

# RESIDENT RESEARCH IN THE DEPARTMENT OF SURGERY

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 many of you that involves research. The Department of Surgery's research mission is to be the premier home for surgical research and we are proud to be consistently ranked as one of the top programs in the nation for NIH and extramurally funded research. We strive to do research that is innovative, collaborative, and impactful and we look forward to you being a part of that.

As the Associate Chair for Research in the Department of Surgery, I am pleased that we have so many research training and practice opportunities for you to participate in. The Department has two NIH-sponsored T32 research training programs; one in basic science (led by Grant O'Keefe, MD) and one in clinical and health services led by faculty at the Surgical Outcomes Research Center. Beyond these training programs, the Department includes a group of investigators eager to work with you in their labs and many other faculty around the School of Medicine who enjoy collaborating with surgical research fellows. No matter what path you choose for research, we are committed to helping you develop as a researcher and supporting you in your career development as surgeon-scientists.

Research in the Department of Surgery is organized into 10 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 you in 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>). There you will find investigator profiles, information about our many research labs and centers, abstracts from the 2018 Schilling Research Symposium, and much more.

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.

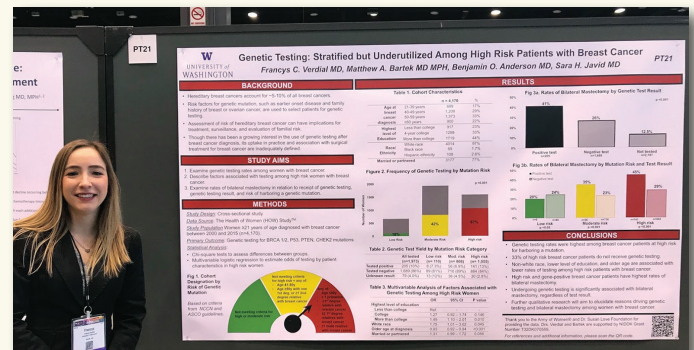
Sincerely,



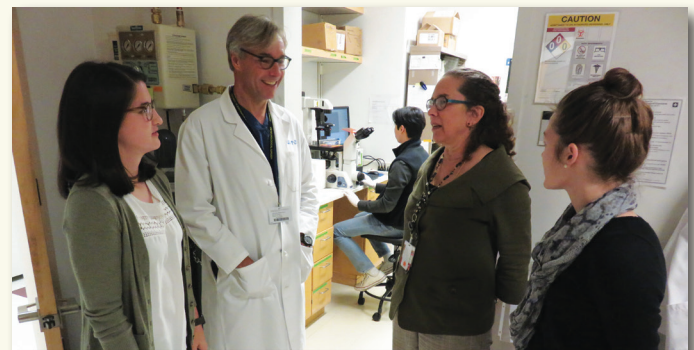
David R. Flum, MD, MPH, FACS  
Associate Chief Medical Officer, UW Medicine  
Professor of Surgery, Adjunct Professor Pharmacy and Health Services  
Associate Chair for Research, Department of Surgery  
University of Washington



**David R. Flum, MD, MPH**  
Associate Chair  
for Research

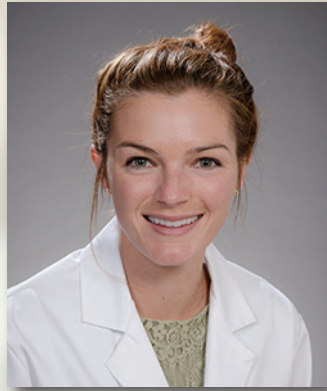


**Dr. Francys Verdial, 2016–18 Research Resident at the Society of Surgical Oncology Meeting**  
(Photo credit: Dr. Francys Verdial)



**Drs. Dara Horn (2018–20 Research Resident), Grant O'Keefe, Nicole Gibran and Sara Daniel (2018–20 Research Resident)**  
(Photo credit: Michael Hilleary, Department of Surgery, Public Information Specialist)

