of medical education. Karolinska Institutet was founded in 1810 as an "Institute for the Making of A-Based Field Physicians". Today, Karolinska Institutet is a modern medical university and one of the world leaders.

With our close relationship with healthcare, well-developed infrastructure, and a strong economic base, Karolinska Institutet has the best conditions for education and research of the highest quality.

Karolinska Institutet has a wide range of education in medicine and healthcare. The wide range is unique in Sweden. Karolinska Institutet conducts research and education on two campuses (Solna and Flemingsberg) and at several of the county's hospitals.

At KI, approximately 6,000 full-time students study longer or shorter educational programmes and courses. Teachers often conduct research in parallel with their teaching, which means that the students get to know the latest in the entire medical field. Students, teachers, and researchers together create an interesting and stimulating environment.

Several of KI's courses include clinical training and on-site training in health care. We also have a large international exchange that gives students the opportunity to study abroad for some time.

https://ki.se/

Katholieke Universiteit Leuven*Rega Institute (Belgium)

The Rega Institute was founded in 1954 by Professor Piet De Somer and named after the 18th century filantropist and Professor Josephus Rega of Leuven. It hosts part of the Department of Microbiology and Immunology. Since its inception, the Rega Institute hosts also the Section of Medicinal Chemistry of the Department of Pharmaceutical Sciences and it is thus a true interdepartmental and interdisciplinary research institute. The Rega Institute has always been a jewel in the crown of research and innovation at the University of Leuven on the basis of publications, citations and prestigious scientific prizes of its members.

https://www.kuleuven.be/english/ , *https://rega.kuleuven.be/*

Luxembourg Institute of Health (Luxembourg)

Luxembourg Institute of Health (LIH) is a public biomedical research organisation. Striving for excellence, its researchers, by their creativity, enthusiasm and commitment, generate knowledge on disease mechanisms and contribute to the development of new diagnostics, preventive strategies, innovative therapies and clinical applications that impact the healthcare of Luxembourgish and European citizens.

The LIH is a public research organisation at the forefront of biomedical sciences. LIH aims to perform research that transcends the boundaries of individual diseases and that can be tangibly applied in the clinical practice to address unmet needs, thus positively affecting health outcomes for patients. This translational and transversal research strategy, combined to the increasing appreciation of the role of the immune system in determining disease, has led LIH to focus on four priority areas:

- Cancer,
- Immunological disorders,
- Neurodegenerative diseases,
- Preventive medicine.

With its strong expertise in population health, oncology, infection, and immunity as well as storage and handling of biological samples, LIH investigates disease mechanisms to develop new diagnostics, innovative therapies, and effective tools for personalised medicine.

https://www.lih.lu/

Merck Sharp & Dohme (USA/FR)

We aspire to be the premier research-intensive biopharmaceutical company in the world. For more than 125 years, Merck Sharp & Dohme (MSD) has been inventing for life, bringing forward medicines and vaccines for many of the world's most challenging diseases in pursuit of our mission to save and improve lives.

We demonstrate our commitment to patients and population health by increasing access to health care through far-reaching policies, programs, and partnerships.

Today, we continue to be at the forefront of research to prevent and treat diseases that threaten people and animals – including cancer, infectious diseases, such as HIV and Ebola, and emerging animal diseases.

https://www.msd.com/

Mikrobiologický ústav - AVCR (Czech Republic)

The Institute of Microbiology of the CAS represents the largest scientific body extensively exploring life cycles, molecular mechanisms and regulatory systems of various microorganisms such as bacteria, yeast, fungi and algae) as well as mammalian cell lines with respect to basic research questions as well as their prospective practical exploitation in medicine and industry.

The main research interests of our Institute represent cellular and molecular microbiology, genetics and physiology of microorganisms and their resistance to antibiotics, production of microbial metabolites and their biotransformation, and grading up production strains by genetic modifications etc.

