CENTER FOR CELLULAR AND MOLECULAR ENGINEERING ESTABLISHED IN DEPARTMENT OF ORTHOPAEDIC SURGERY



Dr. Rocky Tuan

Dr. Freddie Fu has announced the establishment of the Center for Cellular and Molecular Engineering within the University of Pittsburgh Department of Orthopaedic Surgery, as well as the appointment of **Dr. Rocky Tuan**, a world-renowned expert in stem cell biology and tissue engineering, as the founding director. The mission of the center is to apply the principles of cellular and molecular science and engineering to restore tissue and organ functions. Special emphasis will be placed on building strong basic science foundations for the treatment of injuries and diseases of the musculoskeletal system, and utilizing nanotechnology and mechanobiological principles in combination with bioreactor technology for functional skeletal tissue engineering and regeneration.

For more than 30 years, Dr. Tuan has studied the workings of the musculoskeletal system and its diseases, including cartilage development and repair, cell signaling and matrix biochemistry, stem cell biology, nanotechnology, and other orthopaedic topics. He is well known for his innovative research on the development, growth, and function of the musculoskeletal system. He has authored more than 400 refereed publications. He has done pioneering work on adult stem cells and cell-based tissue engineering, in particular applications in skeletal tissue engineering and repair. His research on cartilage has included cellular signaling in developmental chondrogenesis and the utilization of adult stem cells in tissue engineering. Dr. Tuan has also pioneered the development of molecular diagnostic technologies for orthopaedic infections, an achievement that has significant impact in the clinical setting. In 2004, he received the prestigious Marshal Urist Award for Excellence in Tissue Regeneration Research from the Orthopedic Research Society.

Dr. Tuan received his undergraduate education from Swarthmore College and Berea College, and his PhD in life sciences from The Rockefeller University under Dr. Zanvil A. Cohn. His early research was on calcium transport; later, as a research fellow at Harvard Medical School, he studied embryonic skeletogenesis. Dr. Tuan has had a long association with Thomas Jefferson University, Philadelphia, where he was appointed in 1988 as professor in the Department of Orthopaedic Surgery and department vice chairman and has also served as director of its Orthopaedic Research Laboratory. In 2001, Dr. Tuan joined the National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institutes of Health, as the chief of the newly established Cartilage Biology and Orthopaedics Branch. He is also an adjunct professor in the Department of Orthopaedic Surgery at George Washington University School of Medicine and Georgetown University School of Medicine.

Dr. Tuan has received multiple awards for his teaching and mentoring skills, including the Outstanding Mentor Award, National Institutes of Health, and on two occasions the Special Recognition Award, National Institutes of Health Undergraduate Scholars Program.

According to Dr. Freddie Fu, "Dr. Tuan will be an absolutely outstanding addition to our department and its research base. Dr. Tuan's exploration into ways to repair damaged muscle and cartilage using regenerative medicine approaches will greatly complement the technologies we, too, have been developing."

Dr. Tuan has indicated that his goal is to establish a national and international center of excellence built on research innovation, a strong education program, and an entrepreneurial culture that fosters local and regional collaborations among the academic, industrial, and business communities.

In addition to his role as director of the Center for Cellular and Molecular Engineering, Dr. Tuan will serve as executive vice chairman for orthopaedic research. He will be accompanied by his wife, Dr. Cecelia Lo, who has been appointed the founding chair of the newly established Department of Developmental Biology at the University of Pittsburgh.