

# Lingqian Chang, PhD

Assistant Professor, Department of Biomedical Engineering

Research Area: BioMEMS, Micro-/nano-fabrication, Lab on Chip, Biosensors

Research topics: 1. Flexible nano-electroporation biomedical device for in vivo gene delivery; 2. multiplexed single-cell gene chip for cancer intracellular marker detection; 3. Micro-/nano-scale cell manipulation; 4. Micro-/nano- sensors

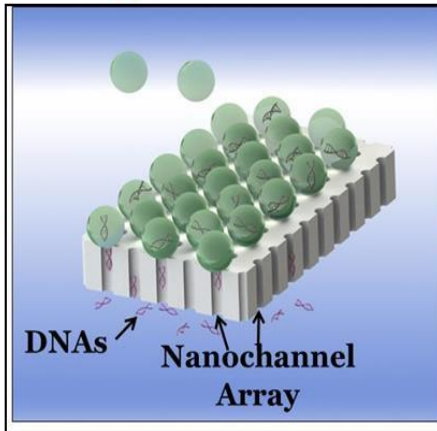
## Current Research: Nano-electroporation Technique

- Precise Dose Control
- negligible membrane Damage
- High-throughput
- Single-cell resolution

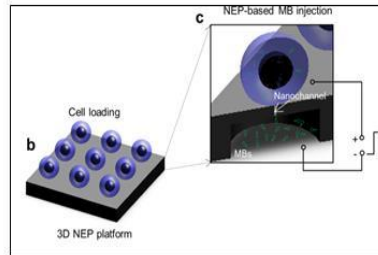
Micro-/nano-fabrication

MEMS

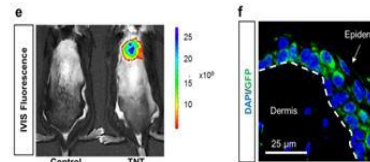
Multidisciplinary:  
Electrical,  
Mechanical, Physics



### Intracellular Gene delivery / Interrogation

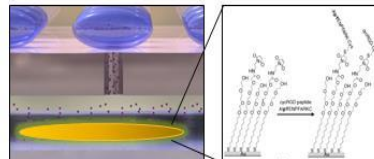


### In Vivo Cell therapy



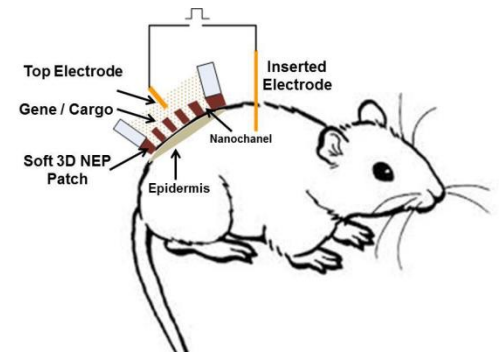
D. Gallego-Perez, .. L. Chang, .. et al. *Nature Nanotechnology*, 2017.

### Protein Biosensors



- D. Gallego-Perez, .. L. Chang, .. et al. *Nature Nanotechnology*, 2017.
- L. Chang#, D. Gallego-Perez#, et al. *Nano Letters*, 2016
- L. Chang, et al. *Small*, 2016
- L. Chang, et al. *Small*, 2015
- L. Chang, et al. *Lab Chip*, 2015
- L. Chang, et al. *Lab Chip*, 2016
- L. Chang et al. *Nanoscale*, 2016
- L. Chang et al. *Nanoscale*, 2016
- K. Gao, ... L. Chang, *Nature Molecular Therapy*, 2016
- K. Gao, ... L. Chang, *Small*, 2014

## Research 1: In vivo Soft-NEP for gene delivery



## Research 2: multiplexed gene interrogation chip

