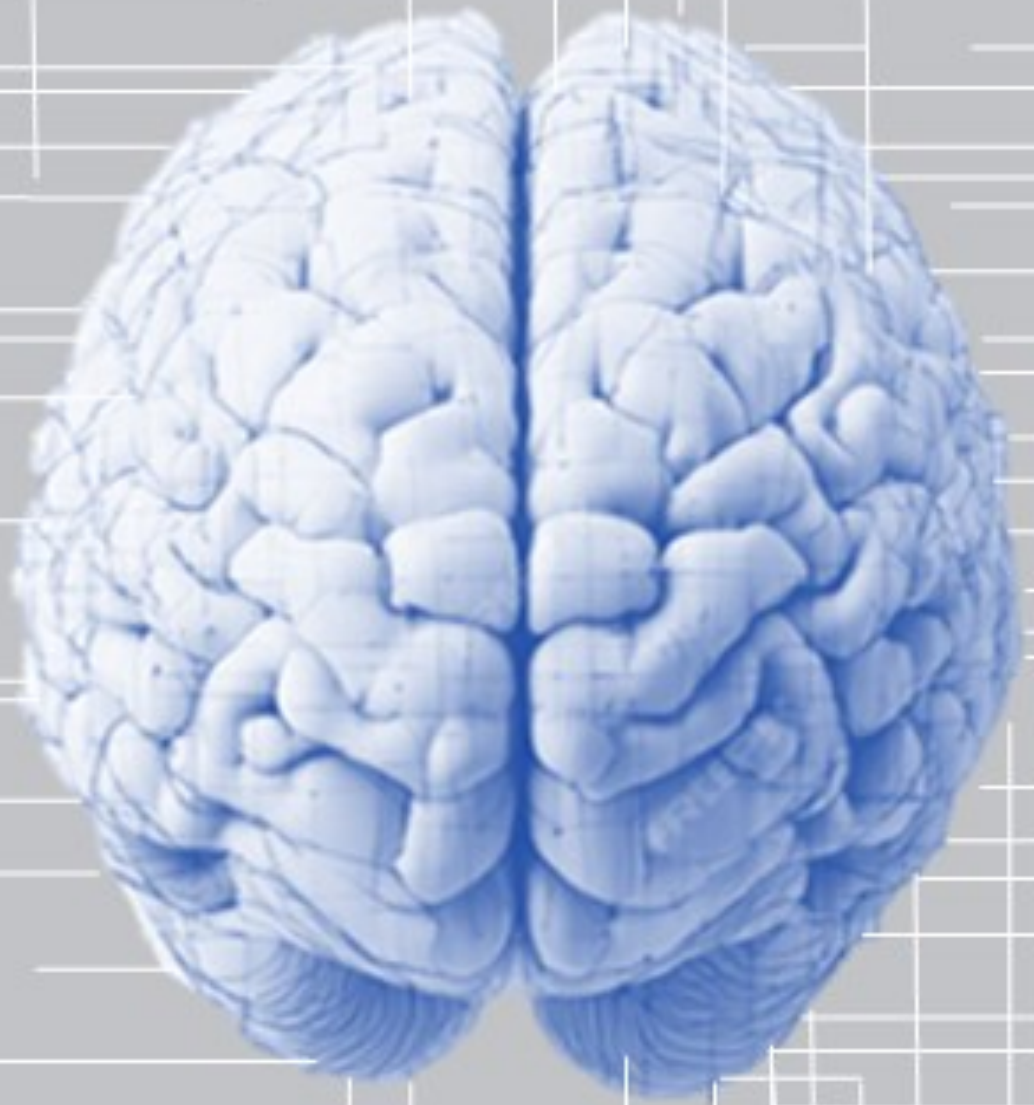
Center For Applied Neuroscience

14th ANNUAL SCIENTIFIC CONFERENCE

'Multifaceted aspect of Applied Neuroscience in typical and atypical cognition'



Aithousa Teleton, University of Cyprus

November 27th, 2024

08:30 - 18:15

#CAN2024

PROGRAM

0900 - 0930 Opening Ceremony

Prof. Tasos Christofides, Rector, University of Cyprus (UCY)

