

THE INTERNATIONAL CONFERENCE

BRAIN AGING, NEURODEGENERATION



AND THE ROLE OF NATURAL MOLECULES
IN MAINTAINING BRAIN HEALTH



Polish Academy of Sciences
Scientific Center in Paris
74, rue Lauriston - 75116
Paris



11 - 13 OCT 2023
09:00 - 17:00

Organizers:



Paris
Centre Scientifique
Académie Polonaise des Sciences



Maj Institute of Pharmacology
Polish Academy of Sciences

Partners:

université
de BORDEAUX



Frontiers in Neuroscience



Brain aging, neurodegeneration, and the role of natural molecules in maintaining brain health

Scientific Meeting
Polish Academy of Sciences Scientific Center
Paris, October 11-13, 2023

Keynote speakers



Gerard Clarke
Dept Psychiatry and Neurobehavioral Science
Ireland University of Cork



Professor of Neurobehavioural Science in the Department of Psychiatry and Neurobehavioural Science, and a Principal Investigator in APC Microbiome Ireland at University College Cork. His research interests include the impact of the gut microbiome on brain and behaviour across the life span, microbial regulation of tryptophan metabolism and translational biomarkers of stress-related neuropsychiatric disorders. His approach is based on advancing frontier knowledge in microbiome research to yield potential new therapeutic targets for effective treatment of central nervous system disorders.



Andrii Domanskyi
Orion Pharma, Helsinki, Finland



Obtained his PhD at the University of Helsinki, Finland and continued as a postdoctoral scientist in the laboratory of Prof. Gunther Schutz at the German Cancer Research Center in Heidelberg, Germany, working on genetically modified mouse models of Parkinson's disease. After returning to Finland in 2017 and obtaining the Academy of Finland funding to start independent research group, Andrii studied the role of non-coding RNAs and neurotrophic factors in protecting neurons from oxidative stress and pathological protein aggregation. From 2020 until now, Andrii combines his academic research with the position of senior researcher at Orion Pharma, leading pharmaceutical company in Finland, working on pre-clinical development of next generation drugs for chronic pain management.



Martin Hofmann-Apitius

Fraunhofer Institute for Algorithms and Scientific Computing SCAI,
Germany



Martin Hofmann-Apitius holds a PhD in Molecular Biology and worked for more than 10 years in experimental molecular biology. The screening for novel genes involved in tumor metastasis lead him into the area of functional genomics and subsequently to applied bioinformatics. Martin Hofmann-Apitius has experience in both, academic (University of Heidelberg (ZMBH), Forschungszentrum Karlsruhe (ITG), German Cancer Research Center (DKFZ)) and industrial (BASF, Boehringer Ingelheim, LION bioscience AG) research. Since 2002 he is leading the Department of Bioinformatics at the Fraunhofer Institute for Algorithms and Scientific Computing (SCAI) in Sankt Augustin (Germany), a governmental non-profit research institute. In July 2006 he has been appointed as a Professor for Applied Life Science Informatics at Bonn-Aachen International Center for Information Technology (B-IT). Co-author of more than 200 scientific publications. Academic initiator and co-coordinator of IMI-project AETIONOMY, a project aimed at generating a mechanism-based taxonomy of neurodegenerative diseases (see www.aetionomy.org). He was also involved in related IMI-projects, such as EPAD (www.ep-ad.org), PHAGO (www.phago.eu) and RADAR-AD (<https://www.radar-ad.org>). Furthermore, his team is substantially involved in VirtualBrainCloud (<https://virtualbraincloud-2020.eu/tvb-cloud-main.html>), a project bridging between “computational neuroscience” and “disease progression modeling” in neurodegenerative diseases.



