ERA PerMed funded projects on:
PREVENTION IN PERSONALISED MEDICINE

JTC2022 Midterm Seminar

February 3-4, 2026

Paris, France

EP PerMed
European Partnership
for **Personalised Medicine**

ERA PerMed

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Content

Introduction

Personalised medicine (PM) represents a paradigm shift in healthcare, emphasizing tailored approaches to prevention, diagnosis, and treatment that take into account individual variability in biological factors, environment, and lifestyle. As the field continues to advance, PM is increasingly recognised not only for its therapeutic potential, but also for its capacity to enable earlier and more effective preventive strategies. Realising this potential requires coordinated research efforts and close collaboration across disciplines, sectors, and national borders.

The EP PerMed network, funded under the EU Horizon Europe framework, builds on the achievements of its predecessor ERA PerMed and continues to play a central role in strengthening the European personalised medicine research, innovation, and implementation ecosystem. By aligning national and regional research priorities, fostering transnational collaboration, and supporting high-quality interdisciplinary projects, EP PerMed aims to accelerate the translation of PM research into tangible benefits for patients and health systems across Europe and beyond.

The Joint Transnational Call 2022 (JTC2022), entitled "Prevention in Personalised Medicine," supports 24 outstanding research consortia composed of interdisciplinary teams from diverse research domains. The funded projects address a broad spectrum of diseases and conditions, including cancer, neurological disorders, cardiovascular and metabolic diseases, kidney and bladder diseases, autoimmune conditions and more. Collectively, these projects explore innovative preventive strategies in personalised medicine, ranging from biomarker discovery to data-driven prediction models, with the aim of preventing disease or disease progression.

This mid-term symposium provides a dedicated forum for JTC2022 project teams, clinicians, researchers, and other stakeholders to exchange knowledge, present scientific progress, and reflect on challenges and opportunities encountered during the first phase of project implementation. Through oral presentations and poster sessions, the meeting fosters scientific dialogue and cross-project exchange. In addition, the programme features interactive thematic roundtables including topics on research and innovation in personalised medicine, approaches to implement personalised medicine, and patient and citizen engagement in personalised medicine. A dedicated workshop led by an invited expert will address the role of artificial intelligence in personalised medicine, highlighting how AI-driven approaches can help bridge the gap between scientific innovation and real-world implementation.

On behalf of EP PerMed, we would like to thank all project partners, speakers, chairs, and participants for their commitment and contributions. We wish you a stimulating and productive symposium and look forward to the continued progress of the JTC2022 projects as they advance the prevention-orientated vision of personalised medicine for the benefit of patients everywhere.

JTC2022 Midterm Seminar

3-4 February 2026

French National Research Agency (ANR)
86 rue Regnault, 75013 Paris, France

Day 1, Tuesday, 3 February 2026

08:00 – 09:00	Registration
09:00 – 09:20	Opening Session Welcome note and Introduction of EP PerMed Introduction of JTC2022 | JTC2022 secretariat
09:20 – 11:00	Session 1: Biomarkers for kidney & bladder disease CHAIR: SANDOR, Gyorgy KidneySign – ARGILÉS, Angel ONAKI-ICI – SOLER, Maria José SPAREKID – FAGUER, Stanislas UBIOBCA – BOISVERT, François-Michel
11:00 – 11:40	Coffee-Break & Poster session
11:40 – 12:55	Session 2: PM in immune & infectious diseases CHAIR: PAWLAK, Edyta PARADISE – PIN, Elisa Stracyfic – NIETERT, Manuel UriCoV – DUDOIGNON, Emmanuel
13:00 – 14:00	Lunch
14:00 – 16:05	Session 3: Personalised approaches in Neurolog CHAIR: PAPALEO, Francesco DEEPEN-iRBD – CAPPELLETTI, Graziella MG-PerMed – CAVALCANTE, Paola RELIABLE – GERLI, Filippo Glioma-PerMed – GOPALAKRISHNAN, Jay IPerGlio – INDERBERG, Else Marit
16:05 – 16:45	Coffee-Break & Poster session
16:45 – 18:30	Workshop – Thematic Roundtables
20:00 – 23:00	Networking dinner – Vedettes de la Seine

Day 2, Wednesday, 4 February 2026

9:00 – 9:10	Short welcome
9:10 – 11:15	Session 4: Neuropsychiatric challenges CHAIR: PAPALEO, Francesco LANTERN – LOCOCO, Filippo *(Advances in cancer diagnostics)* BIPCOM – DE GIROLAMO, Giovanni PERMANENS – MORTIER, Philippe PERMEPSY – OCHOA GÜERRE, Susana ETAP – MÖLLER, Knut
11:15 – 11:30	Coffee Break & Poster session
11:30 – 12:30	Workshop - AI for Personalised Medicine: Bridging the Gap Between Innovation and Implementation ALLASSONNIERE, Stéphanie
12:30 – 13:30	Lunch
13:30 – 14:45	Session 5: Advances in cancer diagnostic CHAIR: KALLUNKI, Tuula OVA-PDM – CAVALLARO, Ugo miRPOC – TURZANSKI FORTNER, Renée PORTRAIT – PIRINI, Francesca
14:45 – 15:15	Coffee Break (voting for best poster)
15:15 – 16:55	Session 6: Cardiovascular & metabolic diseases CHAIR: SANDOR, Gyorgy DAWN-AF – PLANK, Gernot OPTIMA – DANQUAH, Ina SIGNAL – SCHANSTRA, Joost-Peter OmegaPerMed – MEESSEN, Jennifer
16:55 – 17:05	Poster Award session
17:05 – 17:15	Video Competition Award
17:15 – 17:30	Feedback, summary and farewell

Session Chairs

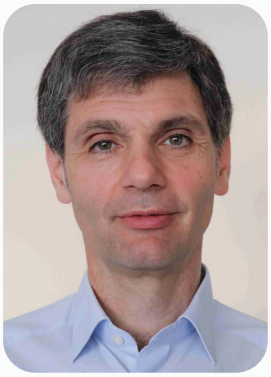
We are honoured to introduce our panel of esteemed experts serving as session chairs for the JTC2022 Midterm Symposium. Bringing together a wealth of knowledge across diverse scientific disciplines, their leadership and vision will be instrumental in guiding our discussions and ensuring a dynamic, high-impact exchange of ideas throughout the event.

Tuula Kallunki

Dr. Tuula Kallunki holds a PhD in Biochemistry and Molecular Biology from the University of Oulu, Finland, and completed postdoctoral training at the University of California, San Diego (USA). She joined the Danish Cancer Society as a Marie Curie Fellow and currently leads the Cancer Invasion and Resistance research group at the Danish Cancer Institute. Dr. Kallunki is also an Associate Professor in Drug Design and Pharmacology at the University of Copenhagen. Her research focuses on ovarian cancer and is supported by Horizon 2020, EP PerMed, and national funding schemes. She has authored 54 peer-reviewed publications (over 7,300 citations; h-index 33), supervised numerous MSc and PhD students, and served on multiple Nordic PhD committees. She has consulted for three biotech companies and evaluated several EU funding programmes, including FP6–FP7, IMI, and Horizon 2020. In addition, she has held leadership roles within the Danish Society for Biochemistry and Molecular Biology and has represented Denmark on FEBS and IUBMB councils.

Francesco Papaleo

Dr. Francesco Papaleo is a tenured Researcher and Group Leader of the Genetics of Cognition Laboratory at the Istituto Italiano di Tecnologia in Genova, Italy. His research focuses on uncovering the mechanisms that underlie social and cognitive processes, and how these are altered in neurodevelopmental and psychiatric disorders. Dr. Papaleo's laboratory employs an interdisciplinary approach that bridges genetics, behavior, and neural circuit analyses. Combining studies in mice with parallel investigations in humans, his team integrates advanced techniques to link cell- and circuit-specific mechanisms with socio-cognitive behaviors. Before establishing his independent research program at IIT, Dr. Papaleo trained at the University of Padova (Italy, 1996-2002), University of Bordeaux (France, 2002-2005) and the National Institute of Mental Health in Bethesda (USA, 2005-2010). His laboratory has made significant contributions to identifying novel genetic and neural circuit mechanisms underlying social and cognitive (dys)functions.



