



THE UNIVERSITY OF ARIZONA
COLLEGE OF MEDICINE TUCSON

Infectious Diseases

ID Grand Rounds



Klearchos K. Papas, PhD

**“Cell Based Therapies for
the Treatment of Diabetes”**

Tuesday, May 28, 2024

8:00 – 9:00 a.m.

COM-T 5120 & Zoom

Dr. Klearchos K. Papas, holds B.Ch.E., M.S., and Ph.D. in Chemical Engineering from the Georgia Institute of Technology with a focus on tissue engineering and completed his postdoc training at Novartis Pharmaceuticals.

Dr. 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 (especially as they relate to oxygen demand and supply) and their relationship to viability and function (potency) in the context cell therapies for diabetes with the objective of improving cost-effectiveness, availability, practicality, and clinical outcomes of this approach.

Dr. Papas' team is actively involved in research for improvements in post-transplant cell engraftment and function, especially with tissue engineered constructs and macro-encapsulation devices, by enhancing nutrient delivery and in particular oxygenation. Dr. Papas' team demonstrated that enhanced oxygen delivery to such devices *in vivo* can: **1)** enhance beta cell viability and functionality, especially at high cell loadings, **2)** dramatically reduce the marginal dose of cells required to reverse diabetes, and **3)** thus dramatically reduce the necessary device size required to reverse diabetes in a human. As part of the effort to enhance nutrient delivery to tissue engineered constructs, his team has also examined the impact of surface vascularization of immunoisolation devices and significant improvements in insulin release kinetics through the vascularized devices. These discoveries led Dr. Papas to co-found Procyon Technologies LLC.

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. He has also 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).

Join Zoom Meeting: <https://uits-arizona.zoom.us/j/4712743927?pwd=NzI5VEF1N0tlanhwVmRVZiRNdjJVZz09&omn=84612206171>

Password: 888639

This University of Arizona event is sponsored by the Division of Infectious Diseases, Department of Medicine, UA College of Medicine - Tucson. It is open to the public, particularly community physicians and other interested health-care professionals.

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