



Mike Sano



Assistant Professor
Biomedical Engineering

B.A. Mathematics
B.S. Electrical Engineering
M.S. Engineering Mechanics
Ph.D. Biomedical Engineering

Address:
**Department of Biomedical
Engineering**
Engineering Building III
911 Oval Drive
Raleigh, NC 27695

Phone: 919-515-5252
Email: mikesano@med.unc.edu
www.mikesano.com

Detection and Treatment of Cancer Using Electric Fields

Research emphasis:

Dr. Sano's laboratory investigates the complex phenomena which arise when cells and tissues are exposed to electric fields. Practical applications of these phenomena include early cancer screening, focal cancer treatments, and in vivo gene transfection. The lab is particularly interested in the development of new clinical tools for the treatment of brain tumors and we employ a number of 3D cell culture and microfluidic techniques to optimize protocols before evaluating them in vivo.

Application:

- Genetic Engineering
- Focal Cancer Ablation
- Early Cancer Detection
- Electrochemo Therapy

Collaboration potential:

- Treatment of Inoperable Tumors
- Medical Device Development
- Microfluidic Device Design
- 3D Tumor Models

Selected publications:

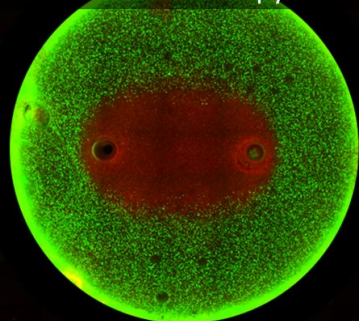
Michael B. Sano, Christopher Arena, Katelyn Bittleman, Matthew DeWitt, Hyung Cho, Christopher Szot, Yong Lee, Rafael Davalos – Bursts of Microsecond Pulses Inhibit Tumor Growth, *Nature Scientific Reports*, 5, 14999; doi: 10.1038/srep14999 (2015)

Michael B. Sano, Richard Fan, Gloria Hwang, Geoffrey Sonn, Lei Xing - Production of Spherical Ablations using Non-Thermal Irreversible Electroporation, *Journal of Vascular and Interventional Radiology* 27 (9), 1432-1440. e3 doi: 10.1016/j.jvir.2016.05.032 (2016)

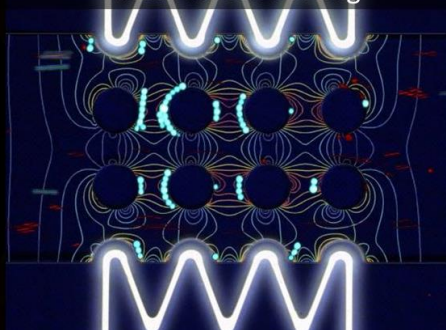
Michael B. Sano, Richard Fan, and Lei Xing - Asymmetric Waveforms Decrease Lethal Thresholds in High Frequency Irreversible Electroporation Therapies, *Nature Scientific Reports* 7 40747 doi:10.1038/srep40747 (2017)

Michael B. Sano#, Christopher Arena, Rafael Davalos – In-Vitro Bipolar Nano- and Microsecond Electro Pulse Bursts for Irreversible Electroporation Therapies, *Bioelectrochemistry*, doi:10.1016/j.bioelechem.2014.07.010 (2014)

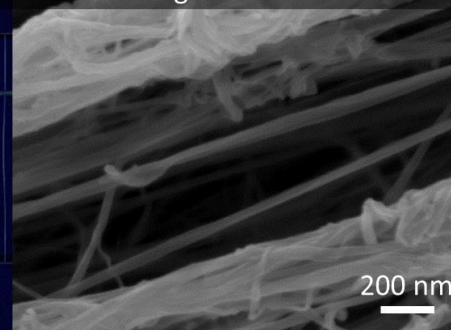
INSPIRE Therapy



Electrical Cell Sorting



Electromagnetic Biofabrication



Therapeutic Imaging