György Sándor

Dr. György Sándor holds an MSc in Electrical Engineering from the Technical University of Budapest and a PhD in Bioinformatics. He spent ten years as a research fellow at the Hungarian Academy of Sciences and served as a Fulbright Scholar and guest researcher at the University of Utah, where he focused on cardiovascular model-based research. He later transitioned into various management roles at Ericsson Hungary R&D. His research focuses on biomedical data communication, data integration, and systems interoperability. He has a particular interest in interpreting and processing large-scale data from wearable devices and other personalised-medicine technologies using 5G/6G-enabled AI and IoT solutions. In recent years, his work has expanded to multi-omics data analysis, integrating genomics, transcriptomics, proteomics, and metabolomics to study complex biological systems. A key goal of his research is the development of machine-learning-based predictive algorithms.

Edyta Pawlak

Dr. Edyta Pawlak is an Institute Professor at the Polish Academy of Sciences (PAS) and Head of the Laboratory of Immunopathology at the Ludwik Hirszfeld Institute. She holds a PhD in biological sciences and a habilitation in medical sciences. Since 2025, she has also served as Plenipotentiary for Research at the 4th Military Clinical Hospital in Wrocław. Her research focuses on identifying novel therapeutic targets for cancer, autoimmune diseases, and neuropsychiatric disorders using multi-omics approaches to characterize complex genetic and disease interactions.

With over 20 years of experience in biotechnology and molecular biology, Dr. Pawlak has led numerous projects funded by the National Science Centre (NCN) and the Medical Research Agency (ABM). She has authored 70 peer-reviewed publications (h-index 20) and has served as an expert evaluator for international funding programmes, including ERA PerMed and EP PerMed. She is an active member of the Polish Society of Human Genetics and the European Federation for Immunogenetics.

Presentation Abstracts

BIPCOM: Medical Comorbidities in Bipolar Disorder: Clinical Validation of Risk Factors and Biomarkers to Improve Prevention and Treatment

Presented by: Giovanni De Girolamo
IRCCS Istituto Centro San Giovanni di Dio Fatebenefratelli, Italy

Bipolar Disorder (BD) is a common, heritable, chronic, and recurrent disorder that represents a critical public health problem, due to its prevalence, its high degree of disability and psychiatric and medical comorbidities (MC). The project on "Medical comorbidities in bipolar disorder: clinical validation of risk factors and biomarkers to improve prevention and treatment" (BIPCOM) aims to study MC in people with BD targeting 2 main objectives: (1) to identify prevalence rates, risk and protective factors and natural history of MC among subjects with BD, through analyses of the Nordic medical registers and a cross-sectional study exploiting existing datasets of patients with BD; (2) to conduct a clinical study involving 400 subjects to assess the overall clinical profile of these patients and study the onset of medical comorbidities. BIPCOM will be implemented through continuous consultations with stakeholders (scientific and patients' associations, users, and families), for ensuring results' acceptability and transferability.

Coordinator:
Giovanni De Girolamo, IRCCS Istituto Centro San Giovanni di Dio Fatebenefratelli, Italy

Partners:
Michael Bauer, University Hospital Carl Gustav Carus, Technische Universität Dresden, Germany

Andreas Reif, University Hospital Frankfurt, Germany

Miguel Garcia-Argibay, Örebro University, Sweden

Ole A. Andreassen, Centre of Excellence NORMENT and University of Oslo, Norway

Marion Leboyer, University of Paris Est (UPEC) and Hôpitaux Universitaires Mondor, Assistance-Publique-Hôpitaux de Paris, France

Rosa Corcoy, Institut de Recerca-Hospital de la Santa Creu I Sant Pau and Universitat Autònoma de Barcelona, Spain

Florian Klingler, Deutsche Gesellschaft Für Bipolare Störungen (Gsbd) E.V., Germany

DAWN-AF: Digital Twins to Treat Atrial Fibrillation

Presented by: Gernot Plank
Medical University of Graz, Austria

Atrial Fibrillation (AF) is the most common cardiac arrhythmia. Since AF is progressive, the longer one has it, the harder it is to treat, and the risks of stroke, dementia and heart failure increase. The most effective treatment is catheter ablation therapy, a procedure that strategically destroys tissue to restrict propagation of electrical waves. However, approaches are currently generic, ignoring patient variability in atrial structure, and AF usually recurs. We aim to develop a personalised medicine approach based on computer modelling, to use digital twins to plan AF ablation to prevent recurrence. We propose to use preoperative measurements, imaging (MRI/CT) and the ECG, to build digital twins. However, these data are insufficient to uniquely characterize the atria, so we will build sets of potential digital twins for each patient, each of which will have its ideal ablation treatment determined. Invasive measurements acquired during the ablation procedure will be then used to select the digital twin that best matches the patient. Economic analysis will evaluate benefits arising from early preventative and longer-lasting treatment, reduced duration and procedural risks of interventions.

Coordinator:
Edward Vigmond, University of Bordeaux, France

Partners:
Gernot Plank, Medical University of Graz, Austria
Francisco Cristobal, Pontificia Universidad Católica de Chile, Chile
Thomas Czypionka, Institute for Advanced Studies, Austria
Thomas Pambrun, University Hospital Centre Bordeaux, France
Joël Romeu, Alliance du Coeur Sud-Ouest, France

DEEPEN-iRBD: Prodromal DEtErminants for PhENoconversion of idiopathic RBD to alpha-synucleinopathies (PD, DLB and MSA)

Presented by: Graziella Cappelletti
Università degli Studi di Milano, Italy

Evidence shows that individuals affected by idiopathic REM sleep behavior disorder (iRBD) have a high risk of conversion to Parkinson's disease, or dementia with Lewy bodies, or multiple system atrophy. Despite sharing a cellular pathological hallmark, the aggregation of alpha-synuclein, and some clinical features in the early stages, these conditions show different phenotypes in later stages with significant therapeutic and prognostic consequences for the patients. The consortium DEEPEN-iRBD aims to develop a pathogenicity model for prediction of phenoconversion utilizing pre-clinical/clinical research and data analysis, taking into account a personalised medicine approach, based on the individual's unique characteristics and optimisation of strategies for the prevention, diagnosis and treatment of the individuals rather than the disease. In this project, both existing and newly acquired data will be integrated, including advanced clinical assessments, physiological signal recordings, molecular markers derived from body fluids, skin biopsy, and iPSC-derived brain cells, in order to identify a specific profile at a very early stage, that is a prodromal phase, for each of the above conditions. This would ultimately allow to define a model for early risk stratification, diagnosis, treatment, and prognosis of patients with iRBD. A further important objective of the project deals with the ethical and social aspects of screening people in a prodromal stage of the diseases and of communicating the screening results.

Coordinator:
Graziella Cappelletti, Università degli Studi di Milano, Italy

Partners:
Rejko Kruger, University of Luxembourg, Luxembourg Center for Systems Biomedicine (LCSB), Luxembourg

Beatrice De Maria, IRCCS Istituti Clinici Scientifici Maugeri di Milano, Italy

Mauno Vihinen, Lund University, Sweden

Ronald Melki, Commissariat a l'Energie Atomique et aux énergies alternatives, Institut Francois Jacob (MIRCen), CEA and Laboratory of Neurodegenerative Diseases, CNRS, France

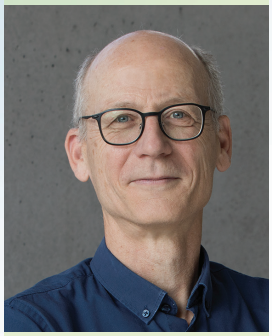
Cèline Galvagnion-Bull, University of Copenhagen, Denmark

Astrid Blom, The Danish Parkinson's Association, Denmark

Ana Borovecki, University of Zagreb, School of Medicine, Andrija Stampar School of Public Health, Croatia

ETAP: Early diagnosis and personalised Therapy in Autism spectrum to Prevent severe disorders

