

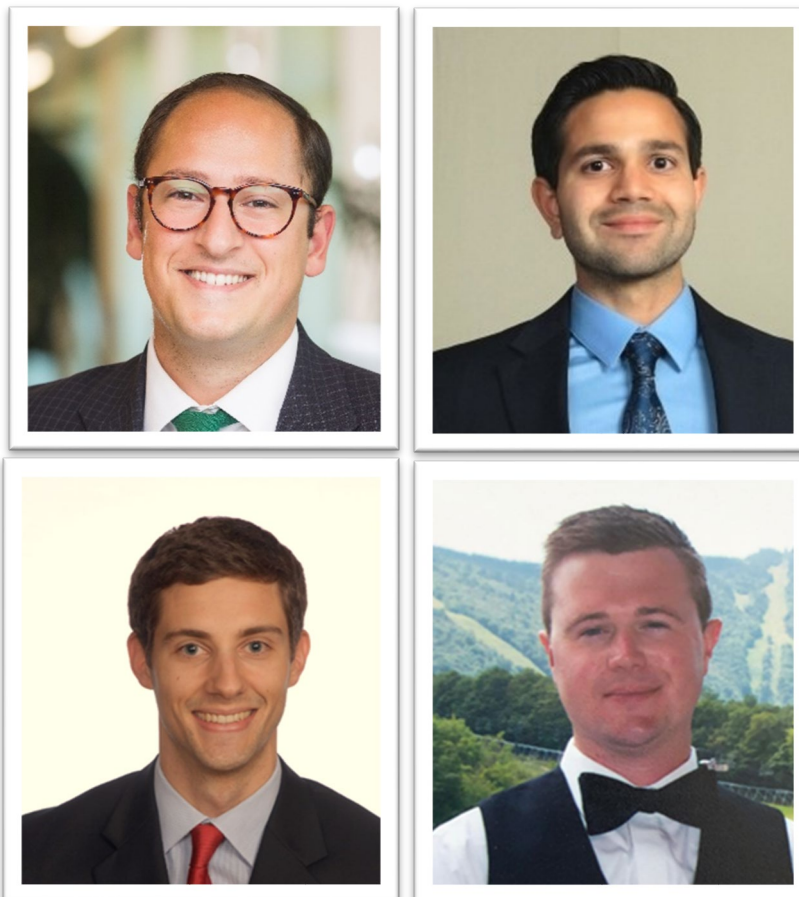
Surgical Trainee Research Initiative and Evaluation (STRIVE) Annual Report 2020-2021

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Department of Surgery

Dartmouth-Hitchcock Medical Center

July 2020 – June 2021



Executive Summary

The Department of Surgery *Surgical Trainee Research Initiative and Evaluation (STRIVE) Program* provides support for general and vascular surgery residents during their academic development time, with the goal of ensuring residents make meaningful strides in professional development.

During AY 2021, four surgical residents dedicated their time to professional development and scholarly pursuits. Mark Eid (general surgery), completed the second year of the VA Quality Scholars program; Kunal Mehta (vascular surgery) worked with Dr. Goodney as an American Heart Association (AHA) Strategically Funded Vascular Disease Research Network (SFRN) Fellow; Casey Lamb (general surgery), completed the Surgical Education Research Fellowship (SERF); and Robert Shaw (general surgery), also served as a SERF fellow.

Each of the residents identified their own areas of interest and worked with faculty mentors from the Department of Surgery and other collaborators within and outside the Dartmouth community to design and conduct research and quality improvement projects (see *Faculty Mentorship and Collaboration*). All STRIVE participants conducted research, attended weekly academic development conferences, and engaged in supplemental training and educational courses (see *Educational Programs and Other Professional Development Activities*). In addition, Dr. Eid completed the Masters of Science Program at The Dartmouth Institute for Health Policy and Clinical Practice.

Table 1 below summarizes the key achievements resulting from the residents' research activities over the course of the year.

Table 1: Publications and Presentations: July 2020 – June 2021

Resident	Presentations	Total publications*	First author publications*
Mark Eid	2	16	6
Robert Shaw	6	11	8
Kunal Mehta	3	7	4
Casey Lamb	5	5	4
Mean	4	9.75	5.5
*Includes manuscripts under review as of Oct 1, 2021			

Introduction

The Department of Surgery *Surgical Trainee Research Initiative and Evaluation (STRIVE) Program* provides support for general and vascular surgery residents during their academic development time, with the goal of ensuring residents make meaningful strides in professional development. Residents are largely self-directed, but work closely with faculty mentors on research and other scholarly projects of their choosing in addition to having regular touch points with the STRIVE team. At the conclusion of the year, residents are able to point to conference presentations, peer-reviewed journal articles, educational certifications, and an expanded professional network as evidence of professional growth.

This report summarizes the results of the achievements of the general and vascular surgery residents engaged in full-time academic development during the 2021 Academic Year (AY 2021, July 2020- June 2021). This includes residents sponsored by the Department of Surgery (DoS), the VA Quality Scholars Program (VAQS), and individual research awards held by DoS faculty. Residents engaged in externally sponsored research training programs with supervision outside DHMC are not included.