Prof. Antonis Ellinas, Dean, Faculty of Social Sciences & Education, UCY

Prof. Fofi Constantinidou, Prof. of Language Disorders & Clinical Neuropsychology, Dept. of Psychology & Director, Center for Applied Neuroscience, UCY

0930 - 1030 Keynote

Prof. Panagiotis Bamidis, Prof. of Medical Physics, Informatics and Medical Education & Director, Lab of Medical Physics and Digital Innovation, School of Medicine, Aristotle University of Thessaloniki

'Fusing Neuroscientific Research with Biomedical Technology and Healthcare Applications: The Establishment of a Contemporary MEG Lab to Widen Clinical and Societal Prospects.'

1030 - 1100 Coffee Break & Poster Viewings

1100 - 1200 CAN Presentations

Language and Cognitive Development Research Group

Prof. George Spanoudis, Prof. of Psychology, Dept. of Psychology & Center for Applied Neuroscience, UCY

& Andreas Savva, Ph.D. Student, UCY

'Reframing Cognitive Development: A New Theoretical Perspective through Information Geometry and Mathematical Modeling'

Learning Disabilities Group

Prof. Timothy C. Papadopoulos, Prof. of Psychology, RIF Distinguished Researcher, Dept. of Psychology & Center for Applied Neuroscience, UCY

& Dr. Argyro Fella, Assistant Prof., Dept. of Education, University of Nicosia

'Eye-Tracking in Reading Research: A Systematic Review of Studies with Children of Varying Reading Ability'

Clinical Psychology and Psychophysiology Lab

Prof. Georgia Panayiotou

Prof. of Clinical Psychology, Dept. of Psychology & Center for Applied Neuroscience, UCY

& Markos Apostolakis, Ph.D. Student, UCY

& Andronikos Strouthou, Ph.D. Student, UCY

'Using Psychophysiology to Assess Emotion Processes in the Lab and Beyond'

1200 - 1300 BLITZ Presentations

Kalia Lofitou, Ph.D. Student, UCY

'PediaSleep: EEG Biomarkers of Sleep-Wake Disturbances and Cognitive Impairments in Pediatric TBI'

Maria Loizidou, Ph.D. Student, UCY

'A Qualitative Exploration of Healthcare Professionals' Experiences of Post COVID-19 Condition: Recommendations for Clinical Practice'

Dr. Soteroulla Ellina, Postdoctoral Researcher, Neurophysiology & Neuroepidemiology, The Cyprus Institute of Neurology & Genetics

'COMFORTage: Prediction, Monitoring and Personalized Recommendations for Prevention and Relief of Dementia and Frailty'

PROGRAM

Dr. Elena Philippou, Associate Prof. in Nutrition-Dietetics, Dept. of Life Sciences, University of Nicosia

'Associations between Chrono-Nutrition Behaviours and Cognitive Function in Middle-Aged Adults: The NUTRICO Cross-Sectional Cohort Study.'

Evgenia-Peristera Kouki, Ph.D. Student, UCY

'Visual Expertise for Print in School-Age Children: An Event-Related Potentials Study on Pseudowords and Letter Strings.'

Dr. Prokopis C. Prokopiou, Instructor in Radiology, Dept. of Radiology, Harvard Medical School & Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital

'Lower Resting-State Phasic LC Activity is Associated with Cortical Tau Deposition and Aβ-related Cognitive Decline in Preclinical Alzheimer's Disease.'