Presented by: Knut Möller
Institute of Technical Medicine, Furtwangen University, Germany



Problem: Autism Spectrum Disorder (ASD) is growing (1-in-44 children; 4:1 boys:girls) and manifests in debilitating cognitive problems. "Social blindness", the inability to recognise emotions in others, is a common debilitating feature, treated via intensive 1:1/ small-group therapy. It is costly, in very short supply, and thus often infrequent. Growing ASD diagnosis, particularly in boys, threatens to create a "lost-generation" unable to achieve their full potential. **Need:** To prevent severe disorder by significantly increased access to emotional recognition training/therapy for those with ASD, and at low(er) cost. **Proposed Solution:** To virtualize emotional recognition training in a two-way adaptive, and individualized system by combining three novel key elements (**KE1-3**)

- **KE1:** Realistic avatars able to show detailed emotions (**Availability, Scalability, Reproducibility**)
- **KE2:** Sophisticated sensing to read subject emotional state, reaction rates in therapy tasks, stress levels, to create critical subject feedback (**Personalisation**)
- **KE3:** Programmed therapeutic methods to challenge and respond to measured subject response (**Adaptive, Gamified**)

Outcome: Highly extensile software-based platform technology solution to dramatically increasing access and scalability, lower costs, and create new insights/pathways in ASD research.

Coordinator:
Knut Möller, Institute of Technical Medicine, Furtwangen University, Germany

Partners:
Johanna Pirker, Institute for Interactive Systems and Data Science, TU Graz, Austria
Ludger Tebartz van Elst, University of Freiburg, Germany
Gabor Kertesz, Obuda University, Hungary
J. Geoffrey Chase, University of Canterbury, New Zealand

Glioma-PerMed: Glioma invasion assays as a predictive tool for personalised glioma medicine

Presented by: Jay Gopalakrishnan
Institute of Human Genetics, Heinrich-Heine-Universität Düsseldorf, Germany

Glioblastoma multiforme (GBM) is the most frequent malignant brain tumor. No cure exists, and GBM patients' median survival is <24 months. Therefore, a therapeutic strategy to perturb GSCs invasion in the human brain is critical. Since GBMs are highly heterogeneous and are unique from patient to patient, "one therapy for all" is not practical. Furthermore, invasive behavior is unpredictable in the human brain. The "Glioma-PerMed" is establishing an interdisciplinary research consortium aiming to develop personalised glioma invasion assays in the preclinical models of human brain organoids and zebrafish brains. We will quantitatively determine the GBM invasion behaviors with unbiased machine learning algorithms. As our "personalised glioma invasion assay" platform allows drug screenings, we will screen an FDA-approved drug library and identify molecules that can be transferred to clinical patients. Ultimately, these would be the first step towards personalised GBM medicine.

Coordinator:
Jay Gopalakrishnan, Institute of Human Genetics, Heinrich-Heine-Universität Düsseldorf, Germany

Partners:
Nathalie Jurisch-Yaksi, Norwegian University of Science and Technology (NTNU), Norway

Limor Freifeld, Technion – Israel Institute of Technology, Israel

Julia Steinmann, University Hospital Düsseldorf, Heinrich-Heine-University, Germany

Vita Rovite, Latvian Biomedical Research and Study Centre, Latvia

IPerGlio: Improving personalised glioblastoma care by intertwined immunomics and artificial intelligence approaches

Presented by: Else Marit Inderberg
Oslo University Hospital, Norway

New treatment strategies to improve glioblastoma patient care and quality of life are urgently needed. Survival rates are very poor as virtually all glioblastomas recur and standard therapy has not changed for over 15 years. Around 25% of clinical trials in glioblastoma evaluate immunotherapies and several have reported long-term survival benefits in 10-20% of patients. We currently lack biomarkers to predict clinical benefit of immunotherapy in this highly heterogeneous disease. The objective in IPerGlio is to consider clinical and immunological data integrated with sex and age as well as key lifestyle and environmental factors using artificial intelligence (AI) technologies. This represents a novel approach to guide personalised interventions improving glioblastoma patient care and quality of life. By applying AI generated models to these data, IPerGlio will deliver prognostic markers that can be used to guide decisions for combination treatment with immunotherapy in clinical trials. Furthermore, IPerGlio will address the ethical challenges concerning data security and sharing posed by personalised medicine and AI approaches through active stakeholder and patient involvement.
The IPerGlio project will strongly improve clinical decision-making for glioblastoma patients by identifying risk factors amenable to reinforce tertiary prevention and ensuring effective and responsible delivery of AI-guided personalised immunotherapy.

Coordinator:
Else Marit Inderberg, Oslo University Hospital, Norway

Partners:
Quintino Giorgio D'Alessandris, Fondazione Policlinico Universitario Agostino Gemelli IRCCS (FPG), Italy
Lucia Gabriele, Istituto Superiore Di Sanita (ISS), Italy
Antonio Cosma, Luxembourg Institute of Health (LIH), Luxembourg
Marcos Araúzo Bravo, BioDonostia Health Research Institute (BHRI), Spain
Ruben Sakowsky, University Medical Center Goettingen (UMG), Germany

KidneySign: An integrated multi-omics signature of kidney fibrosis for CKD precision medicine

Presented by: Àngel Argilés
RD Néphrologie SAS, France

Chronic kidney disease (CKD) is a progressive condition defined by sustained structural or functional abnormalities. Monitoring and predicting the risk of CKD progression is difficult due to fluctuating renal function markers and limited access to the organ itself for structural assessment. The KidneySign project aims to develop a blood- and urine-based multimodal proteomic signature reflecting in situ kidney fibrosis and predictive of CKD progression. Personalised nephroprotection based on the complementarity of patients and drugs proteomic profiles will also be explored. The resulting clinical decision support system providing risk estimates and therapeutic guidance will comply with ethical and societal issues identified at each stage of the project. The project relies on the analysis of Big Data comprising classical, proteomic and peptidomic evaluations of kidney biopsy, urine, serum and plasma samples from existing patient cohorts, biobanks and a KidneySign prospective study.

Coordinator:
Àngel Argilés, RD Néphrologie SAS, France

Partners:
Julie Klein, Inserm U1297 and U1295, Inserm, France

Sara Denicolo, Medical University Innsbruck, Austria

Harald Rupprecht, Medizinische Klinik V, Nephrologie, Angiologie, Rheumatologie, Klinikum Bayreuth GmbH, University of Erlangen-Nürnberg, Germany

Vera Jankowski, Institute for Molecular Cardiovascular Research, RWTH Aachen University, Germany

Jane Synnergren, Systems Biology Research Centre, University of Skövde, Sweden

LANTERN: Lung cancer multi-omics avatars for integrated precision medicine

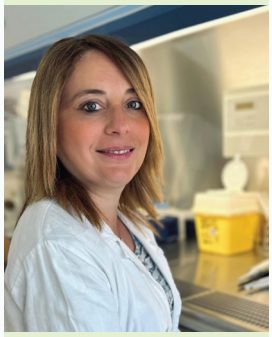
Presented by: Filippo Lococo
Fondazione Policlinico Universitario "A. Gemelli" IRCCS (FPG), Italy

The current management of lung cancer patients has reached a high level of complexity, thereby complicating the process of decision-making by clinicians. With the advent of advanced Artificial Intelligence (AI) techniques, various omics datasets may be used efficaciously in creating predictive models. LANTERN partners will develop accurate predictive models for lung cancer patients, through the creation of Digital Human Avatars (DHA), defined as computerised representations of individual patients with a focus on biological functions. LANTERN partners will prospectively enrol 600 lung cancer patients, collecting several omics domains (including radiomics and genomics). Advanced and correlated omics variables will be modelled, originated and parameterized in an experimental context of cutting-edge big data. The development of DHA and the consequent application of AI-based predictive models in clinical practice will in fact, favour the accuracy of diagnosis and a complete personalisation of treatment.

