

# Device to monitor and control the differentiation of stem cells into pancreatic beta-islet cells

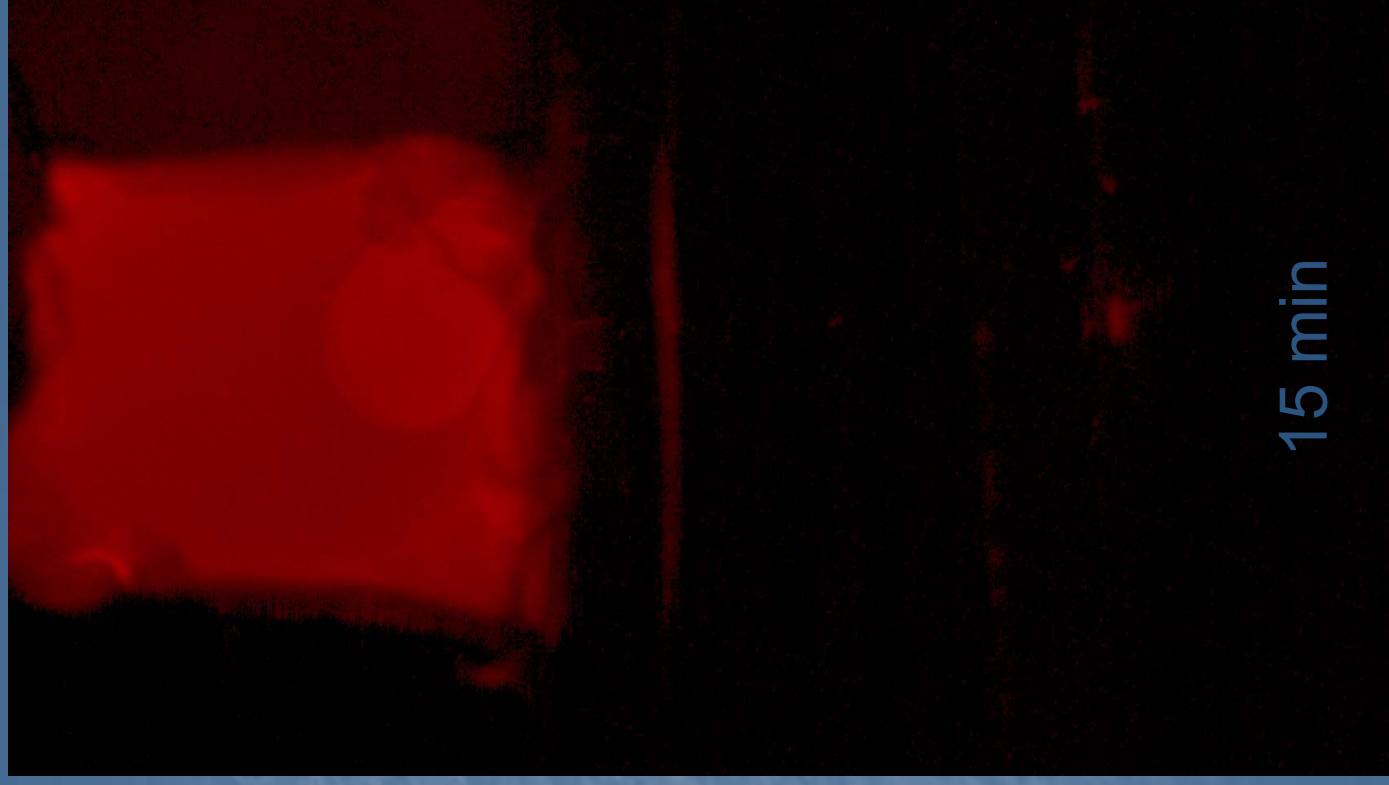
Jonathan Baran<sup>1</sup>, Dhaval Desai<sup>1</sup>, Kyle Herzog<sup>1</sup>,  
and Timothy Pearce<sup>1</sup>.