Michaël Jourdes,

Institut des Sciences de la vigne et du vin
Université de Bordeaux, France



Dr. Michael Jourdes obtained his B.Sc. and M.Sc. in Chemistry from the University of Poitiers. He received his Ph.D. in Organic Chemistry under the supervision of Prof. Stéphane Quideau at the University of Bordeaux, where his Ph.D. work involved the study of ellagitannins and flavanoellagitannins. In 2004, he joined Prof. Norman G. Lewis' group at the Institute of Biological Chemistry of Washington State University as a postdoctoral fellow, where he studied lignin macromolecular configuration, and lignin deposition in vascular plants. In 2008, he moved back to Bordeaux at the Institute of vine and wine sciences first as a postdoctoral fellow and was appointed Maître de Conférences in 2010. Dr. Michael Jourdes teaching activities are mainly related to wine and grape phenolic composition and evolution, as well as wine analysis, colloidal stabilities, and mouthfeel perceptions. His current research focuses on the chemical reactions of the phenolic compounds from grapes, wine and oak wood in order to increase wine organoleptic quality, which is a complex challenge because of the diversity of reactions and the complexity of the media. Moreover the impact on the organoleptic properties of wines of these phenolic compounds (native and / or evolution) is also a part of his objectives. Dr. Michael Jourdes published 89 articles in peer-reviewed scientific journal as well as 11 books chapters and has one patent (H index: 332). Dr. Michael Jourdes is also a member of the CNU section 68 since 2019, as well as an OIV expert for the sub-commission Methods of analysis since 2015. He is co-leader of the “Determining Sensory Properties” axis from the UMR 1366 Oenology since 2022, and member of the Bordeaux Metabolome platform since 2020.



Ajeet Kaushik,
Florida Polytechnic University, USA



Fellow-ICS working as an assistant professor of Chemistry at Florida Polytechnic University, USA, and exploring nano-enabled technology for health wellness, involving efficient sensing and nanomedicine. He is an accomplished scholar (supported by his publications, editorial roles, edited books, patents, and international collaborations) and the recipient of several international awards in support of his credentials. His research interests include green materials, green technology, analytical systems, sensors, biosensors, nanomedicine, point-of-care sensing devices, and related areas of healthcare monitoring. Focused on cutting-edge research and seeking collaborations.



Witold Konopka
Laboratory of Neuroplasticity and Metabolism
Dept. of Life Sciences and Biotechnology
PORT Łukasiewicz, Wrocław, Poland



Molecular biologist with a background in fundamental neuroscience. He completed his doctoral thesis at the Nencki Institute of Experimental Biology of the Polish Academy of Sciences in Warsaw. During his doctoral studies, he generated a unique transgenic rat model with induced gene expression in neurons. Subsequently, he did a postdoctoral fellowship at the German Cancer Research Center (DKFZ) in Heidelberg, Germany, where he began research on the role of Dicer/microRNA in neuronal plasticity. Upon his return to Poland, he established his own Animal Models Laboratory at the Nencki Institute, and shortly thereafter became the Institute's Deputy Director for Scientific Affairs. He currently heads the Neuroplasticity and Metabolism Research Group at the Łukasiewicz PORT – Polish Center for Technology Development in Wrocław, Poland. His research focuses on the mechanisms controlling eating behavior in the context of neuropsychiatric diseases such as Anorexia Nervosa and obesity.



Karol Kozak
Medical Faculty
Technical University Dresden, Germany



Professor Kozak received his Dr. rer. nat. degree from Max Planck Society, Germany in cooperation with Silesian University of Technology, POLAND (in discipline: AI, machine learning, biology). Awarded in 2012 as Junior Professor for Bioinformatics at Philips Marburg University, Germany. He became doctor habilitatus in the field of databases for medicine and biotechnology. He became in 2015 a professor title at Medical Faculty, Technical University Dresden in collaboration with Fraunhofer Society. Responsible for database development, AI applications, digitalization in the field of material, cyber security, medicine, pharma, industry 4.0. He has published one book, 6 books/book chapters and 62 papers in scientific journals with high impact factor in the areas of computational methods for industry and large scale biomedical data. Group manager of the cybersecurity, data management and image processing at State of Saxony, keeping in same time a chair at Medical Faculty of TU Dresden. Member and advisor of Institute of Applied Informatics (InfAI).