Another main research direction is embodied by soil ecology, ecotoxicology and microbial degradation of organic pollutants in the natural environment. An immunological section of the Institute then studies the importance of microorganisms in phylogenetic and ontogenetic acquisition of immunity as well as during the onset of autoimmune diseases and, last but not least, it is also focused on immunotherapies of oncogenic diseases.

http://mbucas.cz/en/

National University of Life and Environmental Sciences of Ukraine*Faculty of Veterinary Medicine (Ukraine)

The National University of Life and Environmental Sciences of Ukraine is one of the leading institutions of education, science and culture in Ukraine. More than 26 thousand students and more than 600 graduates, PhD students and seekers study at 3 educational and research institutes and 13 departments of basic university institution (in Kyiv) and 10 separate units of NULES of Ukraine – regional universities of I-III accreditation levels. Educational process and scientific research at the University are provided by more than 2,600 scientific and educational and pedagogical workers, including about 300 professors and doctors of sciences, more than 1,000 assistant professors and PhDs.

https://nubip.edu.ua/en

Network for Education and Support in Immunisation (Belgium)

The Network for Education and Support in Immunisation (NESI) was officially launched on 1 September 2002. The Executive Secretariat of NESI is hosted at the Department of Family Medicine and Population Health, University of Antwerp in Belgium.

NESI was built on the experience of the International Network for Eastern and Southern Africa on hepatitis B vaccination, which was established in 1999 by five universities in Eastern and Southern Africa (Kenya, South Africa, Tanzania, Zambia and Zimbabwe), Ministries of Health (MoH) in Africa and the University of Antwerp. The purpose of this network was to translate

research on hepatitis B through capacity building and advocacy into universal access to hepatitis B vaccination in the partner countries.
With the development of new vaccines and increased commitment by development partners and private sector initiatives to strengthen vaccine supply and immunisation services, there are more opportunities to prevent more diseases in more people. This led to the establishment of NESI, which is an international multidisciplinary network with the mission to strengthen immunisation programmes, in particular in low- and middle-income countries.
http://www.nesi.be/

Paul-Ehrlich-Institut (Germany)

Paul-Ehrlich-Institut

Federal Institute for Vaccines and Biomedicines

The Paul-Ehrlich-Institut (PEI), the Federal Institute for Vaccines and Biomedicines, in Langen near Frankfurt/Main is a senior federal authority reporting to the Federal Ministry of Health (Bundesministerium für Gesundheit, BMG). It is responsible for the research, assessment, and marketing authorisation of biomedicines for human use and immunological veterinary medicinal products. Its remit also includes the authorisation of clinical trials and pharmacovigilance, i.e. recording and evaluation of potential adverse effects. Entrance of the institute with head of Paul Ehrlich (Source: Morgenroth/Paul-Ehrlich-Institut)
Other duties of the institute include official batch control, scientific advice and inspections. In-house experimental research in the field of biomedicines and life science form an indispensable basis for the manifold tasks performed at the institute.
The Paul-Ehrlich-Institut, with its roughly 800 members of staff, also has advisory functions nationally (federal government, federal states (Länder)), and internationally (World Health Organisation, European Medicines Agency, European Commission, Council of Europe etc.).
https://www.pei.de/

Pfizer vaccines (USA)

Pfizer

Pfizer Inc. is a research-based, global biopharmaceutical company. We apply science and our global resources to bring therapies to people that extend and significantly improve their lives through the discovery, development and manufacture of medicines and vaccines.
Vaccines are one of the greatest public health advancements of all time, resulting in the control, elimination, or near-elimination of numerous infectious diseases that were once pervasive and often fatal. Pfizer has a rich history in vaccine research and development (R&D). Over the years, we've played a pivotal role in eliminating or nearly eliminating deadly infectious diseases like smallpox and polio globally. We have designed novel vaccines based on new delivery systems and technologies that have resulted in vaccines to prevent bacterial infections, like those caused by S. pneumoniae and N. meningitidis.
Our vaccine R&D program includes an ongoing focus on the prevention of pneumococcal disease, including in adults. We are also advancing vaccines for additional deadly adolescent and adult infections including Meningococcal disease, Staphylococcus aureus and Clostridium difficile.

http://www.pfizer.com/research/therapeutic_areas/vaccines

Sanofi Pasteur (France)

Sanofi Pasteur vaccines help protect as many as half a billion lives each year against life-threatening infectious diseases at every stage of life. With our 15,000 employees worldwide, we seek to extend the protective power of vaccination to new infectious diseases while continuously improving existing vaccines to enhance health and wellbeing.

