

Orthopedic Tissue Engineering

Biomedical Tissue Engineering – Where We Go in the Future

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Presentation Summary

My group at the University of Kansas is interested in biomaterials, stem cells and tissue engineering. Tissue engineering efforts focus primarily on bone and cartilage regeneration, including the in the temporomandibular joint (TMJ), intervertebral disc (IVD), knee, cranium, and trachea. New collaborations at KUMC are leading us to explore the cochlea of the ear and the liver as well. Biomaterials-based efforts in our group include microsphere-based gradient scaffolds (TMJ, knee), colloidal gels (cranium), electrospinning (trachea, IVD) and interpenetrating network hydrogels (knee). Overall, our group is working to build our reputation in the areas of umbilical cord stem cells in musculoskeletal tissue engineering, TMJ biomechanics and tissue engineering, and gradients in tissue engineering.

My group is interested in the spectrum research from developmental projects up through commercialization and licensing of therapeutic products. We collaborate with several types of surgeons, engineers and biologists at KU, KUMC, UMKC, and beyond, and look forward to exploring further opportunities at the Missouri Regional Life Sciences Summit.