

CHEMICAL & BIOMEDICAL ENGINEERING **TENG MA MEMORIAL LECTURE**

# Engineering bioactive scaffolds and hydrogels for improving cell therapy in Type 1 Diabetes”

**Friday, April 3  
11:00 AM  
COE B135**

**Cherie Stabler, Ph.D.**

**UF FOUNDATION PREEMINENCE TERM  
PROFESSOR AND DEPARTMENTAL CHAIR**  
Department of Biomedical Engineering  
University of Florida

Type 1 diabetes is an autoimmune condition in which the patient's immune cells destroy insulin-secreting cells in pancreatic islets, leading to blood glucose dysregulation. Cell-based therapies hold the potential to deliver a durable and automated insulin delivery system, thereby providing improved physiological control. One approach, termed clinical islet transplantation, involves isolating allogeneic islets from donors and infusing them into the hepatic portal vein to secrete insulin. While promising, this approach requires permanent systemic immunosuppression (IS), and the survival of the implanted cells is poor due to poor engraftment. In our laboratory, we have focused on addressing these key challenges by engineering macroporous scaffolds that provide a supportive environment for implanted cells by delivering oxygen, guiding vascularization, and delivering local immunomodulatory agents.



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Department of Chemical & Biomedical Engineering

