UCLA Scholars in Translational Medicine
2010 Awardees

Arnold Chin, MD, PhD

Dr. Chin is an Assistant Professor in the Department of Urology at UCLA, with complementary clinical and research responsibilities. His clinical practice focuses on treating patients with urologic malignancies, in particular bladder and prostate cancer, providing the latest and highest quality of care. His basic science research aims to further the understanding of how the immune system recognizes and fights these malignancies. He has achieved many milestones over the course of the last two years in large part due to support from the STM Program award. His laboratory studies the tumor microenvironment in prostate and bladder cancer, ultimately to develop therapeutic targets, novel immune-based platforms, and stem cell based therapies against cancer. Currently, his basic science research focuses on understanding how interactions in the tumor microenvironment can regulate the ability of a tumor to invade and metastasize. Recent work has identified a family of receptors that mediate immune surveillance in prostate cancer. This work has led to a publication in *Cancer Research* and a developmental grant from the Department of Defense. On the translational research front, Dr. Chin's laboratory has been isolating and characterizing cancer stem cells from his bladder cancer patients, testing new therapeutics against this subpopulation of traditionally treatment resistant cells. This work is co-sponsored by a grant from the American Association of Cancer Research. He hopes to develop this into a personalized therapy model where each cancer undergoes molecular testing with treatments specifically tailored to the individual patient in hopes of maximizing benefits and limiting toxicity. And finally, in his clinical practice, Dr. Chin has incorporated the use of robot-assisted laparoscopic surgery to advance the surgical treatment of patients with bladder, prostate, and kidney cancer.

Tim Donahue, MD

Dr. Donahue is an Assistant Professor in the Departments of Surgery and Molecular and Medical Pharmacology. He is also an active member of the Institute of Molecular Medicine (IMED). His clinical and research interest is in pancreatic cancer, the 4th leading cause of all cancer-related deaths in the United States. The STM Program award led to a recent publication in Clinical Cancer Research, "An integrative survival-based profile of human pancreatic cancer." While much is known about the genes that cause the development about pancreatic cancer, little is known about those that cause the tumors to progress to advanced stages. This paper identifies the latter genes that are associated with patient survival. Dr. Donahue hypothesizes that it is these prognosis-significant genes that will lead to more effective therapies. Moreover, his laboratory has recently made an extremely novel and exciting finding that miR 21 expression in the tissue around a tumor are associated with poor prognosis and lymph node metastasis of the tumor cells. In the final year of his STM Program award, he will focus on the role of microRNA (miR) 21 in the stromal compartment of pancreatic cancer. Ultimately, he aims to investigate the efficacy of targeting miR21 as a dual stromal and tumor cell molecule. If the pre-clinical findings hold promise, he plans to launch a clinical trial examining an anti-miR-21 therapy in the pancreatic cancer patients who Dr. Donahue sees and treats each week.

Sanaz Memarzadeh, MD, PhD

Dr. Memarzadeh is an Assistant Professor in the Department of Obstetrics and Gynecology and is building a clinical practice in gynecologic cancers while simultaneously pursuing her basic research interests in this area. Dr. Memarzadeh's research focuses on identifying the stem cells that line the uteran cavity (endometrial stem cells). With the support of the STM Program, her lab has made great progress in identifying uterine epithelial stem cells and is currently examining properties of these cells in response to female hormones. She hopes her findings will have important implications in designing more effective therapies for both benign and cancerous conditions of the uterus. Currently she is exploring the role of these cells in formation of endometriosis and endometrial cancer. Lack of response to hormones such as progesterone may play a role in both of these diseases. Specifically resistance of the uterine epithelial stem cells to hormones such as progesterone may explain why hormonal therapy doesn't always work in the clinic for treatment of endometriosis and endometrial cancer. She is working to understand why this resistance to progesterone occurs in the stem cells, how can it be reversed and can alternative non-hormonal drugs be explored for these common female diseases. Notably, Dr. Memarzadeh has been quite successful in leveraging the support provided by the STM Program and was selected by the Sidney Kimmel Foundation as a 2012 Kimmel Scholar. Kimmel Scholars represent the nation's most promising young cancer researchers. Dr. Memarzadeh will also be presenting her research findings at the next meeting of the International Society for Stem Cell Research.

Nader Pouratian, MD, PhD

Dr. Pouratian is an Assistant Professor in the Department of Neurosurgery and the Director of the Neurosurgical Movement Disorders Program. The goal of Dr. Pouratian's research is to develop technologies to restore function and communication to patients with neurological deficits, such as patients with stroke and spinal cord injury. These advances could help patients with spinal cord injury control a prosthetic limb or a computer cursor or eventually enable a patient who cannot speak to communicate again. With his STM Program award, Dr. Pouratian is advancing several lines of research. At the forefront of his research program, he is developing novel technologies and signal analysis algorithms to enable people to communicate directly with a computer using brain signals – including spelling of word sand controlling a robotic arm to reach and grasp. Through this research, Dr. Pouration seeks to improve the accuracy and efficiency of communication using signals recorded directly from the brain surface; impressively, this research resulted in a publication in the Journal of Neural Engineering. The other major focus of his laboratory is the integration of advanced neuroimaging techniques with intraoperative brain signal recordings to better define the accuracy and reliability of neuroimaging. These techniques guide brain surgery and help to better understand how brain signals can be used to create closed-loop circuits for the surgical treatment of Parkinson's disease. These studies have resulted in two publications, one in NeuroImage and the other in the Journal of Neurosurgery, the latter having been featured on the cover of the journal. Finally, since initially receiving the STM Program award, Dr. Pouratian has synthesized his work into a competitive K23 Career Development Award from the National Institutes of Health that has recently been funded.