Katarzyna Kuter-Nowak
Dept Neuropsychopharmacology
Maj Institute of Pharmacology PAS, Poland



Head of Dept Neuropsychopharmacology in Maj Institute of Pharmacology, Polish Academy of Sciences in Kraków, Poland. The main interest of dr Kuter research is recognition of mechanisms active in the preclinical stages of Parkinson's Disease. These are both, mechanisms leading to neuronal death as well as those compensating for the deficits in dopaminergic system. Those opposite processes are active in the brain at the same time and mask early disease symptoms. Our studies in animal models of early PD focus on search for neuro-glial related mechanisms of compensation, potential early PD biomarkers, especially in energy metabolism and mitochondria as well as pharmacological and non-pharmacological therapies.



Pierre-Marie LLEDO
Pasteur Institute and CNRS, France



Pierre-Marie LLEDO is member of the European Academy of Science. He is Chairman of the Department of Neuroscience at the Pasteur Institute where he also runs the Laboratory "Perception & Memory". He is as well a senior scientist at the Center for National Scientific Research (CNRS) where he manages the laboratory "Genes, Synapses & Cognition ". Finally, PM Lledo is Director of the Teaching Graduate Program "Neuroscience" at the Pasteur Institute. With interests ranging from brain development and brain disease to neuronal circuitry, Dr. Lledo is best known for his studies of the interplay of sensory input and metabolic signals. His research has employed techniques from systems and molecular neuroscience to probe the mechanisms of early neural wiring, the limits of early brain plasticity, and how such neuronal plasticity depends on internal signals. He obtained several awards, including the National Science Foundation (NSF) and NIH Fellowships, eight prizes from the French National Academy of Science and the International award from the Foundation Roger de Spoelberch.



Lydia Giménez Llort
Universitat Autònoma de Barcelona, Spain



Full Professor in Psychiatry. 2016-2019 Head of the Medical Psychology Unit. Dept Psychiatry and Forensic Medicine, UAB, Universitat Autònoma de Barcelona. Researcher at Institute of Neuroscience, UAB. Head of Gender-Specific Medicine, Faculty of Medicine, Observatori per l'Igualtat, UAB. Research Positions: CSIC Spanish Research Council PhD grants in Neurochemistry (1992-1996). Postdoctoral Grants Spain and Swedish Medical Foundation (1996-1998). 1/50 in the first promotion of Ramón y Cajal Tenure-Track Research position in the Area of Medicine (2002-2006) and Outstanding Career Researcher I3 (2006-2009) immediately before the Associate

Professorship in Psychiatry in 2007. Member of the Directive Board of the 'Institute of Neuroscience' 2008-2010. Management Committee Member for Spain at COST- Action TD1005 (2010-2015): Pain in cognitive Impairment, especially dementia (www.cost-td1005.net). Awards: 'Special Mention' for the Research Work of the Master in Biochemistry, Student Awards of the Catalan Society of Biology (1992). I3, Trayectoria Investigadora Destacada, Outstanding Research Career (2006). Academic excellence: Coordinator of the first and second edition of the Official Master of Neuroscience 2008-2010; Coordinator of 'Cervell i Conducta' Brain and Cognition' at the degree of Medicine, CEO and Docent of 'Envellir bé/ Healthy Aging (including Mourning)' since 2002. Writer of Children's Stories to manage palliative care and mourning. Professor on Neurobiology of Aging at 3 Master programs of 2 universities (UAB, UPV). Divulcation activities since 2002.



Peter McCaffery
Institute of Medical Sciences,
University of Aberdeen, Aberdeen, UK



Graduated in Biochemistry at Victoria University, New Zealand and obtained a Ph.D. in Pathology at Otago University, New Zealand in 1987. After post-doctoral research at Harvard Medical School became Instructor and then Assistant Professor in the Department of Psychiatry, Harvard Medical School, where developed his interest in retinoic acid in the developing central nervous system. After working at the University of Massachusetts Medical School, Worcester, MA as Associate Professor in Cell Biology, moved to the University of Aberdeen in 2006, where was co-director of the Institute of Medical Sciences until 2015. His research into retinoic acid continues with a focus on its function in the hypothalamus as well as its potential to protect in neuropsychiatric and neurodegenerative disorders, the latter including Alzheimer's and motor neuron disease.