Coordinator:
Filippo Lococo, Fondazione Policlinico Universitario "A. Gemelli" IRCCS (FPG), Italy

Partners:
Esther Troost, Technische Universität Dresden (TUD), Germany
Róza Ádány, University of Debrecen (DEB), Hungary
Núria Farré, Hospital de la Santa Creu i Sant Pau (HSCSP), Catalona, Spain
Ece Öztürk, Koç University, Türkiye
Dominique Van Doorne, Academia del Paziente Esperto EUPATI, Italy

MG-PerMed: Personalising myasthenia gravis medicine: from “one-fits-all” to patient-specific immunosuppression



Presented by: Paola Cavalcante
Fondazione IRCCS Istituto Neurologico Carlo Besta, Italy

Myasthenia Gravis (MG) is a prototypic autoimmune disease causing muscle weakness and fatigability, frequently treated with lifelong immunosuppressive therapy (IST). Clinical heterogeneity, unpredictable disease course, treatment refractoriness in a proportion (10-15%) of patients, IST-related adverse events, and inter-individual variation in response to both conventional IS and emerging biological drugs highlight the need to adopt more effective, preventive and safe personalised medicine (PM) strategies, still lacking in MG. The MG-PerMed project will combine pre-clinical, clinical, artificial intelligence (AI), telemedicine and bioethics research to promote adoption of PM in MG clinical practice. Integration of biomarker with real-world clinical data from three MG populations (Italian, French and Israeli) via AI will allow the development of a clinical decision support tool (MG-CDST), whose effectiveness in guiding the choice of the best patient-centred treatment programme will be proven in an exploratory clinical study. Our findings will set the basis for a shift from the current “one-fits-all” treatment flow-chart to personalised care in MG, thus promising to significantly improve therapeutic success and MG patients’ quality of life.

Coordinator :
Paola Cavalcante, Fondazione IRCCS Istituto Neurologico Carlo Besta, Italy

Partners :
Rozen Le Panse, Centre of Research in Myology, INSERM – Sorbonne University, France

Adi Vaknin-Dembinsky, Hadassah University Hospital, Israel

Fabio Stella, University of Milan-Bicocca, Italy

Sandra Paci, Dept. of Market Access and Patient Advocacy, Argenx, Belgium

Ji-Young Lee, University of Copenhagen, Denmark

miRPOC: miRNA as biomarkers in early detection and personalised treatment in ovarian cancer

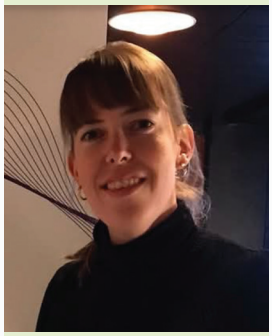
Presented by: Renée Turzanski Fortner
Cancer Registry of Norway, Oslo University Hospital, Norway

Ovarian cancer is generally diagnosed at a late stage, after the disease has spread, and has poor survival diagnosis. Currently, there are no effective early detection strategies and early disease symptoms are non-specific (e.g., bloating, feeling of fullness). Biomarkers evaluated to date do not outperform the "best available" marker CA125; however, a preliminary study provided evidence that a serum microRNA profile may provide better differentiation between ovarian cancer cases and non-cases than CA125. This study will provide validation of a microRNA panel for early detection of ovarian cancer in serum samples from prospective cohorts and clinical data and biospecimens. The overarching objective is to validate a serologic microRNA panel that, together with CA125, would have sufficient diagnostic discrimination for early-stage disease to be used as a tool that, complementary to imaging, would allow early diagnosis and direction of patients with suspected malignancy to personalised gyn-oncological care.

Coordinator:
Renée Turzanski Fortner, Cancer Registry of Norway, Oslo University Hospital, Norway

Partners:
Rudolf Kaaks, German Cancer Research Center, Germany
Konrad Stawiski, Medical University of Łódź, Poland
Kevin Elias, Brigham and Women's Hospital, Harvard Medical School, MA, USA

OmegaPerMed: Optimizing omega-3 supplementation to resolve inflammation in a personalised medicine cardiovascular disease prevention



Presented by: Jennifer Meessen
Istituto di Ricerche Farmacologiche Mario Negri, Italy

Cardiovascular diseases (CVD) are the most common cause of death in Europe and worldwide. Although omega-3 polyunsaturated fatty acids (PUFA) are traditionally considered beneficial in CVD prevention, clinical trials have generated contradictory results for CVD outcomes. The aim of this project is to generate a personalised CVD prevention decision tool to identify responders and non-responders to omega-3 treatment. This project will explore observational cohorts and clinical trials for the interactions between genes, omega-3 PUFA treatment and/or intake, CVD risk factors, and biomarkers, followed by data integration for artificial intelligence (AI)-empowered development of the OmegaPerMed decision tool. The resulting personalised omega-3 treatment indications in CVD can be the first personalised medicine to be widely implemented in international CVD treatment guidelines to the benefit of a large patient population.

Coordinator:
Magnus Bäck, INSERM, Université de Lorraine, France

Partners:
Jennifer Meessen, Istituto di Ricerche Farmacologiche Mario Negri, Italy
Sven-Christian Pawelzik, Karolinska Institutet, Sweden
Caroline Brorsson, Qlucore AB, Sweden
Reijo Laaksonen, Zora Biosciences Oy, Finland

ONAKI-ICI: Towards a personalised clinical management of oncologic patients with acute kidney injury associated to immune-checkpoint inhibitors

Presented by: María José Soler Romeo
Hospital Vall d'Hebron Institut de Recerca (VHIR), Barcelona, Spain

Treatment with immune checkpoint inhibitors (ICIs) has led to increased survival rates of cancer patients, who were previously untreatable, by favouring an immune response against tumour cells. ICIs action is not selective and may cause immune-related adverse events. Up to 29% of cancer patients, who receive ICIs treatment, develop acute kidney injury (AKI) secondary to ICIs use (ICI-AKI), and acute tubulointerstitial nephritis (ATIN) is the most frequent lesion. ICI-AKI is a serious complication that increases the risk of AKI recurrence after ICIs rechallenge and mortality. The diagnosis of ICI-AKI is performed by a kidney biopsy, which is highly invasive. We will collect retrospective and prospective demographic and clinical data of ICI-AKI patients as well as urine, blood and kidney tissue samples of ICI treated cancer patients during two years to identify novel biomarkers related to immune response to avoid kidney biopsy. This approach will enable more personalised clinical management of patients and improve their quality of life.

Coordinator:
María José Soler Romeo, Hospital Vall d'Hebron Institut de Recerca (VHIR), Barcelona, Spain

Partners:
Jolanta Malysko, Medical University of Warsaw, Poland
Laura Cosmai, ASST Fatebenefratelli Sacco, Italy
Kai Schmidt-Ott, Hannover Medical School, Germany
Jordi Fonollosa Magrina, Universitat Politècnica de Catalunya (UPC), Spain
Filipa Sampaio, Uppsala University, Sweden
Meltem Gürsu, Bezmialem Vakif University, Türkiye

OPTIMA: Omics Approach for Personalised Prevention of Type 2 Diabetes Mellitus for African and European Populations

Presented by: Ina Danquah
Heidelberg Institute of Global Health (HIGH), Medical Faculty and University

Lay abstract:
The global prevalence of type 2 diabetes (T2D) is increasing, with sub-Saharan Africa most affected. Although the development of T2D differs between African and European populations, and between men and women, risk screening and guidelines for the prevention of T2D are generic. This collaboration between Sweden, Germany and South Africa enables the measurement of circulating proteins and metabolites to identify sex- and ethnic-specific biomarkers for the early prediction of T2D risk in two African cohorts (South African and Ghana) and a European (Swedish) cohort. We will also link these biomarkers to dietary patterns, which will be used to inform targeted dietary modifications for primary prevention of T2D in the different populations. The cost effectiveness of the targeted dietary modifications, as well as the perceptions among target populations regarding these early preventative strategies will be assessed in the respective countries to inform future implementation of personalised prevention strategies.

