



Department of Bioengineering

www.uta.edu/bioengineering

The University of Texas
ARLINGTON™

1974 - Biomedical Engineering Program with UT-Southwestern Med Center Dallas

2005 - Bioengineering Dept. offering BS, MS, PhD & five-year dual degrees in either Biology, Chemistry, or Physics and MS in Biomedical Engineering

2015 - 229 undergraduate, 117 MS, & 55 PhD students from all over the world

Respiratory and anesthesia device

Neural engineering

Research at

Biomaterials

Regenerative medicine

UTA Bioengineering

Nanomedicine

Biomedical optics

Brain imaging

Artificial organs

Tissue engineering

Vascular Stent

Peripheral nerve regeneration



**Kytai Nguyen,
Ph.D.
Prof –
Bioengineering**

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Research Projects

- Nanoparticles, & injectable hydrogel drug delivery systems to treat cancers, cardiovascular diseases, & lung disorders. 
- Nanocomposite scaffolds as skin grafts for burn treatment. 
- Vascular tissue engineering to enhance endothelialization *in situ*.

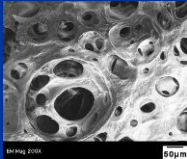
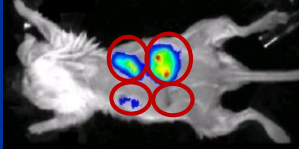
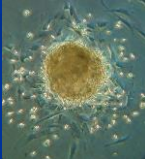
Nanofiber scaffolds



**Liping Tang,
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Research Projects



- “Cancer trap” to combat metastatic cancers. 
Cancer traps
- Microscaffolds to treat osteoarthritis.
- Optical imaging probes to diagnose inflammation & cell response 
Imaging probes
- Autologous stem cells-mediated tissue regeneration. 



**Yi Hong, Ph.D.
Asst. Prof -
Bioengineering**

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Research Projects

- Novel biodegradable elastomers for tissue repair 
- Decellularized biological materials for tissue engineering and regeneration 
- Nanoscale materials for drug delivery and tissue repair



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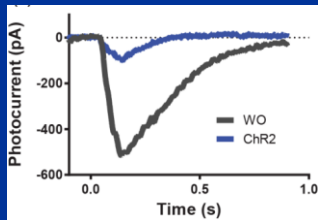


Michael Cho, Ph..D.
Prof & Chair- Bioengineering

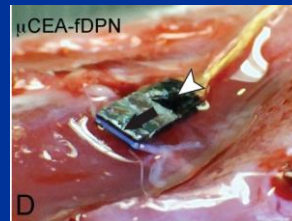
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Research Projects

- High-throughput cancer drug screening (migration & viability)
- Neurophotonics focusing on controlled neuronal outgrowth & cancer cell migration
- Optogenetic enabled vision restoration
- Bioelectronic medicine & Neuroengineering



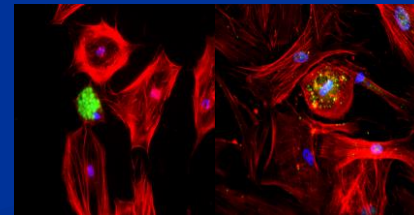
Vision restoration



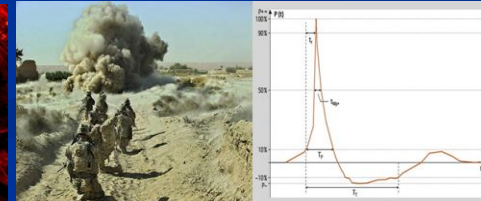
Bioelectronic medicine

Research Projects

- Stem cell tissue engineering to advance regenerative medicine
- Development of predictive models to forecast and manipulate the fate of stem cells, including inducible pluripotent stem cells
- Engineering testbeds to identify the potential mechanisms of blast-induced traumatic brain injury



**Adipogenesis (left)
Chondrogenesis (right)**



**Dynamics of blast
pressure waves**



Baohong Yuan, Ph.D.
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Research Projects

- Ultrasound switchable fluorescence for deep tissue super resolution imaging for early cancer detection
- Cancer stem cell imaging
- Cancer treatment assessment
- In vivo evaluation of implanted tissue scaffold

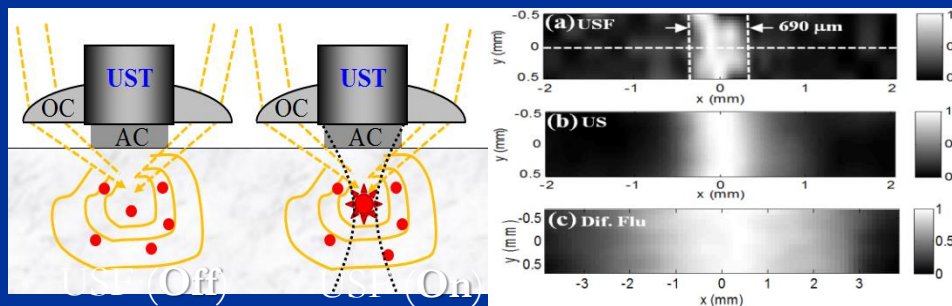


George Alexandrakis, Ph.D.
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Research Projects

- Assessment of rehabilitation outcomes in children with Cerebral Palsy by functional Near-Infrared Spectroscopy (fNIRS) imaging.
- FNIRS imaging-guided electrical brain stimulation to personalize stroke rehabilitation.
- Microscopy methods to enable quantification of DNA repair kinetics after radiation or chemotherapy.



Depth: ~30 mm; Resolution: < 100 microns



Imaging brain function with near-infrared light using optical fibers

Live cell microscopy lab