We have a diverse portfolio of high-quality vaccines for children, adolescents and adults, including influenza, meningitis, travel and endemic diseases. We are a world leader in influenza and paediatrics vaccines, and the first worldwide supplier of polio injectable vaccine. Combination vaccines, those that protect against multiple diseases, are one of the strengths of Sanofi Pasteur's product range. They offer the advantage of simplifying vaccination schedules, decreasing the number of injections and the health-related costs.

Our company offers the broadest range of vaccines in the world, providing protection against 20 bacterial and viral diseases. We distribute more than 1 billion doses of vaccine each year, making it possible to vaccinate more than 500 million people across the globe.

https://www.sanofi.com/

SPHERE CNRS (France)

The Sphère unit (Sciences, Philosophy, History) UMR7219 was created in 2009 from the meeting of two units: the CHSPAM (Centre of History of Sciences and Arab and Medieval Philosophies, former UMR 7062), created in 1972, and REHSEIS (Epistemological and Historical Researches on Exact Sciences and Scientific Institutions, former UMR 7596), created in 1984. This meeting concretizes the proximity and the complementarity of the scientific programs of these two units, whose works relate to a long duration ranging from the antiquity to the contemporary period, in different cultural contexts. Anne Marie Moulin, doctor, philosopher and research director emeritus of the CNRS, studies the link between the history of medicine and contemporary issues raised by global health and biomedicine, the universality of medicine and the history of vaccination in the clash of cultures and civilizations. AIDS, tuberculosis and emerging diseases are still waiting for their vaccine. The adventure goes on.

http://www.sphere.univ-paris-diderot.fr/?lang=en

Statens Serum Institut (Denmark)

Statens Serum Institut (SSI) is under the auspices of the Danish Ministry of Health. Our main duty is to ensure preparedness against infectious diseases and biological threats as well as control of congenital disorders.

SSI was inaugurated on 9 September 1902 to secure production and supply of anti-diptheria serum to Danish patients. Diptheria is a severe tonsillitis caused by a bacterium releasing a toxin. Treatment by serum from horses which were vaccinated by the toxin could reduce the mortality by half with patients suffering from diphtheria.
During the first more than 100 years SSI has proved its justification and viability and has had the capacity to undertake new vital assignments. SSI has only been able to do so, because SSI is based on a strong research foundation. Today, SSI is one of Denmark's largest research institutes.
http://www.ssi.dk/English.aspx

Takeda Pharmaceuticals International Co. (Japan / USA)

Takeda is a patient-focused, values-based, R&D-driven global biopharmaceutical company committed to bringing Better Health and a Brighter Future to people worldwide. Our passion and pursuit of potentially life-changing treatments for patients are deeply rooted in over 230 years of distinguished history in Japan.
In 1781, Takeda founder, Chobei I, began selling traditional Japanese and Chinese herbal medicines in Doshomachi, the medicine district of Osaka, Japan. He soon gained a reputation for business integrity and quality products and services. These values and characteristics have continued through the years and have become embedded in our uncompromising corporate philosophy, which still guides us today.
Our global team of researchers and scientists harness cutting-edge science to push the boundaries of what is possible. We cultivate external collaborations and strong research capabilities to bring life-changing therapies to patients worldwide.
Takeda focuses its R&D efforts on four core therapeutic areas: Oncology, Rare Genetic and Hematology, Neuroscience and Gastroenterology, with targeted investments in Plasma-Derived Therapies and Vaccines. We are focusing on targeted patient populations in areas of high unmet need, where there is potential for greater therapeutic benefit.
We are advancing a modality-diverse pipeline with an increased focus on immuno-oncology and rare diseases. Leveraging platform capabilities in cell therapy, gene therapy and data sciences, we're working to deliver a steady stream of next-generation therapies with transformative or curative potential across our core areas.
http://www.takeda.com/

The Pirbright Institute (United Kingdom)

We are a world leading centre of excellence in research and surveillance of viral diseases of farm animals and viruses that spread from animals to humans. We receive strategic funding from the Biotechnology and Biological Sciences Research Council (BBSRC), and work to enhance capability to contain, control and eliminate these

economically and medically important diseases through highly innovative fundamental and applied bioscience.
The Institute employs around 350 staff, research students and visiting scientists, and has recently moved to one campus in Pirbright, Surrey, where investment by BBSRC has resulted in a redevelopment of the site and the construction of a high level containment facility – the BBSRC National Virology Centre: The Plowright Building and a SAPO level two facility – the BBSRC National Vaccinology Centre: The Jenner Building. Our mission is to be the world's leading innovative centre for preventing and controlling viral diseases of livestock.
https://www.pirbright.ac.uk/our-science/impact-our-research