External Programs in Research: VA Quality Scholars Program & AHA SFRN Fellowship

In the 2020-2021 year, Dr. Mark Eid completed the second year of a two-year fellowship through the VA Quality Scholars Program (VAQS). This external fellowship allows residents to complete the MS degree program at The Dartmouth Institute for Health Policy and Clinical Practice as part of their research training. Led by Dr. Louise Davies, Brant Oliver, Brenda Sirovich, and Philip Goodney, the VAQS program at the White River Junction VA Medical Center has a longstanding history of success in mentorship and career development. It focuses on methods in outcomes research, quality improvement, and medical communication. A full report can be obtained at <http://www.vaoutcomes.org>.

Dr. Kunal Mehta served as the research fellow for the Brigham-Dartmouth AHA SFRN Center. The AHA SHRN fellowship is funded through a four-year grant awarded to Dr. Goodney in April 2018 to study the use and effect of integrated management strategies for patients with peripheral arterial disease. The fellowship components include monthly professional development seminars offered by AHA, quarterly SFRN center meetings with the Brigham-Dartmouth team, and an annual network meeting with SFRN teams from across the country, all of which emphasize professional networking and collaboration.

Resident Reflections



Mark Eid

Mark Eid is a PGY 3 general surgery resident who completed a two-year research fellowship as a VA Quality Scholar, including the MS degree program at The Dartmouth Institute for Health Policy and Clinical Practice.

His interests include:

- Peripheral arterial disease
- Vascular surgery outcomes
- Quality improvement related to opiate use

Overall, in the second year of his research fellowship, he authored 6 first author publications and gave 2 presentations which earned a first place prize and a second place prize. Dr. Eid plans to pursue a vascular surgery fellowship following completion of his residency and later, a career in academic surgery.

Dr. Mark Eid

My professional development goals were to learn robust statistical methods, how to critically review and consume literature, and to implement quality improvement and implementation science methods.

My coursework at The Dartmouth Institute provided me the skills and knowledge needed to conduct thorough research. I excelled in biostatistics, quality improvement, and survey methodology, which translated well to my research projects.

In my second year of research, three of my major projects focused on peripheral arterial disease (PAD). First, I studied the epidemiology and regional variation in care and outcomes among some of the highest risk populations with PAD. Along with studying this population ecologically, I also applied my quality improvement skills to help improve care for PAD patients at our institution, particularly regarding standardization of opiate use. Lastly, I used Medicare claims to study the association of Medicaid expansion on amputation rates among patients with diabetes and PAD. We found that rates of amputation decreased in Medicaid expansion states compared to non-expansion states but this was independent and not associated with increased utilization of preventative care strategies (i.e. HbA1c testing, diabetic foot exams and vascular imaging studies).

Another major focus was the PROVE-AAA Trial. For this project, I functioned as a de-facto analyst and project manager for a multi-site randomized trial of a decision aid for Veterans faced with abdominal aortic aneurysms, an invaluable experience afforded to me by Dr. Phil Goodney that allowed me to apply my knowledge of biostatistics and survey analytics. We studied three primary aims: 1) patient preference associated with open versus endovascular repair, 2)

the effect of a decision aid on alignment of patient preference and repair type, and 3) the barriers and facilitators to a cluster randomized trial. We found that Veterans who valued a shorter hospital stay and shorter recovery tended to prefer endovascular repair, while those concerned about long-term complications preferred open repair. Veterans typically value the advice of their surgeon over their own beliefs and preference. Our work found that the decision aid increased the likelihood of Veterans' receiving the repair they initially preferred. We also conducted thematic analyses and examined the association between driving distance and repair type.

All in all, my professional development was time well spent; I grew my academic acumen and laid the foundation for a fruitful career in academic surgery. Publications and presentations resulting from my second year of research are shown below. ¹

Presentations

1. **Eid MA**, Mehta K, Barnes JA, Wanken Z, Columbo JA, Stone DH, Goodney PP, Smith MM. Global Burden of Disease of Peripheral Arterial Disease. 48th Annual Meeting of the New England Society for Vascular Surgery. Standard Presentation. October 15-17, 2021, Cape Neddick, ME. **First place.**
1. **Eid MA**, Barnes JA, Mehta K, et al. Effect of a decision aid on alignment of patient preference and repair type for abdominal aortic aneurysm. The Ninth Annual STARS; 2021 May 14th; Lebanon, NH. **Second place.**

Publications

1. **Eid MA**, Gray P, Goldwag J, Oliver B, Ivatury SJ. Decreasing Ileostomy Readmissions in a Rural Healthcare Setting: A Quality Improvement Initiative. *Disease of the Colon and Rectum*. 2020 Jun 1; 63(6),E126-E126.
2. **Eid MA**, Mehta KS, Goodney PP. Epidemiology of Peripheral Artery Disease. *Seminars in Vascular Surgery*. 2021 March;34(1):38-46. doi.org/10.1053/j.semvascsurg.2021.02.005. PMID 33757634.
3. **Eid MA**, Barnes JA, Wanken ZJ, Arya S, Powell RJ, Stone DH, Suckow BD, Gladders B, Creager MA, Goodney PP. Factors Associated with Preference of Choice of Aortic Anueyrsm Repair. *Journal of the American College of Surgeons*. 2020;231(4)S1:S344. doi:10.1016/j.jamcollsurg.2020.07.697.
4. **Eid MA**, Goldwag J, Gray P, Ivatury SJ. Differences in Procedural Care of Hemorrhoid Management in Medicare Patients; Unwarranted Variation in Clinical Practice for a Medical-First Problem. *Journal of the American College of Surgeons* 2020 Oct;231(4)e96.
5. Gray PJ, Bastien AJ, **Eid MA**, Goldwag JL, Wilson LR, Wilson MZ, Ivatury S. Does Long-Term Bowel Function Change After Colectomy for Colon Malignancy? *Diseases of the Colon and Rectum*. 2020 Jun 1;63 (6), E440-E440.
6. Barnes JA, **Eid MA**, Wanken ZJ, Gladders B, Austin AM, Powell RJ, Stone DH, Feinberg MW,

¹ See prior year annual report for presentations and publications resulting from the first year of Dr. Eid's VAQS fellowship.