Vittorio Maglione
IRCCS Neuromed, Pozzilli (IS), Italy



Vittorio Maglione has completed his PhD in Neurobiology from University of Catania (Italy) and postdoctoral studies first from Neurological Institute "IRCCS Neuromed" (Italy) and successively from University of Alberta (Canada). After he have been awarded a Marie Curie Fellowship, he became Group Leader at Centre for Neurogenetics and Rare Diseases of IRCCS Neuromed. Author of many scientific papers, Associate Editor for Frontiers in Neuroscience and Member of the Editorial Board of Neural Regeneration Research.

**Jean Luc Olivier**

CHRU de Nancy, Pôle des Laboratoires, Service de Biochimie-Biologie Moléculaire-Nutrition, France



Professor of Biochemistry – Molecular Biology at the Medical School of Nancy -University of Lorraine since 2000. Previously, he obtained his medical degree at the Diderot University (Paris) and his PhD degree on biophysics and biochemistry of cell membrane at the Pierre and Marie Curie University. He was post-doctoral fellowship in the laboratory directed by Pr Vassilis Zannis at the Boston University Medical School in 1993. He was chief of the Biochemistry and Molecular Biology Department of the Central University Hospital of Nancy for 15 years. He is presently director of the Calbinotox (Composés Alimentaires, Biofonctionnalités et risques NeuroTOXiques) laboratory whose project focuses on the balance between negative and positive effects of food compounds on brain health. Working on the effects of poly-unsaturated fatty acids and the enzymes using these molecules in human health since the beginning of his scientific career, his research was focused in the last period on the role of cytosolic phospholipase A2 and dietary arachidonic acid in Alzheimer's Disease and he recently highlighted the contribution of gut microbiome and low grade inflammation through the gut-brain axis.

**Rosanna Parlato**

Mannheim Center of Translational Neuroscience
Medical Faculty Mannheim Heidelberg University
Germany



Principal Investigator and staff scientist at the Division of Neurodegenerative Diseases (Mannheim Medical Faculty). She completed her PhD at the University of Naples (Italy) and at the NIH (Bethesda, USA) focusing on mouse genetics and pioneering laser capture microdissection for the study of differential gene expression in transgenic mice. As a postdoc at the German Cancer Research Center (DKFZ, Heidelberg), her research has addressed the function of specific stimulus- and ligand-dependent genes in the catecholaminergic system during development and aging. Dr. Parlato's independent research line as team leader and lecturer at the DKFZ and at the Ulm Medical Faculty explored mechanisms of neuronal homeostasis in response to cellular stress for intervention against neurodegeneration. Her research and research training activities address the identification of transcriptional and translational dysregulation in motor neurodegenerative diseases, such as Parkinson's disease (PD), Huntington's disease (HD) and Amyotrophic Lateral Sclerosis (ALS). In particular, Dr. Parlato's work explores the role of two cellular compartments - the nucleolus and the primary cilium - functionally and structurally responsive to environmental stress conditions, in selective and progressive neuronal vulnerability. Her studies revealed that disruption of these organelles affects protein quality control mechanisms, contribution to neurodegeneration in mouse models of PD and HD. This work revisited the traditional role of these organelles in neuronal homeostasis for intervention against neurodegeneration. The results of her research have been published in renowned peer-reviewed scientific journals (>60 peer-reviewed articles, with 5935 citations; h-index: 27).

Panelist



Malgorzata Chalupowski

The Copernicus Institute for the arts, sciences and law, Inc., Beverly, MA, USA



Malgorzata Chalupowski, an MD with a PhD from the Jagiellonian University Medical School in Krakow, Poland, also holds a Juris Doctor from the Massachusetts School of Law. She is an alumna of the Harvard T.H. Chan School of Public Health, and a recipient of the Prince of Wales Medical Scholarship, with credentials from the University of Cambridge, University of Sheffield, Liverpool School of Tropical Medicine, and University of Liverpool. While still a medical student, worked as an investigative reporter and interviewed Nobel Prize laureates, including Andrew V. Schally, Sir John Vane, and Paul Lauterbur. From 2020 to 2022, served as a Public Health Advisor at the CDC Quarantine Station in Boston. Currently serves as the Executive Director of the Copernicus Institute for the Arts, Sciences and Law, Inc. based in the Greater Boston Area. The Institute's mission is to promote collaboration in the fields of arts, sciences and law between the academic institutions, governmental agencies, and non-profit organizations in the United States, Poland, and other countries in Europe and beyond.