# RESIDENT RESEARCH



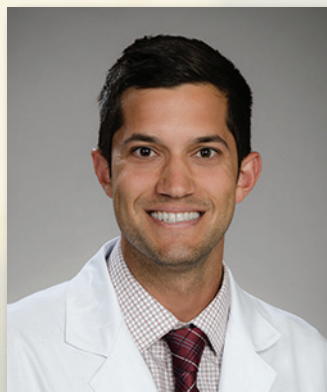
## **Sara Daniel, MD, 2018–2020**

Dr. Daniel is working with the newly created University of Washington Tumor Immunology and Microenvironment (UW TIME) lab group, which comprises multiple faculty from the Departments of Surgery, Medicine, and Pathology. Building off previous work by lab members on the tumor slice culture model, Dr. Daniel's primary focus is evaluating the effects of hypoxia on the cancer microenvironment, particularly the immunosuppressive effects exhibited by the stroma and infiltrating lymphocyte phenotypes. While immunotherapy has previously had limited effects on pancreatic adenocarcinoma and other solid tumors, a better understanding of the interactions between tumors as well as the spatial relationships and metabolism of cells in the tumor environment will allow combination immunotherapy to activate intratumoral T cells. She is also working on a clinical trial with her primary mentor, Dr. Venu Pillarisetty, evaluating the effects of a somatostatin analogue on leak rates after pancreatic surgery.



## **Dara Horn, MD, 2018–2020**

Dr. Horn is a research fellow in the T32 Postdoctoral Research Fellowship in Trauma and Burns under the mentorship of Dr. Grant O'Keefe, Professor in the Division of Trauma, Burn, and Critical Care Surgery. She will be focused on translational research, applying advances in nutrition and metabolomics to improve the outcomes and care of critically ill and injured patients, and ultimately provide more personalized therapy options. During this time, Dr. Horn will also pursue a Master of Science degree in Epidemiology through the UW School of Public Health, with a focus on clinical research methods. After residency, she plans to pursue a fellowship in trauma and critical care.



## **Kevin Labadie, MD, 2018–2020**

Dr. Labadie is working as a research fellow under the mentorship of Dr. James Park developing an antibody-directed theranostic platform for the treatment of Hepatocellular Carcinoma (HCC). The antibody targets glypican-3 (GPC3), a tumor associated antigen serving as a unique molecular target in HCC. Their team has successfully conjugated different radiopharmaceuticals including Zirconium-89 for diagnostic immuno-positron emission tomographic imaging and Yttrium-90 for therapeutic application. In an orthotopic xenograft tumor mouse model, Dr. Labadie will further establish the efficacy of this theranostic antibody platform as a novel radiotherapeutic treatment approach to HCC. Dr. Labadie is also conducting research in the UW Tumor Immune Microenvironment (UW TIME) lab under the collaborative guidance of Drs. Venu Pillarisetty and Teresa

Kim. Utilizing their tissue slice culture model, he plans to study the local immune microenvironment in pancreatic adenocarcinoma and soft tissue sarcoma with an emphasis on better understanding the role of tumor-associated macrophages (TAM) and their relationship to T-cells. He hopes to use the tissue slice culture model to study TAM-targeted therapeutics to augment and improve the efficacy of immunotherapy for pancreas and soft tissue cancers.

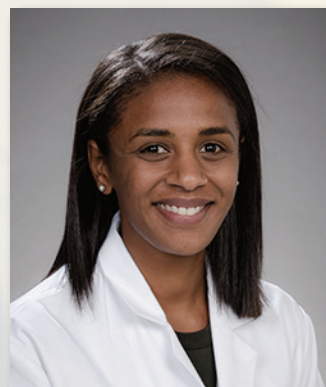
### **John Monu, MD, 2017–2019**

Dr. Monu is a trainee in the NIDDK-funded T32 fellowship in 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.



