The Barcelona Debates
on the Human Microbiome 2018
from Microbes to Medicines

Thursday 21st and Friday 22nd June 2018
COSMOCAIXA BARCELONA - C/ Isaac Newton, 26

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IrsiCaixa
Institut de Recerca de la Sida

THE BARCELONA DEBATES ON THE HUMAN MICROBIOME 2018

FROM MICROBES TO MEDICINES

WELCOME

Dear Speakers and Participants,

It is with pleasure that we welcome you to the 2018 Barcelona Debates on the Human Microbiome. From Microbes to Medicines. This meeting is organized by the IrsiCaixa AIDS Research Institute with the collaboration of the Vall d'Hebron Research Institute (VHIR), the University of Vic (UVic-UCC), and the Spanish National Cancer Research Centre (CNIO) and it is possible thanks to the support of our sponsors: "Obra Social la Caixa", MSD and Hotel Mandarin Oriental.

The human body has about 37 billion cells, but of these, only 10% are human cells. The rest belong to almost 100 billion microbes that can be found inside us. The hundreds of microbial species with whom we share our body, live (and die) in different places, but it is in the intestines where the majority inhabits forming a whole universe. More than 99% of our "genetic information" is actually information from this community of microbes, our microbiota. This "second genome", as it is called sometimes, exerts a great influence on our health, possibly even greater than the one that exerts the genes that we inherit from our parents. In addition, inherited genes are more or less fixed, invariable; however, it seems that the second genome that the microbiota contributes can be remodeled and even regenerated.

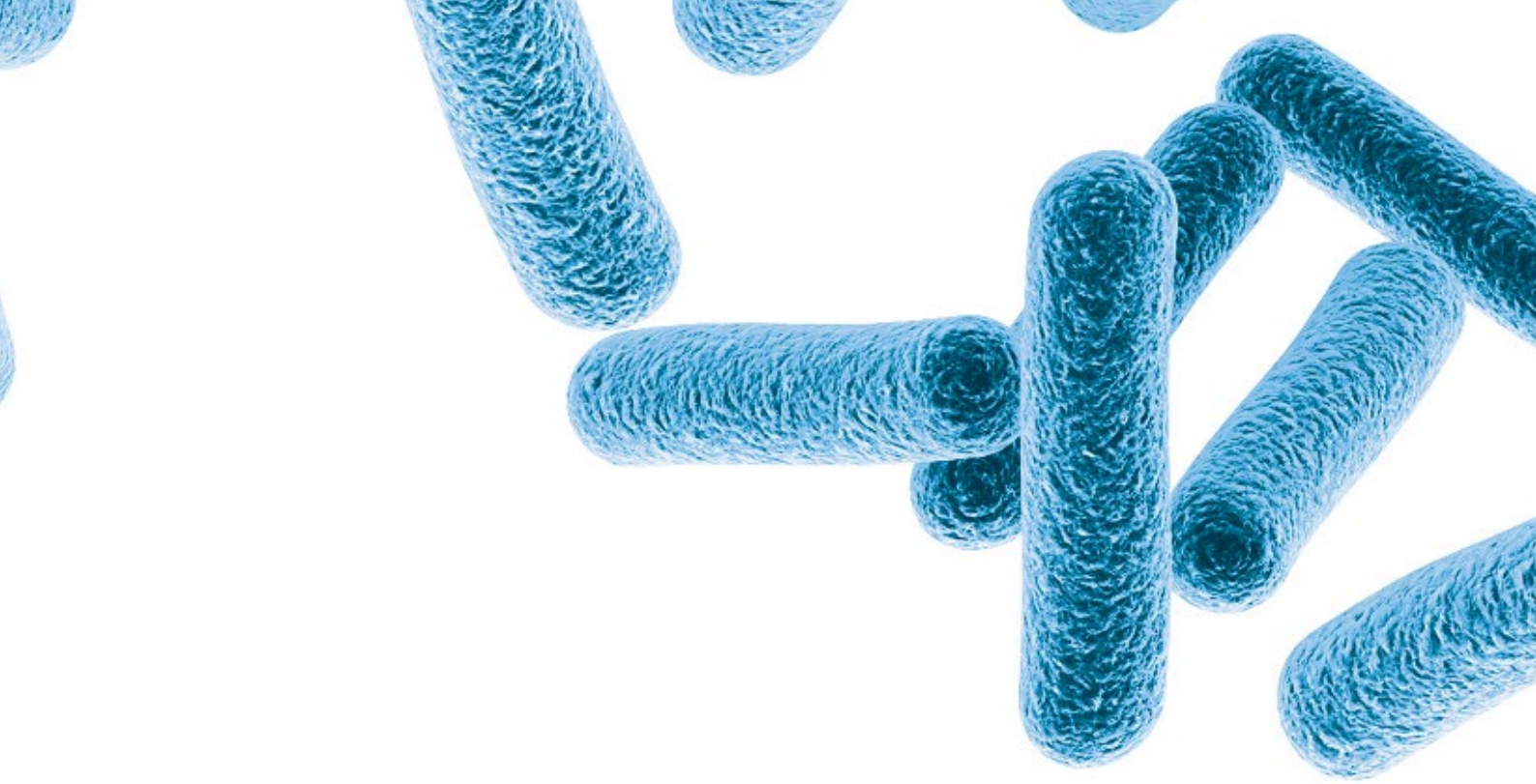
Human and microbial health are inextricably linked: the microbiota plays a key role in various aspects, such as the digestion or education of our immune system. A dysfunction in our microbiota can contribute to the emergence of diseases such as obesity, diabetes, allergies, certain types of Cancer and even mental health problems. Understanding human-microbiome relationship is a challenge for preventive medicine and for the medical management of chronic diseases and it represents an opportunity for innovation.

The 2018 "Barcelona Debates on the Human Microbiome. From Microbes to Medicines" will discuss the most recent studies on the complex human-microbiome relationship, how the microbiome can influence in improving the health and well-being and explore future research areas on this promising field. The 2-day meeting brings together international leading-edge and has become a meeting of reference, this year celebrating its fourth edition. We hope you enjoy the meeting and we strongly encourage you to actively participate in the discussions over the next two days.

Yours sincerely,

Dr. Bonaventura Clotet
Dr. Francisco Guarner
Dr. Roger Paredes

IrsiCaixa
Institut de Recerca de la Sida



PROGRAM
The Barcelona Debates
on the Human Microbiome 2018

Thursday 21st June 2018

8.30 **Registration**

9.20 **Welcome**

Àngel Font - Corporate Director of Research and Strategy, La Caixa Banking Foundation

Albert Barberà - Director general Research and Innovation in Health - Generalitat de Catalunya

Bonaventura Clotet - Scientific Director, IrsiCaixa AIDS Research Institute

Francisco Guarner - Senior investigator at Vall d'Hebron Research Institute

9.40 **SESSION 1 - Chair: Francisco Guarner** - Senior investigator at Vall d'Hebron Research Institute, Barcelona

Special lecture - Living in a microbial world

Ricard Guerrero, Institute for Catalan Studies, Barcelona

10.30 Coffee Break

11.00 **SESSION 2 - Chair: José Manuel Fernández-Real**, Girona Biomedical Research Institute (IDIBGI)

Vertical Transmission of the human microbiome

M. Carmen Collado, Institute of Agrochemistry and Food Technology (IATA), Spanish National Research Council (CSIC), Valencia

Transmission and population biology of members of the human microbiome

Nicola Segata, Centre for Integrative Biology (CIBIO). University of Trento

12.00 Overall discussion

12.30 Lunch

Thursday 21st June 2018

13.30 **SESSION 3 – Chair: Daria Hazuda**, Merck, West Point, USA

Microbiome and HIV

Roger Paredes, IrsiCaixa AIDS Research Institute. Hospital Germans Trias i Pujol. Barcelona

Microbiome and B-Cells

Andrea Cerutti, IMIM-Hospital del Mar. ICREA professor.Icahn School of Medicine at Mount Sinai

14.30 Overall discussion

15.00 Coffee break

15.30 **SESSION 4 – Chair: Bonaventura Clotet**, IrsiCaixa AIDS Research Institute. HospitalGermans Trias i Pujol. Barcelona.

