

Grant Award

Drs. Bruno Péault, Chia Soo, Kang Ting and Benjamin Wu have teamed up to win a prestigious \$5.4 million Candidate Development Award from the California Institute of Regenerative Medicine (CIRM) on bone regeneration.

Drs. Péault, Soo, Ting, Wu comprise a multidisciplinary core team with expertise in reconstructive surgery, musculoskeletal biology, molecular pathology, developmental biology, stem cell biology, material science and bioengineering.

Drawing upon personnel resources from three top-ranked schools at UCLA: the David Geffen School of Medicine (Péault, Soo, Ting, Wu), the School of Dentistry (Ting, Wu), and the Henry Samueli School of Engineering and Applied Science (Wu), Dr. Adams, the Vice Chair for Research, Orthopaedic Hospital Research Center, assembled this multidisciplinary core team of clinician-scientists to tackle difficult regenerative medicine problems.

Based within the UCLA Department of Orthopaedic Surgery, the multidisciplinary core team is led by Dr. Soo, a reconstructive surgeon and academician with crucial translational research expertise as well as industrial and FDA regulatory experience. The team's primary mission is to accelerate the development of regenerative medicine based therapies. The bone regeneration program proposed in the present CIRM award is the first of many projects to be addressed by the multidisciplinary core team.

The CIRM bone regeneration project combines the regenerative potential of unique perivascular stem cells (discovered by Dr. Péault, the CIRM project PI) and novel growth factor, NELL-1 [discovered by Dr. Ting and developed by Drs. Soo (CIRM project Co-PI), Ting, and Wu). The PI, Dr. Péault, will lead the integrative efforts of the team to define perivascular stem cell biology relative to other stem cells as well as to optimize their processing. The Co-PI, Dr. Soo will lead the team to define the safety and efficacy of the combination stem cell NELL-1 product. Dr. Ting will lead the team to optimize NELL-1 and perivascular stem cell osteoinductivity. Dr. Wu will lead the team to develop sustained delivery NELL-1 carriers, scaffolds to maximize osteogenesis, and scalable manufacturing protocols.

Other regenerative medicines therapies in the pipeline for future grant submissions include knee cartilage regeneration, osteoporotic fracture healing, skin wound regeneration, and cardiac regeneration. According to Dr. Adams: "The Orthopaedic Hospital Research Center was created and funded as an alliance among the School of Medicine, Department of Orthopaedic Surgery and Orthopaedic Hospital. With new research space as well as the Departments of Pathology, the Jonsson Comprehensive Cancer Center and the Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research as partners, we sought to recruit scientists from outside of UCLA (Soo and Péault) to join investigators already present at UCLA (Ting and Wu) to undertake an innovative transdisciplinary approach to musculoskeletal regenerative medicine for eventual applications in human disease."

You can read more about our center and our research faculty at these sites:

- http://www.orthohospital.org/research_ucla.php
- <http://ortho.ucla.edu/body.cfm?id=71>