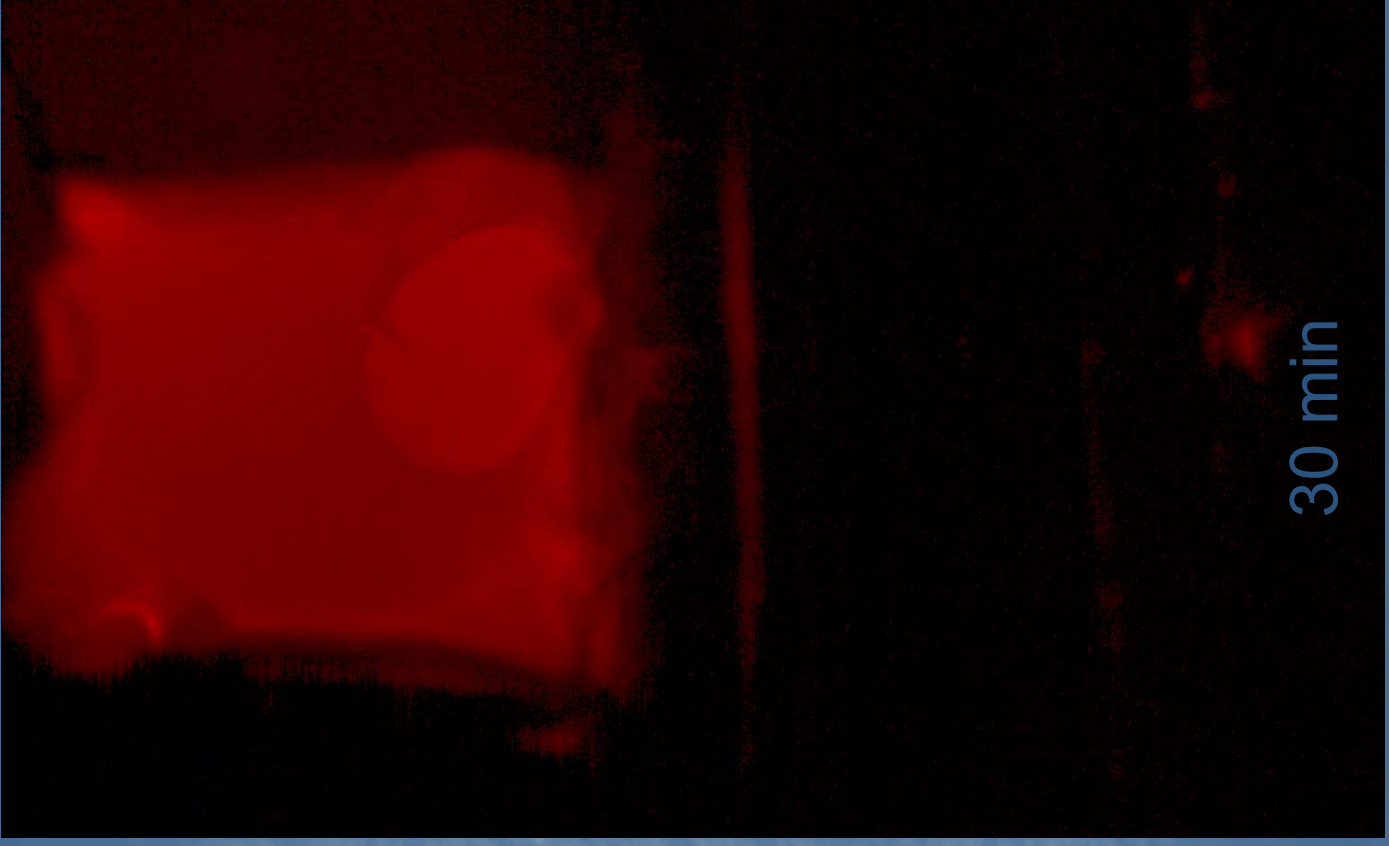
**Advisor:** Dr. Naomi Chesler PhD<sup>1</sup>