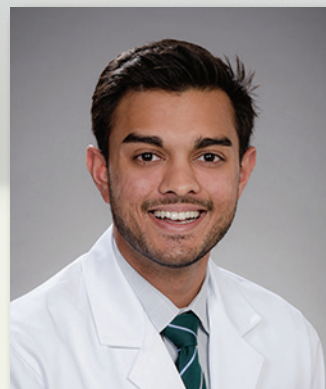
### **Kavita Pandit, MD, 2018–2020**

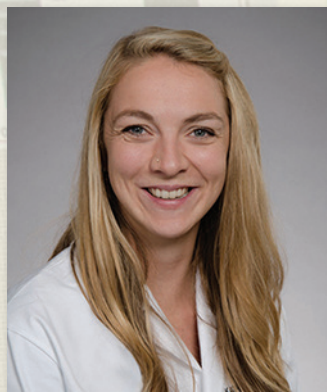
Dr. Pandit is a trainee in the NIDDK-funded T32 fellowship in Gastrointestinal Surgical Outcomes Research at the Surgical Outcomes Research Center (SORCE) under the direction of Dr. David Flum, Professor in the Division of General Surgery. Her research interests span multiple clinical areas, though she will focus on health disparities in surgical care across a variety of settings and populations. During this two year fellowship, Dr. Pandit will also be enrolled in the Master's in Public Health program at the University of Washington with a focus on health services. This advanced coursework will help her develop knowledge of research methodology and data analysis. She plans to eventually pursue a fellowship and career in colorectal surgery.



### **Veeshal Patel, MD, MBA, 2017–2019**

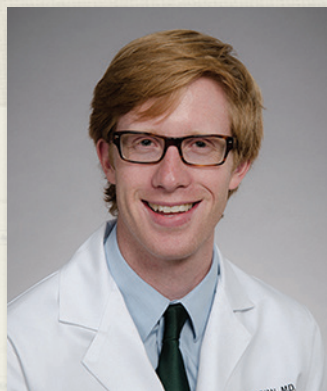
Dr. Patel will spend two years as a research fellow at the University of California, San Francisco, in the Department of Surgery and Surgical Innovations Program under the mentorship of Dr. Michael Harrison, Professor Emeritus of Surgery, Dr. Hanmin Lee, Professor and Chief of Pediatric Surgery, and 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 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.





## **Kate Stadel, MD, 2017–2019**

Dr. Stadel 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. Stadel 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.



## **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.

# FROM RESEARCH RESIDENT TO ACADEMIC SURGEON

**Giana H. Davidson, MD, MPH**

**Associate Professor, Division of General Surgery**

**Medical Director of Post-Acute Care, UW Medicine**

**Associate Medical Director of Clinical Resource Management, UW Medical Center**



“During my clinical training in General Surgery, I completed a two year research fellowship to gain expertise in outcomes and health services research. This program was under the mentorship of Dr. Frederick Rivara and Drs. Saman Arbabi, Ronald Maier and Eileen Bulger at the Harborview Injury Prevention and Research Center (HIPRC) as a trainee in the Pediatric Injury Research T32 program. During these two years, I completed my Masters of Public Health in Epidemiology and gained invaluable experience in grant writing and outcomes research, allowing me to publish and present our work at various surgical and public health conferences. This was the foundation for my current research focused on improving the care of our surgical and trauma patients in the post-acute care period. In addition to my academic pursuits, my husband and I expanded our family to include two children! My research fellowship years were a wonderfully busy time in my life and the mentoring, training in epidemiology and statistics, and exceptional departmental support were instrumental in establishing my career in academic surgery.”

## ACCOMPLISHMENTS RESULTING FROM FELLOWSHIP

### Significant Publications

1. Davidson GH, Hamlat CA, Rivara FP, Koepsell TD, Jurkovich GJ, Arbabi, S. Long-term Survival of Adult Trauma Patients. *JAMA*. 2011;305(10):1001-1007.
2. Davidson GH, Rivara FP, Arbabi S. Trauma and Long-term Mortality-Reply. *JAMA*. 2011;305(23):2413-2414.
3. Davidson GH, Maier RV, Arbabi S, Goldin AB, Rivara FP. Impact of Operative Delay on Pediatric Trauma Outcomes. *J Trauma Acute Care Surg*. 2012 Jul;73(1):162-7.
4. Davidson GH, Rivara FP, Mack CD, Kaufman R, Jurkovich GJ, Bulger ME. Validation of Pre-Hospital Trauma Triage Criteria for Motor Vehicle Collisions. *J Trauma Acute Care Surg*. 2014 March; 76(3):755-761.