- Bonaca MP, Creager MA, Goodney PP. Long-term Survival After Amputation Among Medicare Patients With Concomitant Diabetes and Peripheral Artery Disease. *Arteriosclerosis, Thrombosis, and Vascular Biology*. 2020;40:1808–1817. <https://doi.org/10.1161/ATVBAHA.120.314595>
7. Gray PJ, Goldwag JL, Eid MA, Sacks OA, Wilson LR, Wilson MZ, Ivatury SJ. Does Bowel Function Change After Colectomy for Colon Malignancy? *J Surg Res*. 2021 Feb;258:283-288. doi: 10.1016/j.jss.2020.09.003. Epub 2020 Oct 8. PMID: 33039637.
 8. Gray PJ, Goldwag JL, **Eid MA**, Sacks OA, Wilson LR, Wilson MZ, Ivatury SJ. Does Bowel Function Change After Colectomy for Colon Malignancy? *J Surg Res*. 2021 Feb;258:283-288. doi: 10.1016/j.jss.2020.09.003. Epub 2020 Oct 8. PMID: 33039637.
 9. Wanken ZJ, Rode JB, Bessen SY, Anderson PB, Barnes JA, **Eid MA**, Goodney PP. Online Ratings for Vascular Interventional Proceduralists Vary by Physician Specialty. *Ann Vasc Surg*. 2021 Jan;70:27-35. doi: 10.1016/j.avsg.2020.05.008. Epub 2020 May 20.
 10. Sacks OA, Goldwag JL, **Eid MA**, Shaw RS, Williams TJ, Ivatury SJ. Poor Baseline Health for IBD Patients at Presentation to a Surgeon: Results from a Patient Reported Outcomes Database. *Crohn's & Colitis 360*. 2021 Jan;3(1)otaa096.
 11. Shaw RD, **Eid MA**, Milanese ED, Ivatury SJ. Long-term bowel function patient reported outcomes after successful chemoradiation for anal canal cancer. *Colorectal Dis*. 2021 Jun;23(6):1480-1486. doi: 10.1111/codi.15590. Epub 2021 Mar 12.
 12. Synan LT, **Eid MA**, Lamb CR, Wong SL. Crowd-sourced hospital ratings are correlated with patient satisfaction but not surgical safety. *Surgery*. 2021 Sep;170(3):764-768. doi: 10.1016/j.surg.2021.04.011. Epub 2021 May 20. PMID: 34024472.
 13. Siracuse JJ, Goodney PP, Menard MT, Rosenfield K, Van Over M, Hamza TH, **Eid M**, Villarreal MF, Strong MB, Farber A. Participation in a Chronic Limb Threatening Ischemia Randomized Trial Is Inversely Correlated With Regional Amputation Rate in Limb Threatening Ischemia Patients. *Ann Surg*. 2021 Oct 1;274(4):621-626. doi: 10.1097/SLA.0000000000005058. PMID: 34506317.
 14. Gray P, Goldwag J, **Eid M**, Trooboff ST, Wilson LR, Wilson MZ, Ivatury S. What are the Long-Term Changes to Bowel Function Patient-Reported Outcomes After Elective Sigmoidectomy for Diverticular Disease. *Journal of the American College of Surgeons*. 2020 Oct;231 (4), S72.

Publications pending review/submission:

15. **Eid MA**, Mehta KS, Goodney PP on behalf of the PROVE AAA team. Effect of a Decision Aid on Agreement of Patient Preference and Repair Type for Abdominal Aortic Aneurysm. Anticipated submission by Dec 2021.
16. **Eid MA**, Goldwag JL, Gray PP, Shaw RD, Ivatury SJ. Physicians Perceive that Ostomates Have Decreased Quality of Life but Not Overall Health: An International Survey of Physicians. Under review at *American Journal of Medicine*.



Robert Shaw

Robert Shaw is a PGY 3 general surgery resident engaged in the Surgical Education Research Fellowship. He will dedicate 2-years to research and return to clinical duties in June 2022. His research interests include:

- Surgical education
- Colorectal Surgery

In the first year of his professional development time, Dr. Shaw gained skills and knowledge in different research methodology, statistical analyses, curriculum design, scientific writing, and the conduct of clinical trials.

Overall, in the first year of his research fellowship, he authored 8 first author publications and delivered 6 presentations, for which earned a first place and a second place prize.

Dr. Robert Shaw

This was the first of a two-year research fellowship. I started my research years with a focus in surgical education and colorectal surgery research. During this time, I participated in the Surgical Education Research Fellowship (SERF), a program overseen by the Association for Surgical Education (ASE), which focuses on preparing fellows to conceive, plan, and bring to fruition novel research projects, which will enhance surgical education. In addition, I wanted to become facile at statistical analysis and improve my scientific writing abilities.