Coordinator:
Julia H. Goedecke, South African Medical Research Council/WITS Developmental Pathways for Health Research Unit (DPHRU), University of the Witwatersrand and Biomedical Research and Innovation Platform, South African Medical Research Council, South Africa

Partners:
Ina Danquah, Heidelberg Institute of Global Health (HIGH), Medical Faculty and University Hospital, Heidelberg University, Germany
Tommy Olsson, Umeå University, Sweden
Rikard Landberg, Chalmers University of Technology, Sweden

OVA-PDM: Personalising the clinical decision making in ovarian cancer through patient-derived in vitro models

Presented by: Ugo Cavallaro
Istituto Europeo di Oncologia s.r.l., Italy

High-grade serous ovarian cancer (HGSOC) is a difficult-to-treat disease, mainly due to the lack of treatments for preventing tumour relapse following the primary surgery. In the last few years, a new class of compounds termed PARP inhibitors (PARPi) have emerged as highly promising drugs that prolong dramatically the relapse-free interval in HGSOC patients. Because of their mechanism of action, PARPi are currently given to a subgroup of patients whose cancer is defective in a specific mechanism of DNA repair. However, even within this subgroup there are patients who fail to respond, while, on the other hand, a significant fraction of patients, who are not identified as DNA repair-defective, do show a very good response. Unfortunately, at the moment we have no means to identify in advance patients who are likely to benefit from PARPi and, hence, could receive a personalised treatment. Our consortium will implement innovative, patient-derived experimental models and cutting-edge technologies to design novel tools for the prediction of PARPi response, thus helping to tailor the therapies and to defeat HGSOC recurrence.

Coordinator:
Ugo Cavallaro, Istituto Europeo di Oncologia s.r.l., Italy

Partners:
Mirjana Kessler, LMU University Hospital, Germany
Jesper V. Olsen, Novo Nordisk Foundation Center for Protein Research, Denmark
Sonia Tarazona Campos, Universitat Politècnica de València, Spain
Antonio González-Martin, Clinica Universidad de Navarra, Spain
Nicolai Bache, Evosep Biosystems, Denmark

PARADISE: PersonAlisation of RelApse risk in autoimmune DISEase

Presented by: Elisa Pin
KTH Royal Institute of Technology, Sweden

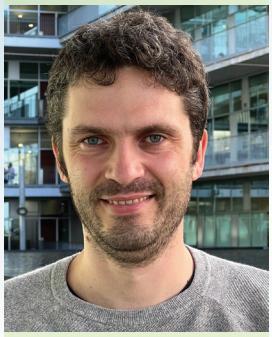
Autoimmune disease affects 10% of adults, most of whom are women, and two of the top five medications with the highest cost globally are used to keep these recurring conditions in remission. These medications suppress the immune system, leaving the patient exposed to increased infection and cancer risk. The general requirement for such treatments, and their side effects, has been raised as a key target for research by the PARADISE consortium patient groups. Therefore, we aim to develop a personalised prediction tool that accurately defines the patient's risk of disease recurrence so that medication doses can be tailored and, in some cases, stopped safely. We use systemic vasculitis as a typical autoimmune disease, bringing together clinical, biomarker and smartphone derived wellbeing data to inform predictive algorithms underpinning a physician tool. Such artificial intelligence (AI) applications are coming under intense EU scrutiny, so we will co-develop an "AI transparency notice", which will make explicit and explainable the PARADISE tool clinical outputs.

Coordinator:
Mark Little, Trinity Translational Medicine Institute and ADAPT Centre, Trinity College Dublin, Ireland

Co-coordinator:
Declan O'Sullivan, ADAPT centre, Trinity College Dublin, Ireland

Partners:
Anto Čartolovni, Catholic University of Croatia, Croatia
Elisa Pin, KTH Royal Institute of Technology, Sweden
Harald Binder, University of Freiburg, Germany
Stéphanie Boutillier, Firalis S.A., France
Dipak Kalra, The European Institute for Innovation through Health Data AISBL, Belgium
Julie Power, Vasculitis Ireland Awareness, Ireland
Juliana Bordignon Draibe, Bellvitge Biomedical Research Institute, Barcelona, Spain

PERMANENS: Towards personalised clinical management of suicide risk through data-driven clinical decision support using transnational electronic registry data



Presented by: Philippe Mortier
IIS Institut Hospital del Mar d'Investigacions Mèdiques, Spain

Suicide is a major, yet preventable, public health issue, representing an annual loss of 34.6 million years of life worldwide. Clinical management of patients with suicide risk is a challenging task, in part because suicide represents highly complex difficult-to-predict behaviour. The PERMANENS project will develop a prototype of a Clinical Decision Support System (CDSS), i.e., a medical software programme that assists clinicians in the personalised management of suicide risk. Using machine learning-based algorithms, the CDSS will enable accurate suicide risk prediction and the subsequent personalised allocation of evidence-based treatment. Data for the project will be obtained from population-representative electronic registries from Ireland, Norway, Sweden, and Catalonia (Spain). To maximize its clinical usefulness, the CDSS prototype will be co-created with both patients and clinicians through user-oriented qualitative implementation research.

Coordinator:
Philippe Mortier, IIS Institut Hospital del Mar d'Investigacions Mèdiques, Spain

Partners:
Ella Arensman, Suicide Research Foundation CLG, Ireland
Lars Mehlum, University of Oslo - UiO, Norway
Manuel Pastor, Universitat Pompeu Fabra, Spain
Johan Bjureberg, Karolinska Institutet, Sweden

PERMEPSY: Towards a personalised medicine approach to psychological treatment for psychosis

Presented by: Susana Ochoa
Fundació Sant Joan de Déu (FSJD), Spain

Despite the efficacy of psychological interventions in people with psychosis, few patients receive them and none of them are personalised. PERMEPSY aims to integrate new technologies such as harmonisation of data and machine learning for providing a prototype platform that will allow personalisation of a psychological treatment named Metacognitive Training (MCT). The project is divided into two phases. The first one consists of a systematic review of the literature and the harmonisation of previous data (aprox. 500 patients with sociodemographic, clinical, cognitive and meta-cognitive, and biomarkers information) to develop a prototype platform that will predict personalised treatment (P-MCT). The second phase will validate the P-MCT compared with classical MCT in a prospective pilot clinical trial study in 5 countries: Poland, Germany, France, Chile and Spain (including 252 patients). PERMEPSY project will develop an open platform for clinicians to predict the response to MCT and recommend a personalised MCT treatment.

Coordinator:
Susana Ochoa, Fundació Sant Joan de Déu (FSJD), Spain

Partners:
Steffen Moritz, Universitätsklinikum Hamburg-Eppendorf (UKE), Germany
Berna Fabrice, University Hospitals of Strasbourg (UHS), France
Lukasz Gaweda, Polish Academy of Sciences (PAoS), Poland
Caroline König, Universitat Politècnica de Catalunya (UPC), Spain
Vanessa Acuña, Universidad de Valparaíso (UV), Chile

PORTRAIT: A multi-omic stratification and a non-invasive tool for early recognition of triple negative and Her2+ breast cancer patients responders to neoadjuvant therapy

Presented by: Francesca Pirini
Bioscience laboratory, IRCCS Istituto Romagnolo per lo Studio dei Tumori (IRST) "Dino Amadori', Italy

Neoadjuvant therapy (NAT) is the standard initial treatment for Triple Negative and Her2+ breast cancers. The tumour response to NAT diverges widely due to the influence of several individual factors, including microbiota, that have a crucial role in immune response and in conditioning molecular pathways. Thus, a systematic and integrated stratification of the patients at the onset of the disease, together with the evaluation of the common decision-making criteria, will help to recognise responders and improve patient care and quality of life. PORTRAIT aims to create a multidimensional ID of responders and non-responders to NAT integrating host characteristics and clinical data with tissue and distal microbiota characteristics (gut and skin microbiota) to detect the individual panel of determinants affecting the therapeutic outcome by a multiomic approach. It also aims to create a non-invasive predictive tool based on volatilomics and test personalised therapy approaches in 3D models.