Transgene (France)

Transgene is a clinical-stage biotechnology company focused on designing and developing novel immunotherapeutics. Every day, we push the boundaries of innovation with our therapeutic vaccines and oncolytic viruses, to design better treatments for patients.
A pioneer in viral vectors engineering, we have one ambition: design innovative treatments in the fight against cancer. Our approach uses the mechanisms of the immune response to enable the patient's body to fight against disease. At Transgene, we integrate genetic sequences (or transgenes) into viral vectors to transform them into weapons that can kill abnormal cells.
Transgene's immunotherapeutics can be administered as single agents or in combination with other treatments (immunotherapy, chemotherapy, etc.).
https://www.transgene.fr/en/

UCBL - iCAP (France)

Unique in France in terms of both its scale and its innovations and successes in the field, iCAP is a common service of the University Claude Bernard Lyon 1, whose main objective is the modernization and improvement of the quality of teaching.
With its experience, its multiple skills, its openness to emerging technologies, iCAP is today a national and European leader in supporting teachers, creating multimedia resources (the educational platform "Spiral Connect », 3D animations, serious games, etc ...) and educational innovation with the tools of tomorrow.
iCAP's missions are:

- ✓ to offer teachers new tools adapted for teaching,
- ✓ train teachers and support them in change,
- ✓ to innovate, advise and experiment,
- ✓ evaluate the educational systems and training.

The iCAP service develops and maintains the Claroline Connect educational platform.
http://clarolineconnect.univ-lyon1.fr
Finally, a multimedia resource portal proposes to pool and share educational resources by thematic channels.
https://icap.univ-lyon1.fr/

Universidad de Oriente (Cuba)

The University of the Orient, as a revolutionary university, directs, develops and promotes higher education policies in the continuous and integral training of the professional, science, innovation, university extension, with the constant search for excellence of all processes for its contribution to the development of a prosperous and sustainable society, with the relevance and impact that our time requires.

We are an institution of higher education, recognized nationally and internationally for its academic excellence, the quality in its processes, the social relevance of its initial and permanent training programs, the results of the activity of science, technology and innovation, as well as the assumption of the challenges of our country in this century to promote local development with competitiveness and political commitment.

https://www.uo.edu.cu/

Universidade de São Paulo (Brazil)

The University of São Paulo (USP) is a public university, maintained by the State of São Paulo and affiliated with the State Secretariat of Economic, Scientific and Technological Development, particularly efficient in scientific productivity. USP have widely recognized the talent and dedication of USP professors, students and employees. USP, as the major institution of higher learning and research in Brazil, is responsible for educating a large part of Brazilian Masters and Ph.D's. On our site, you can find information about our structure, ways of entrance and services offered to the foreign community.

The University of São Paulo offers undergraduate and graduate programs in all areas of knowledge. These are Stricto Sensu courses offering Master's and Ph.D degrees and their objective is to form highly qualified human resources for teaching, research and scientific and technological development. The graduate programs may be offered by a single teaching unit, in the fields of biological, exact or human sciences and/or by various units (called inter-unit courses) or even various different institutions of higher education (called inter-institutional courses).

USP is a Partner of the Butantan Institute, the major vaccine manufacturer of Brazil, which is an associated Partner of the LIVE.

https://www5.usp.br/

Universita degli Studi di Firenze (Italy)

The University of Florence is an important and influential centre for research and higher training in Italy, with 1,800 lecturers and internal research staff, 1,600 technical and administrative staff, and over 1,600 research assistants and doctoral students.