**Client:** Dr. Victoria Browning PhD<sup>2</sup>

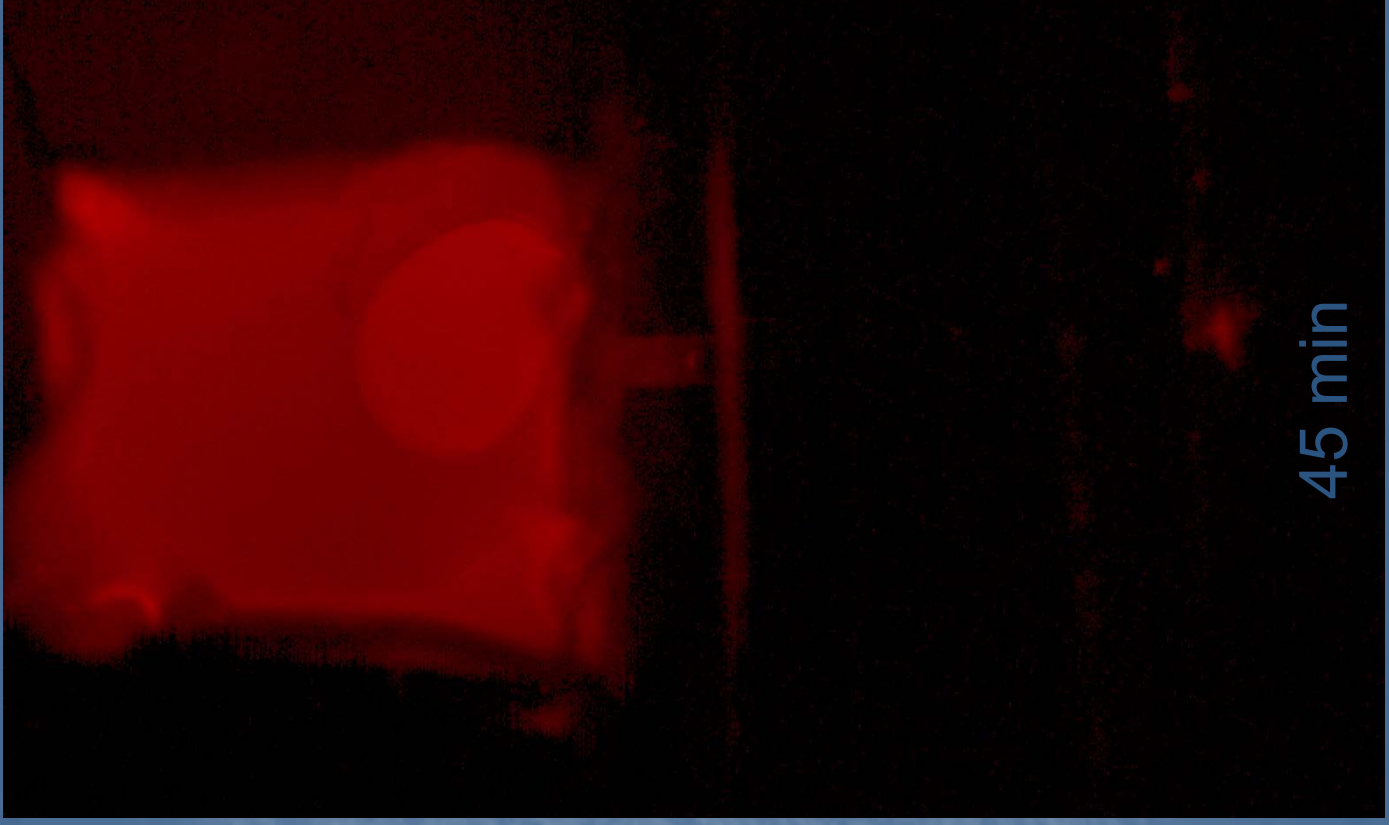
**1 Department of Biomedical Engineering, 2  
Department of Surgery**

