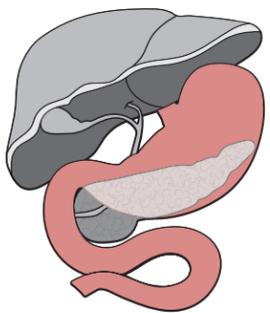




Access the  
2021 Annual Report

From left: Research Lab Supervisor Brett Knolhoff and David DeNardo, PhD.

Section of  
**Hepatobiliary-Pancreatic & GI Surgery**



HPB-GI surgeons have established themselves as a major midwestern referral center for disorders of the liver, pancreas and biliary tract. These surgeons treat patients with benign and malignant disorders of the liver, biliary tree, pancreas, stomach, small intestine and retroperitoneum. The section is a high-volume center for both open and laparoscopic surgical procedures. Faculty are at the forefront of research on new and improved therapies for HPB-GI disorders, with active research laboratories, pre-clinical studies and clinical trials. This section also offers a one-year HPB-GI surgery fellowship.

	<b>393</b> operating room cases		<b>75</b> office procedures
	<b>6,314</b> visits		<b>38</b> clinical research studies
	<b>4</b> faculty		<b>\$3,024,793</b> research funding



**Getting Ready for Surgery**

Dominic Sanford, MD.

Healthy patients tend to have fewer complications and better overall recovery after surgery. For marginal patients, preoperative interventions have been shown to reduce the risk of postoperative complications. The Surgical Prehabilitation and Readiness (SPAR) Program uses this guiding principle to prepare patients for surgery by improving their health before their procedures.

Led by Washington University HPB-GI surgeons, SPAR is a multidisciplinary prehabilitation program designed to improve preoperative health in four main areas: physical activity, pulmonary function, nutrition and mindfulness. When a patient is enrolled in the program, they receive a fitness tracker and an incentive spirometer. A SPAR coordinator demonstrates how to use these devices, while print and digital patient education resources guide patients through the program. SPAR is designed with a focus on older adults, especially those over 70, who are the main patient population in HPB-GI surgery and are often at higher risk of postoperative complications.

“For me, the number one goal is for patients to get back to the kind of life they want to live after having a major operation,” says SPAR Program leader **Dominic Sanford, MD**. “Many HPB patients are older adults who may not be in the best health. We are all on their team. We’re here to work with them, not on them. SPAR is designed to address not just a patient’s surgical problem, but their overall health. Our aim is to return patients to normal life, or an even better life, after surgery.”

The SPAR team includes surgeons, coordinators, nursing staff, dieticians and smoking cessation specialists, as well as other experts and resources from across the School of Medicine and Barnes-Jewish Hospital. In its first year, SPAR has benefitted patients in HPB-GI, colon and rectal surgery, and abdominal transplant surgery, and will continue to roll out to other surgical specialties as the program grows. The Section of HPB-GI Surgery continues to refine prehabilitation strategies through ongoing research projects. HPB surgeon **Chet Hammill, MD, MCR**, is Principal Investigator on a

“For me, the number one goal is for patients to get back to the kind of life they want to live after having a major operation.”  
-Dominic Sanford, MD

new clinical trial studying the efficacy of incentive spirometry to improve preoperative and postoperative pulmonary function. Hammill received a 2021-2022 Big Ideas Competition Grant from the Healthcare Innovation Lab to support the study. In another trial, Hammill uses fitness monitors to track patient activity prior to surgery.

“What’s become evident is that prehabilitation has the potential to improve outcomes,” says Hammill. “We want to optimize patient health before surgery, just like you would train for a marathon. I am excited to see prehabilitation empower patients to recover from surgery faster and return to even better quality of life.”

# Hepatobiliary-Pancreatic & GI Surgery Highlights



Chet Hammill, MD, MCR.

## Clinical

Washington University HPB-GI surgeons provide increased access to cutting-edge surgical care for patients by expanding minimally invasive services to multiple locations across the region. The section extends coordinated, high-quality care into local communities to improve health equity in St. Louis. Laparoscopic and robotic HPB surgeon **Chet Hammill, MD, MCR**, sees patients at the John Cochran Veterans Hospital. **Dominic Sanford, MD**, who completed a minimally invasive HPB fellowship, and Section Chief and Neidorff Family and Robert C. Packman Professor of Surgery **William Hawkins, MD**, have expanded minimally invasive HPB surgery to Missouri Baptist Medical Center, where Hawkins also serves as representative on the Missouri Baptist Tumor Board.