For SERF, I sought to understand what barriers currently exist for general surgery residents in learning how to perform robotic surgery. Mentored by Dr. Brigitte Smith, a vascular surgeon at the University of Utah, my goal with this project involved learning how to construct, test, distribute, and analyze survey data. Through Dr. Smith's mentorship, we successfully completed a multi-institutional survey of nine academic general surgery programs. I presented this work at the annual SERF Forum, and the manuscript is under review at the Journal of Surgical Education.

In addition, I worked on the development of a new surgical sub-internship curriculum with a research component for fourth year medical students. This helped us to understand what knowledge medical students and surgery residents consider most important prior to starting residency. Through this project, I learned the nuances of curriculum development and assessment. The first year's work has now informed the second iteration of our curriculum, which will be ongoing in years to come. Dr. Rosenkranz, Dr. Wong, and Dr. Casey Lamb all helped make this project a possibility.

Lastly, I conducted several research projects that studied patient reported outcomes following colorectal surgery. We have explored many different patient populations including those with anal cancer, the

impact of mental health on patient outcomes, and compared patient reported outcomes for different surgical approaches. I received second place for my presentation related to this work at the Department of Surgery's Ninth Annual Surgical Trainees Advancing Research Symposium.

Lastly, I have been involved in two clinical trials looking at prophylactic mesh implantation during ileostomy reversal. I presented the early results of the first clinical trial at the New England Surgical Society Annual Resident and Fellow Research Day and won 1st place. My mentors have been Dr. Ivatury and Dr. Matthew Wilson for these projects.

My first year of professional development time has improved my ability to think of research questions, construct assessment methods, and develop an analytic plan from the start. I have also become proficient at STATA and have improved my scientific writing abilities significantly. These skills gained, and the ones I will continue to gain during my second year, will dramatically improve my effectiveness as a future surgeon scientist.

Presentations:

1. **Shaw R**, Eid MA, Ivatury SJ, *et al.* Current barriers to robotic training for general surgery residents. SERF Forum Presentation. Surgical Education Annual Meeting at Surgical Education Week; 2021 April; Virtual.
2. **Shaw RD**, Read JT, Eid MA, Wilson MZ, Ivatury SJ. Mental Health Diagnosis, Not Patient Reported Outcomes, is Predictive of Failing to Meet the Expected Outcomes Following Successful Implementation of a Enhanced Recovery After Surgery Protocol After Elective Colon Resection. The Ninth Annual STARS; 2021 May 14th; Lebanon, NH. Virtual. **Second Place.**
3. **Shaw RD**, Goldwag J, Eid MA, Wilson L, Ivatury SJ, Wilson M. Stoma Closure and Reinforcement (SCAR) Trial: A Video Demonstration. Video presentation. American Society of Colon and Rectal Surgeons Annual Scientific Meeting, 2021. Virtual.
4. **Shaw RD**, Goldwag J, Eid MA, Wilson L, Ivatury SJ, Wilson M. Stoma Closure and Reinforcement (SCAR) Trial: early results. New England Surgical Society Virtual 27th Annual Surgical Resident and Fellow Research Presentation Day, 1 May 2021. **First place**
5. **Shaw RD**, Goldwag J, Eid MA, Wilson L, Ivatury SJ, Wilson M. Retrorectus Mesh Reinforcement of Ileostomy Closure Is Feasible, Safe and Effective: Results from the Stoma Closure and Reinforcement (SCAR) Trial. 102nd Annual New England Surgical Society Meeting, 24 September 2021. Mashantucket, CT.
6. **Shaw RD**, Read JT, Eid MA, Wilson MZ, Ivatury SJ. Mental Health Diagnosis, Not Patient Reported Outcomes, is Predictive of Failing to Meet the Expected Outcomes Following Successful Implementation of a Enhanced Recovery After Surgery Protocol After Elective Colon Resection. Oral presentation. 2021 Academic Surgical Congress. Virtual.

Publications:

1. **Shaw RD**, Eid MA, Milanese ED, Ivatury SJ. Long-term bowel function patient reported outcomes after successful chemoradiation for anal canal cancer. *Colorectal Dis.* 2021 Feb 18. doi: 10.1111/codi.15590.PMID:<http://doi.org/10.1111/codi.15590>
2. **Shaw R**, Goldwag J, Ivatury S. Ulcerative colitis, surgical management. The SCORE Portal. <http://www.surgicalcore.org>.
3. Sacks OA, Goldwag JL, Eid MA, **Shaw RD**, Williams TJ, Ivatury JS. Poor Baseline Health of IBD Patients at Presentation to a Surgeon: Results From a Patient-Reported Outcomes Database, *Crohn's & Colitis* 360. 2021 Jan;3(1)otaa096. <https://doi.org/10.1093/crocol/otaa096>
4. **Shaw RD**, Ivatury SJ. Late and Long-term Symptom Management in Colorectal Cancer Survivorship. *Dis Colon Rectum.* 2021 Sep 9. doi: 10.1097/DCR.0000000000002262. Epub ahead of print. PMID: 34611115.
5. Lamb CR, **Shaw RD**, Hilty BK, Wong SL, Rosenkranz KM. A Targeted Needs Assessment for the Development of a Surgical Sub-internship Curriculum. *J Surg Educ.* 2021 Aug 3:S1931-7204(21)00171-9. doi: 10.1016/j.jsurg.2021.06.017. Epub ahead of print. PMID: 34362707.