Advances in the microbiota-induced modulation of cancer Immunotherapy

Conrad Rauber, Gustave Roussy. France

Microbiome signatures in colon cancer progression

Mani Arumugam, University of Copenhagen

16.30 Overall discussion

17.00 Adjourn

Friday 22nd June 2018

9.00 **SESSION 5 – Chair: Marc Noguera,** IrsiCaixa AIDS Research Institute. Barcelona

Proteomics and the microbiome:
Adam Burgener, University of Manitoba
Integrating the microbiome into systems biology
Rafick-Pierre Sékaly, Case Western Reserve University. Cleveland

10.00 Overall discussion

10.30 Coffee Break

11.00 **SESSION 6 – Chair: Xavier Aldeguer,** University Hospital Dr. Josep Trueta. Girona

Microbiome in non-alcoholic fatty liver disease
José Manuel Fernández-Real, Girona Biomedical Research Institute (IDIBGI)
Microbiome in inflammatory bowel disease (IBD)
Chaysavanh Manichanh, Vall d'Hebron Research Institute (VHIR). Barcelona

12.00 Overall discussion

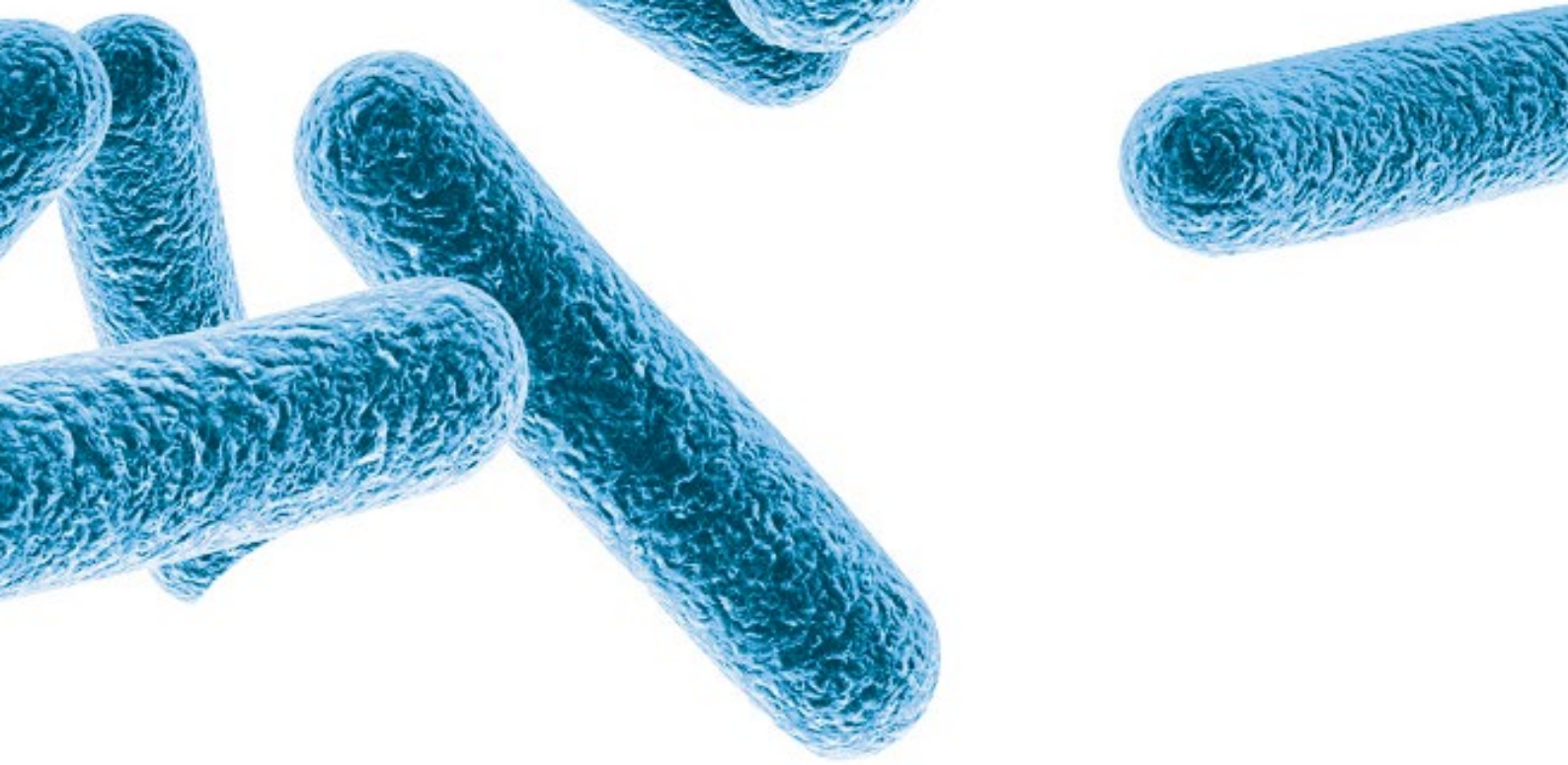
12.30 Lunch

13.30 **SESSION 7 – Chair:** Jordi Guardiola,

Lessons from 5-years' experience of FMT in clinical research
Christoph Högenauer, Medical University of Graz.
Austria Microbial Consortia in the pipeline
Jason Norman, Vedanta Biosciences, Boston

14.30 Overall discussion

15.00 **Meeting closure**
Francisco Guarner, Vall d'Hebron Research Institute (VHIR), Barcelona



COORDINATORS AND SCIENTIFIC COMMITTEE

COORDINATORS

Bonaventura Clotet, Director IrsiCaixa. Head of Infectious Diseases, Hospital Universitari Germans Trias i Pujol. IrsiCaixa. UAB. UVIC-UCC Badalona, Spain.