It offers a wide range of study programmes at various levels and in all areas of knowledge. Over 130 Degree courses (First and Second Cycle, corresponding to Bachelor's and Master's Degrees) organised in 10 Schools, with a population of about 51,000 enrolled students, one-fourth of which come from outside of Tuscany. There are over 9,000 degrees awarded each year in Florence. According to the alumni data, the percentage of students who are in the workforce one year after their First Level degree is above national average.
The University of Florence has a natural international vocation and the development of internationalization is one of its strategic priorities. It is one of the largest and most productive public research systems in Italy. This result is accomplished thanks to the number of permanent and temporary researchers working in a wide range of disciplinary and scientific fields, and the numerous junior scientists in training. It is also due to an intensive participation in research programmes of national and international relevance and to the significant scientific results achieved. External funds support the research and knowledge transfer activities. This combination of factors qualifies the Florentine institution as a modern research university and accounts for its excellent position in national and world rankings. Researchers at the University of Florence operate within 21 different departments and have at their disposal approximately 40 research structures comprising inter-departmental and inter-university centres as well as specialised research, knowledge transfer and advanced training centres.
https://www.unifi.it/

Université Libre de Bruxelles (Belgium)

Four scientific Nobel Prizes, one Fields Medal, three Wolf Prizes are further evidence of the University's longstanding tradition of excellence. The Université libre de Bruxelles is an active member of the Research Area: ULB has received HR Excellence in Research award from the EU (EURAXESS) and also EU funding to hire post-doctoral researchers (COFUND program), for example. Over the past few years, it has obtained 36 Grants (16 starting, 10 consolidator and 10 advanced) from the European Research Area (ERC) to finance research in Medicine, Mathematics, Political Science, Economics, Physics, etc. In addition, the University's Institute for European Studies is recognized as a “Jean Monnet European research centre” for its work on European integration.
https://www.ulb.be/en/ulb-homepage

Université Paris XII Val de Marne*VRI (France)

The Vaccine Research Institute (VRI), Laboratory of excellence, was established by the French National Agency for Research on AIDS and viral hepatitis (ANRS – France Recherche nord & sud Sida-HIV Hépatites) and the University of Paris-Est Créteil (UPEC) to conduct research to accelerate the development of effective vaccines against HIV/AIDS, and (re)-emerging infectious diseases. The VRI’s structure strengthens the links between basic research and translational

research, patient's associations and the socio-economic world, contributing to accelerating vaccine development.
The VRI is structured around research teams with multi-disciplinary expertise, a network of national and international thought leading scientists, a clinical network of physicians, core facilities and innovative immunomonitoring platform.
The VRI's scientific strategy, since its creation, has been organized into fully integrated research programs and supported with shared scientific, technological and administrative platforms. The overarching goal is the generation of novel DC-based vaccine candidates in the field of preventive and therapeutic vaccines inducing potent Ab and T cell responses and understands the immunological mechanisms involved in the innate and adaptive immune response to these vaccines by in vitro, preclinical studies in animal models and clinical trials of prophylactic and therapeutic vaccination.
https://www.en.u-pec.fr/ ; https://vaccine-research-institute.fr/

University of Arkansas Medical Sciences (USA)

The College of Medicine at the University of Arkansas for Medical Sciences (UAMS) has held a unique, vital role in Arkansas for more than 135 years. As a major part of the state's only medical sciences university, we train the majority of Arkansas' physicians. Our outstanding faculty members are on staff at UAMS Medical Center, Arkansas Children's Hospital, the Central Arkansas Veterans Healthcare System, UAMS regional centers and numerous other clinics and facilities providing services throughout the state of Arkansas and for patients from around the world.
Many of our basic sciences faculty members also hold appointments in the UAMS Graduate School, teaching tomorrow's scientists. And with a vibrant, world-class research enterprise that emphasizes multidisciplinary collaboration, the College of Medicine's researchers and clinicians serve on the forefront of medical advances.
https://medicine.uams.edu/

University of British Columbia*Child & Family Research Institute (Canada)

The University of British Columbia (UBC) is a global centre for teaching, learning and research, consistently ranked among the top 20 public universities in the world and recently recognized as North America's most international university.
Since 1915, our motto, Tuum Est (It is Yours), has been a declaration of our commitment to attracting and supporting those who have the drive to shape a better world. As a result, UBC students, faculty and staff continue to embrace innovation and challenge the status quo, placing us at the forefront of discovery, learning and engagement. UBC encourages bold thinking, curiosity and initiative, so you can realize your greatest potential.