Publications pending review/submission:

1. **Shaw R**, Eid MA, Ivatury JS. No Difference Exists Between Robotic and Laparoscopic Approach in Long-Term Bowel Function Patient Reported Outcomes After Elective Sigmoid Colectomy. Under review at *Colorectal Disease*.
2. **Shaw R**, Eid MA, White B. Epidemiology of Parastomal Hernia Repairs in the United States: A NSQIP Analysis. Under review.
3. **Shaw R**, Wilson L, Ivatury SJ, Wilson M. Retrorectus Mesh Reinforcement of Ileostomy Closure Is Feasible, Safe and Effective: Results from the Stoma Closure and Reinforcement (SCAR) Trial. Under review at *JACS*.
4. **Shaw R**, Eid MA, Ivatury JS, *et al*. Current barriers to robotic training for general surgery residents. Under review at *JSE*.
5. Eid MA, Goldwag JL, Gray PP, **Shaw RD**, Ivatury SJ. Physicians Perceive that Ostomates Have Decreased Quality of Life but Not Overall Health: An International Survey of Physicians. Under review at *American Journal of Medicine*.
6. **Shaw RD**, Read JT, Eid MA, Wilson MZ, Ivatury SJ. Mental Health Diagnosis, Not Patient Reported Outcomes, is Predictive of Failing to Meet the Expected Outcomes Following Successful Implementation of a Enhanced Recovery After Surgery Protocol After Elective Colon Resection. Under review at *JACS*.



Kunal Mehta

Kunal Mehta is a PGY 3 vascular surgery resident with an MS in Clinical Research. He completed a one-year research fellowship under the mentorship of Dr. Phil Goodney. His research has focused on:

- Clinical outcomes
- Peripheral arterial disease

During his professional development time, Dr. Mehta gained skills in claims-based analyses, cluster randomized trials, and project execution.

Overall, in the first year of his research fellowship, he authored 4 first author publications and delivered 3 presentations, which earned a first place and a second place prize.

Dr. Kunal Mehta

I came into my research year with an interest in clinical outcomes research. Having previously obtained a Master's in Clinical Research, I looked forward to having dedicated time for research in residency. My primary goal was to learn how to take a research project from the idea phase through to project completion. During this time, I served as an AHA Strategically Focused Vascular Disease Research Network (SFRN) Fellow and became involved in many of the clinical trials underway in Vascular Surgery, such as PROVE-AAA.

As an SFRN fellow, I focused on peripheral artery disease (PAD). Using Medicare data, we examined patient characteristics, medications, and mortality among Medicare patients newly diagnosed with PAD. Working with Dr. Goodney, we found a 5% reduction in one-year mortality from 2006 to 2018 associated with patients' younger age at diagnosis, changing comorbidity profiles, and greater adherence to statin medications. This work earned first prize at the Heart and Vascular Center HEART Symposium moderated poster session, and is under review at *Circulation*.

In the Preferences for Open Versus Endovascular Repair of Abdominal Aortic Aneurysm (PROVE-AAA) Trial, we assessed factors associated with Veterans' choice of endovascular AAA repair and found that a decision aid resulted in better agreement between patient preference and repair type for patients undergoing AAA repair. Our latest manuscript for this trial is under review at the *New England Journal of Medicine*.

Over the course of this year, I acquired key skills that will serve me well in the future. I became proficient at STATA and the key statistical analyses required for conducting clinical outcomes research. I also took multiple projects to completion, including IRB approval, analysis, presentation and publication. Lastly, the experience collaborating with talented medical students, residents, and other faculty members from across the country was invaluable.

Presentations:

1. **Mehta K**, Barnes A, Eid M, Columbo J, Suckow B, Stone D, Goodney P, Zacharias N. (2021, February). "Outcomes of Cryopreserved Allografts for Limb Salvage in Chronic Limb Threatening Ischemia." Oral presentation. 2021 Academic Surgical Congress. Virtual.
2. **Mehta K**, Eid M, Barnes J, Wanken Z, Columbo J, Kang R, Newhall K, et al. "High Levels of Satisfaction with Abdominal Aortic Aneurysm Repair Among Patients treated at VA Hospitals." Video presentation. April 2021. 2021 Association of VA Surgeons Annual Meeting; Virtual.
3. **Mehta K**, Eid M, Gladders B, Moore K, Creager M, Austin A, Feinberg M, Bonaca M, Greenland P, McDermott M, Goodney P. "Trends in Patient Characteristics, Medications, and Mortality Among Medicare Patients Diagnosed with Peripheral Artery Disease." Oral presentation. May 2021. HVC HEART Symposium; Virtual and The Ninth Annual STARS; 2021 May 14th; Lebanon, NH. Virtual.

Publications:

1. Eid MA, **Mehta KS**, Goodney PP, Epidemiology of Peripheral Artery Disease. *Seminars in Vascular Surgery*. 2021 March;34(1):38-46. doi.org/10.1053/j.semvascsurg.2021.02.005. PMID 33757634.