Bonaventura Clotet,Specialized in Internal Medicine and Infectious Diseases. PhD in Medical Sciences in 1981. He is Head of the Infectious Diseases department and Director of the Retrovirology Laboratory “irsiCaixa” Foundation at the Hospital Universitari Germans Trias i Pujol since 1993. He is also President of the Foundation “Lluita contra la SIDA”, founded in 1992. Since 2006, he is co-director of the HIVACAT project for the development of the AIDS vaccine in Catalonia, Spain. Director of the Master in AIDS Pathogenesis and Treatment (Universitat Autònoma de Barcelona) since 2011. Dr. Clotet is member of the steering committee of EuroSIDA Scientific Advisory Board Member. He is the director of the Chair of AIDS and Related Diseases at the University of Vic (UVic), created in October 2013. In October 2012, he was awarded by the Catalan Government (Generalitat de Catalunya) with the Josep Trueta medal to Sanitary Merit for his contributions to the research in the HIV field. In April 2016, Clotet has been awarded with the ‘Creu de St. Jordi’ for being one of the most internationally renowned HIV researchers. Dr. Clotet has created 2 spin-offs from IrsiCaixa:AELIX Therapeutics (December 2015) for the development of a therapeutic vaccine for HIV infected patients and AlbaJuna Therapeutics (January 2016) for the development of an Immunoglobulin for curing & preventing HIV. More than 700 papers in international journals (Impact factor: >5.000 // H-index: 81)

Francisco Guarner, Senior Investigator at Vall d'Hebron Research Institute (VHIR), Barcelona, Spain.

Dr. Francisco Guarner graduated in Medicine at the University of Barcelona in 1973, trained Gastroenterology and Hepatology at Hospital Clinic (Barcelona); obtained PhD degree at University of Navarra (Spain). He was Research Fellow at Royal Free Hospital (London, UK), King's College Hospital (London, UK), and Wellcome Research Laboratories (Beckenham, UK). He is Senior Researcher at the Digestive System Research Unit, Vall d'Hebron Institut de Recerca (Barcelona, Spain). Member of the Steering Committee of the International Human Microbiome Consortium (www.human-microbiome.org), past member of the Board of Directors on the International Scientific Association for Probiotics and Prebiotics (www.isapp.net), current President of the Board of the Spanish Society for Probiotics and Prebiotics (www.sepyp.es), Member of the Guidelines Committee of World Gastroenterology Organisation (www.worlgastroenterology.org), and co-author of 295 publications on original research or reviews (Web of Science); holds an h-index of 50.

Roger Paredes, HIV Physician at Hospital Germans Trias i Pujol and Head of the Microbial Genomics Group at the IrsiCaixa AIDS Research Institute, Barcelona, Spain.

Roger Paredes obtained an MD, PhD degree in Medicine and Surgery from the Autonomous University of Barcelona (UAB). He specialised in HIV resistance at the Brigham & Women's Hospital in Boston and Harvard Medical School, being funded by a post-doctoral scholarship from "la Caixa". He has demonstrated the clinical utility of new methods of sequencing HIV in both high- and low-income countries. He is a member of the WHO HIV Drug Resistance Strategy (ResNet) Steering Committee and of the International Antiviral Society-USA, which publishes an international annual update of drug resistance mutations in HIV-1. He is co-author of the Rega algorithm for interpreting resistance to antiretrovirals and is a virologist for the EuroSIDA European cohort. His group has led pioneering research into the role of the gut microbiome in the pathogenesis of HIV infection and chronic inflammation. He combines his research with a senior medical appointment at the HIV unit of the Germans Trias i Pujol University Hospital (Badalona).

SCIENTIFIC COMMITTEE

Fernando Azpiroz, Chief of the Department of Digestive Diseases, University Hospital Vall d'Hebron, and Professor of Medicine, Autonomous University of Barcelona, Barcelona, Spain.

Dr. Azpiroz is currently Chief of the Department of Digestive Diseases, University Hospital Vall d'Hebron, and Professor of Medicine, Autonomous University of Barcelona, Spain. Dr. Azpiroz clinical practice develops in a large referral unit, and specifically focusses on functional gut disorders. His research program investigates the origin of gastrointestinal sensations, either pleasant or unpleasant (symptoms), which involves the control mechanisms of gut motility, sensitivity and contents. Dr. Azpiroz has been distinguished with the 1999 Janssen Award for Clinical Research in Digestive Diseases, the Fourth Research Award of the International Group for the Study of Gastrointestinal Motility, the 2003 Research Scientist Award of the Functional Brain Gut Research Group, and the Senior Investigator-Clinical Science Award of the International Foundation for Functional Gastrointestinal Disorder. At present Dr Azpiroz serves as Chairman of the Microbiota & Health Section, European Society of Neurogastroenterology and Motility and is a member of the Board of Directors, Rome Foundation for the Study of Functional Gastrointestinal Disorders.

Peer Bork, Senior group leader, Joint Head of Unit, and Strategic Head of Bioinformatics, EMBL, Heidelberg, Germany.

Professor Peer Bork is senior group leader and joint head of the Structural and Computational Biology unit at EMBL, a European research organization with headquarters in Heidelberg, where he also serves as strategic head of bioinformatics. Dr. Bork received his PhD in Biochemistry (1990) and his Habilitation in Theoretical Biophysics (1995). He works in various areas of computational and systems biology with a focus on function prediction, comparative analysis and data integration. He is an ERC investigator, has published more than 500 research articles, among them more than 60 in Nature, Science or Cell and is one of the most highly cited researchers in life sciences, with an H-factor of 162. He is on the editorial board of a number of journals including Science and functions as senior editor of the journal Molecular Systems Biology. Dr. Bork co-founded five successful biotech companies, two of which went public. More than 35 of his former associates now hold professorships or other group leader positions in prominent institutions all over the world. He received the "Nature award for creative mentoring" for his achievements in nurturing and stimulating young scientists and was recipient of several other prizes, including the prestigious "Royal Society and Académie des Sciences Microsoft award".

M. Luz Calle, Head of the Bioinformatics and Medical Statistics Group, Systems Biology Department, University of Vic – Central University of Catalonia (UVic-UCC), Vic, Spain.

Professor of Biostatistics and Bioinformatics at the Systems Biology Department, University of Vic – Central University of Catalonia. Background in Mathematics (BSc Mathematics, Universitat de Barcelona and PhD in Mathematics, Universitat Politècnica de Catalunya). Chair of the Master ofSciences in Omics Data Analysis, UVic-UCC. Group leader of the Bioinformatics and Medical Statistics Group of the University of Vic (consolidated group 2014 SGR-596). Former President of the Spanish Region ofthe International Biometrics Society (2012-2013) and Vice-president (2014). Her main research areas are statistical genetics, omics data analysis and survival analysis. She works on the development of new methods for biomarker discovery, identification of genetic risk profiles and construction of dynamic prediction and prognostic models of disease evolution. She is also interested in statistical methods for integration of multi-omics data and compositional data approaches in metagenomics. She is member of several scientific societies: BiostatNet-Spanish National Network in Biostatistics, Catalan Statistical Society, Spanish Society of Statistics and Operational Research, International Biometric Society, International Genetic Epidemiology Society.

Stanislav Dusko Ehrlich, Director Emeritus at Institut National de la Recherche Agronomique (INRA) and PI of the Metagenopolis project, Jouy en Josas, France. And Director of Centre for Host Microbiome Interaction, King's College, London, UK.