# Time lapse gradient formation

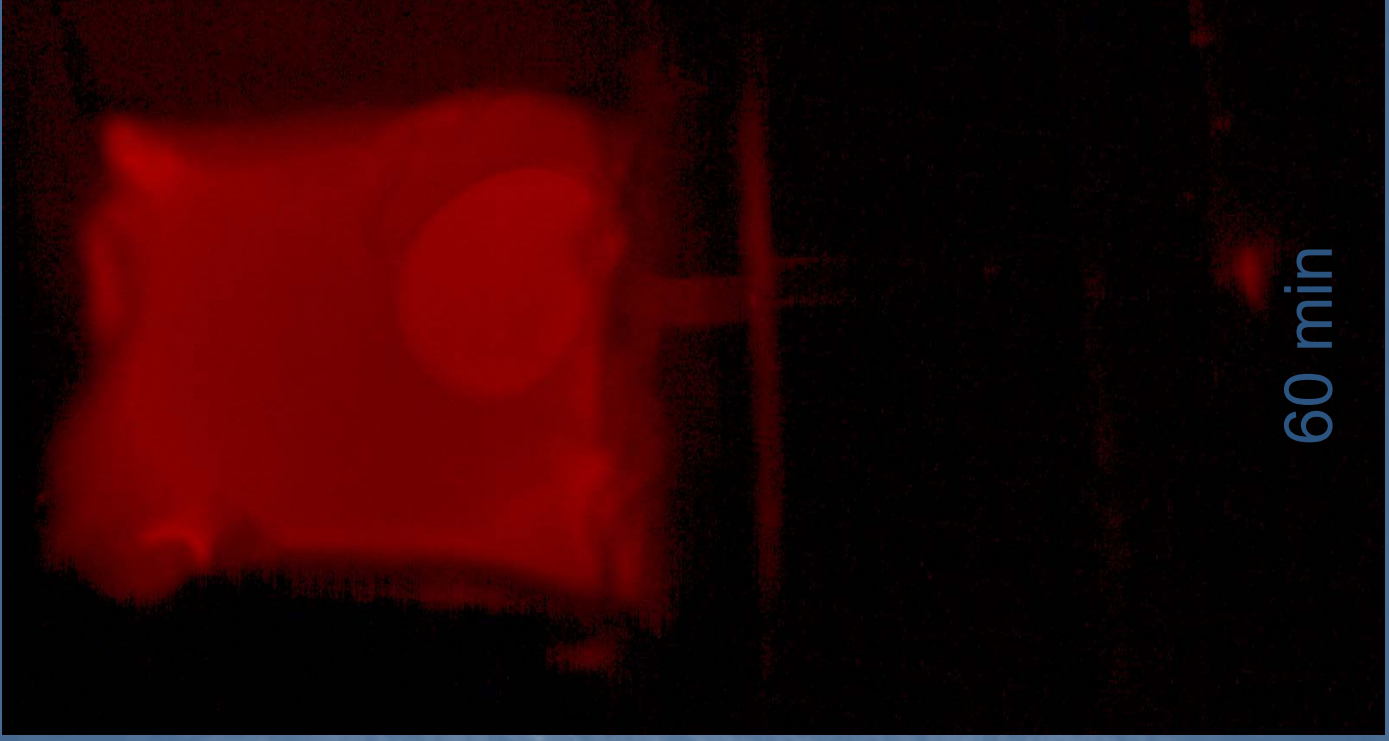




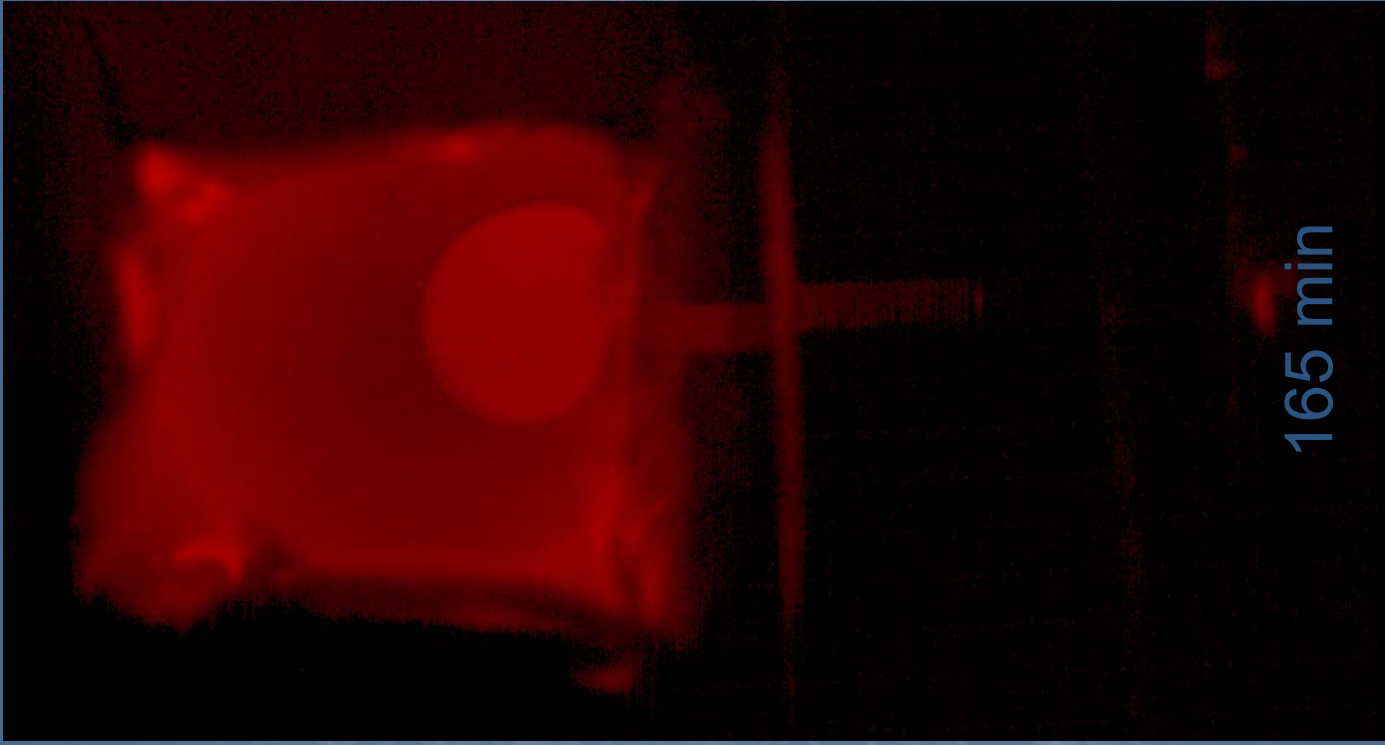
30 min



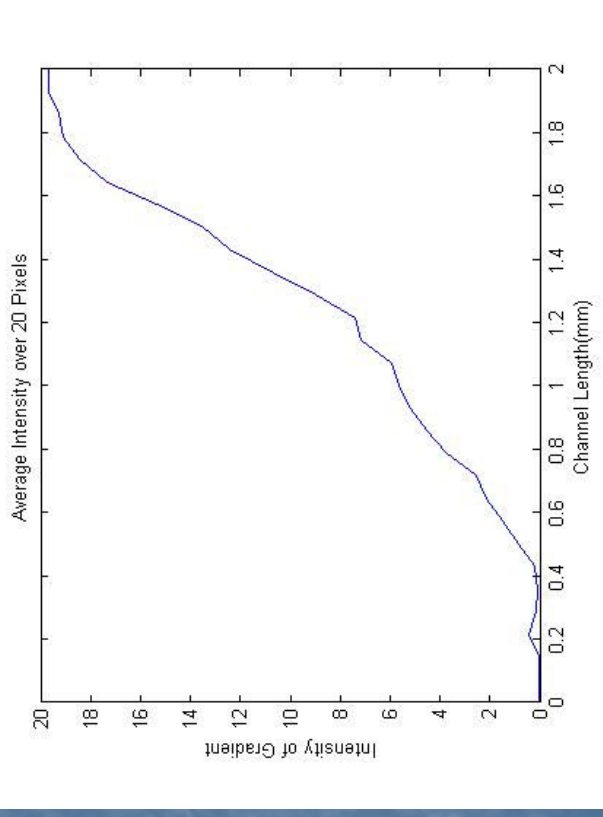
