



Institute for Cancer Research

PICR SEMINAR SERIES

# ***IRREVERSIBLE ELECTROPORATION FOR NON-THERMAL TUMOR ABLATION***

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Irreversible Electroporation (IRE) is a minimally invasive surgical therapy we invented to treat unresectable tumors using low-energy microsecond pulses. These pulses create nanopores in the cell's membrane causing them to die. IRE is unique among tissue ablation techniques in that it targets only the cell's membrane while leaving the underlying collagen structures intact. This makes treatment near critical structures such as major blood vessels and nerves possible. Furthermore, the treatment has been shown to promote a robust immune response making it a powerful tool to use with immunotherapy. IRE is now being used clinically to help people with pancreatic and prostate cancer. We are developing an advanced form of the technology, high frequency irreversible electroporation (HFIRE), or biphasic Pulsed Field Ablation (PFA), for the treatment of cardiac disease, cancer, and other malignancies. This new therapy preferentially targets cancer cells over healthy cells while also mitigating the need for a neuroblocker. Our preclinical work focuses on helping canine patients with

spontaneous disease, which are excellent translational models for human disease. Results of our ongoing trials have been exceedingly positive, supporting that HFIRE is effective for the treatment of cancer, including tumors refractory to surgery, radio- and chemotherapies. This presentation will also discuss recent advances in pulsed electric field therapies to target various aspects of the tumor microenvironment and potential future clinical applications.

**THURSDAY, SEPTEMBER 11, 2025 • 11:30 AM**  
**DRUG DISCOVERY (DD) CONFERENCE ROOM**