Dear Prospective Residents,

We are excited that you’re considering the University of Washington for your residency. This is a dynamic department that offers comprehensive training in the clinical practice of surgery, as well as all of the components of professional development that will help you be successful in the years ahead; for some of you, this will include research training and/or experience in clinical or basic science research. As the Associate Chair for Research in the Department of Surgery, I am pleased to give you a view of some of the research training opportunities that await you. Many of our applicants want research and research training to be a part of their experience, and we work hard to accommodate those who are interested in pursuing research during residency, and strive to match residents with the ideal research setting so that they can accomplish their professional goals. For some, this means taking part in a formal NIH-sponsored T32 research training program and/or pursuing a secondary degree—a Master of Science, a Master of Public Health, or a PhD. For others, this means participating in discrete, mentored research projects throughout residency. For still others this means leaving the institution for research endeavors at other centers. No matter what path you choose, we are committed to helping you develop a broad breadth of knowledge in the field, giving you the skills needed to be successful as a researcher after leaving the department, and ensuring that your research products (publications, grants, presentations) are something that you can be proud of in the years to come.

Research in the Department of Surgery spans the spectrum from basic science to health policy, and is organized into 10 major cores: Injury, Burn, and Inflammation; Cancer; Reperfusion; Transplant; Device and Pharmaceutical Clinical Trials; Vascular Biology; Gastrointestinal Physiology and Metabolism; Simulation and Education; Global Health; and Health Services. Each of these cores includes faculty with substantial experience who are eager to work with residents in both short-term research projects and longer research fellowships.

This publication highlights the work of residents currently undertaking two-year research fellowships. You can learn more about all resident research opportunities by visiting the research section of the Department of Surgery website (http://www.uwsurgery.org/researchintroduction), where you will find investigator profiles, information about our many research labs and centers, abstracts from the 2017 Schilling Research Symposium, and much more.

The Department of Surgery’s research mission is to be the premier home for surgical research. That’s for everybody–staff, faculty, fellows, and residents. We are consistently ranked as one of the top programs in the nation for NIH and extramurally funded research, and we strive to do research that is highly innovative, collaborative, and impactful. We hope you will join us in pursuing research during your time as a surgical resident, and welcome you to be part of what we believe is the premier home for surgical research.

Sincerely,

David R. Flum, MD, MPH
Associate Chief Medical Officer, UW Medicine
Professor of Surgery, Adjunct Professor Pharmacy and Health Services
Associate Chair for Research, Department of Surgery
University of Washington

RESIDENT RESEARCH IN THE DEPARTMENT OF SURGERY

DEPARTMENT OF SURGERY
CURRENT RESEARCH TRAINEES

Matthew Bartek, MD, MPH, 2016–2018

Dr. Bartek is a research fellow in the NIDDK-funded T32 fellowship in Gastrointestinal Surgical Outcomes Research at the Surgical Outcomes Research Center (SORCE). His mentors include Drs. David Flum, Professor in the Division of General Surgery, Dr. Sherene Shahbou, Assistant Professor of Surgery in the Division of Vascular Surgery, and Danielle Lavalle, Research Associate Professor in the Division of General Surgery. Under their guidance, he is conducting research on vascular surgery outcomes with a specific focus on surgical decision-making—both on the part of the patient and the physician—and how data can enhance the decision-making process. He plans to pursue an academic career in vascular surgery, and to continue to develop his research interests and skills to that end.

Harry Flaster, MD, 2016–2018

Dr. Flaster is in his second year of academic and clinical work in Israel. His research focus is on patient outcomes in cardiothoracic surgery, trauma surgery, and emergency medicine, with a specific focus on building databases and electronic medical records systems to track outcomes and ultimately elucidate ways to improve patient care. In addition, he is passionate about using health care as a means to promote peace and dialogue between the Israeli and Palestinian people. Toward this end, he is working with Dr. Grant O’Keefe and others to find a way for Palestinian surgeons to do clinical rotations in trauma hospitals in Israel and the United States, as well as for Israeli surgeons to rotate through their Palestinian counterpart hospitals in the Palestinian territories, with the ultimate goal of creating an integrated trauma fellowship that would involve all three nations.

John Monu, MD, 2017–2019

Dr. Monu is a trainee in the NIDDK-funded T32 fellowship in the Gastrointestinal Surgical Outcomes Research at the Surgical Outcomes Research Center (SORCE) under the tutelage of Dr. David Flum, Professor in the Division of General Surgery. His research will span a variety of clinical areas, however, he will primarily be focusing on diseases in the field of thoracic surgery. With guidance from Dr. Farhood Farjah, Associate Professor in the Division of Cardiothoracic Surgery, Dr. Monu plans to move forward with research on lung cancer and the implementation of screening for this disease. He will concurrently be pursuing a Masters of Public Health at the University of Washington to supplement his knowledge on research methodology. He ultimately intends to complete a fellowship in cardiothoracic surgery.

Veeshal Patel, MD, MBA, 2017–2019

Dr. Patel will spend two years as a research fellow at the University of California, San Francisco, in the Department of Surgery and Surgical Innovations Program under the mentorship of Dr. Michael Harrison, Professor Emeritus of Surgery, Dr. Hanmin Lee, Professor and Chief of Pediatric Surgery, and Dr. Shuvo Roy, Professor of Bioengineering. His research is funded by a National Institute of Biomedical Imaging and Bioengineering (NIBIB) R25 grant and an NIH SBIR grant. As a Surgical Innovations Fellow, Dr. Patel will focus on medical device development and be involved in a number of bioengineering and translational medicine projects including the Magnetic Duodenal Ileal Bypass (DIPASS) clinical trial. The goal is to demonstrate that a partial proximal

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small bowel diversion will have similar metabolic benefits as bariatric surgery on Type 2 Diabetes and metabolic syndrome, while creating a novel, less invasive surgical intervention. He is additionally working on a number of ongoing projects further developing technology for a magnetic bowel anastomosis device in addition to a magnetic implanted device for the treatment of obstructive sleep apnea, novel approaches to seal the amniotic membrane, and less invasive therapies for the treatment of pectus excavatum. Dr. Patel plans pursue a career in academic trauma surgery and critical care at safety–net hospitals, while continuing ongoing work in medical device development and translational research.