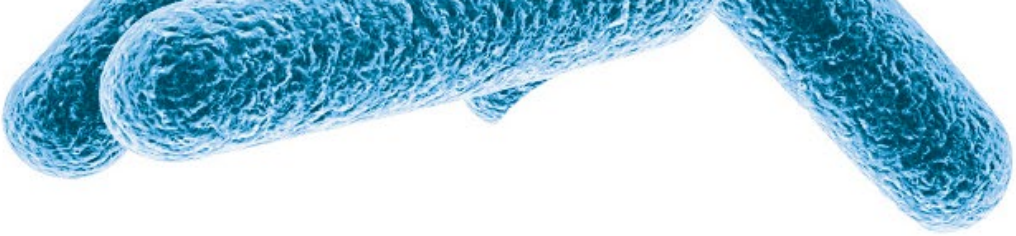
Stanislav Dusko EHRLICH was trained in Organic Chemistry at the University of Zagreb, Croatia and obtained PhD degree in Biochemistry at the University Paris VII, France. He was a research associate of Dr. Joshua Lederberg, Nobel Prize winner, in the Department of Genetics, Stanford University Medical School, California. He founded and directed Microbial Genetics Research Unit and the Microbiology Division at the National Institute for Agricultural Research (INRA) and coordinated the MetaHIT project. He authored or co-authored 350 publications in peer-reviewed scientific journals, 60 book chapters and 14 patents and holds an H index of 75. He is member of the Croatian Academy of Sciences and Arts, French Academy of Agriculture, the European Molecular Biology Organisation, the American Academy of Microbiology and the European Academy of Microbiology. He is Research Director Emeritus at INRA, where he is the PI of the Metagenopolis project and Professor at King's College London, where he is Director of the Centre for Host Microbiome Interactions. He is Laureate of the Excellence in the Agricultural Research of INRA and of the Grand Prix Scientifique Del Duca de l'Institut de France, Chevalier de l'Ordre de Mérite et de la Légion d'Honneur.

José-Manuel Fernández-Real, Chief of Section at Institut d'Investigació Biomèdica de Girona (IdIBGi) and CIBERobn, Girona, Spain.

Dr. Fernández-Real received his M.D. and Ph.D. degrees from University of Barcelona, Spain. Since then, he has been researching in chronic inflammation, iron metabolism and insulin resistance. He has published 389 articles indexed in PubMed, of which 102 as first author and 118 as last author (corresponding author). He is Principal Investigator of >20 competitive National and International competitive Projects (continuously since 1993) and is a former member of the Editorial Board of Diabetes Care and Clinical Chemistry, among others. He was among the very first authors to propose chronic low grade inflammation in the pathophysiology of type 2 diabetes, obesity and insulin resistance and iron stores as a component of the metabolic syndrome. The interplay of the microbiota with all these elements is also an important line of research. He has been recently invited to talk about his research in the Annual Meeting of the American Diabetes Association (San Francisco 2015), the Endocrine Society (Boston 2016) and the American Society of Nutrition (San Diego 2016), in addition to invited conferences in meetings from European Association for the study of Diabetes (Lisbon 2011), Endocrinology (Budapest 2012), Obesity (Sofia 2014) and Nutrition (Prague 2016). He is currently Associate Professor in the Faculty of Medicine (University of Girona), Director of Research in the Department of Endocrinology, and Scientific Director of the "Fat Bank", a nation-wide Biobank specialized in adipose tissue samples. He is Principal Investigator and member of the Steering Committee of the CIBERobn, a Network of Excellence in the Research of Obesity in Spain.

Núria Malats, Principal Investigator of the Genetic & Molecular Epidemiology Group at the Spanish National Cancer Research Centre (CNIO), Madrid, Spain.

Dr. Núria Malats is currently the head of the Genetic and Molecular Epidemiology Group at the Spanish National Cancer Research Centre (CNIO), Madrid, Spain. She has a broad expertise in these fields of research by focusing mainly on pancreas and bladder cancer. She coordinates several large national and international studies integrating different levels of information, including omics data, in both disease development and progression. She has over 250 publications and is external reviewer of national and international funding agencies and first rank scientific journals. Dr. Malats chaired the EUPancreas COST Action (BM1204), is a board member of the International Pancreatic Cancer Case Control Consortium (PanC4), and the chair of the Research Work Stream of Pancreatic Cancer Europe (PCE) multistakeholder platform.

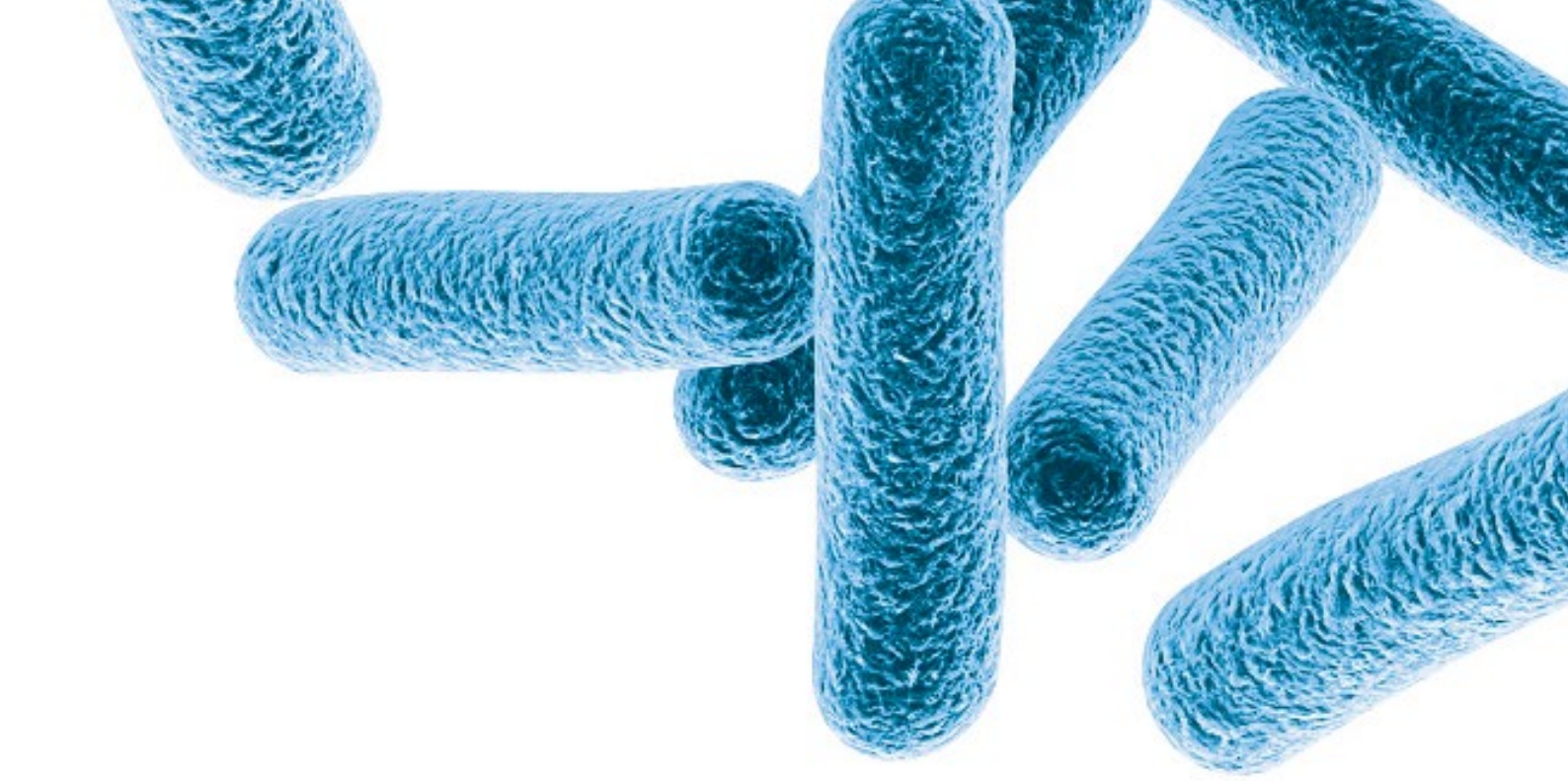


Chaysavanh Manichanh, Research investigator, head of the Metagenomics Lab, Department of Physiology and Physiopathology, Vall d'Hebron Research Institute (VHIR), Barcelona, Spain.