Coordinator:
Francesca Pirini, Bioscience laboratory, IRCCS Istituto Romagnolo per lo Studio dei Tumori (IRST) "Dino Amadori', Italy

Partners:
Michel Salzet, Laboratoire PRISM U1192 Inserm, University of Lille, France
Lorenzo Gerratana, IRCCS Centro di Riferimento Oncologico di Aviano (CRO) National cancer Institute, Italy
Josefa León, Foundation for Biosanitary Research in Eastern Andalusia, Granada, Spain
Fruzsina Molnar-Gabor, Faculty of Law/BioQuant Centre, University of Heidelberg, Germany
Shai Rosenberg, Hadassah Medical Centre, Israel
Ruben Armañanzas Arnedillo, University of Navarra, Navarra, Spain

RELIABLE: Targeting subclinical motor and cognitive impairment in patients with early onset Multiple Sclerosis at high Risk of disEase activity through a preventive personaLised and InnovAtive rehaBiLitation stratEgy

Presented by: Filippo Gerli
IRCCS Don Carlo Foundation, Italy

Prevention of progression from the earliest stages of the disease is an important unmet need in Multiple Sclerosis (MS). In this study we will focus on a comprehensive assessment of subclinical deficits in patients without clear evidence of neurological dysfunction. Applying personalised interventions targeted to the patient's deficits may reduce the burden of these deficits, improve the patient's quality of life and possibly reduce the chance of future, clinically evident, disability accrual. The aim of this pilot study is to assess the subclinical burden of neurological impairments in early Relapsing-Remitting MS patients with no evident neurological disability by applying a comprehensive evaluation, including comorbidities, lifestyle, imaging data, neuropsychological evaluation, gait and balance analyses. From these analyses, we will obtain a risk score for disability worsening over the short-term (1 year). We will then evaluate in a validation cohort the reduction of the rate of patients with evidence of disease activity using a comprehensive and personalised approach (lifestyle counselling, advanced motor and cognitive rehabilitation). As an added value, we will take into account patient preferences and values to support tailoring the interventions.

Coordinator:
Maria Pia Amato, IRCCS Fondazione Don Carlo Gnocchi ONLUS, Italy

Partners:
Emilio Portaccio, Careggi University Hospital, SOD Neurological Rehabilitation, Italy

Sylvia Martin, Center for Research and Bioethics, Uppsala University, Sweden

SIGNAL: Body fluid proteome SIGnatures for persoNALised intervention to prevent cardiovascular and renal complications in diabetes

Presented by: Joost P Schanstra
INSERM U1048, France

Diabetes and the associated cardiovascular and renal complications are among the largest burdens for patients, as well as the public healthcare system. Several different drugs that show a significant benefit are available, with the largest benefit produced if given at the earliest possible time point. However, guidance on which specific medication to apply per patient is currently lacking. Partners in this consortium have investigated urine and plasma proteome in multiple clinical studies and identified several biomarkers expected to predict drug response. In addition, the consortium has access to large biobanks of diabetic patients undergoing different types of pharmacological intervention. Building on these extensive available resources, SIGNAL targets to evaluate and establish predictive biomarkers that enable guiding anti-diabetic treatment with respect to prevention of chronic kidney and cardiovascular disease. The study will establish and prompt advancement towards clinical implementation of predictive biomarkers-opening the way towards the personalised treatment of people with diabetes.

Coordinator:
Peter Rossing, Steno Diabetes Center Copenhagen, Denmark

Partners:
Justyna Siwy, DiaPat GmbH, Germany

Joost P Schanstra, INSERM U1048, France

María Ángeles Martinez de Salinas, San Pedro Hospital, Rioja Salud Foundation, Spain

Beatriz Fernandez Fernandez, Fundación Instituto de Investigación Sanitaria Fundación Jiménez Díaz, Spain

Gert Mayer, Medical University Innsbruck, Austria

SpareKid: Multi-markers risk assessment of kidney sensitivity to injury to personalise prevention of acute kidney injury

Presented by: Stanislas Faguer
Centre Hospitalier Universitaire de Toulouse, France

Acute kidney injury (AKI) is an extremely complex life-threatening disease with high mortality and chronic kidney/non-kidney consequences. AKI is characterised by (1) the (current) inability to predict its development before the insult, even in well-controlled and frequent clinical settings such as cardiac surgery or chemotherapy, and (2) the huge heterogeneity of the kidney response even after an insult of similar intensity. The aim of SpareKid is to better predict the development of AKI to allow dedicated primary prevention and reduce its costs. The innovative concept of SpareKid is to define a so-called non-invasive Kidney Resilience Index (KRI), modeling AKI as a maladaptive kidney response to the insult. The KRI will be defined based on in-depth and multiscale molecular and clinical data using a holistic big data-based strategy to integrate high throughput urinary and plasma proteomic, immunologic mRNA and cell population signatures, genetic whole genome sequencing (WGS) signatures and detailed clinical parameters to optimally model the complexity of AKI. Lastly, using data from the National Systems of Health, we will model the cost-effectiveness of the KRI to determine the cost savings of a preventive strategy.

Coordinator:
Stanislas Faguer, Centre Hospitalier Universitaire de Toulouse, France

Partners:
Alberto Ortiz, Fundación Instituto de Investigación Sanitaria Fundación Jiménez Díaz, Spain

Julia Hoefele, Technical University of Munich (TUM), Institute of Human Genetics, Germany

Patrick Murray, University College Dublin, UCD School of Medicine, Clinical Research Centre (UCD CRC), Ireland

Julie Klein, INSERM, Institut des Maladies Métaboliques et Cardiovasculaires, UMR 1297, France

Andreas Hildebrandt, Johannes Gutenberg University Mainz, Institute for Computer Science, Germany

Stracyfic: Patient Stratification by Standardization of the Image-based Sweat Test for Cystic Fibrosis for use in Clinical Routine

Presented by: Manuel M. Nietert
University Medical Center Göttingen & Campus Institute Data Science, Germany

The demonstration of a salty sweat has long been used to diagnose cystic fibrosis (CF), a rare disorder affecting 1 in 2,500 live births and associated with high morbidity and mortality. CF is caused by mutations resulting in a loss-of-function of the CFTR protein that mainly acts as a chloride channel. It leads to dramatic trans-epithelial ion and water transport abnormalities and produces a thick mucus obstructing airways and duct lumens of exocrine glands. Beyond complex treatments, mainly symptomatic, CFTR modulators have recently been developed to mitigate the mutation effects; there is, however, still no cure for CF. Moreover, there is an unmet need of validated biomarkers of CFTR function to quantify the remaining CFTR activity, e.g. to classify the level of the base defect and later assess the efficacy of target therapies. We aim at developing a usable common standard for the required experiments, the automated analysis via software and providing the experimental hardware setups for an easy dissemination of the technique to other sites. Stracyfic will offer a novel strategy to better classify and monitor patients by their individual level of the disease-causing effect. Enabling better detection as well as better management of the disease in the long run.

Coordinator:
Manuel M. Nietert, University Medical Center Göttingen & Campus Institute Data Science, Germany

Partners:
Sophie Gohy, Cliniques universitaires Saint-Luc, Université catholique de Louvain, Belgium

Isabelle Sermet-Gaudelus, INSERM U1151 Necker Enfant Malades, France

Andrea Gramegna, IRCCS Ca' Granda Ospedale Maggiore Policlinico, University Milan, Italy

Sabine Wöhlke, University of Applied Sciences Hamburg, Germany

UBIOBCA: Urine biomarkers for bladder cancer diagnosis and surveillance: a multicentric study to assess the diagnostic accuracy of a comprehensive diagnostic tool

Presented by: François-Michel Boisvert
Université de Sherbrooke, Canada

Bladder cancer (BC) ranks as the tenth most prevalent cancer in the world (IARC, WHO), with a steady rise in its incidence and prevalence, and is accompanied by a high morbidity and mortality. The current standard of care to diagnose bladder cancer is cystoscopy, which consists of inserting a camera in the urinary tract to the bladder. Although the detection rate is high, the technique and equipment are expensive, invasive, unavailable worldwide, and, most importantly, uncomfortable and associated with risk of complications. Therefore, there is a critical need to establish a non-invasive, low cost, and sensitive method for the early detection and monitoring of BC. In this project, we aim to investigate the robustness of using urine biomarkers as a diagnostic tool in different populations through a large international multicentre study (Canada, France, Germany). This would demonstrate the applicability of such tests to be used as universal non-invasive biomarkers for early detection and surveillance of BC in different populations to reduce the number of procedures, improve the patients' quality of life and lower the costs.

