

International Other 0118							
RIF PROPOSAL NUMBER	TITLE	COORDINATOR	HOST ORGANISATION	FOREIGN ORGANISATION	TOTAL BUDGET	RIF FUNDING	PUBLISHABLE SUMMARY
INTERNATIONAL/OTHER/0118/0101	Landscapes of Tourism in Cyprus and Bali: Architectural, Social and Environmental Dimensions	Panayiota Pyla	University of Cyprus	National University of Singapore	79.998,20 €	79.998,20 €	The proposed research project (CyBallScapes) will investigate the architecture of tourism in mid-20th Century, focusing on Cyprus and Bali, two paradigmatic cases of postwar tourism development; one in Eastern Mediterranean and the other in Island South East Asia, the latter compared to the Mediterranean by scholars both in terms of its strategic position and its extensive coastal developments, particularly of port cities. CyBallScapes will produce a critical history and a comparative study, investigating how both Cyprus and Bali responded to and engaged with the emerging trends of tourism planning as a promise of development for these regions and for the developing World at large. This historical analysis will adopt an interdisciplinary approach incorporating methodological tools from architectural and cultural history, social scientific perspectives on tourism, urban geography, and environmental history. Along with its scholarly objective to produce new historical knowledge on the connections of architectural modernism and tourism, CyBallScapes will also converse with the domains of architectural design/planning to produce new knowledge about the potentials and perils of tourism development in terms of its social, economic and environmental dimensions. This will bring novel conceptual tools to architectural design and planning, offering a better understanding of the challenges of today in a temporal continuum for both the two regions and the geographies of the Global South at large. Beyond its scholarly/historical objectives and its architectural design/planning relevance, CyBallScapes ultimately provides a broader basis for assessing current sustainable development strategies and policies. In the process of advancing scholarly knowledge, and supporting architectural, professions, and development practices, CyBallScapes will also strengthen and formalize an existing and productive collaboration between the University of Cyprus and the National University of Singapore.
INTERNATIONAL/OTHER/0118/0017	Development of a novel nanoparticle for the targeting of aggressive breast cancer	Andreas Constantinou	University of Cyprus	Ryerson University	80.000,00 €	80.000,00 €	Breast cancer is the most frequently diagnosed and second in mortality rate malignancy among women. Triple-negative breast cancer (TNBC), that constitutes 20% of all breast cancer cases, is difficult to target and patients with this disease have poorer overall survival. Despite the many advances in breast cancer treatment in recent years, there is still need for the discovery of novel approaches to target TNBC. D-alpha-tocopheryl polyethylene glycol succinate (TPGS) is a vitamin E synthetic derivative frequently used in the development of drug delivery systems to improve the pharmacokinetics of anti-cancer drugs and reduce multi-drug resistance. We have previously shown that TPGS not only acts as a carrier molecule but also exerts anti-cancer effects by inducing apoptosis and cell cycle arrest in breast cancer cells. As part of this study, we will synthesize a TPGS-based mixed micelle, loaded with the natural compound Resveratrol. Resveratrol has been shown to possess preventive and therapeutic activities in many types of cancer but its clinical use is limited due to poor absorption and rapid metabolism. In addition, we will conjugate the peptide LXY to the surface of the nanoparticle in order to effectively target tumor cells that overexpress alpha-3 integrin on their membrane. Our Specific Aims are: 1. To synthesize a TPGS-based nanoparticle loaded with Resveratrol and conjugated with the LXY peptide for targeted delivery to tumor cells, 2. To characterize the TPGS-based nanoparticle. We will do this in the facilities of our partner at the University of Calgary in Canada, 3. To evaluate the anti-cancer activity of the novel synthesized nanoparticle in vitro. Further pre-clinical and in vivo studies will reveal the potential usefulness of a Res-TPGS-LXY micelles in the treatment of breast cancer. In addition, the results of our research will be the foundation for the development of a series of TPGS-based nanotherapeutics to be tested in several types of aggressive and difficult to treat cancers.
INTERNATIONAL/OTHER/0118/0120	GEOSTATISTICAL DOWNSCALING OF WIND FIELD PREDICTIONS USING HIGH RESOLUTION SATELLITE DATA	Phaedon Kyriakidis	Cyprus University of Technology	Inha University	79.760,40 €	79.760,40 €	The project's main scientific objective is to refine the relatively coarse wind information available through numerical weather prediction models, thus contributing towards a more detailed offshore wind speed and direction assessment for Cyprus, via a suite of different data sources and advanced geostatistical methods for data fusion. The aim is the development of an innovative methodology combining heterogeneous data and geostatistical techniques for offshore wind resource assessment and related uncertainty estimation. A 5-years data set composed by 3-hours interval data will be obtained by the SKIRON numerical weather prediction (NWP) model from 2014 onwards. In situ meteorological station data will also be collected, processed and analysed, in order to establish mismatch statistics of the NWP data. Moreover, Synthetic Aperture Radar (SAR) data obtained by the Sentinel-1 satellite platform will be collected, processed and analysed, in a geostatistical framework to provide an uncertainty-aware wind resource assessment at a finer spatial resolution. Because of its high spatial resolution, Sentinel provides detailed information on the spatial variability of offshore wind, hence it is considered a valuable tool for offshore wind assessment and a valuable source for the long-term correction of wind NWP data. Finally, the corrected NWP and Sentinel-1 wind datasets will be integrated for the spatial downscaling of NWP data. Having parameterized the downscaling procedure between the two data sets the ground will be set for efficient future downscaling of historical NWP before 2014 and with no restriction to Sentinel-1 fine data availability. The project aims to expand the researchers' network of contacts and provide opportunities for the continuation of relevant research careers in universities and/or private enterprises in Cyprus. The role of collaboration and networking between research teams which are active in the proposed research framework is crucial in terms of exchanging expertise and technical know-how.
INTERNATIONAL/OTHER/0118/0018	Mathematical models of tumor response to therapy	Katerina Strati	University of Cyprus	McGill University	80.000,40 €	80.000,00 €	A critical challenge to developing individualized approaches to cancer therapy is the integration of a multitude of parameters which will influence therapeutic outcome. Mathematical modeling of this process while thought to provide solutions to this problem it is not considered ready for prime-time. While attempts have been made to model various parameters these often lack critical validation using experimental data. MODTHERAPY will expand the work we have initiated with the lab of Dr. Mitsis, on using mathematical modeling to describe tumor growth and the effects of therapy in transgenic mouse models (Ioizides et al, PLoS One 2015), with an ultimate aim to design individualized therapeutic strategies. Performing similar work using cell cultures which include heterogeneous populations of cancer cells is an exciting and promising new direction and yields great promise in terms of combining it with our previous work.
INTERNATIONAL/OTHER/0118/0108	Cooperation to Unravel the Role of the Atmospheric Aerosol over the Amazon Basin using drones	Jean Sciare	The Cyprus Institute	University of Sao Paolo	79.600,00 €	79.600,00 €	The Amazon basin is a tipping point for the global climate system that has attracted attention since the 1980's. Despite the state of the art instrumentation and the impressive infrastructure based there, measurements are routinely conducted below the atmospheric boundary layer most of the time. We propose to demonstrate the ability of unmanned aerial vehicles in atmospheric sampling at heights up to 2 km asl during an intensive month long campaign based inside the Amazon forest. The aim is to show the added value of such measurements to a broad scientific community. In return a significant gain in publicity and a collaboration with a prestigious transatlantic partner is expected. A suite of light-weight commercial and custom made instruments will be employed that monitor climate change relevant parameters such as black carbon, aerosol size distribution along with indirectly related parameters such as ozone and ice nuclei.