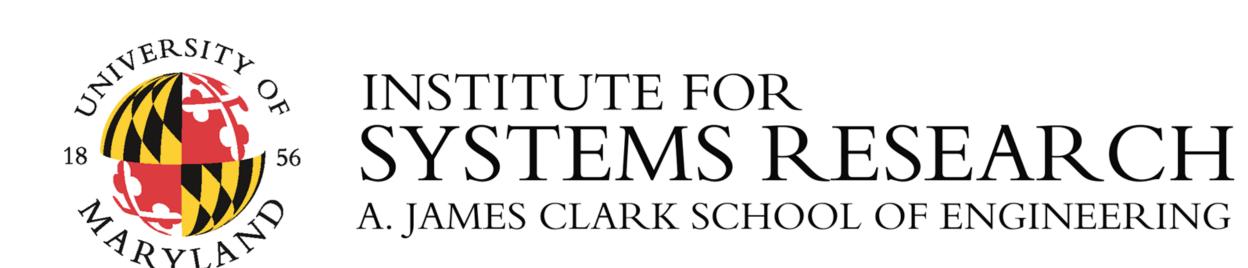
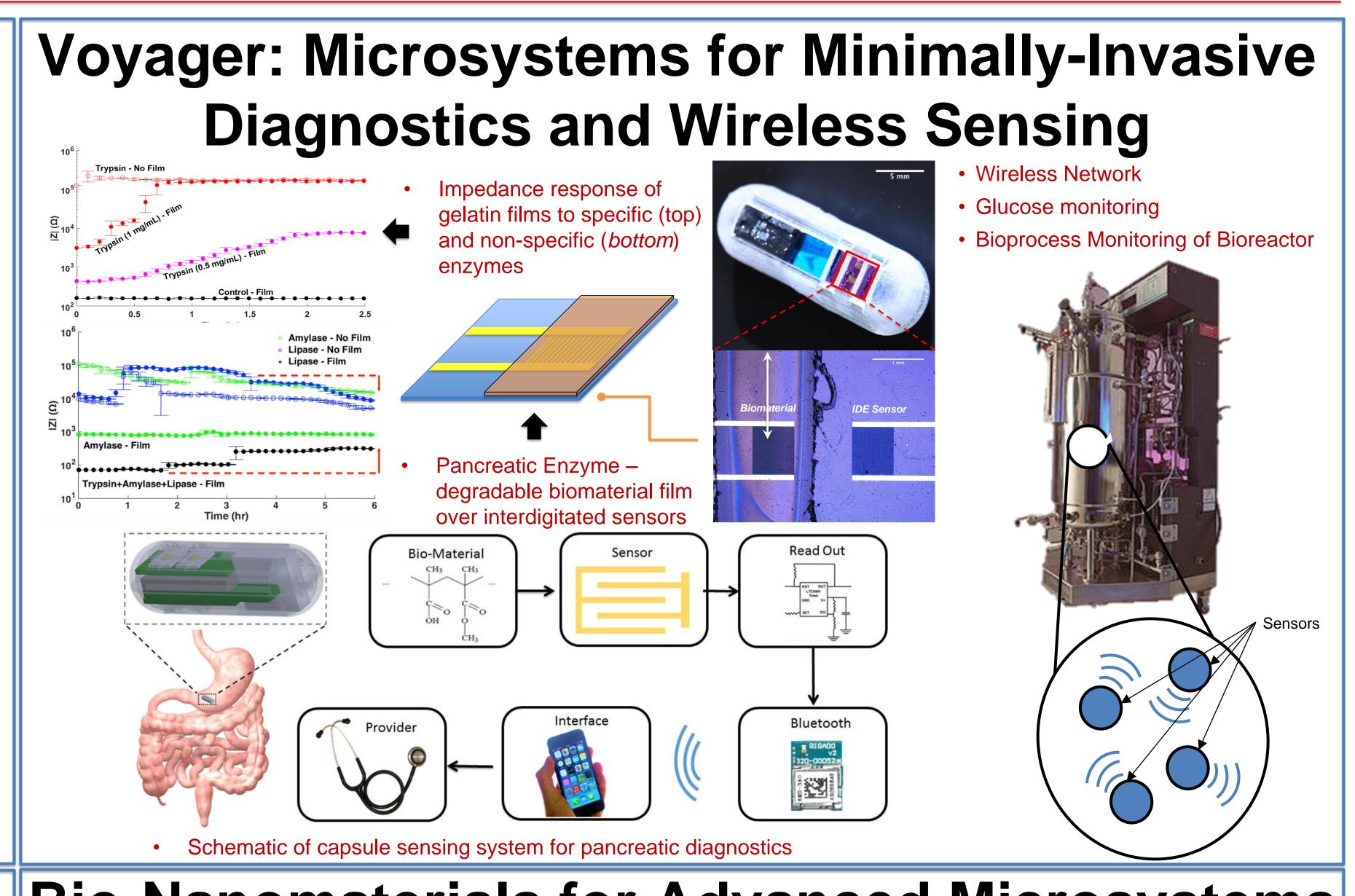
Micro-Nano-Bio Systems for Biological Applications



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µTAS for Biofilm Characterization & Treatment Microsystems enable reliable characterization of biofilm growth and Reliable multi-Microsystems allow integrated sensors experiment and autonomous microsystems for in treatment testing vivo biofilm detection and treatment **Closed valve** SDS Dose monitoring of biofilm growth and treatment 5 mm **Bioelectric effect** treatment results in increased treatment efficacy



e-Gut: Gut-Brain-Axis Exploratory Platform **Impedance**: Tissue Culture —— 2 Hr Biological Mechanism ulletThe Gut Feeling ?! Mode Fluid flow 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 Intestinal villi Psychology Personalized Diagnostics --- 100uM Serotonin Top Chamber - 100uM Serotonin Normalized Lid with Spring with Cells+Buffer CHARACTERIZE Loaded **Contact Pins Contact Pads Custom Designed Cell Culture Device with Integrated** Ag/AgCl Reference Electrode 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55 **Electrodes Electrochemistry**: Serotonin Sensing