Since 1915, our motto, Tuum Est (It is Yours), has been a declaration of our commitment to attracting and supporting those who have the drive to shape a better world. As a result, UBC students, faculty and staff continue to embrace innovation and challenge the status quo, placing us at the forefront of discovery, learning and engagement. UBC encourages bold thinking, curiosity and initiative, so you can realize your greatest potential. Facts: 65,000 total students at both campuses, 16,000 international students from 156 countries, $2.6 billion annual operating budget, 325,000 alumni in 140 countries, 16,000 faculty and staff, $658 million Research funding for 9,000 projects in 2017-18, 34th in Times Higher Education world rankings, one of three Canadian universities in the top 50.

https://www.ubc.ca/

BC Children's Hospital research Institute performs world-class research that saves and transforms the lives of children in BC and beyond. Our more than 1,000 researchers are driven by a tireless commitment to help children and their families receive the best possible care and live the healthiest possible lives. Spanning a wide range of children's and women's health concerns, we have four research themes: Childhood Diseases, Brain, Behaviour & Development, Healthy Starts and Evidence to Innovation. There are 358 investigators. The 2017-18 total research revenue of the BC Children's Hospital Research Institute was approximately $77.8 million, including grants, contracts and agreements received from foundations, granting agencies and organizations, government, hospitals and universities.

https://www.bcchr.ca/

Vaccine Formulation Institute (United Kingdom)

VACCINE FORMULATION INSTITUTE

Adjuvants are key components of modern vaccines, because of – among others – their ability to modulate immune responses, enable dose-sparing and improve efficacy of numerous life-saving vaccines.

However, suitable adjuvants and the associated expertise required to effectively use them are not always openly available to the majority of vaccine researchers and developers.

VFI, a not-for-profit company based in Switzerland, is dedicated to provide its technologies in open-access to all interested groups.

Since 2012, VFI provides vaccine researchers and developers a variety of adjuvant-related laboratory and training activities. This includes advise on how to correctly formulate and characterize the adjuvants and the resulting vaccine formulations.

https://www.vformulation.org/

Vaccines Europe (Belgium)

Vaccines Europe
An industry for healthy lives

Vaccines Europe is a specialised vaccines group within the European Federation of Pharmaceutical Industries and Associations (EFPIA), the professional association of the innovative pharmaceutical industry in Europe.

Vaccines Europe was created in 1991 to provide a voice for the vaccine industry in Europe. The group represents vaccine companies of all sizes operating in Europe, and currently includes all

the major global innovative and research-based vaccine companies, including small and medium-sized enterprises.
https://www.vaccineseurope.eu/

Vakzine Projekt Management (Germany)

Founded originally in August 2002, VPM was established following an initiative of the German Federal Ministry of Education and Research (BMBF) to promote the development of vaccines in Germany. Scope of the vaccine initiative was the funding of rapid transfer of results from basic research into the development of new vaccines. The BMBF provided VPM with 25.6 million euros funding between 2001 and 2010 to organize and finance the preclinical and clinical development of vaccines nationwide.
To this end, VPM acquired proprietary rights to promising vaccine candidates from public German laboratories and managed their development until further licensing to industrial partners. In order to identify such promising vaccine candidates in Germany, a map of vaccine research with the associated technologies for research and development of vaccines was drawn up at the beginning of the BMBF funding and updated in 2006.
Since July 2018 Serum Institute of India (SIIPL) is majority shareholder of VPM. SIIPL is the world's largest vaccine manufacturer by number of doses produced and sold globally (more than 1.3 billion doses) which includes Polio vaccine as well as Diphtheria, Tetanus, Pertussis, Hib, BCG, r-Hepatitis B, Measles, Mumps and Rubella vaccines. Vaccines manufactured by SIIPL are accredited by the World Health Organization, Geneva and are being used in around 170 countries across the globe in their national immunization programs, saving millions of lives throughout the world. The acquisition through SIIPL provides VPM and its clients a direct link to cost-effective GMP manufacturing.
https://www.vpm-consult.com/

Valneva (France)

Advancing vaccines for better lives, Valneva is a specialty vaccine company focused on prevention against diseases with major unmet needs. The Company has several vaccines in development, including unique vaccines against Lyme disease, COVID-19 and chikungunya. Valneva's portfolio also includes two commercial vaccines for travellers.
Valneva's strategy stems from its vision to contribute to a world in which no one dies or suffers from a vaccine-preventable disease. We aim to become the leading specialty vaccine company. The Company's strategy is based on an integrated business model that has a unique risk profile and significant potential for value creation.
https://valneva.com/

Virbac (France)

Focusing on animal health, from the beginning, In the 1960s, the various preparations manufactured by human pharmaceutical laboratories at that time did not make it possible to treat all the animal diseases. In 1968, while these major groups were looking to invest in animal health, Pierre-Richard Dick, a veterinary doctor in Nice, drew upon his training at the Pasteur Institute to devise and develop new medications. He founded Virbac with a desire to provide veterinarians, farmers and pet owners worldwide with a set of innovative solutions to fight animal diseases.