Since 2002, Dr. Chaysavanh Manichanh is using meta-omic approaches to study the human microbiome associated with disorders. In 2006, Chaysavanh joined the VHIR institute in Barcelona as principal investigator to pursue her line of research on Human Microbiome. She has collaborated with the MetaHIT and the IHMS consortia to build a comprehensive gene catalogue from the human gut microbiome and to develop standard operating procedures (SOPs) and protocols in order to optimize data comparisons in the human microbiome field. With this experience and her double expertise in molecular microbiology (PhD University Paris VI, 2001) and in bioinformatics (Degree at Pasteur Institute, Paris 2000), she is leading at VHIR a multidisciplinary research group to develop molecular, cellular as well as bioinformatics tools to understand the role of the microbiome in human health and disease.

Marc Noguera, Researcher, bioinformatics Lead. Microbial Genomics Group at the IrsiCaixa AIDS Research Institute, Badalona, Spain.

Background in Chemistry (Bsc in Chemistry, PhD in Computational Chemistry, Universitat Autònoma de Barcelona, Barcelona), Biochemistry (BSc in Biochemistry, Universitat Autònoma de Barcelona, Barcelona) and Computer Science (Computer Engineriing, Universitat Oberta de Catalunya). He did his PhD in computational and theoretical chemistry and later switched to human and microbial genomics and bioinformatics. His research is mainly focused on human microbiome data analysis and HIV resistance from the computational perspective.



INVITED SPEAKERS AND CHAIRS

Xavier Aldeguer, University Hospital Dr. Josep Trueta. Girona, Spain.

Dr. Aldeguer is the Head of the Digestive Service of University Hospital Dr. Josep Trueta of Girona and of Hospital Santa Caterina of Salt. He is a PhD in medicine and Associate Professor at the University of Girona. He is the co-founder of GoodGut, a biotechnology company dedicated to the development of fecal microbial signs for monitoring digestive diseases. He did his postgraduate studies, with a La Caixa fellowship grant, at the University of Pennsylvania, Philadelphia, where he studied the influence of the immune system on intestinal and hepatic regeneration. Since 2002, in Girona, in collaboration with the Department of Bacterial Ecoligia of the University of Girona, led by Dr. Garcia-Gil, he began studies of the microbial profile of digestive diseases, specifically MII, SII and CRC. As a result of this research, bacterial markers susceptible to being used as microbial signatures for these diseases were described. The bioteches, GoodGut, has been created to further develop its use and translate them to the clinical practice.

Manimozhiyan Arumugam, is a Group Leader and Associate Professor at the Novo Nordisk Foundation Center for Basic Metabolic Research, University of Copenhagen, Denmark.

He received his PhD in computational biology from the European Molecular Biology Laboratory (Heidelberg) in 2010. He studies the trillions of microbes that inhabit the human gut, collectively called the human gut microbiota. As part of the European MetaHIT consortium, he has contributed to major advances in understanding the human gut microbiome (collective genomes of the human gut microbiota), including the establishment of the first human gut microbial gene catalog and the discovery of enterotypes. Dr. Arumugam leads the “Microbiome Systems Biology” research group that investigates how our health and diseases are influenced by our gut microbiome. His research is interdisciplinary, combining metagenomics (a technique to study gut microbiome), genomics, genetics, (meta)transcriptomics, and metabolomics to study host-microbial cross-talk. He is the principal investigator in several externally funded studies investigating the role of gut microbiome in multiple sclerosis (Lundbeck Foundation), obesity (Novo Nordisk Foundation), alcoholic liver fibrosis (EU Horizon 2020), ageing (Danish Independent Research Council) and producing antimicrobial peptides (Danish Independent Research Council). His group has international collaborations studying the interaction between the gut microbiome and the host in the context of several other diseases, including cardiometabolic diseases, chronic liver diseases and cancer. Dr. Arumugam has published 38 research articles, 7 of them in Nature (2 as shared first author), 1 in Science and 1 in Cell. He has an h-index of 26 with >10,000 total citations.

Adam Burgener, is Head of Proteomics at the National HIV and Retrovirology lab at the Public Health Agency of Canada, and an Associate Professor at the University of Manitoba.

Dr. Burgener's research program is focused on developing proteomics based systems biology tools to study host immunity and the microbiome; understand the role of mucosal systems in HIV infection and disease by working with human cohorts; and to identify host and microbiome factors important for HIV infection. His research involves several human populations in Africa, and currently leads CIHR and NIH-funded studies to understand mucosal determinants of HIV infection and disease.

Andrea Cerutti, Professor, Icahn School of Medicine at Mount Sinai, New York, NY, USA and ICREA Research Professor, IMIM, Barcelona,Spain.

Dr. Andrea Cerutti graduated in Medicine and specialized in Hematology at Padua University School of Medicine, Italy and obtained his PhD in 2013 from Pompeu Fabra University, Barcelona, Spain. From 1996 to 1999 Dr. Cerutti worked as Postdoctoral Fellow, Senior Research Associate and Visiting Assistant Professor in the Department of Pathology and Laboratory Medicine of Cornell University (New York). In 2000 he was promoted to Assistant Professor and in 2006 to Associate Professor. Dr. Cerutti was grated tenure by Weill Medical College of Cornell University in 2009. In 2010, Dr. Cerutti moved to the Department of Medicine of Mount Sinai School of Medicine (New York) as a Professor. Currently he is a Professor of Medicine at the Immunology Institute Mount Sinai School of Medicine and an ICREA Professor at the Department of Cardiovascular and Inflammatory Disorders IMIM, Barcelona Biomedical Research Park (PRBB), Barcelona. His group explores the cellular and signaling networks underlying class switching and antibody production in B cells. The main focus of his research is the role of the innate immune system in immunoglobulin (Ig) heavy chain class switching, a process critical for the generation of immune protection against viral and bacterial infections. He serves as grant reviewer for the European Research Council and the National Institutes of Health, and as manuscript reviewer for journals such as Science, Nature, Immunity, Nature Immunology, Nature Medicine, Nature Communications, The Journal of Experimental Medicine and The Journal of Immunology.

Maria Carmen Collado, Institute of Agrochemistry and Food Technology-National Research Council (IATA-CSIC), Valencia,Spain.

M. Carmen Collado, PhD (Polytechnic University of Valencia (UPV), Valencia, Spain, 2005); Researcher at Dept. Biotechnology, Institute of Agrochemistry and Food Technology (IATA) of the Spanish National Research Council (CSIC) located in Valencia, Spain. Her research work is multidisciplinary and includes microbiology, food science and nutrition areas. Her interests are focused on probiotics, microbiota and health and nutrition. Her current work includes basic and applied research on molecular analysis and evaluation of health effects of beneficial bacteria and probiotics, the microbial-host interactions, microbiome and its role in human health and diseases and also, the influence of diet (lactation) and other perinatal factors.