1300 - 1400 Light Reception & Poster Viewings

1400 - 1520 CAN Presentations

Translational Neuropharmacology Lab

Dr. Panos Zanos, Associate Prof. of Neuropharmacology, Dept. of Psychology & Center for Applied Neuroscience, UCY

'From Whiskers to Wisdom: How Rodent Models can Reveal Neural Mechanisms Underlying Decision-Making and Cognitive Processes'

Neurocognitive Research Lab

Prof. Fofi Constantinidou, Prof. of Language Disorders & Clinical Neuropsychology, Dept. of Psychology & Director, Center for Applied Neuroscience, UCY

& **Dr. Maria Constantinou,** Postdoctoral Researcher, Center for Applied Neuroscience, UCY

'The Evolution of Neuropsychological Assessment: Moving from Paper-Based to Digital and Online'

Experimental Psychology Lab

Prof. Marios Avraamides, Prof. of Cognitive Psychology, Dept. of Psychology & Center for Applied Neuroscience, UCY

'Cognitive Skills and Performance'

Cognitive Neuroscience and Functional Neuroimaging Lab

Dr. Evangelos Paraskevopoulos, Associate Prof. of Psychology, Dept. of Psychology & Center for Applied Neuroscience, UCY

'Brain Network Re-organization Induced by Multisensory Training in Young and Older Adults'

1530 - 1630 Keynote

Prof. Jack Naglieri, Emeritus Prof. of Psychology, George Mason University & Senior Research Scientist, Devereux Center for Resilient Children

'Intelligence Redefined as PASS Neurocognitive Processes and Measured with the CAS2'

1630 - 1700 Coffee Break & Poster Viewings

1700 - 1800 Panel Discussion

1800 - 1815 Closing Comments

Meet the Presenters

Fusing Neuroscientific Research with Biomedical Technology and Healthcare Applications: the Establishment of a Contemporary MEG Lab to Widen Clinical and Societal Prospects

The focus for most neuroscientific research (basic, clinical, translational) is to localise, identify, model and process both the location and time course of cerebral activity as well as changes in activity which are associated with brain state changes (either experimentally or disease-induced). Thus, the non-invasive, silent, and totally-passive neurophysiological method of MEG positively stands out among other neuroimaging and neurophysiology techniques, by providing tomographic descriptions of almost the entire brain at good spatial and excellent temporal precision. In this talk, we revisit some of our recent neuroscience research at the Aristotle University of Thessaloniki highlighting the research findings and outlining perspective, contemporary clinical applications. Emphasis is then given on our efforts to establish the first OPM-MEG Lab in South East Europe, while also attempting to fuse these developments with other ongoing research on Biomedicine in order to widen perspectives and increase societal and clinical impact.

By the end of this lecture, attendants will be able to:

1. Understand what kind of studies may be organised by MEG.
2. Explain the differences between old and new technologies on MEG instruments and their complementarity with EEG studies.
3. Appreciate the potential of using biomedical technology and digital medicine principles upon designing new studies and exploring brain function.

Prof. Panagiotis Bamidis

Prof. Panagiotis Bamidis is a Professor of Medical Physics, Informatics and Medical Education and Director of the Lab of Medical Physics and Digital Innovation, School of Medicine, Aristotle University of Thessaloniki, Greece. He designs, implements, and evaluates Digital Health and Assistive Technologies systems that improve everyday activities of elderly or other vulnerable groups and improves their health or life quality or improves the education and training of health professionals. He conducts research that attempts to understand how the brain reacts to different stimuli, technological or educational interventions, as well as the development and evolution of human emotions and sleep transitions. He is the coordinator of more than 12 large European projects, and the principal investigator for many national and international funded projects (>100 in total). He is the President of the Hellenic Biomedical Technology Society, HL7 Hellas, the international Society of Applied Neuroscience, a member of the Administration Boards of other societies and patient associations. He has also founded and leads Thessaloniki's Active and Healthy Ageing action, which is a three-star reference site of the EIP-on-AHA. In 2013 he established the ThessAHALL, Thessaloniki's Action for Health and Well-being Living Lab. He received prizes for the best track record in funded research projects and the best overall high/extra-ordinary academic performance.

Meet the Presenters

Intelligence Redefined as PASS Neurocognitive Processes and Measured with the CAS2

This session will begin with a brief discussion of the historical and current state of the art of intelligence testing. The Planning, Attention, Simultaneous and Successive cognitive processing theory and its connection of A. R. Luria's three functional units will be provided. Research evidence which supports the PASS theory as measured by the Cognitive Assessment System-Second Edition will be examined. The utility of PASS scores across language and countries will be discussed. The research on PASS profiles for students with Dyslexia, ADHD, and Autism will be examined. Emphasis will be placed on the value of PASS theory as a fair and equitable way to measure intelligence using test questions that measure thinking in a manner that is not confounded by what a student knows. Evidence will also be presented that shows the advantages of PASS over traditional tests of general ability.

