Πρόσκληση

“Faculty start-ups and their impact on the economy and society”

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17:00

Αμφιθέατρο 1
Κτήριο Τάσσος Παπαδόπουλος
Τεχνολογικό Πανεπιστήμιο Κύπρου
Θέμιδος και Ιφιγενείας γωνία, Λεμεσός

Τεχνολογικό
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Το Τεχνολογικό Πανεπιστήμιο Κύπρου και το Εθνικό Συμβούλιο Έρευνας και Καινοτομίας διοργανώνουν διάλεξη με θέμα:

“Faculty start-ups and their impact on the economy and society”

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Klearchos Papas, PhD

Professor, Surgery
Director of the Institute for Cellular Transplantation
Professor,Department of Medical Imaging

Faculty, Biomedical Engineering Graduate Interdisciplinary Program
Faculty, Department of Radiology Graduate Interdisciplinary Program
Faculty,Physiology Graduate Interdisciplinary Program

Dr. Klearchos Papas has devoted his research career to the application of engineering principles and the development of enabling technologies in the fields of cell therapy and tissue engineering with a focus on the treatment of diabetes. He has studied and utilized the properties of insulin-secreting tissue and their relationship to viability and function in the context of cell therapies for diabetes with the objective of improving the cost-effectiveness, availability, and clinical outcomes of this approach.

Prior to joining the University of Arizona in 2011, Dr. Papas served on the faculty at the University of Minnesota (2003-2011), where he held leadership positions as associate director of the Islet Transplant Program, director of Islet Processing Research and Development, and director of the Islet Quality Assurance Core in the Schulze Diabetes Institute. Prior to that, he held joint research positions at the Massachusetts Institute of Technology in the Department of Chemical Engineering, the Juvenile Diabetes Research Foundation (JDRF) Center for Islet Transplantation at Harvard Medical School, and the Howard Hughes Medical Institute at Yale University (1999-2003). Dr. Papas serves on the council of the Cell Transplant and Regenerative Medicine Society (formerly Cell Transplantation Society). He also serves on the editorial board of the journals Cell Transplantation, Cell Medicine, Xenotransplantation, and Cell R4.

Dr. Papas has worked on the development and validation of equipment and assays (especially ones based on mitochondrial function, such as oxygen consumption rate (OCR)) for the real-time, objective assessment of islet (and other cell and tissue) quality prior to transplantation. The OCR assay has been validated based on its ability to predict diabetes reversal in rodents and clinical human islet allo transplants in patients with type 1 diabetes as well as islet auto transplants in patients with chronic pancreatitis. He utilized these assays along with engineering principles to optimize critical steps in the islet transplantation process. These steps include pancreas procurement, pancreas preservation, islet isolation and purification, islet culture and shipment, and islet transplantation and engraftment in the recipient. Through NIH funding, he is also involved in research seeking improvement in organ preservation technology to extend the time window from procurement to transplantation and in the use of organs from expanded-criteria donors without compromising clinical outcomes.

A major focus of Dr. Papas' current research, which is sponsored by the JDRF Encapsulation Consortium and the NIH NIDDK, is the successful clinical transplantation of islets or stem-cell derived β-cells to reverse diabetes without the need for immunosuppression. His work focuses on the optimization of β-cell viability and function post-transplantation by improving oxygenation. Dr. Papas utilizes novel methods for in situ oxygen delivery (via a miniaturized wearable and ultimately fully implantable (size of a few pennies), electrochemical oxygen generator) to retrievable vascularization inducing macro-encapsulation immunoisolation devices. Enhanced oxygenation to such immunoisolation devices in vivo can: 1) dramatically reduce the necessary size from that of a 40" flat-screen TV to that of a postage stamp; 2) enhance beta cell functionality (in terms of their glucose-stimulated secretion); and 3) reduce the dose of cells required to reverse diabetes. If successfully translated to the clinic, his work in this area has the potential to have a profound impact on reducing overall costs, increasing availability, and improving short-and long-term outcomes of β-cell therapies for the treatment of diabetes while eliminating the need for immunosuppression.