Bonaventura Clotet, Director IrsiCaixa. Head of Infectious Diseases, Hospital Universitari Germans Trias i Pujol. IrsiCaixa. UAB. UVIC-UCC Badalona, Spain.

(See his CV at Coordinators and Scientific Committee section)

José-Manuel Fernández-Real, Chief of Section at Institut d'Investigació Biomèdica de Girona (IdIBGi) and CIBERobn, Girona, Spain.

(See his CV at Coordinators and Scientific Committee section)

Jordi Guardiola, Head of the Digestive Diseases Department of the Hospital Universitari de Bellvitge. Barcelona, Spain.

Dr. Jordi Guardiola is Head of the Digestive Diseases Department of the Hospital Universitari de Bellvitge. He is the past President of the "Catalan Society of Gastroenterology". Dr. Guardiola is an expert advisor for the "Spanish Working Group for Crohn's Disease and Ulcerative Colitis" and current member of the Steering Committee of this organization. His main research interests include inflammatory bowel diseases and colorectal cancer.

Francisco Guarner, Senior Investigator at Vall d'Hebron Research Institute (VHIR), Barcelona, Spain.

(See his CV at Coordinators and Scientific Committee section)

Ricard Guerrero, Institute for Catalan Studies. Barcelona, Spain.

Full Professor of Microbiology at the University of Barcelona (1988-2013), Emeritus. Adjunct Professor at the University of Massachusetts-Amherst (2001-present). Formerly Full Professor at the Autonomous University of Barcelona (1975-1988). Visiting Professor at the University of California-Davis (1979), and Boston University (1985-1988). Fellow of following Academies: the Linnean Society of London, the American Academy of Microbiology, the Academia Europaea and the Institute for Catalan Studies (IEC). Medal Narcís Monturiol to the scientific merit of the Government of Catalonia (2000). Prize of the Foundation F. González Bernáldez (2010). President of the Spanish Society for Microbiology, SEM (2007-2014) and Vice-president of the Confederation of Scientific Societies of Spain, COSCE (2013-present). His studies on microbial ecology were pioneers in Europe, where he worked on the photosynthetic anoxigenic bacterial communities of karstic lakes and microbial mats. He has significantly contributed to the understanding of the first ecosystems and the establishment of early life on Earth. As a consequence of his work, he has more than 400 publications on the biochemistry, genetics, and ecology of prokaryotes. Besides his activity in research and teaching at the university, he has worked on different programs and activities on behalf of the communication of science in Spain, Latin America, and the United States, and of the public understanding of science in different countries. Editor in chief of International Microbiology, SEM (1998-2014) and of Contributions to Science, IEC (1999-present). Member of the board of many journals on microbiology, microbial ecology, aquatic microbiology, and biotechnology. He has been the curator of the permanent exhibition of the new Museum of Natural Sciences of Barcelona (Museu Blau). Currently, he is the Academic Director of the Academia Europaea office for the Mediterranean (AE-Barcelona Knowledge Hub), located in Barcelona.

Daria Hazuda, Vice President, Infectious Disease & Vaccines, CSO Cambridge Exploratory Science Center, Merck, West Point, PA, USA.

Daria Hazuda, Ph.D., trained as a biochemist at the State University of New York at Stony Brook, N.Y. After completing her postdoctoral research fellowship in the department of Immunology at Smith Kline, she joined the antiviral group as a Senior Research Biochemist at Merck in 1989. Daria is currently Vice President of Infectious Disease and Vaccines at Merck Research Labs and Chief Scientific Officer of MRL Cambridge. Daria has over 20 years of experience in drug discovery and development with more than one hundred-eighty publications focused primarily on antiviral research in the fields of HIV and HCV. She led the research efforts that identified the first-in class HIV integrase inhibitor Isentress which was awarded the Prix Galien in 2008 and was responsible for pioneering work on HCV drug resistance enabling the discovery of agents with improved spectrum and efficacy including the NS5A inhibitor Elbasvir and the NS3 inhibitor Grazoprevir. Daria has been recognized with the Bernie Field Lecture Award, the David Barry DART Achievement Award for HIV Drug Development and is a Fellow of the American Society of Microbiology. Daria is on the editorial board of the ACS Journal on Anti-infectives Research and the Journal of Viral Eradication. She is currently on the Scientific Program Advisory Council of the American Foundation for Aids Research (AMFAR) and The Forum for HCV Collaborative Research and a past member of NIH Aids Research Advisory Committee (ARAC) and the NCI Basic Sciences Board of Scientific Counselors (2010-2015).

Christoph Högenauer, is a faculty member in the Division of Gastroenterology and Hepatology at theMedical University in Graz, Austria.

Prof. Högenauer works as a clinical gastroenterologist with a focus is on inflammatory bowel disease and interventional endoscopy. His research focus is on inflammatory bowel diseases, microbiome research in the context of gastrointestinal diseases, fecal microbiota transplantation (FMT) and bacterial virulence factors. He is the National Representative of the European Crohn's and Colitis Organisation of Austria, head of the Inflammatory Bowel Disease Working Group of the Austrian Society of Hepatology and Gastroenterology and member of the European FMT working group.

Chaysavanh Manichanh, Research investigator, head of the Metagenomics Lab,Department of Physiology and Physiopathology, Vall d'Hebron Research Institute (VHIR), Barcelona, Spain.

(See her CV at Coordinators and Scientific Committee section)

Marc Noguera, Researcher, bioinformatics Lead. Microbial Genomics Group at the IrsiCaixa AIDS Research Institute, Badalona, Spain.

(See her CV at Coordinators and Scientific Committee section)

Jason Norman, is the Associate Director of Systems Biology at Vedanta Biosciences, Inc. Boston, USA.

He has been with Vedanta since August of 2015 and is responsible for the development of the bioinformatics workflows utilized throughout the company. This includes establishing protocols for the metagenomic analysis of microbial communities in human clinical studies, detection of live bacterial consortia in human subjects, and de novo assembly of bacterial isolates. Dr. Norman completed his post-doctoral training with Dr. Herbert "Skip" Virgin at Washington University in St. Louis, where he discovered that the human virome was altered and may contribute to bacterial dysbiosis in inflammatory bowel disease patients. He completed his graduate training at the University of Michigan in the Department of Microbiology and Immunology where he studied HIV immune evasion mechanisms. Dr. Norman received his B.Sci. in Microbiology from Auburn University. He has published his work in several top tier journals including Cell, Science, eLife, and Nature Immunology.

Roger Paredes, HIV Physician at Hospital Germans Trias i Pujol and Head of the Microbial Genomics Group at the IrsiCaixa AIDS Research Institute, Barcelona, Spain.

(See his CV at Coordinators and Scientific Committee section)

Conrad Rauber, Immutrain Researcher at Gustave Roussy, France.

MD (tumor immunology) University Heidelberg/Germany, graduated in Medicine from the School of Medicine of the University of Heidelberg in 2013. He started his scientific career at the German Cancer Research Institute/Heidelberg investigating the role of Toll-like receptor agonists in stromal tumors followed by his residency in at the department of Gastroenterology and infectious diseases at the University Clinics in Heidelberg. He represents Laurence Zitvogel's lab at this conference and has a Marie-Curie doctoral position (Immutrain) at the Immuno-Oncology programmm at Gustave Roussy, the largest cancer Center in Europe.