Participants will be able to:

1. Recognize test questions that demand thinking rather than knowing.
2. Use PASS scores to better understand learning and learning difficulties.
3. Use the research on PASS theory to support change in the field of intelligence testing.
4. Make informed decisions regarding socially just intellectual assessment.

Prof. Jack A. Naglieri

Dr. Jack A. Naglieri is Emeritus Professor of Psychology at George Mason University and Senior Research Scientist at the Devereux Center for Resilient Children. His main interest is the development of psychological and educational tests and the implications these approaches have for accurate and equitable assessment. He has published about 25 books, 50 tests and rating scales, and over 300 research papers. He is also well known for his neurocognitive theory of intelligence referred to as PASS and measured with the Cognitive Assessment System-2nd Edition and the related book Helping Children Learn-Second Edition; the Autism Spectrum Rating Scale (2010); Comprehensive Executive Function Inventory (2013); the Devereux Elementary Student Strengths Assessment (DESSA); and the DESSA-mini for universal screening of SEL behaviors. Most recently, Jack is the author of tests used for identification of gifted students including the Naglieri Nonverbal Ability Test, the Naglieri Tests of General Ability Verbal, Quantitative and Nonverbal with coauthors Dina Brulles and Kim Lansdowne and their book 'Understanding and Using the Naglieri General Ability Tests: A Call to Equity in Gifted Education'. In summary, Dr. Naglieri has received many awards for his extensive research program that includes scholarly research, books, and psychological tests with an emphasis on uniting sound theory with scientific practice.

CAN Presentations

Group A

Language and Cognitive Development Research Group

Lead: Prof. George Spanoudis

Title: *Reframing Cognitive Development: A New Theoretical Perspective through Information Geometry and Mathematical Modeling*

Presenters: Prof. George Spanoudis & Andreas Savva

Learning Disabilities Group

Lead: Prof. Timothy C. Papadopoulos

Title: *Eye-Tracking in Reading Research: A Systematic Review of Studies with Children of Varying Reading Ability'*

Presenters: Prof. Timothy C. Papadopoulos & Dr. Argyro Fella

Clinical Psychology and Psychophysiology Lab

Lead: Prof. Georgia Panayiotou

Title: *Using Psychophysiology to Assess Emotion Processes in the Lab and Beyond*

Presenters: Prof. Georgia Panayiotou, Markos Apostolakis, & Andronikos Strouthou

CAN Presentations

Group B

Translational Neuropharmacology Lab

Lead: Dr. Panos Zanos

Title: *From Whiskers to Wisdom: How Rodent Models can Reveal Neural Mechanisms Underlying Decision-Making and Cognitive Processes*

Presenters: Dr. Panos Zanos

Neurocognitive Research Lab

Lead: Prof. Fofi Constantinidou

Title: *The Evolution of Neuropsychological Assessment: Moving from Paper-Based to Digital and Online*

Presenters: Prof. Fofi Constantinidou & Dr. Maria Constantinou

Experimental Psychology Lab

Lead: Prof. Marios Avraamides

Title: *Cognitive Skills and Performance*

Presenters: Prof. Marios Avraamides

Cognitive Neuroscience and Functional Neuroimaging Lab

Lead: Dr. Evangelos Paraskevopoulos

Title: *Brain Network Re-organization Induced by Multisensory Training in Young and Older Adults*

Presenters: Dr. Evangelos Paraskevopoulos

Short Presentations (Blitz)