Now present in more than 100 countries, Virbac has maintained its independence and its essence. Linking the needs of caregivers with the latest technological advances, our innovation ecosystem delivers a practical range of products and services to diagnose, prevent and treat the majority of pathologies, all while improving the quality of life for animals. Thanks to our offer, supported by a manufacturing base that meets the highest international quality standards, Virbac has been forging personalized relationships with veterinarians, farmers and pet owners in each country for more than 50 years. Through these privileged partnerships, in which societal, health and environmental issues intersect, Virbac contributes day after day to shaping the future of animal health.

https://corporate.virbac.com

World Health Organization, WHO / OMS (Switzerland)

WHO began when our Constitution came into force on 7 April 1948 – a date we now celebrate every year as World Health Day. We are now more than 7000 people from more than 150 countries working in 150 country offices, in 6 regional offices and at our headquarters in Geneva.

We are building a better, healthier future for people all over the world. Working with 194 Member States, across six regions, and from more than 150 offices, WHO staff are united in a shared commitment to achieve better health for everyone, everywhere. Together we strive to combat diseases – communicable diseases like influenza and HIV, and noncommunicable diseases like cancer and heart disease.

We help mothers and children survive and thrive so they can look forward to a healthy old age. We ensure the safety of the air people breathe, the food they eat, the water they drink – and the medicines and vaccines they need.

WHO works worldwide to promote health, keep the world safe, and serve the vulnerable. Our goal is to ensure that a billion more people have universal health coverage, to protect a billion more people from health emergencies, and provide a further billion people with better health and well-being.

https://www.who.int/

TABLE OF THE INSTITUTIONS INVOLVED IN THE LIVE

60 Total Associated or Supporting Partners from 22 countries (11 partner countries) are involved in the LIVE Consortium. These partners have provided a letter of commitment. 55 partner Institutions have provided a PIC number. The LIVE partners can be classified in five categories: **21 Clin_Res, clinical or research centres; 10 HEI** (including the Main Partners), **higher education institutions; 9 BPC, big pharma companies; 9 SMC, small and medium size companies; 11 Org, foundations, and other organization**.

INSTITUTION FULL NAME (PIC-ASSOCIATED)	Country	Institution type	Association year
ABL LYON	FR	SMC	2015
AMAL THERAPEUTICS	CH	SMC	2015
ASSOCIATION LYON BIOPOLE	FR	Org	2015
BAYLOR COLLEGE OF MEDICINE*NATIONAL SCHOOL OF TROPICAL MEDICINE*DPT OF PEDIATRIC TROPICAL MEDICINE	US	HEI	2018
BIOASTER FONDATION DE COOPERATION SCIENTIFIQUE	FR	Org	2015
BIOMERIEUX SA	FR	BPC	2018
BOEHRINGER INGELHEIM ANIMAL HEALTH (BIAH)*MERIAL	FR	BPC	2015
CENTRE MURAZ	BF	Clin_Res	2015
CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS*CRCL – LBTI - IPBS	FR	Clin_Res	2015
CENTRE NATIONAL DE RECHERCHE SCIENTIFIQUE ET TECHNOLOGIQUE*IRSS	BF	Clin_Res	2015
CENTRE PASTEUR OF CAMEROON	CM	Clin_Res	2015
COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	FR	Clin_Res	2015
ECOLE NORMALE SUPERIEURE DE LYON*CIRI	FR	Clin_Res	2015
ETABLISSEMENT FRANÇAIS DU SANG	FR	Clin_Res	2015
EUROPEAN VACCINE INITIATIVE EWIV	DE	Org	2015
FONDATION MERIEUX	FR	Org	2015
FUDAN UNIVERSITY	CN	HEI	2015
FUNDACIÓN PRIVADA INSTITUTO DE SALUD GLOBAL BARCELONA	ES	Org	2015
GLAXOSMITHKLINE BIOLOGICALS*GSK VACCINES	BE	BPC	2015
IMMUNO VALLEY* STICHTING IMMUNO VALLEY	NL	SMC	2015
INCEPTA VACCINE LTD	BD	SMC	2018
INSTITUT DE INVESTIGACIO EN CIENCIES DE LA SALUT GERMANS TRIAS I PUJOL (IGTP)	ES	Clin_Res	2018
INSTITUT MERIEUX *MERIEUX ALLIANCE	FR	BPC	2015
INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE*CIC-EC – CIIL	FR	Clin_Res	2015
INSTITUTO BUTANTAN	BR	Clin_Res	2015
INTERNATIONAL VACCINE INSTITUTE	KR	Clin_Res	2015
JANSSEN VACCINES & PREVENTION BV	NL	BPC	2018
KAROLINSKA INSTITUTET*DEPARTMENT OF MEDICINE_SOLNA	SE	Clin_Res	2019