### Awards and Honors

- First place, Region 10 ACS COT Resident Paper Competition & First place, Washington State COT clinical paper presentation. American College of Surgeons (ACS), Committee on Trauma (COT). Tacoma, WA. November 2010.
- Fourth place, UW Department of Surgery Schilling Research Symposium. Seattle, WA, February 2011.

### Presentations

- UW Department of Epidemiology 29th annual SER Meeting. Injury as a Risk Factor for Fatal Unintentional Overdose following Hospitalization: A Population Based Analysis. Seattle, WA. June 2010.
- Washington State Joint Conference on Health. Injury as a Risk Factor for Fatal Unintentional Overdose After Hospitalization. Yakima, WA. October 2010.
- Washington State Joint Conference on Health. Public Opinion About Gun Regulation in Washington State. Yakima, WA. October 2010.
- Regional American College of Surgeons Committee on Trauma (COT) Resident Paper Competition. Long Term Survival of Adult Trauma Patients. Tacoma, WA. November 2010.
- Washington State Department of Health EMS and Trauma Steering Committee. Outcome of WA State Adult Trauma Patients. January 2011.
- UW Department of Surgery Schilling Research Symposium. Long Term Survival of Adult Trauma Patients. Seattle, WA. February 2011.
- American College of Surgeons, Washington-Oregon Chapter. Long Term Survival of Adult Trauma Patients. Lake Chelan, WA. June 2011.

# FROM RESEARCH RESIDENT TO ACADEMIC SURGEON



## **Farhood Farjah, MD, MPH**

**Associate Professor, Division of Cardiothoracic Surgery**

**Associate Program Director, Cardiothoracic Surgery Residency Program**

**Associate Medical Director, Surgical Outcomes Research Center**

“I interrupted my clinical training in general surgery to pursue a post-doctoral fellowship in outcomes and health services research under the mentorship of Dr. David Flum through the Surgical Outcomes Research Center (SORCE). During that time I obtained a Masters of Public Health in Epidemiology and completed post-doctoral level coursework in biostatistics and health services research. In addition, I gained practical experience studying the delivery of care and outcomes of patients with lung cancer using the Surveillance, Epidemiology, and End-Results (SEER)-Medicare database. Moreover, I cultivated a vast network of mentors and collaborators throughout the Department and Institution. This unparalleled experience was critical in providing me the training, experience, and networks to legitimately pursue a career in academic surgery.”

## **ACCOMPLISHMENTS RESULTING FROM FELLOWSHIP**

### **Significant Publications**

1. **Farjah F**, Wood DE, Yanez D 3rd, Symons RG, Krishnadasan B, Flum DR. Temporal trends in the management of potentially resectable lung cancer. *Ann Thorac Surg.* Jun 2008;85(6):1850-1855; discussion 1856.
2. **Farjah F**, Wood DE, Yanez ND 3rd, Vaughan TL, Symons RG, Krishnadasan B, Flum DR. Racial disparities among patients with lung cancer who were recommended operative therapy. *Arch Surg.* Jan 2009;144(1):14-18.
3. **Farjah F**, Flum DR, Ramsey SD, Heagerty PJ, Symons RG, Wood DE. Multi-modality mediastinal staging for lung cancer among Medicare beneficiaries. *J Thorac Oncol.* Mar 2009;4(3):355-363.
4. **Farjah F**, Flum DR, Varghese TK Jr, Symons RG, Wood DE. Surgeon specialty and long-term survival after pulmonary resection for lung cancer. *Ann Thorac Surg.* Apr 2009;87(4):995-1004; discussion 1005-1006.
5. **Farjah F**, Wood DE, Mulligan MS, Krishnadasan B, Heagerty PJ, Symons RG, Flum DR. Safety and efficacy of video-assisted versus conventional lung resection for lung cancer. *J Thorac Cardiovasc Surg.* Jun 2009;137(6):1415-1421.
6. **Farjah F**, Wood DE, Varghese TK Jr, Massarweh NN, Symons RG, Flum DR. Health care utilization among surgically treated Medicare beneficiaries with lung cancer. *Ann Thorac Surg.* Dec 2009;88(6):1749-1756.