Laurence Zitvogel's lab has been actively contributing to the field of cancer immunology and immunotherapy, and brought together basic and translational research, including the design of cancer therapies through combined animal studies and Phase I/II patient trials. Laurence Zitvogel lab's expertise is mainly dendritic cell and innate effector biology and relevance during tumour development as well as exosome-based vaccine designs. It pioneered the concept of immunogenic cell death and showed that chemotherapy, radiotherapy and inhibitors of tyrosine kinase mediate their tumoricidal activity, at least partly through the immune system. Her team discovered the critical role and impact of gut microbiota in cancer immunosurveillance and therapies. Laurence Zitvogel is the recipient of many awards including the National Academy of Medicine, the Translation Research INSERM Prize, the ASCO-SITC and the Brupbacher Awards 2017.

Nicola Segata, is associate professor at the Centre for Integrative Biology at University of Trento, Italy.

His ERC-funded lab (http://segatalab.cibio.unitn.it) focuses on experimental and computational metagenomics to characterize with strain-level resolution the microbial communities associated with humans in healthy and disease conditions. On the experimental side, the laboratory is producing and analysing shotgun metagenomics and metatranscriptomics data for studying the link between the gut microbiome and colorectal cancer, the skin microbiome and psoriasis, the lung pathobiome and progression of cystic fibrosis infections, the gut microbiome in dietary intolerances, and the vertical transmission of microbial organisms from mothers to infants during the first weeks of life. The main computational projects focus instead on the profiling of microbiomes with strain-level resolution and the meta-analysis of very large sets of metagenomes with multiple analytic tools.

Rafick-Pierre Sékaly, Case Western Reserve University. Cleveland, USA.

Rafick-Pierre Sekaly, Ph.D., one of the world's leading scientists in AIDS research, human immunology and immunotherapy. Sekaly's work has resulted in the generation of novel approaches in cancer and HIV vaccines. Sekaly's work has led to more than 331 peer-reviewed articles in scientific journals and more than 23 patents. He has graduated over 30 Ph.D.'s at Montreal University and at McGill University. He was a co-founder of The Vaccine and Gene Therapy Institute. He is principal investigator on numerous grants from the National Institutes of Health and foundations, including the Bill and Melinda Gates Foundation and the American Foundation for AIDS Research, the European Community. Dr. Sekaly leads several clinical trials that test new vaccines and immunotherapies including cell-based therapies. He has pioneered the field of systems immunology and systems vaccinology.

PRACTICAL INFORMATION

Venue: CosmoCaixa Barcelona

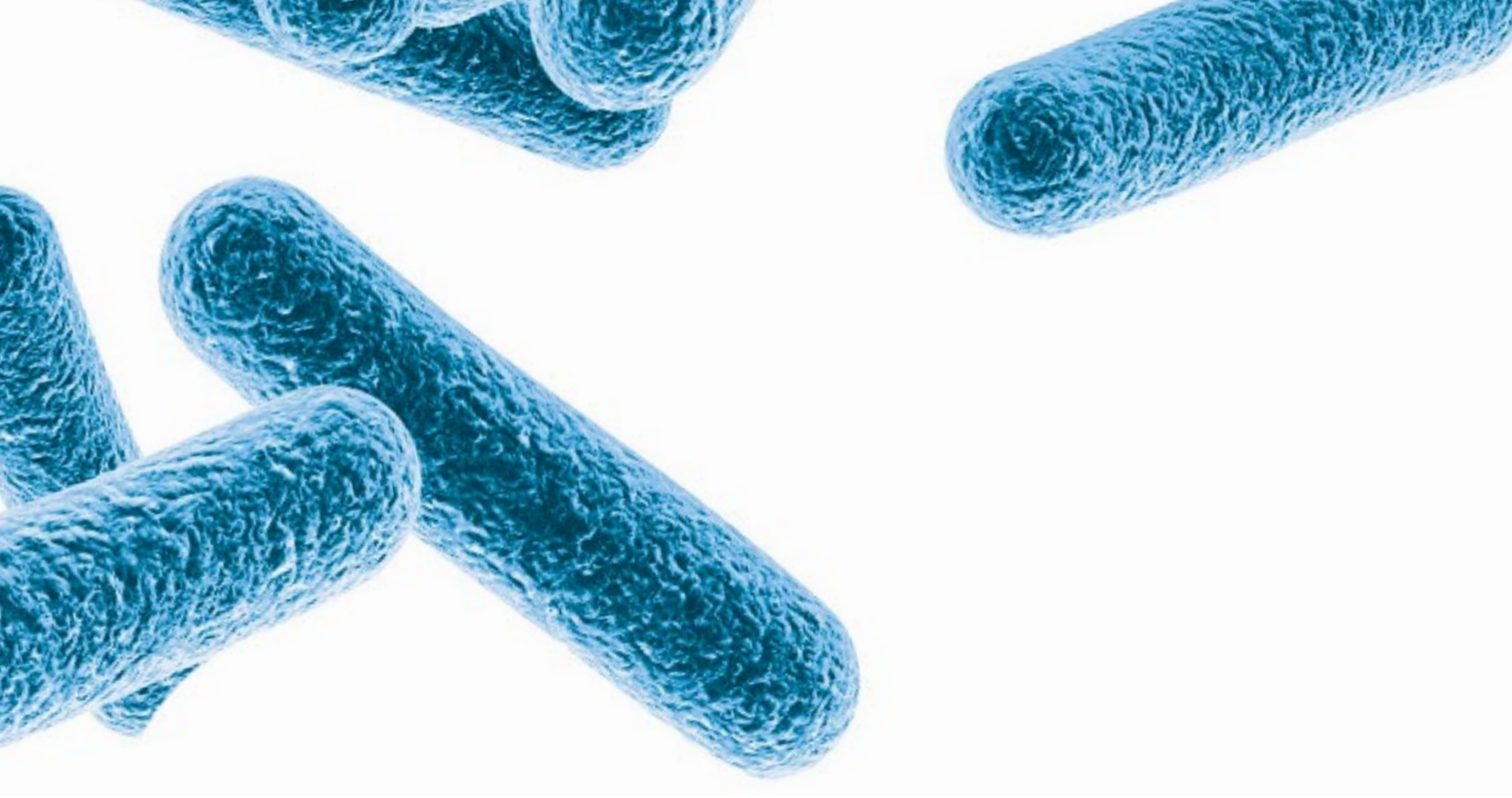
CosmoCaixa Barcelona
C/ Isaac Newton, 26
08022 Barcelona, Spain
Conferences Meeting
Agora Room (-2 floor)

Free wifi

1. Select wifi_cosmocaixa_bcn
2. Open an Internet Browser
3. The page of cosmocaixa will appear.
Follow the instructions

Contact:

+34 934 657 897
info@fls-science.com
www.bcnmicrobiome.com



ORGANIZERS AND COLLABORATORS

Organized by:

IrsiCaixa
Institut de Recerca de la Sida

The IrsiCaixa AIDS Research Institute is an internationally recognized organization. Its aim is to do research on HIV/AIDS and related diseases, their prevention and treatments, with the ultimate goal of eradicating the pandemic. It was founded in 1995 as a private non-profit foundation promoted by the Obra Social "la Caixa" and the Health Department of the Generalitat de Catalunya. IrsiCaixa scientific research takes place in coordination with the most prestigious international research centers and its publications have one of the highest impact factors in its field. More than 60 professionals devoted to research, academic training and public engagement work in collaboration with health care professionals and more than 3.000 patients. IrsiCaixa research lines include the study of the microbiome and its influence on the development of the disease and the effectiveness of treatments. The Institute also participates in clinical trials to evaluate new therapeutic strategies and collaborates with developing countries to help in the fight against the global pandemic.