Coordinator:
François-Michel Boisvert, Université de Sherbrooke, Canada

Partners:
Florence Le Calvez-Kelm, International Agency for Research on Cancer, WHO, France
Anja Rabien, Charité - Universitätsmedizin Berlin, Germany
Félix Camirand-Lemyre, Université de Sherbrooke, Canada
Ecke Thorsten, Helios Hospital Bad Saarow, Germany

UriCov: URInary peptidomic patterns of Long-COVID syndrome

Presented by: Emmanuel Dudoignon
Assistance Publique – Hôpitaux de Paris, France

The UriCoV project aimed to understand the molecular pathology of Long-COVID, also known as Post-Acute Sequelae of SARS-CoV-2 (PASC), and to develop tools for early diagnosis and risk prediction. Using urine samples and advanced protein and peptide analyses, the project identified specific biomarkers predicting the risk of developing Long-COVID. These biomarkers were integrated into classifiers that can predict the likelihood of future PASC already during the acute infection. Analyses also enabled identification of biomarkers for established PASC and revealed underlying molecular mechanisms. Further, sex-specific differences in experiencing and coping with the disease were identified. Health data confirmed that Long-COVID is associated with reduced quality of life, higher healthcare costs, and increased mortality risk, particularly for younger patients. In silico simulations demonstrated that personalised treatments based on molecular data could improve patient outcomes. UriCoV has delivered tools and insights that support early identification of at-risk patients, and pave the way for targeted interventions. The project's results offer both scientific understanding and practical solutions to improve care for Long-COVID patients.

Coordinator:
Justyna Siwy, Mosaiques Diagnostics GmbH (MOS), Germany

Partners:
Ralph Wendt, St. Georg Hospital Leipzig, Germany
Björn Peters, Skaraborg Hospital, Sweden
Benjamin Chousterman, Assistance Publique – Hôpitaux de Paris, France
Mirosław Banasik, Wroclaw Medical University, Poland
Manfred Hecking, Medical University of Vienna, Austria
Catherine Tourette-Turgis, University of Patients – Sorbonne, France

Poster Abstracts

Project ETAP

Evaluation of a Speech-Based AI Assistant Across CPU and GPU Platforms

Kata Egres

Kata Egres[1], Balazs Gaspar[1], Adam Pinter[1], Zsolt Bringye[1], Ludger Tebartz van Elst[2], Johanna Pirker[3,4], Knut Möller[2,5,6], Gabor Kertesz[1]

1 Obuda University, Budapest, Hungary
2 University of Freiburg, Freiburg, Germany
3 Technical University of Munich, Munich, Germany
4 Graz University of Technology, Graz, Austria
5 Furtwangen University, Villingen-Schwenningen, Germany
6 University of Canterbury, Christchurch, New Zealand

Abstract:

This poster presents a performance evaluation of an end-to-end speech-based AI pipeline consisting of Speech-to-Text (STT), a Large Language Model (LLM), and Text-to-Speech (TTS) components executed on CPU and GPU environments. Both file-based and real-time microphone input modes have been tested. The evaluation focuses on end-to-end latency, component-level processing time, and resource utilization. The results show that GPU acceleration significantly improves LLM inference performance, while STT and TTS exhibit varying sensitivity to hardware acceleration.

Project IPerGlio

Trust, Transparency, and Public Dashboards: Stakeholder Perspectives on Sharing Glioblastoma Patient Data

Ruben Andreas Sakowsky

Ruben Andreas Sakowsky[1], Amirali Jahani Yazdi[1], Simone Krieger[1]

1 University of Potsdam, Faculty of Health Sciences Brandenburg, Potsdam, Germany

Abstract:

This study reports on an online Stakeholder Consensus Conference conducted within the IPerGlio project, which aims to improve personalised glioblastoma care by using AI to analyze data from cancer patients and publish results on a public dashboard. Given the ethical and legal implications of sharing pseudonymised patient data, 11 stakeholders from 8 European countries, including patient representatives, engaged in informed deliberations in late 2024 and subsequent qualitative interviews. Participants discussed benefits and risks of public data sharing and jointly developed ethical guidelines and practical recommendations for dashboard design and content. Trust and transparency emerged as central requirements, with strong emphasis on clear communication about data use, patient rights, consent, and potential misuse, as well as discouraging commercial exploitation. Overall, participants agreed that the educational and research benefits of a public dashboard outweigh privacy concerns, provided that data are managed transparently by a trustworthy institution.

Project LANTERN-01

AI model for Postoperative Complications Prediction after NSCLC Lung Resection: Prospective Multicentric Study and External Validation

Carolina Sassorossi

Filippo Lococo*[1], **Carolina Sassorossi*[1]**, Davide Dalfovo[2], Annalisa Campanella[1], Luca Boldrini[1], Filippo Gallina[3], Mattia Bruschi[3], Virginia Proietti[1], Akshaya Balamurugan[1], Esther G C Troost[2], Steffen Löck[2], Róza Ádány[4], Núria Farré[5], Ece Öztürk[6], Edoardo Mercadante[3], Marco Chiappetta[7], Alessandra Cancellieri[1], Rocco Trisolini[1], Emilio Bria[1], Antonio Gasbarrini[1], Stefano Margaritora[1]

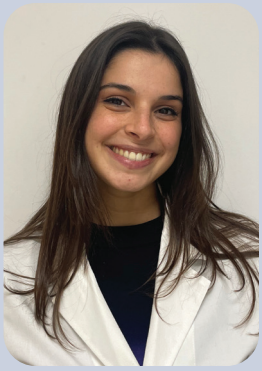
1 Catholic University of the Sacred Heart & A. Gemelli University Hospital Foundation IRCCS, Rome, Italy
2 TUD Dresden University of Technology & University Hospital Carl Gustav Carus, Dresden, Germany
3 IRCCS "Regina Elena" National Cancer Institute, Rome, Italy
4 University of Debrecen, Debrecen, Hungary
5 Hospital de la Santa Creu i Sant Pau (IR-HSCSP), Barcelona, Spain
6 Koç University, Istanbul, Turkey
7 Magna Graecia University, Catanzaro, Italy
*Contributed equally.

Abstract:

Introduction: Artificial intelligence(AI) techniques may combine various omics datasets to create more accurate predictive models for lung cancer patients' management. The aim of this study from the LANTERN project, is to develop an AI-based predictive model of post-operative complications after lung resection for NSCLC. Methods: In the framework of LANTERN Consortium we prospectively collected data from 3/2023 to 12/2024 of patients who underwent curative surgery for Stage I-III NSCLC and were herein analyzed considering 80 preoperative clinical features and 43 spirometric variables to predict the occurrence of post-operative complications. Prediction models were developed on the basis of different feature selection algorithms and machine-learning models. An external dataset composed by a surgical series of 232 patients was used for validation. Results: The final analysis was conducted on 231 surgical patients. Post-operative complications were observed in 37 patients (16%). AI-based models showed that pathologic scores (AUC=0.72, 95% CI [0.62-0.81]) and pre-opFEV1_TEOR (AUC=0.77, CI [0.67-0.89]) were the most relevant variables. Testing the models on the external dataset, while the predictive value of Pathologic score alone was reduced, pre-opFEV1_TEOR and the combination of Pathologic score and pre-opFEV1_TEOR were confirmed to predict post-op outcome. Postoperative risk rises by about 6% per pathologic score level and 11–12% for each 10% decrease in FEV1_TEOR. Conclusions: Combining the FEV1_TEOR and the pathologic score permits the prediction of complications risk in a significant way. This model could be tested in a further prospective cohort of patients to verify its effectiveness in order to improve the perioperative management of lung resection candidates.