**Yongwoo Seo, MD, 2016–2018**

Dr. Seo is working as a research fellow under the collaborative guidance of Dr. Venu Pillarisetty, Associate Professor in the Division of General Surgery, and Dr. Seth Pollack, Assistant Professor in the Division of Oncology, and he is funded by the Sarcoma Research Program at the Fred Hutchinson Cancer Research Center. In his role he will help complete and analyze the data for a phase I clinical trial in soft tissue sarcomas utilizing an intra–tumoral injection of a Toll–like receptor 4 (TLR4) agonist. In addition, he will lead efforts to develop an in vitro tumor slice culture system, previously demonstrated in multiple solid tumors such as colon and pancreatic cancer, in leiomyosarcoma and liposarcoma. He hopes to optimize the culture conditions for these slice cultures in sarcoma to allow for in vitro examination of the live tumor microenvironment. The goal is to demonstrate the maintenance of this architecture over time in culture and to then use multiple imaging modalities to test the local immune response to promising therapeutic agents (such as immune checkpoint inhibitors and TLR agonists). At the same time, he will continue work previously done by Dr. Pillarisetty’s group in human pancreatic ductal adenocarcinoma (PDA) to analyze the specific immune response using T cell receptor (TCR) deep sequencing, in collaboration with Adaptive Biotechnologies. By using these high throughput computational methods and correlating the TCR data with whole genome expression from the same tumors, he hopes to gain a better understanding of what activates or perturbs the immune response to PDA and to develop further hypotheses for therapeutic targets.

**Kate Stadeli, MD, 2017–2019**

Dr. Stadeli is a trainee in the NIDDK–funded T32 fellowship in Gastrointestinal Surgical Outcomes Research at the Surgical Outcomes Research Center (SORCE) under the direction of Dr. David Flum, Professor in the Division of General Surgery. Her research will focus on health disparities and patient reported outcomes in variety of surgical populations and settings, including patients with diverticulitis, appendicitis, and traumatic injuries. She will also examine current opioid use and abuse patterns in trauma patients with the aim to identify patients at highest risk for abuse and areas for intervention. During her two year fellowship, Dr. Stadeli will also be enrolled at the University of Washington to complete a Master’s in Public Health with a focus in Health Services. She plans to eventually pursue a fellowship in trauma, critical care, and acute care surgery.

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Kevin Sullivan, MD, 2017–2019

Dr. Sullivan is a Cancer Research Institute/Fibrolamellar Cancer Foundation Fellow working with Drs. Venu Pillarisetty, Associate Professor in the Division of General Surgery, Raymond Yeung, Professor in the Division of General Surgery and Kimberly Riehle, Associate Professor in the Division of Pediatric General Surgery. Fibrolamellar hepatocellular carcinoma (FL−HCC) is a form of liver cancer that is rare but occurs in otherwise healthy adolescents and young adults without underlying liver disease or cirrhosis. Surgical resection is the mainstay of treatment, and no systemic therapy or chemotherapeutic agents have proven effective; therefore, patients with unresectable or metastatic disease have a poor prognosis. Recently, a deletion on chromosome 19 that results in a novel fusion protein called DNAJB1−PRKACA was discovered and has been shown to be unique to FL−HCC. Dr. Sullivan and team will be working toward new treatments for FL−HCC by two mechanisms. First, to determine the potential for immunotherapy in FL−HCC, they will investigate the immune microenvironment of tumors using multiplex immunohistochemistry, which allows for analysis of multiple types of immune cells and their relationship with each other and tumor cells. Given that the fusion protein DNAJB1−PRKACA is located in the cytoplasm of tumor cells, it may be a target for T cells, and they plan to characterize the intra−tumoral T cells using T cell receptor deep sequencing along with isolation and culture of tumor infiltrating lymphocytes (TIL). In addition, the group plans to continue to elucidate the mechanism by which DNAJB1−PRKACA promotes tumorigenesis in the search for additional therapeutic targets.

Francys Verdial, MD, 2016–2018

Dr. Verdial is a trainee in the NIDDK−funded T32 fellowship in Gastrointestinal Surgical Outcomes Research under the direction of Dr. David Flum, Professor in the Division of General Surgery. Her research will primarily focus on addressing appropriateness of surgical care and resource utilization. Dr. Verdial’s research spans multiple clinical areas, including lung cancer, breast cancer, small bowel obstruction, and bariatric surgery. In addition, Dr. Verdial is enrolled in the University of Washington Master of Public Health program to help increase her knowledge of research methods and data analysis. She eventually plans to pursue a fellowship in surgical oncology.

Jay Zhu, MD, 2016–2018

Dr. Zhu is a research fellow in the NHLBI−funded T32 Cardiovascular Research Training Program under the mentorship of Dr. David Dichek, Professor of Medicine at the University of Washington. He is investigating biochemical pathways involved in the development of aortic aneurysms in genetically heritable conditions such as Loeys−Dietz Syndrome. Specifically, his work focuses on evaluating vasomotor function in an animal model with smooth muscle specific TGF−β deletion. Aside from his basic science research, Dr. Zhu is also working with co−resident, Dr. Kate Stadeli, to standardize clinical handoffs as part of a resident−led multidisciplinary quality improvement project.

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