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RIF PROPOSAL NUMBER	**TITLE**	**COORDINATOR**	**HOST ORGANISATION**	**PARTNER ORGANISATION**	**FOREING ORGANISATION**	**TOTAL BUDGET**	**RIF FUNDING**	**PUBLISHABLE SUMMARY**
INTERNATIONAL/USA/0118/0016	Regulation of the cancer epigenome by histone N-terminal acetyltransferase Naa40	Antonis Kirmizis	University of Cyprus		FRO 1: University of Southern California	80.000,00 €	80.000,00 €	Histone modifications play a key role in shaping chromatin structure and thereby controlling the accessibility of DNA and subsequent cellular processes like transcription. The sum of such chromatin modifications, also refer to as the epigenome, is often misregulated leading to various diseases such as cancer. We have recently shown that histone N-terminal acetylation, catalysed by the N-terminal acetyltransferase Naa40, is required for colorectal cancer cell survival. Robust preliminary evidence supports the hypothesis that Naa40 and its mediated modification regulate the cancer epigenome in order to sustain tumour cell growth. To investigate this hypothesis, our research team based at the University of Cyprus will collaborate extensively with world-renowned experts on epigenomics located at the University of Southern California, USA. Specifically, during the proposed work we initially plan to identify histone modifications whose abundance is altered upon Naa40 depletion. Then, using a state-of-the-art chromatin immunoprecipitation coupled to sequencing (ChIP-seq) technology, we aim to precisely map these histone modification changes genome-wide in colorectal cancer cells in order to determine which underlying genomic features are affected by loss of Naa40 and histone N-terminal acetylation. Overall, through this project we expect to create a long-lasting interaction with a leading research institution in the USA, acquire new technical knowhow in Cyprus and generate novel knowledge that would eventually benefit the quality of life.
INTERNATIONAL/USA/0118/0037	Video processing for Sign Language Recognition using Deep Bayesian Recurrent Neural Networks	Sotirios Chatzis	Cyprus University of Technology		FRO 1: Rutgers University - New Jersey	79.994,20 €	79.994,20 €	A Sign Language (SL) chiefly uses manual (e.g., hand shapes, movement of the hands, arms or body), and facial expressions to fluidly express a speaker's thoughts and constitutes the main communication means for deaf people. Several ideas for products that recognize gestures have been investigated, e.g., using gloves or wristbands that measure electrical activity by muscles. Unfortunately, they all remain prototypes, which cannot be widely employed for Sign Language Recognition (SLR), due to their obtrusiveness. In contrast, vision is very attractive for SLR because (a) cameras are cheap and embedded in many devices (b) provide rich information including body and face and (c) modeling of video data is becoming feasible using the latest machine learning methods. One of the main challenges is how to learn efficiently such a complex model. The challenge can be addressed by developing methods (a) to infer the appropriate network size to limit the amount of parameters to learn, and (b) to integrate the known linguistic constraints, and non-manual cues so that the optimization search space can be significantly limited. DeepSignNet aims to make significant contributions, to developing an automated visual SLR system for emergency situations by addressing these issues. The contributions concern the horizontal topic "8.3.3 Quality of Life", since the outcome aims to contribute towards a better quality of life for the deaf. To this end we will collaborate with a world-leading group, the Computational Bioimaging and Modeling (CBIM) Center of Rutgers University – New Jersey. It is one of the leaders in computer vision and has extensive know – how on sign language recognition under realistic conditions. This collaboration will significantly enhance the know-how of CUT, as well as its networking capacity
INTERNATIONAL/USA/0118/0043	New Results inGroup Factor Models: Theory and Applications	Elena Andreou	University of Cyprus	PA 1: The Cyprus Institute	FRO 1: University of North Carolina - Chapel Hill	79.922,00 €	79.922,00 €	Real-time monitoring of macroeconomic conditions, of the stability of financial conditions indicators and identifying sources of distress in economic institutions are examples of the challenges economists face both in academic and policy making institutions. This project will develop novel models, tests and tools using Group Factor models with large datasets of different sampling to provide new results in econometric theory and applications which are useful for economists and economic policy makers.
INTERNATIONAL/USA/0118/0057	Is there a link between metal ion release and in-stent restenosis?	Andreas Anayiotos	Cyprus University of Technology		FRO 1: University of Alabama at Birmingham	73.098,00 €	73.098,00 €	Despite a considerable clinical and investigative emphasis on the problem of in-stent restenosis (ISR), complications arising from the interaction of stent materials with the surrounding vessel wall, remain a significant problem. Metal implants experience different levels of wear and corrosion due to the mechanical and biochemical environment at the site of implantation. Given the large number of stents implanted annually, investigating the potential mechanisms and regulatory factors involved in the development of in-stent restenosis is of significant importance. The proposed project aims to evaluate the vessel inflammatory response to stent in vivo corrosion through a direct model of murine in situ stenting in order to study the concentration of released nickel ions from cardiovascular stents over time. Nickel leaching will be investigated for different stent designs/geometries and across a wide range of surface process conditions and implantation time points. The vessel inflammatory response to biocorrosion will be evaluated via in vivo imaging and immunohistochemistry. Atomic force microscopy (AFM) studies will also be performed to characterize the mechanical properties of live lymphocyte cells. The results of this multi-level analysis will effectively enable us to investigate the connection between the level of nickel ion release, the associated inflammation, and factors thought to initiate in-stent restenosis (ISR). The collaboration on this common task is expected to accommodate knowledge transfer and exchange, developing productive synergies that will make the involved institutions, Cyprus University of Technology (CUT) with the University of Alabama at Birmingham (UAB), more competitive at an international level. The proposal will strengthen the ties between the two Institutions and will provide joint prospects for securing international funding and exploring intellectual property opportunities to benefit the competitiveness of the Cyprus economy.
INTERNATIONAL/USA/0118/0058	Sustainable UrbanGovernance through Augmented Reality	Panayiotis Zaphiris	Cyprus University of Technology	PA 1: University of Cyprus	FRO 1: Harvard University	80.000,00 €	80.000,00 €	Urban Design and Planning worldwide have long been criticised for their lack of meaningful public consultation and participation in the process of the making of our cities. Currently, the existing practices of consultation and participation are within the confines or council meetings, complex form filling and survey reports that most often than not carry little weight towards the decisions made by the planning authorities. For the last decades, the concept of Participatory Planning as an approach of designing has been heavily incorporated in many disciplinary fields. This project investigates the role of participation as the process that users, and other stakeholders, are actively involved in the decision-making process through the approach of achieving Sustainable Urban Governance and utilising innovative immersive technologies (specifically AR). We argue that the application of participatory design in the design process is essential to provide economically and socially sustainable outcomes. The Sustainable Urban Governance through Augmented Reality (SUGAR) project aims to develop innovative best-practice protocols and guidelines on Sustainable Urban Governance and specifically Public Participation through Augmented Reality, building on the existing collaboration and expertise of two state universities in Cyprus, the Cyprus University of Technology and the University of Cyprus and a world-leading Centre of Excellence in the field from USA, Harvard University. SUGAR aims to empower both citizens that seek ways to participate in the decision-making process for the design of their cities and neighbourhoods and stakeholders that would like to involve the public actively in the process of shaping their environment creating a lasting and meaningful impact.