### **Awards and Honors**

- Ruth L. Kirschstein National Research Service Award (NIH/NCI), 2007
- Society of Thoracic Surgeons J. Maxwell Chamberlain Memorial Paper, 2009

### **Presentations**

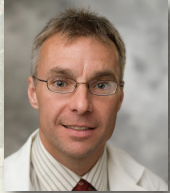
- **Farjah F**, Wood DE, Yanez D 3rd, Symons RG, Krishnadasan B, Flum DR. Temporal trends in the management of potentially resectable lung cancer. Society of Thoracic Surgeons 44th Annual Meeting. Fort Lauderdale, Florida. January 2008.
- **Farjah F**, Flum DR, Varghese TK Jr, Symons RG, Wood DE. J. Maxwell Chamberlain Memorial Paper for General Thoracic: Surgeon specialty and long-term survival following pulmonary resection for lung cancer. Society of Thoracic Surgeons 45th Annual Meeting. San Francisco, California. January 2009.

**“ I cultivated a vast network of mentors and collaborators throughout the department and institution. This unparalleled experience was critical in providing me the training, experience, and networks to legitimately pursue a career in academic surgery. ”**

**—Farhood Farjah, MD, MPH**

# FUNDED RESEARCH TRAINING PROGRAMS

The University of Washington is a target-rich environment for resident research, with many clinical investigators across departments and schools to serve as mentors and resources for funding. Some examples of popular, ongoing NIH-funded training programs are below, but there are numerous other opportunities for funding through grants and other mechanisms. We will work with you to find the right fit to accomplish your professional goals.