Scientific Committee



Malgorzata Kujawska

Poznan University of Medical Sciences, Poland



Malgorzata Kujawska, Ph.D., D.Sc., is a Professor of Poznan University of Medical Sciences. She is an experienced Principal Investigator of projects implemented within international cooperation focused on therapeutic and neuroprotective approaches against neurodegeneration. Dr. Kujawska is a recipient of the 2020 Matsumae International Foundation Research Fellowship Program. She completed entrepreneurship and design thinking workshops at Stanford University and took part in an internship at NASA Ames Research Center at Synthetic Biology Innovation Lab. Dr. Kujawska is a scientific evaluator for Polish and foreign agencies financing R&D activities and a member of the Sectoral Council for Competences of the Chemical Sector.



Grzegorz Kreiner

Dept. Brain Biochemistry

Maj Institute of Pharmacology PAS, Krakow, Poland



Grzegorz Kreiner, PhD, D.Sc. is a head of Dept. Brain Biochemistry, Maj Institute of Pharmacology, Polish Academy of Sciences (Krakow, Poland). Focused on the projects related to neurodegenerative diseases prevention by drug repurposing and developing neuroprotective strategies. Project leader of CEPHARES - R&D Center of Pharmacotherapy of Central Nervous System Diseases at the Maj Institute of Pharmacology, a new project to be launched Jan 1, 2024 (currently under construction). Author of more than 50 research papers in the field of neuroscience and pharmacology



Pierre-Louis Teissedre

Institut des Sciences de la vigne et du vin

Université de Bordeaux, France



Pierre-Louis Teissedre is Oenologist of the Faculty of Pharmacy of Montpellier and Doctor of the University of Montpellier 1, he was, in 1993 and 1994 Associate Doctor of the University of California at Davis -USA in the Department of Oenology and Viticulture. Assistant-Professor at the University of Montpellier 1 at the Training and Research Center in Oenology (Pharmacy Faculty) from 1994-2004.

Pierre-Louis TEISSEDRE is full Professor at the ISVV of the University of Bordeaux since 2005 and was Deputy Director of the UMR 1219 Oenology (Oenopro Group) of the Faculty of Bordeaux Oenology where he heads the Laboratory of Applied Chemistry. He is also director of the Oenoviti International network made up of 40 partners universities from the European Union and Non-European in the field of wine and viticulture and 20 associated industrial partners. Member of UOEF (Union des Oenologues de France) since 1989, Pierre - Louis TEISSEDRE is also rector of the French Oenologists Union since 2013 and was elected 1st Vice President of UOEF in 2019 and Vice Chair of UIOE (International Union of Oenologists) in 2021. Pierre-Louis TEISSEDRE is an OIV expert in the -Wine Technology, - Food Safety, - Consumption, Nutrition and Health groups since 1996, and serves as Scientific Secretary of the Safety and Health Commission of the International Organization of Vine and Wine since 2001 and become President of the OIV Commission Safety and Health in 2021. He is specialized in research areas of phenolic compounds in grapes and wine: qualitative, sensory and physiological aspects, the chemical analysis of grapes and wine, the qualitative improvement of wines during winemaking and ageing, food safety and health in the wine sciences. He is the author of more than 300 publications and communications in international peer-reviewed journals, 30 books and book chapters and is a co-inventor of 13 patents and extensions. Pierre-Louis TEISSEDRE H index is 55 with 9219 citations. He is Chief Editor of the Oeno one Journal and Associate Editor of an International Journal (Journal Science Food Agriculture), Member of IVES Board and of the Editorial Committees of 4 international newspapers in the vine and wine sector.