IFMP WORKSHOP IN IONIAN UNIVERSITY, CORFU, GREECE

Monday 6/11/2017 9:30

OPENING SESSION

Welcome by Professor Panayiotis VLAMOS,
Director of Informatics Department and BiHE Laboratory
On behalf of the Ionian University Rector, Prof. Chrissikopoulos

The rector has delegated his vice-rector Prof. Papadatos only available on Tuesday morning to welcome us and immediately returned from abroad the rector came to greet us warmly at Farewell Banquet on Thursday evening

Rector, Prof. Chrissikopoulos

vice-rector Prof. Papadatos

Bioinformatics and Human Electrophysiology Laboratory

Ionian University, Department of Informatics

The Lab

- Founded in 2014
- The ***Bioinformatics and Human Electrophysiology Lab (BiHELab)*** focus on recent advances in autoimmune diseases and especially in neurodegeneration, ranging from basic science to clinical and pharmaceutical developments.
- **BiHELab's** goal is to help bridge the translational gap from data to models and from models to drug discovery and personalized therapy by fostering collaborations and developing original quantitative approaches to biological and clinical problems.
- **The electrophysiological laboratory** houses instruments for intra and extracellular recordings in vivo and in vitro, and equipment for behavioral studies and equipment for both tethered and telemetric field potential recording.

Members

- Director
- 7 Drs Medical Advisory Board
- 7 Collaborating Faculty members
- 10 Laboratory members
- 4 PostDocs
- 9 PhD students
- 13 External Researchers
- 10 Postgraduate Students
- 2 Visiting Professors

Research Interest

Research is carried out along the following main axes:

- Mitochondrial Biogenesis - Disruption of Mitochondrial Dynamics
- Amyloid-β Interaction and Metal Ions
- Evaluation of Mitochondrial Population as a Dynamic System
- Frequencies and Electromagnetic Analysis in the Mitochondrial population
- Cell Signaling and Autophagy
- Metal Ions Metabolim and mtDNA Analysis
- Regulation of Cancer Signaling Pathways
- Cellular Protein Network Collapses- Protein Misfolding and Aggregation Roles in Neurodegenerative Diseases
- Molecular Mechanisms and Signaling Pathways contributing to Neuronal Dysfunction

Collaborations

- ETH, Zurich
- Global Brain Health Institute, Dublin
- Cargo Lab, Wilfrid Laurier University
- GryPHone Lab, Guelph University
- Hbio
- Cliff Kentros Research Group
- NeuRA
- And many others

Diffusion

- GeNeDis Congress 2014, 2016, 2018
- GeNeDis Satellite events
- Master's Program : Bioinformatics & Neuroinformatics
- Seminars/Workshops
- Research projects
- Summer Schools

- **Research Center on Computational Biomarkers (RCCBm)**
- **Springer Handbooks**

Research Center on Computational Biomarkers (RCCBm)

- The center activities, will be focused on studying human biomarkers.
- The future aims of precision medicine will be based on personalized measurements of specific biomarkers.
- The Bioinformatics and Human Electrophysiology Lab is tracing new biomarkers concerning neurodegenerative diseases and constructs frailty functions depending on them.
- The CARGO Lab develops and implements sophisticated data mining algorithmic techniques which can be applied to the analysis of clinical data, providing exact results for the evolution of the biomarkers, involved in specific biological mechanisms.
- The transition from micro scale data provided by computations of biomarkers to macro scale results concerning frailty will be of great interest the next two decades.
- RCCBm will engage in collaboration opportunities with health organizations, hospitals and pharmaceutical companies in Canada, in order to gather and evaluate clinical date at a large scale. The center will encompass tools from Applied Mathematics, Data Mining, Modeling, Biophysics, Biochemistry, Bioinformatics, Neuroinformatics, High-performance computing and Computational Mathematics in Biology.
- The center will be hosted at Wilfrid Laurier University's Waterloo campus.

GeNeDis Satellite Events

1st Satellite Event – November 9th , 2016

Prof. George Paxinos' first novel presentation

In the field of neuroscience, Prof. Paxinos is the author of the most cited publication internationally (The Rat Brain in Stereotaxic Coordinates; Paxinos and Watson, 1986.).This is the third most cited book in science after Molecular Cloning and the Diagnostic and Statistical Manual of Mental Disorders.

Paxinos has published 46 research books, 145 refereed journal articles, 30 book chapters, and 17 CDROMs. He has identified 90 nuclei (areas) in the rat and human brains. Comparing rats and humans, he has identified 61 homologous nuclei. He has identified 180 nuclei and homologies in birds. He was the first to produce a reliable stereotaxic space for the brain of rats, mice, and primates — a factor fueling the explosion in neuroscience research since the 1980s. He developed the first comprehensive nomenclature and ontology for the brain, covering humans, birds, and developing mammals.

In Corfu Greece he presented his first Greek novel called "Κατ' Εικόνα" .

GeNeDis Satellite Events

2nd Satellite Event – November 17th , 2016

Speech of Director of BiHeLab Prof. P.Vlamos at the Wilfrid Laurier University entitled "RNA SS, COMPUTATIONAL BIOMARKERS AND FRAILTY FUNCTIONS, Neurodegenerative Disease Modeling Algorithms"

During his visit at Wilfied Laurier university Prof. Vlamos gave a spech about "RNA SS, COMPUTATIONAL BIOMARKERS AND FRAILTY FUNCTIONS, Neurodegenerative Disease Modeling Algorithms". the topic of the speech included Mathematical modeling in bioinformatics is connecting micro scale and macro scale phenomena appearing in neurodegenerative diseases. A new representation of RNA secondary structures allows us to produce sequences which are used for tracing mitochondria concentrations. Their connection with crucial Biomarkers derive the corresponding frailty function whose stability is examined.