## Research

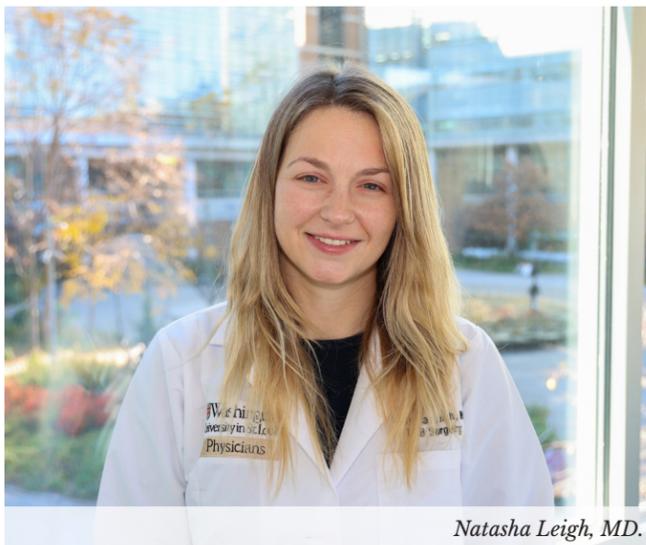
Eliminating disparities in patient outcomes is essential to the Department of Surgery's mission to improve the health equity of the community. A recent study from the Section of HPB-GI Surgery, published in the American Journal of Surgery, found that non-white patients are more likely than white patients to be readmitted for non-severe complications after pancreaticoduodenectomy. General surgery lab resident **Jorge Zárate Rodríguez, MD**, presented the research findings at the Annual Americas Hepato-Pancreato-Biliary Congress. To address this disparity in readmission rates, the section is implementing follow up protocols to identify avoidable readmissions and provide resources and support for under resourced patients.



Jorge Zárate Rodríguez, MD.

## Education

The Washington University Hepatobiliary-Pancreatic Surgery Fellowship provides advanced training in HPB-GI surgery, including laparoscopic and robotic procedures, as well as opportunities in clinical research. HPB fellow **Natasha Leigh, MD**, who completed general surgery residency at Mount Sinai Hospital, received an educational grant from the Fellowship Council, supporting her fellowship training activities and continuing the longstanding success of the program in obtaining extramural funding. "Natasha is a particularly gifted educator and technically skilled surgeon," says HPB-GI Section Chief and Fellowship Program Director **William Hawkins, MD**. "We are very fortunate to train such clinically and academically talented fellows in our program."



Natasha Leigh, MD.



## A Coordinated Attack on Pancreas Cancer

William Hawkins, MD.

Pancreas cancer is a devastating diagnosis with a five-year survival rate of less than 10 percent. Washington University HPB-GI surgeons and investigators are at the forefront of innovative research to improve the treatment and outcomes for patients with the deadliest form of pancreatic cancer, pancreatic ductal adenocarcinoma (PDAC).

"Pancreas cancer is notoriously resistant to immunotherapy, including our personalized vaccines," says HPB-GI Section Chief **William Hawkins, MD**. "This is likely due to the profoundly immune-suppressive environment in which pancreas tumors grow."

Hawkins, the Neidorff Family and Robert C. Packman Professor of Surgery, and **David DeNardo, PhD**, Professor of Medicine and Pathology/Immunology, are leading research to understand and combat the immunotherapy-resistant tumor environment in patients with PDAC.

"Our group has found a way to prime the immune system to attack the cancer even in its hostile home environment," says DeNardo. "We have done so by targeting one immune cell type, called dendritic cells. Dendritic cells act as field generals for the immune system, directing and coordinating attacks on cancer."

A new clinical trial—Restoring PDAC Responsiveness to Immunotherapy by Targeting Conventional Dendritic Cells—uses preoperative therapy in an attempt to increase the number of active dendritic cells in the tumor environment. Before pancreatic resection, patients in this trial receive injections of two hormone therapies: one to enrich the dendritic cell environment and the other to activate these cells. After surgery, the DeNardo Laboratory will study these tumors for indications of increased levels of dendritic cell activity.

"We have observed in laboratory models that this strategy results in coordinated immune attacks on cancer cells and in disease control," says Hawkins, who is Principal Investigator on the trial. "We now seek to employ this strategy in human PDAC patients by treating them with a combination of FLT3L and CD40-agonists therapeutics. These are the agents that we have shown can drive dendritic cells to coordinate immune attack on the tumor, and our belief is this will drive tumor-protective immunity during and after pancreas cancer surgery."

This trial is supported by R01 grant funding from the NIH and a Siteman Investment Program Research Development Award. The Siteman Investment Program supports pioneering cancer research to accelerate the pace of innovation in cancer research.