Publications under review:

1. **Mehta K**, Barnes A, Eid M, Columbo J, Suckow B, Stone D, Goodney P, Zacharias N. "Outcomes of Cryopreserved Allografts for Limb Salvage in Chronic Limb Threatening Ischemia." Submitted to *Annals of Vascular Surgery*.
2. **Mehta K**, Eid M, Barnes J, Wanken Z, Columbo J, Kang R, et al. "High Levels of Satisfaction with Abdominal Aortic Aneurysm Repair Among Patients treated at VA Hospitals." Submitted to *Journal of Vascular Surgery*.
3. **Mehta K**, Eid M, Gladders B, Moore K, Creager M, Austin A, Feinberg M, Bonaca M, Greenland P, McDermott M, Goodney P. "Trends in Patient Characteristics, Medications, and Mortality Among Medicare Patients Diagnosed with Peripheral Artery Disease." Submitted to *Circulation*.
4. Jones J, Hu Y, Eid M, Sensenig C, **Mehta K**, Goldwag J, Barnes J, Goodney P. (2021). "Short-Term Concerns Primarily Determine Patient Preference for Abdominal Aortic Aneurysm Repair." Submitted to *Journal of Surgical Research*.
5. Hu Y, Jones J, Sensenig C, Eid M, **Mehta K**, Goldwag J, Barnes J, Goodney P. (2021). "The Impact of Work Status and Age in Choosing Type of Abdominal Aortic Aneurysm Repair." Submitted to *Journal of Surgical Research*.
6. **Mehta K**, Eid M, Gangadharan A, Pritchard A, Lin C, Creager M, Goodney P. "The Utility of the Bilateral Temporal Artery Biopsy for Diagnosis of Giant Cell Arteritis." Submitted to *Journal of Vascular Research*.



Casey Lamb

Casey Lamb is a PGY 4 general surgery resident and Surgical Education Research Fellow. His primary research mentor is Dr. Meredith Sorensen. His research has focused on:

- Surgical Education
- MIS/general surgery outcomes

During his professional development time, Dr. Lamb gained skills in research project design, survey and interview methods, project execution. He also enjoyed mentoring medical students.

Overall, during his research fellowship, he authored 4 first author publications and delivered 5 presentations.

Dr. Casey Lamb

I started the year with a general interest in surgical education and MIS/general surgery outcomes research. My primary goal was to gain a foundational experience in surgical education research through participation in the Surgical Education Research Fellowship sponsored by the Association for Surgical Education. I also sought to expand my MIS/general surgery outcomes research experience and gain experience in planning and executing diverse project types, such as QI projects and qualitative studies.

My main projects for the year centered on two education projects. The first involved the development of a didactic curriculum for surgical sub-interns. In partnership with my co-fellow Bob Shaw, and under the mentorship of Dr. Rosenkranz and Dr. Wong, we developed and implemented the curriculum in a systematic fashion. Starting with a needs assessment, we found differences in what medical students and residents felt to be the most important aspects of their preparation for internship, with medical students emphasizing learning how to manage common floor problems, whereas residents emphasized non-technical skills such as communication and documentation. I presented this work at APDS in April 2021 where it garnered interest from UMass and other institutions. A second phase of this curriculum is planned for DH with potential for a multi-institutional arm at UMass. The manuscript is under review at the Journal of Surgical Education.

The second major project of the year was my SERF project. Under the mentorship of Nicole Roberts, PhD from the City University of New York, I reviewed the qualitative education literature and developed a project to examine the process by which expert surgeons plan for ventral hernia repairs. Through a series of semi-structured interviews, we were able to outline a consistent framework used by all the surgeons interviewed, which we hope will provide useful information for residents and educators alike on the important decision-making steps involved in the

preoperative planning process for this operation. I presented this work at the SERF forum during the ASE meeting this spring, and a manuscript is underway.

Overall, I have gained significant familiarity with the education literature and confidence planning and executing various types of education research, whether survey- or interview-based. I have learned the importance of having a clearly defined research question and a meticulous methodology. This year also provided me a valuable opportunity to mentor medical students. I have enjoyed the opportunity to be involved in surgical education this year, and I hope to be able to work someday in a setting where I will be able to teach surgical residents and medical students.

Presentations:

1. **C. Lamb**, S. Guerra, M. Sorensen. Medical students recognize different qualities in excellent resident and attending teachers: A qualitative analysis of nominations for surgical clerkship teaching awards. Surgical Trainees Advancing Research Symposium, Dartmouth-Hitchcock Medical Center, May 14, 2021.
2. **C. Lamb**, N. Roberts, K. Parnell, M. Sorensen. The use of cognitive task analysis to describe the preoperative planning process for ventral hernia repair. Surgical Education Research Fellowship Forum at the Association for Surgical Education Annual Meeting, Apr. 30, 2021.
3. **C. Lamb**, R. Shaw, B. Hilty, S. Wong, K. Rosenkranz. A targeted needs assessment for the development of a surgical sub-internship curriculum. Podium Presentation – Association of Program Directors in Surgery Annual Meeting, Boston, MA, Apr. 27, 2021.
4. **C. Lamb** and B.F. Santos. Laparoscopic transcholedochal common bile duct exploration with laser lithotripsy and biliary stenting for choledocholithiasis. Video Presentation – American College of Surgeons Clinical Congress, Oct. 4-7, 2020.
5. **C. Lamb** and B.F. Santos. Endoscopic management of late post-esophagectomy complications: Per-oral endoscopic pyloromyotomy and endoscopic closure of enterocutaneous fistula. 2021 Society of American Gastrointestinal and Endoscopic Surgeons Annual Meeting – Video abstract accepted for presentation on Sept. 1, 2021.