Following the speech, Prof. Vlamos, Prof. Kotsireas and Mr. Tarnanas announced the establishment of a new Research Center entitled 'Research Center on Computational Biomarkers (RCCB)'.

GeNeDis Satellite Events

3rd Satellite Event – February 15th , 2017

Workshop "Management of Healthcare IT Projects (Save the project)"

The topics of the workshop include: Time-Budget-Scope-Quality Management in Healthcare Projects IT, PM Body of Knowledge (PMBoK), PRINCE2, AGILE – SCRUM, Extreme Programming for Healthcare IT, Hybrid PM Methods for Healthcare IT, Communication (Power and Interest), Risk Management (Probability and Impact) in the Healthcare Environment, High Performance Teams, Project Management Tools, Effort/Cost Estimation for Software Development, From the Application to the Optimization of a Healthcare system.

Mr. Ktenas Spiros, the presenter of the workshop,is a Director of IT Projects to the European Centre for Disease Prevention and Control Center and a Rapporteur IT Project Management at KTH Royal Institute of Technology in Stockholm.

GeNeDis Satellite Events

4th Stellite Event – February 24th, 2017

Workshop at the Fields Institute, Toronto "Computational Models of Neurodegeneration"

Speakers – Prof. Panagiotis Vlamos, Prof. Ilias Kotsireas, Dr. John Tarnanas, Dr. Michael Harney, Prof. Stanley Liang, Dr. Siv Sivaloganathan.

On February 24, 2017 in Toronto one of the most important institutions in the world, the Fields Institute, will host three Greek scientists implementing a massive research project with collaborations worldwide.

The workshop is entitled "Computational Models of Neurodegeneration" and there were presented cutting edge technologies in modeling, mathematical analysis and computational practice primarily in the area of neurodegenerative diseases.

GeNeDis Satellite Events

5th Satellite Event – October 10, 2017

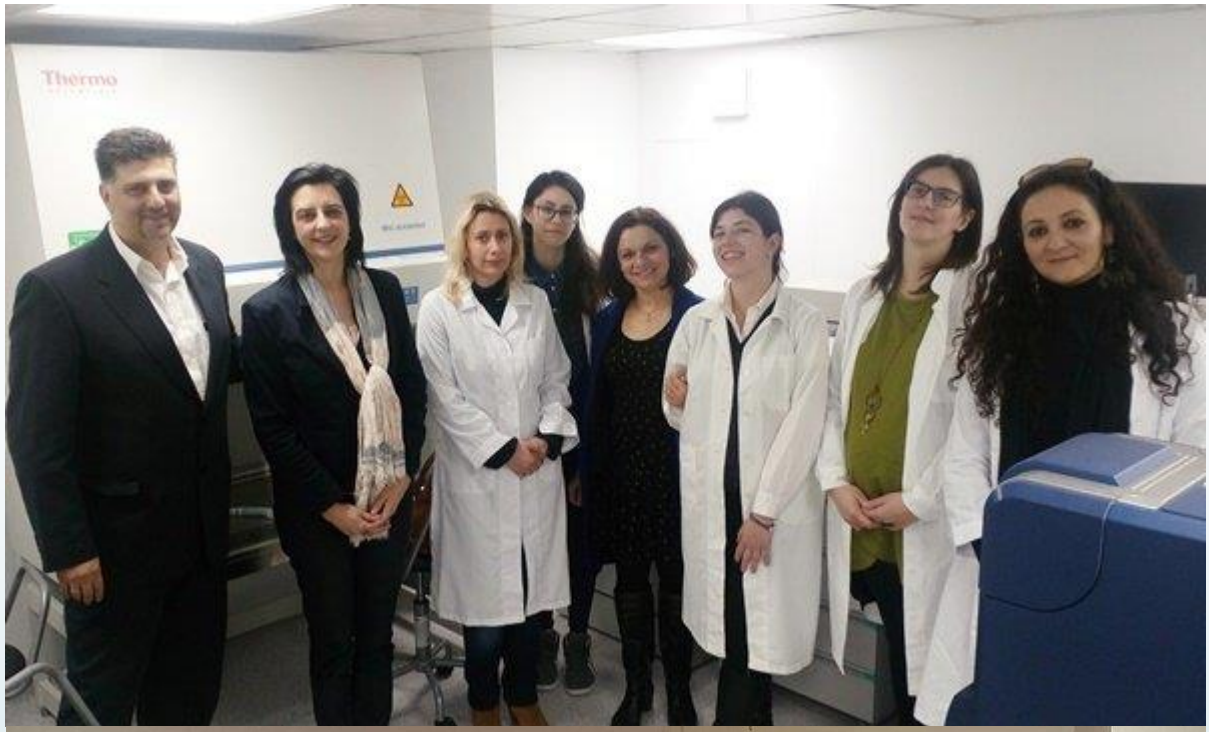
Workshop on “GryPhone Lab: An open-access smartphone testbed” by Petros Spachos.

About Petros Spachos. He is an Assistant Professor at the School of Engineering, University of Guelph, where he leads the GryPHone Lab. Prior to joining University of Guelph, he was a post doctoral researcher with the department of Electrical and Computer Engineering at the University of Toronto, working with Professor Alberto Leon-Garcia . He received his Ph.D. in 2014 and his M.A.Sc. in 2010 from the same department, under the supervision of Professor Dimitrios Hatzinakos. Previously, he received his Diploma degree in 2008 from the department of Electronic and Computer Engineering at the Technical University of Crete, Greece.

GeNeDis 2016- Sparta, Greece

Prof. Paxinos book presentation, 2016

Prof. visit and speech at Wilfrid Laurier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SUPER DRY
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