#	Title	Presenter	Authors
1	PediaSleep: EEG biomarkers of sleep-wake disturbances and cognitive impairments in pediatric TBI	Kalia Lofitou	Lofitou, K., Achilleos, H., Paraskevopoulos, E., Bargiotas, P., Constantinidou, F.
2	A qualitative exploration of healthcare professionals' experiences of Post COVID-19 Condition: Recommendations for clinical practice	Maria Loizidou	Loizidou, M., Pettemeridou, E., Nikolaou, F., Lofitou, K., Constantinou, M., Constantinidou, F.
3	COMFORTage: prediction, monitoring and personalized recommendations for prevention and relief of dementia and frailty.	Dr. Soteroulla Ellina	Ellina, S., Loizidou, E., Christodoulou, C., Kousiappa, I., Zachariou, M., Tomazou, M., Demetriou, E., Sokratous, D., Alexandrou, G., Constantinou, A., Adamou, A., Pipis, M., Koupparis, A., Zamba-Papanikolaou, E., Spyrou, G. M.
4	Associations between chrono-nutrition behaviours and cognitive function in middle-aged adults: the NUTRICO cross-sectional cohort study	Dr. Elena Philippou	Demetriou, C. A., Hileti, D., Onisiphorou, E., Kazafanioti, C., Alogakos, M., Vardakastani, D., Christofidou, E., Andreou, E. P., Giannaki, C. D., Stavrinou, P. S., Philippou, P., Constantinidou, F., Philippou, E.
5	Visual expertise for print in school-age children: An event-related potentials study on pseudowords and letter strings	Evgenia-Peristera Kouki	Kouki, E. P., Paraskevopoulos, E., Spanoudis, G., Papadopoulos, T. C.
6	Lower resting-state phasic LC activity is associated with cortical tau deposition and Aβ-related cognitive decline in preclinical Alzheimer's disease.	Dr. Prokopis C. Prokopiou	Prokopiou, P. C., Schultz, A. P., Rentz, D. M., Sperling, R. A., Johnson, K. A., & Jacobs, H. I. L.

Scientific Posters

#	Title	Authors
1	Gambling behavior and motivating factors: differences in gender	Artemi, T. F., Koupepa, G., Panayiotou, G.
2	Associations of school characteristics with achievement in Cyprus samples from PISA	Vasileva, V., Glikenou, M.
3	Neurophysiological and cognitive alterations in Post COVID-19 Condition: a systematic review	Pettemeridou, E., Loizidou, M., Trajkovic, J., Constantinou, M., De Smet, S., Baeken, C., Sack, A. T., Williams, S. C. R., Constantinidou., F.
4	Generalization stimuli in extinction training for anxiety disorders	Giorgoudi, E., Wong A.
5	Fine motor function in the 5xFAD mouse model of Alzheimer's disease	Kousiappa, I., Valiantis, S., Perentos, N., Papacostas S. S., Hadjipapas, A., Koupparis, A.
6	Examining the effects of emergency simulations in VR on cognitive functioning	Stefanou, A., Avraamides, M.
7	Neuroscience of unisensory and multisensory learning	Papettas, P., Paraskevopoulos, E.
8	Associations between cognitive rehabilitation and neuropsychological performance in an older person with dementia: a nine-month case study	Chrysostomou, S., Moza, S, Tziannarou, A.
9	Early-childhood exposure to WWII associated with late-life cognition	Moza, S., Scarmeas, N., Yannakoulia, M., Dardiotis, E., Hadjigeorgiou, G. M., Sakka, P., Kosmidis M. H.
10	Heart rate variability and negative psychological symptoms in breast cancer patients about to receive chemotherapy and/or radiotherapy: an experimental study	Kazalaki I., Panayiotou G.
11	Half a century of trauma: the enduring psychological impact of the 1974 Turkish invasion on Greek Cypriots	Zavrou, A., Nikolaou, F., Constantinidou, F.
12	The role of attention in sports: comparing football players with non-athletes	Gogoglou S., Avraamides, M.
13	Unravelling the journey to healthy aging: 16 years of NEUROAGE	Themistokleous, V., Nikolaou, F., Constantinidou, F.