Publications:

1. L. Synan, M. Eid, **C. Lamb**, S. Wong. Crowd-sourced hospital ratings are correlated with patient satisfaction but not surgical safety. *Surgery*. Published online 20 May 2021

Publications under review:

1. **C. Lamb**, R. Shaw, B. Hilty, S. Wong, K. Rosenkranz. A targeted needs assessment for the development of a surgical sub-internship curriculum. *Journal of Surgical Education* – Manuscript & revisions submitted.

2. **C. Lamb**, T. Trus, S. Billmeier. Elevated preoperative hemoglobin A1c is not associated with increased postoperative complications after laparoscopic Roux-en-Y gastric bypass. *Surgery for Obesity and Related Diseases* – Manuscript submitted.
3. **C. Lamb**, S. Guerra, M. Sorensen. Qualities of excellent resident and attending teachers recognized by medical students: a qualitative analysis of nominations for surgical clerkship teaching awards. *The American Journal of Surgery* – Manuscript submission pending.
4. **C. Lamb**, N. Roberts, K. Parnell, M. Sorensen. The use of cognitive task analysis to describe the preoperative planning process for ventral hernia repair. *The American Journal of Surgery* – Manuscript submission pending.



Faculty Mentorship and Collaboration

Eid, Mark

Mentors	Sandra Wong, MD, MS Philip Goodney, MD, MD S. Joga Ivatury, MD Brenda Sirovich, MD Mark Creager, MD	DHMC, Chair, Department of Surgery DHMC, Vascular Surgery DHMC, General Surgery WRJ VAMC, VA Outcomes Group DHMC, Director, Heart and Vascular Center
Faculty Collaborators	Jesse Columbo, MD, MS David Stone, MD, MS Brenda Sirovich, MD, MS Michael Mayo-Smith, MD,	DHMC, Vascular Surgery DHMC, Vascular Surgery WRJ VAMC, VA Outcomes Group Geisel School of Medicine, Dartmouth
Medical Students	James McAndrew Jones David Hu Gregory Tsougranis Liam Synam	Geisel School of Medicine at Dartmouth Geisel School of Medicine at Dartmouth Geisel School of Medicine at Dartmouth Geisel School of Medicine at Dartmouth

Shaw, Robert

Faculty Mentors	S. Joga Ivatury, MD Matthew Wilson, MD Kari Rosenkranz, MD Sandra Wong, MD, MS Meredith Sorensen, MD	DHMC, General Surgery DHMC, General Surgery DHMC, General Surgery DHMC, Chair, Department of Surgery DHMC, General Surgery
Faculty Collaborators	Brent White, MD	DHMC, Community Surgery
Medical Students	Jackson Read	Geisel School of Medicine at Dartmouth
Other Collaborators	Mark Eid, MD Casey Lamb, MD	DHMC, General Surgery Resident DHMC, General Surgery Resident

Mehta, Kunal

Faculty Mentors	Philip Goodney, MD, MS Mark Creager, MD Nikolaos Zacharias, MD Jennifer Stableford, MD	DHMC, Vascular Surgery DHMC, Director, Heart and Vascular Center DHMC, Vascular Surgery DHMC, Vascular Surgery
Faculty Collaborators	Mary McDermott, MD, MS Marc Bonaca, MD, MPH	Northwestern University, Internal Medicine University of Colorado, Vascular Surgery
Medical Students	James McAndrew Jones David Hu Renisa Ramnath Malachi Joiner	Geisel School of Medicine at Dartmouth Geisel School of Medicine at Dartmouth Geisel School of Medicine at Dartmouth Geisel School of Medicine at Dartmouth

Lamb, Casey

Faculty Mentors	Sandra Wong, MD, MS Kari Rosenkranz, MD Meredith Sorensen, MD	DHMC, Chair, Department of Surgery DHMC, General Surgery DHMC, General Surgery
Faculty Collaborators	Sarah Billmeier, MD Byron Santos-Aleman MD	DHMC, General Surgery White River Junction VAMC, General Surgery
Medical Students	Liam Synam Bailey Hilty Sylvia Guerra	Geisel School of Medicine at Dartmouth Geisel School of Medicine at Dartmouth Geisel School of Medicine at Dartmouth

Educational Programs and Other Professional Development Activities

Eid, Mark

The Dartmouth Institute for Health Policy and Clinical Practice, Master of Science in Clinical Research and Health Policy Jul 2019 – May 2021
 VA Outcomes Group, White River Junction VA Medical Center July 2019 – June 2021
 VA Quality Scholars Program, White River Junctions VA Medical Center July 2019 – June 2021

Teaching Assistant- Regression and Other Approaches, The Dartmouth Institute, Geisel School of Medicine Dartmouth 2021
 Teaching Assistant- Patients and Population, The Dartmouth Institute, Geisel School of Medicine Dartmouth 2021
 Admissions Committee, Geisel School of Medicine at Dartmouth 2021
 Analyst, PROVE-AAA Trial, White River Junction VAMC 2021
 Quality Improvement Coach, VA Quality Scholars Program 2021
 Student PI, CMS Data Use Agreement for TDI Capstone Project 2021

