

PAGE MORTON HUNTER DISTINGUISHED SEMINAR SERIES



DESIGNING A TISSUE ENGINEERED SCAFFOLD FOR ROTATOR CUFF TENDON REPAIR

The current surgical approach to repairing massive rotator cuff tendon tears relies on either biological graft augmentation to promote cellular growth, but with inferior mechanical properties, or the use of a synthetic graft made from a resorbable polymer with enhanced mechanical performance but with limited biocompatibility. Neither graft type alone can create a gradient structure and properties that are needed to repair the tendon-to-bone interface. In this talk we will present how we used a tissue engineering approach to combine scaffolds braided from synthetic polylactic acid (PLA) yarns for superior mechanical performance together with a collagen coating containing bioactive molecules that not only had good biocompatibility but also supported tenocyte growth and proliferation. This innovative approach shows promise for improved massive rotator cuff tendon repair.

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Martin King joined the Wilson College of Textiles, North Carolina State University, as Professor of Biotextiles and Textile Technology in September 2000 following more than 30 years of experience working in industry, higher education, the healthcare and government sectors in Canada and the UK. After graduating in Polymer Technology from UMIST, Manchester, U.K., he worked for Hoechst-Celanese in Canada and the British Ministry of Technology developing novel carbon fibers. His research is focused on integrating the concepts from biomaterials, fiber and polymer science, biotextiles and textile engineering. As well as being a consultant with many medical device companies, he has been invited to establish biomedical textile laboratories and programs in various institutions, such as the Wilson College of Textiles, NC State University, Quebec Biomaterials Institute, Laval University, Quebec, Canada, Donghua University, Shanghai, China, as well as in Ecuador and Pakistan.

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In-person:
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