Scientific Posters

#	Title	Authors
14	Self-awareness deficits in acquired brain injury: a functional connectivity analysis.	Pettemeridou, E., Mikellidou, K., Constantinidou, F.
15	Horse therapy as a supplementary therapy approach: a systematic review.	Kyprianidou, E., Mikellidou, K., Avraamides M.,
16	Development and validation of the SNAP-COVID questionnaire: a tool for assessing cognitive impairment in Long COVID patients	Christoforou, C., Nikolaou, F., Solomou, I., Constantinidou, F.
17	PediaSleep: psychosocial impairments and behavioral outcomes in pediatric traumatic brain injury using the child behavior checklist	Lofitou, K., Achilleos, H., Paraskevopoulos, E., Bargiotas, P., Constantinidou, F.
18	Parental predictors of children's math anxiety	Drakou, D., Kouki, E. P., Spanoudis, G., Papadopoulos, T. C.
19	Does response inhibition change with ageing?	2024 Experimental Psychology Class, Avraamides, M.
20	Emotion regulation and the heart-brain interaction in children under emotional load	Apostolakis M., Panayiotou G.
21	Identifying novel and effective treatments to prevent negative affect and relapse during opioid abstinence.	Michael A., Onisiforou, A., Polymnia, G., Koumas, M., Powels, C., Mammadov, E., Georgiou, E. N., Zanos, P.
22	Gut virome: the missing link in brain aging	Charalambous, E. G., Gholizadeh, M., Mehrjerd, A., Frenzel, S., Wittfeld, K., Bang, C., Franke, A., Hosten, N., Völker, U., Kaderali, L., Simm, S., Nauck, M., Völzke, H., Grabe, H.J., Frost, F., Hertel, J., Zanos, P., Onisiforou, A.
23	Dissecting the contribution of Herpesviruses in the emergence of depressive symptoms in Alzheimer's disease through multi-omics data	Onisiforou, A., Zanos, P.
24	From viral infections to Alzheimer's disease: unveiling the mechanistic links through systems bioinformatics	Onisiforou, A., Zanos, P.
25	Investigating the shared genetic basis and causal relationships between mucosa- associated lymphoid tissue inflammation and psychiatric disorders	Georgiou, A. N., Voskarides, C., Zanos, P., Chadjittofis, A.
26	Understanding and ameliorating the impact of COVID-19 on neuropsychological health: the Twinning project BRAINN	Constantinou, M., Pettemeridou, E., Nikolaou, F., Solomou, I., Lofitou, K., Loizidou, M., Constantinidou, F.

CAN at a Glance

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General Information:

The Center for Applied Neuroscience (CAN) was founded in 2011 through competitive funding for an infrastructure grant by the Cyprus Research & Innovation Foundation. In 2013, the House of Representatives, Republic of Cyprus, approved CAN as an Independent Research Center in the School of Social Sciences & Education at the University of Cyprus.

CAN is the only established Research Center of its kind in Cyprus. Researchers at CAN apply integrative and contemporary neuroscience methodologies to investigate healthy and clinical populations, with a focus on high incidence neurological and psychiatric disorders. The founding of CAN brings to the forefront the importance of research, development, and delivery of evidence-based procedures and clinical services in Cyprus.

Vision:

As the leading Research Center for the study of brain, mind, and human behavior in Cyprus, CAN aspires to be the flagship center for neuroscience research and collaboration in the greater geographical region.

Mission:

The mission of CAN is to conduct basic and applied research and contribute to the development of new knowledge, methods, and technologies that advance science and benefit health, quality of life and the society.

Scope & Objectives:

Through their research program and their established collaborations with other reputable research institutions and the industry, CAN researchers contribute significant research outcomes to science and society at large. The scope and objectives of CAN are to:

- Build capacities through training and development of new researchers and clinicians;
- Develop and adapt assessment and intervention modalities for language, cognition, behavior and affect;
- Promote multidisciplinary and interdisciplinary research;
- Implement multimodal and integrative research methodologies;
- Expand the national and international network of partners; and
- Apply scientific knowledge and support entrepreneurship to address societal and economic challenges.

Center for Applied Neuroscience thanks you for attending the

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CAN 14th Annual Scientific Conference Evaluation