



Research

PANCREATIC CANCER ACTION NETWORK

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GRANT SNAPSHOT

2011 Pancreatic Cancer Action Network – AACR Pathway to Leadership Grant

Grantee:	Jennifer Bailey, PhD
Institution:	Johns Hopkins University
Research Project:	<i>Stop the Start: Novel Insights into PanIN Initiation and Progression</i>
Award Period:	July 1, 2011 – June 30, 2016
Amount:	\$600,000

Biographical Highlights



Dr. Bailey earned her PhD from the Eppley Institute at University of Nebraska Medical Center, examining the role of the Hedgehog pathway in pancreatic cancer. She performed her thesis work in the laboratory of Dr. Tony Hollingsworth, a member and former chair of the Pancreatic Cancer Action Network's Scientific Advisory Board. Currently, Dr. Bailey is a postdoctoral fellow in the department of surgery at Johns Hopkins University School of Medicine. She has been invited to present her work at national and international meetings, and also has first-author publications in several prestigious biomedical journals.

The mentored phase of Dr. Bailey's proposed project will be under the guidance of Drs. Steven Leach and Anirban Maitra. Dr. Maitra is the recipient of a 2004 Pancreatic Cancer Action Network Career Development grant and the organization is proud to see him now in a position to help guide the career of another young scientist.

Dr. Bailey describes herself as a distance runner, an ironman triathlete, and, most importantly, a scientist. Through her research experience, Dr. Bailey has witnessed the painful challenges experienced by pancreatic cancer patients, and personally suffered the loss of her grandfather to this devastating disease. Dr. Bailey is therefore dedicated to spending the remainder of her career studying and combating pancreatic cancer, with ambitious goals of improving treatment options and discovering biomarkers to aid in earlier detection.

Project Overview

The majority of pancreatic tumors display mutations in a gene called Kras. Activation of the Kras protein confers a survival advantage on the cells, signaling them to continue growing, even in the presence of anti-cancer therapies. Kras mutation and subsequent activation of the protein are thought to occur very early in the development of pancreatic cancer.

Dr. Bailey proposes to study the activation of Kras during the most initial stages of pancreatic cancer, even before a tumor or precancerous abnormality (known as pancreatic intraepithelial neoplasm, or PanIN) is detectable. Dr. Bailey will create a mouse model of pancreatic cancer where a fluorescent tag is attached to the Kras gene, allowing visualization of the specific timing and cellular location of Kras activation. Analyses of the genetic and biochemical features of cells immediately following Kras activation will provide insights into the earliest stages of pancreatic cancer. Moreover, it is still unclear which specific cell type within the pancreas gives rise to pancreatic tumors, so this model will be instrumental in addressing that question. A deeper understanding of the biology of the earliest stages of pancreatic cancer can shed light on better methods to detect and treat the disease before it has progressed to a more aggressive stage.