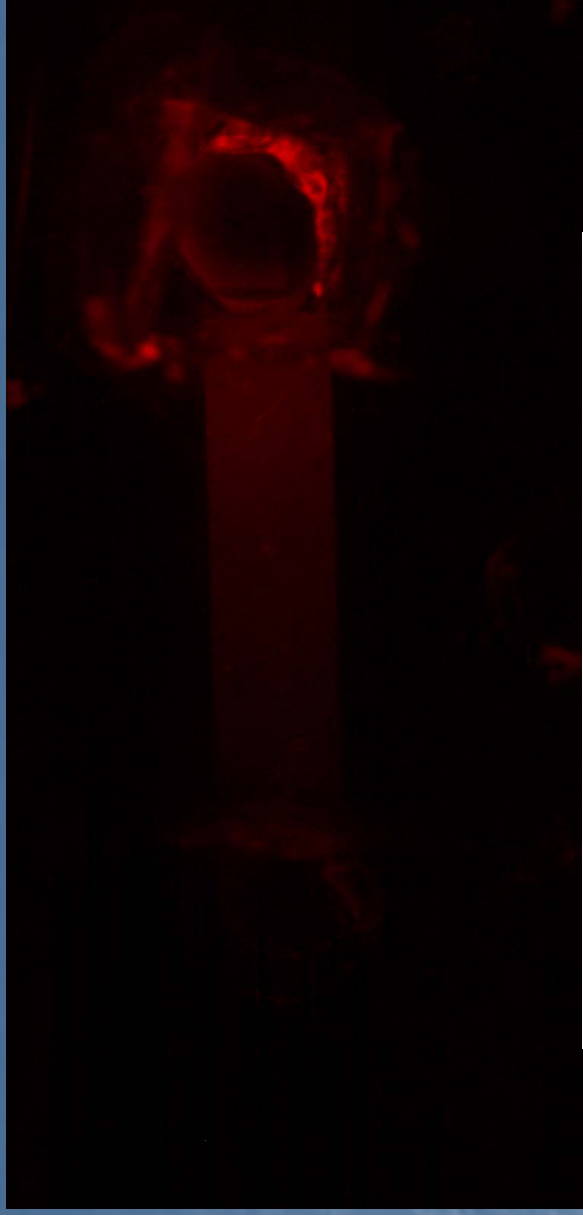
45 min



60 min



# Gradient formation and intensity graph



# COMSOL demo of gradient formation