Project MG-PerMed

MiR-150-5p and miR-146a-5p as biomarkers for monitoring patient-specific response to novel targeted therapies in Myasthenia Gravis



Alessia Berni

Alessia Berni[1], Nicola Iacomino[1], Rita Frangiamore[1], Maria Cristina Tarasco[1,2], Fiammetta Vanoli[1], Giorgia Farinazzo[1], Stefania Marcuzzo[1], Silvia Bonanno[1], Lorenzo Maggi[1], Renato Mantegazza[1,3], Carlo Antozzi[1,4], and Paola Cavalcante[1]

1 Fondazione IRCCS Istituto Neurologico Carlo Besta, Milan, Italy
2 University of Milano-Bicocca, Monza, Italy
3 Associazione Italiana Miastenia e Malattie Immunodegenerative, Milan, Italy
4 Immunotherapy and Apheresis Departmental Unit, Milan, Italy

Abstract:

Myasthenia gravis (MG) is an autoimmune disease characterized by muscle weakness resulting from autoantibodies to neuromuscular junction (NMJ). Conventional treatment relies on long-term immunosuppression with variable efficacy and persistent difficulties in disease control. Innovative targeted therapies are promising to increase therapeutic success: efgartigimod (EFG) blocks the IgG-recycling neonatal Fc receptor (FcRn), while eculizumab (ECU) and ravulizumab (RAVU) inhibit complement component C5, preventing complement-mediated NMJ damage. This study aimed to reveal microRNAs (miRNAs) as biomarkers of patient-specific response to targeted therapies, suitable for treatment personalization and optimization over time. By qPCR, we analysed MG-associated miRNAs (i.e. miR-150-5p, -21-5p, -423-5p, -146a-5p -30e 5p) in longitudinally collected sera from 24 EFG-, 11 ECU- and 10 RAVU-treated MG patients. We observed that miR-150-5p was downregulated in EFG- and ECU-treated patients, while miR-146a-5p was upregulated in ECU - and RAVU-treated patients, in line with clinical improvement assessed by disease scores. Since miR-150-5p and miR 146a-5p play pivotal immunological roles, our findings suggest additional drug effects beyond IgG reduction and complement inhibition, identifying these miRNAs as biomarkers for monitoring treatment response and guiding personalised therapy in MG. Work supported by Fondazione Regionale per la Ricerca Biomedica (Regione Lombardia), Project ERAPERMED2022-258, GA 779282, under the frame of ERAPerMed.

Project OVA-PDM

Multi-omic profiling of response to Olaparib in organotypic models of high-grade serous ovarian cancer

Chiara Battistini

Chiara Battistini[1], Ilaria Piga[2], Giulia Franciosa[2], Melissa Zambuto[1], Laura Ruano Clemente[3], Roxana Andreea Moldovan[3,4], Anabel Buendía-Galera[3], Sonia Tarazona[3], Jesper V. Olsen[2], Ugo Cavallaro[1]

1 European Institute of Oncology IRCCS, Milan, Italy
2 University of Copenhagen, Copenhagen, Denmark.
3 Universitat Politècnica de València, València, Spain
4 Institute for Integrative Systems Biology (I2SysBio, CSIC-UV), Paterna, Spain

Abstract:

High-grade serous ovarian cancer (HGSOC) remains a difficult-to-treat and lethal disease, mainly due to the lack of strategies for preventing tumor relapse. PARP inhibitors (PARPi) substantially improved the prognosis of HGSOC patients with mutations in BRCA1/2 or in other homologous DNA recombination-related genes. However, not all the patients actually benefit from PARPi, and resistance often occurs during drug treatment. Thus, a thorough investigation of the molecular mechanisms responsible for response or resistance to PARPi in clinically-relevant systems is urgently needed. To this aim, we built a platform of in vitro patient-derived organotypic models, which recapitulate the microenvironment of HGSOC peritoneal lesions. These organotypic models were treated with the PARPi Olaparib, and their response to the drug was analyzed both in terms of viability and at the transcriptomic and proteomic levels. We focused on molecular pathways that can discriminate between responders and nonresponders, and the functional validation is currently ongoing. Moreover, candidate biomarkers that could potentially predict patients' response to the treatment will be validated in fully annotated retrospective cohorts of HGSOC patients. By integrating clinically-relevant experimental approaches and cutting-edge technologies, this project will advance personalization strategies for the use of PARPi in HGSOC, thus helping to prevent its recurrence.

Additional Speakers and Experts

Workshop - AI for Personalised Medicine: Bridging the Gap Between Innovation and Implementation

Stéphanie Allassonniere

Prof. Allassonnière is professor in applied mathematics at the School of Medicine and Vice-President Valorisation at University Paris Cité, Chaire PR[AI]RIE at Institut PR[AI]RIE, and co-founder of Sonio.ai. She is an expert in statistical modeling, stochastic optimisation, MCMC samplers, and medical data analysis. Her work focusses on statistical modeling of clinical data and AI-driven decision support systems for healthcare.

Video Competition Award

The young researchers of the DAWN-AF consortium were awarded the JTC2022 Video Competition prize for their production, "DAWN-AF: Digital Twins to Treat Atrial Fibrillation". The video was produced by Tomas Banduc (Pontificia Universidad Católica de Chile) and Hamed Hosseini (University of Bordeaux, LIRYC Institute)—led the development of the concept, narrative design, and technical production.

Their work highlights a personalised approach to treating cardiac arrhythmia through the use of mathematical "digital twins" to guide catheter ablation procedures. By translating complex interdisciplinary research into an engaging visual format, Tomas and Hamed demonstrated how AI-enhanced modelling and international collaboration can improve clinical outcomes and patient accessibility. This award recognizes their outstanding talent in scientific communication and their vital role in advancing the project's visibility within the EP PerMed community.

Patient Engagement Experts

Maria José Ruiz

Maria José Ruiz is a Medical Doctor with over 13 years of experience in healthcare, occupational medicine, and clinical microbiology, with a strong focus on hospital laboratory services. She holds a PhD and a master's in clinical research Methodology. Specialized in the molecular and immunological aspects of human infections, health risk assessment, pathogen identification, and antimicrobial resistance profiling. As a senior researcher at the Istituto Superiore di Sanità (ISS), she was involved for more than 14 years in Phase I–II HIV vaccine trials within the Core Laboratory and contributed to the European HIV Vaccine Alliance. She currently serves as a Scientific Officer and Project Manager at the Italian Ministry of Health, overseeing Horizon 2020 and Horizon Europe projects in Personalised Medicine, Oncology, Pandemic Preparedness, and AMR. She coordinates Italy's national AMR research and ethics working group, acts as ECRIN European Correspondent for Italy, and since 2024 is a certified EUPATI Fellow (Cohort 7), supporting patient engagement in clinical research, HTA, and regulatory processes.

Letizia Pontoriero

Letizia Pontoriero is a Scientific Project Specialist and former researcher. She holds a PhD in Chemical Sciences from the University of Florence, where her research focused on the characterisation of proteins involved in human pathologies, antibiotic resistance, and viral diseases. She is an EUPATI Fellow (Cohort 8) and a member of the Training Committee of the Patient Expert Training Programme, Cohort 9 (2025–2026). Since 2022, she has been working at Fondazione Toscana Life Sciences (TLS), contributing to the coordination and implementation of nationally and European-funded research projects in healthcare innovation, personalised medicine, and clinical research. Her professional activities focus on patient engagement, clinical research, and science dissemination and communication, with particular attention to regulatory strategy and the meaningful integration of patient perspectives into research design and health policy. This approach is further informed by her lived experience with chronic pain, contributing to a pragmatic and partnership-oriented perspective on patient involvement. Letizia is actively involved in international and national patient advocacy and research networks, including IASP, GAPPA, EU-X-CT, and the Associazione Italiana Sindrome Fibromialgica.

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NORWAY - RCN

POLAND - NCBR

ROMANIA - UEFISCDI

SLOVENIA - MIZS

SOUTH AFRICA - SAMRC

SPAIN - ISCIII

SPAIN - FCAECC

SPAIN (CATALONIA) - DS-CAT

SPAIN (NAVARRE) - GN

SWEDEN - VINNOVA

TAIWAN - MOST

Türkiye - TUBITAK

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