MaineHealth
CANCER CARE NETWORK
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RESEARCH PROFILE: IDENTIFYING NEW THERAPIES FOR PATIENTS BEGINS WITH RESEARCH

Successful medical research is a complex process requiring close collaboration of basic scientists, physicians, epidemiologists and data analysts, state-of-the-art instruments, resources to protect the patients who volunteer to participate in clinical trials, and a strong commitment from the Institution. These elements are represented at Maine Medical Center (MMC) and its Research Institute (MMCRI).

Maine Medical Center
Research Institute

MMCRI works closely with Maine Medical Center physicians across the biomedical spectrum from basic disease mechanisms to drug therapy to population health and health care delivery science. The Pancreatic Cancer Working Group is one of the examples that highlight the dedication to making innovative and substantive advances in the prevention and treatment of one of the group of diseases that comprise cancer.

The group includes Peter Brooks, PhD, Principal Investigator at MMCRI; Anne Breggia, PhD, Director of the MMC BioBank; Michael Jones, MD, Pathology; Thomas Gridley, PhD, Director of the Center for Molecular Medicine at MMCRI; and Timothy Fitzgerald, MD, Surgical Oncology. The goal of this project, generously funded by the Jane Bellino Fund and Maine Medical Center institutional resources, is to use pancreatic cancer tissue samples (pancreatic ductal adenocarcinoma, or PDAC) to identify potential new therapies for this type of pancreatic cancer. Pancreatic ductal adenocarcinomas comprise the predominant type of pancreatic tumor. The group has made initial progress analyzing the structure of the protein collagen around the PDAC cells, and isolating and culturing together tumor cells and cells that surround the tumor (termed stromal cells), to understand the mechanisms of communication between the PDAC stromal and tumor cells.

FUTURE PLANS

While this project is just beginning in 2019, the Pancreatic Cancer Working Group will continue analysis of the potential roles of the protein collagen and its role in pancreatic tumor growth. The group also has additional partnership opportunities outside the working group with the University of Maine. UMaine has recently built a state-of-the-art second harmonic generation microscope that could aid in the group's research. This equipment can give a detailed molecular understanding of the system structure of the collagen fibers. This equipment will play a part in the researchers' and physicians' ultimate goal: to develop new and more effective therapies to treat pancreatic cancer.

Dr. Fitzgerald, who has worked in surgical oncology for over 20 years, appreciates being able to positively impact the care of patients across the state of Maine, through the MaineHealth Cancer Care Network and the collaboration at the Research Institute. "It is important not only to take care of patients within the system, but also to be a resource for all patients in Maine and Southern New Hampshire. I am excited to be a part of this opportunity to discover and develop new strategies to treat patients." Dr. Fitzgerald has also published research papers about the concept of enhanced recovery after surgery, which involves the integration of evidence-based medicine into clinical practice to improve patient outcomes.