More info: www.irsicaixa.es/en

In Collaboration with:

Vall d'Hebron
Institut de Recerca
VHIR

Vall d'Hebron Institute of Research (VHIR) is a public sector institution that promotes and develops the research, innovation and biosanitary teaching of the Vall d'Hebron Barcelona Hospital Campus. Through the excellence of its research, they identify and apply new solutions to the health problems of society and contribute to spread them around the world. The research activities of the centre are divided into 8 different areas and over 60 research groups. One of them is the Phisiology and Pathophysiology of the Digestive Tract group, that studies, among other research lines, the microbiome.

More info: www.vhir.org

Girona Biomedical Research Institute (IDIBGI, 2005) was founded as the Doctor Josep Trueta Private Foundation in 1995. Its aim is to promote, develop, manage and disseminate biomedical research in the province of Girona.It has been a public organisation since 2008, when the Catalan Government joined the IDIBGI as a member of its governing bodies, and it is now an affiliated centre within the Government's CERCA programme. The IDIBGI is made up of research groups from the Doctor Josep Trueta University Hospital in Girona and from the University of Girona (UdG), the Institute for Diagnostic Imaging (IDI), the Catalan Institute of Oncology (ICO) and the Primary Care Institute (IAP)/Catalan Health Institute of Girona.

More info: www.idibgi.org/en

UVIC
UNIVERSITAT DE VIC
UNIVERSITAT CENTRAL
DE CATALUNYA

UVic-UCC is a public university under private management. It's commitmed to economic and social development of the surrounding region and Catalonia, through teaching, research and knowledge transfer, imbued with a distinctive European and international vocation. There is twenty-one research groups, three research and knowledge transfer centres and nine research chairs carry forward UVic-UCC research activity, with the aim of generating knowledge and transferring it to society. The universal scope of UVic-UCC science and training builds on the present-day reality of Catalan society – with the Catalan language as its shared symbol of identity – and Europe as a unifying force. UVic-UCC considers international exchange programmes and internships abroad to be essential, and promotes joint academic and research projects with other universities and institutions.

More info: www.uvic.cat/en

Centro Nacional
de Investigaciones
Oncológicas

The Spanish National Cancer Research Centre (CNIO) is one of the world's leading cancer research centres. Almost 400 researchers at the forefront of global science, strive to better understand the underlying mechanisms of cancer and to find ways to combat it. The ultimate goal of the CNIO is to advance knowledge and foster translation of scientific breakthroughs into novel and more effective ways to prevent, diagnose and treat cancer. As a comprehensive Cancer Centre, the CNIO integrates both basic and translational research. We also have an active innovation programme that guarantees the transfer of knowledge, from our scientific discoveries to the market and bedside and to society as soon as possible.

More info: www.cnio.es/ing

Germans Trias i Pujol Hospital

Germans Trias i Pujol Hospital is a public center that provides high-quality healthcare to the 800,000 people living in the Barcelonès Nord and the Maresme, as well as some citizens of other Catalan territories in the case of certain pathologies, in which the hospital is Reference for up to 1,200,000 inhabitants. The hospital is managed by the Northern Metropolitan Territorial Management of the Catalan Health Institute (ICS), which is also responsible for primary care in the Barcelonès Nord, Maresme, Vallès Oriental and Vallès Occidental. Germans Trias is at the same time a basic general hospital for more than 200,000 people in Badalona and several municipalities in the surrounding area. All this is possible thanks to the intense and skilled work of some 2,500 healthcare professionals and non-healthcare workers.

More info: www.hospitalgermanstrias.cat/en

FLS SCIENCE

FLS-Science aims at delivering high quality educational programs on a variety of medical and scientific topics related to HIV and infectious diseases. Medicine and science are areas in constant evolution, requiring continuous learning and knowledge updates. FLS-Science organizes courses, seminars and workshops that guarantee a high level of education and generate a positive environment for interaction, knowledge transfer and continuous learning. FLS-science Scientific Panel is composed of renowned healthcare professionals and researchers at international level. Their educational activities target healthcare professionals but also researchers, academia and representatives from educational, medical and pharma institutions. They also promote outreach activities to transfer the acquired scientific knowledge to the society.

More info: www.fls-science.com

SPONSORS

Obra Social "la Caixa"

The "la Caixa" Banking Foundation directly manages the Welfare Projects, which has always defined "la Caixa". The Foundation maintains, strengthens and develops the fundamental areas of action for "la Caixa" since it was founded: the financial area, the business area and the social area, the raison d'être. Through the Foundation "la Caixa" continues working to achieve a society with more opportunities. By promoting social initiatives, investing in research and education and spreading culture and science. CosmoCaixa offers interactive, enjoyable science and an open door for anyone who is eager to learn and understand and who never stops wondering why things are the way they are. CosmoCaixa Barcelona boasts the Geological Wall and the Amazon Flooded Forest, which features more than 100 plant and animal species that convince visitors they have been transported from the Mediterranean to the very heart of the tropical jungle. In addition to its permanent facilities and its open areas, CosmoCaixa offers a scientific and educational programme that includes exhibitions, workshops, conferences, courses and debates involving experts from all over the world.

More info: obrasocial.lacaixa.es

MSD
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For more than a century, MSD, a leading global biopharmaceutical company, has been inventing for life, bringing forward medicines and vaccines for the world's most challenging diseases. MSD is a trade name of Merck & Co., Inc., with headquarters in Kenilworth, N.J., U.S.A. Through our prescription medicines, vaccines, biologic therapies and animal health products, we work with customers and operate in more than 140 countries to deliver innovative health solutions. We also demonstrate our commitment to increasing access to health care through far-reaching policies, programs and partnerships. Today, MSD continues to be at the forefront of research to advance the prevention and treatment of diseases that threaten people and communities around the world - including cancer, cardio-metabolic diseases, emerging animal diseases, Alzheimer's disease and infectious diseases including HIV and Ebola. For more information, visit www.msd.com and connect with us on Twitter, LinkedIn and YouTube.

More info: www.msd.com

Mandarin Oriental Hotel Group is the award winning owner and operator of some of the most luxurious hotels, resorts and residences located in prime destinations around the world. Increasingly recognized for creating some of the world's most sought-after properties, the Group provides 21st century luxury with oriental charm. Above all, Mandarin Oriental is renowned for creating unique hotels through distinctive design and a strong sense of place, luxury hotels right for their time and place. The Group regularly receives international recognition and awards for quality management and legendary service hospitality.

More info: www.mandarinoriental.com/barcelona/

NOTES

IrsiCaixa
Institut de Recerca de la Sida

In Collaboration with:

Vall d'Hebron Institut de Recerca VHIR

dIBGi Institut d'Investigació Biomèdica de Girona Dr. Josep Trueta

UVIC UNIVERSITAT DE VIC UNIVERSITAT CENTRAL DE CATALUNYA

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