THE CENTRE FOR COMMUNICATION DISORDERS

Division of Speech & Hearing Sciences

Vocal fold regenerative medicine and cellular therapy – towards an understanding of laryngeal inflammation

Prof. Susan Thibeault

Otolaryngology-Head and Neck Surgery
Department of Surgery
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DATE: 20 March 2013 (Wednesday)

TIME: 6:30 – 7:30 pm

VENUE: Room 518, Prince Philip Dental Hospital, 34 Hospital Road, Sai Ying Pun, HK

Abstract:
Normal vocal fold vibration is crucially dependent upon tissue composition and viscoelasticity. When composition of the extracellular matrix (ECM) of the vocal fold cover (i.e. lamina propria – superficial and middle layers) is altered, vocal fold vibratory function can be severely disrupted due to alterations in tissue viscoelasticity. The dysphonias that result are generally difficult to treat effectively with current surgical paradigms and available biomaterials. Treatment failures have been ascribed to poor understanding of pathologic processes in the ECM, as well as suboptimal materials that may negatively affect vocal fold biomechanical properties. Accordingly, there is a clinical need for improved understanding of the pathophysiology of disrupted ECM and the development of advanced biomaterials that appreciate the biomechanical properties of the lamina propria. The long-term aim of our research is to engineer injectable products that promote wound repair and induce tissue regeneration, for treatment of scarring and other existing ECM defects of the lamina propria, exclusively for the superficial and middle layers. We have focused on chemically modified injectable synthetic ECM (sECM) hydrogels (HA derivatives) for tissue regeneration. We have been able to develop hydrogels that mimic and augment the existing ECM and yield optimal vocal fold ECM biomechanical properties. We are able to encapsulate these hydrogels with living stem cells, altering macrophages phenotype and regenerate tissue.

About the speaker:
Susan Thibeault, PhD, CCC/SLP, is an Associate Professor and the Diane M Bless Endowed Chair in Otolaryngology – Head and Neck Surgery in the Division of Otolaryngology-Head and Neck Surgery, Department of Surgery at University of Wisconsin Madison. Clinically, Dr Thibeault is the Director of the Voice and Swallow Clinics. Dr. Thibeault's research interests focus on furthering knowledge of vocal fold biology based upon molecular and genetic methodologies. Specifically, Dr Thibeault's work involves tissue engineering approaches, 3D cell culture, immunology, macrophage behavior, cell line development and in vivo animal models for voice fold biology. Her work has been continually funded by the NIH since 2002.

~ All are welcome ~