**Trauma, Injury and Inflammation  
Research T32 Program**  
PI: Grant O'Keefe, MD, MPH  
Department of Surgery



**Gastrointestinal Surgery  
Outcomes Research T32 Program**  
PI: David R. Flum, MD, MPH  
Department of Surgery



**Cardiovascular Research T32 Program**  
PI: David A. Dichek, MD  
Department of Medicine, Cardiology



**Northern/Pacific Fogarty Global  
Health Fellowship**  
PI: Joseph Zunt, MD, MPH  
Department of Global Health



**Gastroenterology Research T32 Program**  
PI: John M. Inadomi, MD  
Department of Medicine, Gastroenterology



**Pediatric Injury Research T32 Program**  
PI: Frederick P. Rivara, MD, MPH  
Department of Pediatrics



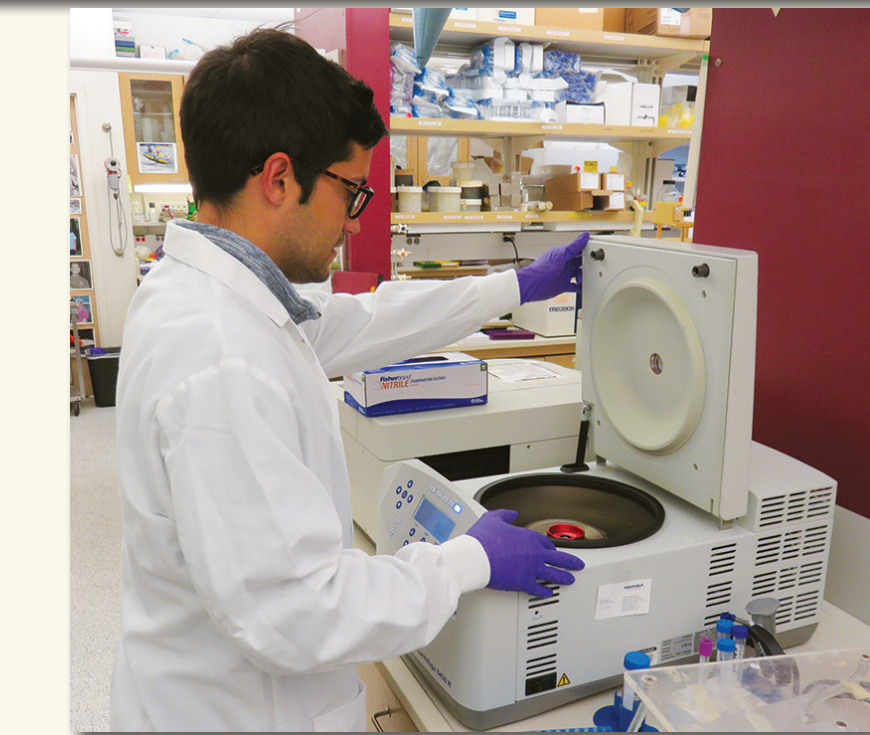
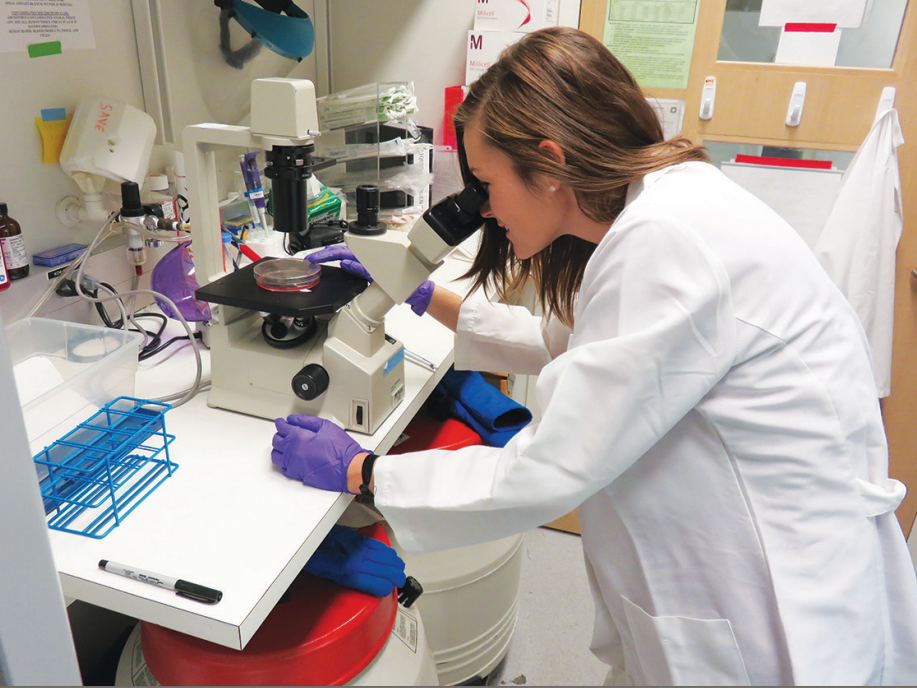
**Palliative Care Research  
T32 Fellowship Program**  
PI: J. Randall Curtis, MD, MPH  
Department of Medicine, Pulmonary and  
Critical Care Division

## NIH Loan Repayment Program (LRP)

In order to encourage health professionals to pursue careers in biomedical, behavioral, social, and clinical research, the NIH Loan Repayment Program may repay up to \$35,000 of qualified student loan debt per year for individuals committing at least two years to conducting qualified research funded by a domestic nonprofit organization or U.S. federal, state, or local government entity. This loan repayment benefit is in addition to institutional salary received during your time in research. Learn more about this program at <https://www.lrp.nih.gov/>.

## LEARN MORE ABOUT DEPARTMENT OF SURGERY RESEARCH

This brochure covers research conducted by the current cohort of residents who have undertaken a structured two-year research fellowship, but there are numerous other opportunities to pursue shorter-term, discrete projects throughout your residency. To learn more about these opportunities, please be sure to visit the Research section of the DOS website, where you will find investigator profiles, information about our many research labs and centers, resident and fellow abstracts from the 2018 DOS Research Symposium, and much more: <https://bit.ly/2Dv4ISo>



# UW Medicine

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## DEPARTMENT OF SURGERY

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### Department of Surgery Resident Research Leadership

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The Henry N. Harkins Professor and Chair

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UW Medicine Professor of Surgery,  
Adjunct Professor Pharmacy and Health Services  
Associate Chair for Research, Department of Surgery

Karen D. Horvath, MD, FACS  
Director of Residency Training Program  
Associate Chair for Education  
Professor, General Surgery

Susan Marx, MBA  
Department Director,  
Administration & Finance

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