

# Translating Immunoengineering Into Medicine

## Tumor Microenvironment Reprogramming:

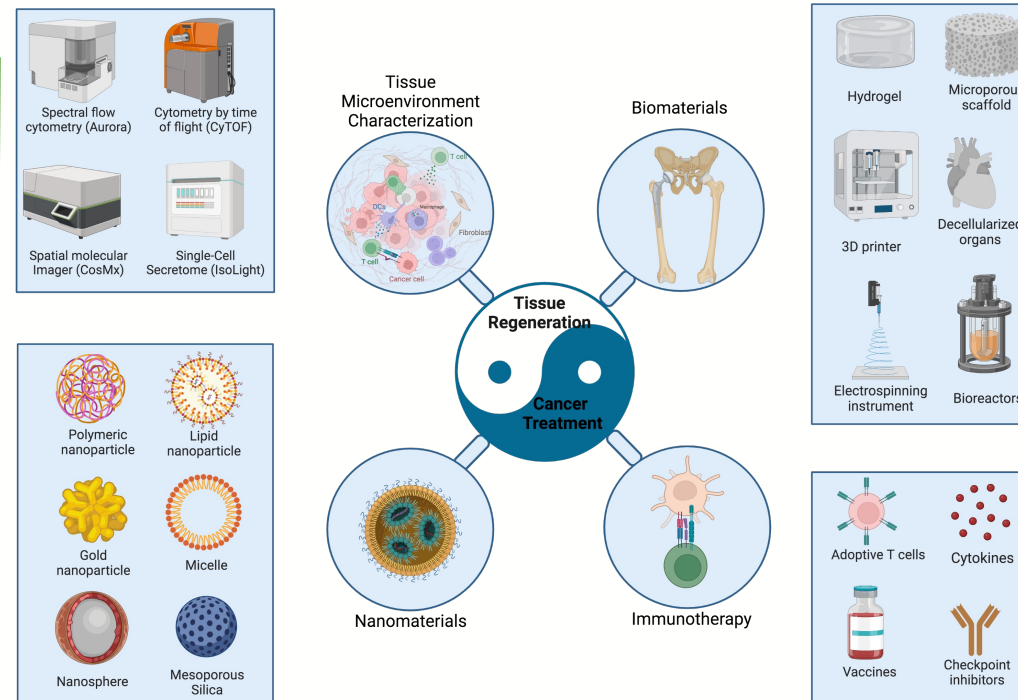
- Activating adaptive T cell immunity and repolarizing immunosuppressive macrophage leveraging nano/biomaterials to enhance therapeutic benefits of chemo-radio-immunotherapy.

## Personalized Cancer Nanovaccines:

- Co-delivering neoantigen peptides and TLR agonists, in combination with anti-PD-1 and anti-CTLA-4 checkpoint inhibitors to augment antitumor activity of T cells.

## Immunoengineering for Musculoskeletal Tissue Repair:

- Developing biodegradable scaffolds that synergistically enhance bone repair by integrating optimized osteoinductivity, osteoconductivity, and mechanical strength with immunomodulatory strategies—specifically, by inducing Treg activity to promote bone regeneration.



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## Keywords:

- Biomaterials, Immunoengineering, Cancer Immunotherapy, Tissue Regeneration, Osteoimmunology, Drug and Gene Delivery, Nanomedicine.

## Publications and Recognitions:

- The NCI Transition Career Development Award (K22)
- NIH T32 Fellowship, Basic Immune Mechanisms
- Guest Editor, Frontiers in Oncology
- [Link to my Publications](#)