KATHOLIEKE UNIVERSITEIT LEUVEN*REGA INSTITUTE	BE	Clin_Res	2019
LUXEMBOURG INSTITUTE OF HEALTH	LU	Clin_Res	2019
MERCK SHARP & DOHME (MSD)	US	BPC	2020
MIKROBIOLOGICKY USTAV - AVCR, V.V.I.*INSTITUTE OF MICROBIOLOGY OF THE CAS	CZ	Clin_Res	2018
NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES OF UKRAINE*FACULTY OF VETERINARY MEDICINE	UA	HEI	2019
PAUL ERLICH INSTITUTE* BUNDESINSTITUT FÜR IMPFSTOFFE UND BIOMEDIZINISCHE ARZNEIMITTE	DE	Clin_Res	2015
PFIZER MANUFACTURING DEUTSCHLAND GMBH MIT SITZ ILLERTISSEN* PFIZER VACCINES	DE	BPC	2015
SANOFI PASTEUR SA	FR	BPC	2015
STATENS SERUM INSTITUT	DK	Clin_Res	2015
TAKEDA PHARMACEUTICALS INTERNATIONAL AG	CH	BPC	2015
THE PIRBRIGHT INSTITUTE LBG	GB	Clin_Res	2015
TRANSGÈNE SA	FR	SMC	2015
UNIVERSIDAD DE ORIENTE	CU	HEI	2015
UNIVERSIDADE DE SÃO PAULO*INSTITUT DE CIÊNCIAS BIOMÉDICAS	BR	HEI	2015
UNIVERSITA DEGLI STUDI DI FIRENZE	IT	HEI	2015
UNIVERSITE LIBRE DE BRUXELLES*INSTITUTE FOR MEDICAL IMMUNOLOGY	BE	HEI	2015
UNIVERSITE PARIS XII VAL DE MARNE*VACCINE RESEARCH INSTITUTE	FR	Clin_Res	2018
UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES	US	HEI	2015
UNIVERSITY OF BRITISH COLUMBIA*CHILD & FAMILY RESEARCH INSTITUTE	CA	HEI	2015
VACCINE FORMULATION INSTITUTE LIMITED	GB	Org	2015
VAKZINE PROJEKT MANAGEMENT GMBH	DE	SMC	2015
VALNEVA SE	FR	SMC	2015
VIRBAC SA	FR	SMC	2015

INSTITUTION FULL NAME (SUPPORTING PARTNERS)	Country	Institution type	Association year
CENTER FOR EVALUATION OF VACCINATION*UNIVERSITEIT ANTWERPEN	BE	Clin_Res	2015
CONSORTIUM DE RECHERCHE EN VACCINOLOGIE	FR	Org	2015
INTRAVACC	NL	SMC	2015
NETWORK FOR EDUCATION & SUPPORT IN IMMUNISATION*UNIVERSITEIT ANTWERPEN	BE	Org	2015
RESEAU D'INVESTIGATION CLINIQUE EN VACCINOLOGIE	FR	Org	2015
SPHERE CNRS-UNIVERSITE PARIS 7 DIDEROT	FR	Clin_Res	2015
UCBL-ICAP	FR	HEI	2015
VACCINES EUROPE	BE	Org	2015
WORLD HEALTH ORGANIZATION	CH	Org	2015

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