GRANT SNAPSHOT

2011 Pancreatic Cancer Action Network – AACR Pathway to Leadership Award

Grantee:	E. Scott Seeley, MD, PhD
Institution:	Stanford University
Research Project:	*Transport Proteins as Modifiers of Oncogenic Signaling in Pancreatic Cancer*
Award Period:	July 1, 2011 – June 30, 2016
Amount:	$600,000

Biographical Highlights

Dr. Seeley began his undergraduate work at the University of Regina in Canada, and then completed his BS degree at Eastern Connecticut State University, graduating Magna Cum Laude. During his undergraduate years, Dr. Seeley conducted research at the National Institutes of Health and Yale University. He pursued his MD and PhD degrees at Dartmouth Medical School, with a research focus in Biochemistry. Despite an extremely rigorous schedule, Dr. Seeley ambitiously continued his research progress even during the medical school training years of his program.

Currently, Dr. Seeley is a joint clinical and research fellow at Stanford University in the departments of Pathology and Molecular and Cellular Physiology. Dr. Seeley served as the chief resident of Pathology until 2010, and is currently dedicating 75 percent of his time to laboratory research. Dr. Seeley already has an impressive résumé of publications, book chapters, and invited presentations, and plans on continuing his research focus in the field of pancreatic cancer throughout his career. Dr. Seeley primarily works in the laboratory of Maxence Nachury, PhD, recipient of the 2009 Larry Kwicinski – Pancreatic Cancer Action Network – AACR Career Development Award. Dr. Nachury's funding period will expire as Dr. Seeley's begins, allowing seamless support of important projects within the laboratory.

Project Overview

All human cells grow under the control of a complex cascade of signaling proteins. In pancreatic cancer, several signaling proteins are known to be abnormally activated or repressed, leading to continuous growth of the cells in an unregulated fashion, directly causing tumor formation. Previous efforts to block protein signaling pathways have not been successful in the treatment of pancreatic cancer.

Dr. Seeley and colleagues have found that the activation of these signaling pathways is dependent on the specific cellular location of the involved proteins. The system by which the proteins get properly localized within the cell is called intraflagellar transport, or IFT. Mutations in genes involved in the IFT mechanism have been found in pancreatic cancer, specifically in cells known as cancer cell stem cells, the precursor cells for pancreatic tumors. Dr. Seeley's goals are to characterize mutations in IFT proteins, understand how intercellular transport of proteins affects signaling pathways, and determine whether this mechanism can be blocked or modified, as a potential novel treatment for pancreatic cancer.