Shaw, Robert

Surgical Education Research Fellowship 2020-2021
 Sub-Intern Curriculum 2020 2021
 Fourth Year Medical Student Capstone 2021
 MS1 Midgut Lecture May 2021
 MS1 Foregut Lecture Series April 2021
 Diseases of the Colon and Rectum Reviewer's Guild 2021

Mehta, Kunal

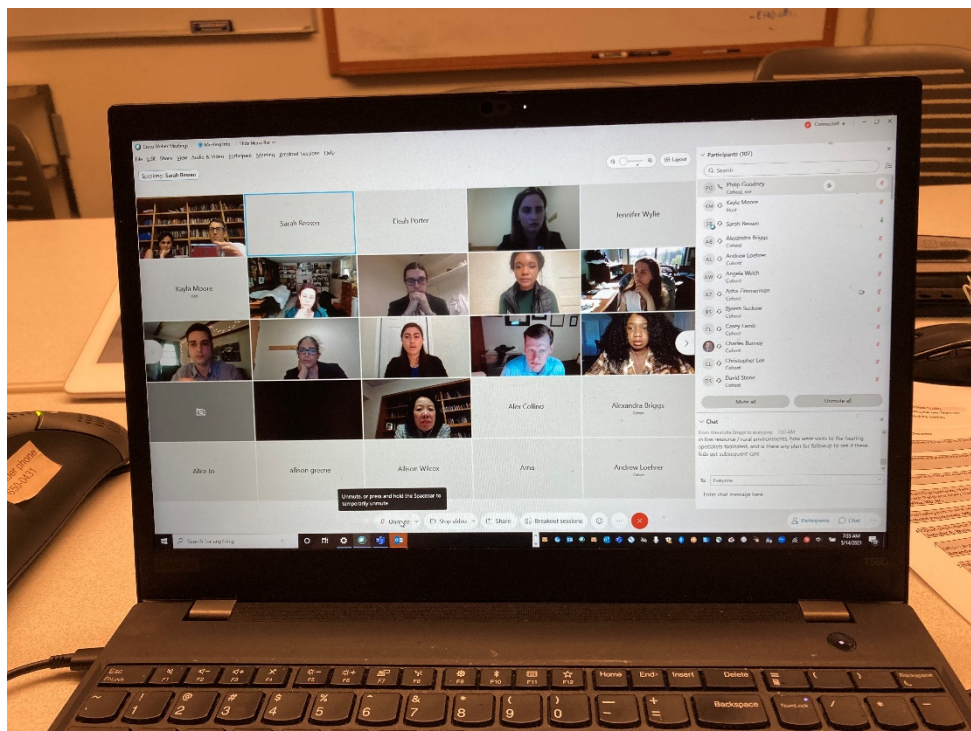
AHA Strategically Focused Research Network Fellowship 2020-2021

Lamb, Casey

Surgical Education Research Fellowship 2020-2021
 AAS Fundamentals of Surgical Research Course Oct 2020
 Poster moderator for ASE virtual annual meeting April 2021
 SAGES webinars (multiple) 2020-2021
 Yellowbelt certification, Lean Sigma course 2021
 Obtained FLS & FES certification 2021

Research Meetings and Events

Each Wednesday, 5-6 pm is reserved for a Resident Research-in-Progress meeting as part of the Chair's Academic and Non-technical Development Opportunities Conference (CAN-DO). The research discussions provide residents and faculty with a venue for sharing research in progress, receiving feedback, and refining ideas. Presentations range from informal discussions of project ideas, to pilot-testing surveys, and practicing for upcoming talks at national meetings. Once a month, the CAN-DO meeting is dedicated to topics related to surgical education research. "The Education And Collaborative researchH and Engaging Residents (TEACHER) Conference" serves as a forum to share project ideas and foster collaboration on surgical education research at DHMC.



Chair's Academic and Non-technical Development Opportunities Conference – Schedule

DATE	PRESENTER	TOPIC
7/8/2020	Teacher (4:30-5:30pm)	Surgical Education Research
7/22/2020	Kunal Mehta	Research in Progress
7/29/2020	Bob Shaw	Research in Progress
8/12/2020	Casey Lamb	Research in Progress
8/26/2020	Mark Eid	Research in Progress
9/2/2020	Teacher 4:30-5:30	Surgical Education Research
9/9/2020	Kunal Mehta	Research in Progress
9/23/2020	Bob Shaw	Research in Progress
9/30/2020	Casey Lamb	Research in Progress
10/7/2020	Phil Goodney/Sandra Wong	How to give a virtual talk
10/14/2020	Mark Eid	Research in Progress
10/28/2020	Teacher 4:30-5:30	Surgical Education Projects
11/4/2020	Kunal Mehta	Research in Progress
11/11/2020	Bob Shaw	Research in Progress
12/2/2020	Casey Lamb	Research in Progress
12/9/2020	Mark Eid	Research in Progress
1/6/2021	<i>Teacher (4:30-5:30)</i>	Surgical Education Projects
1/13/2021	Kunal Mehta	Research in Progress
1/27/2021	Bob Shaw	Research in Progress
2/3/2021	Casey Lamb	Research in Progress
2/10/2021	Mark Eid	Research in Progress
2/24/2021	<i>Teacher (4:30-5:30)</i>	Surgical Education Projects
3/3/2021	Kunal Mehta	Research in Progress
3/10/2021	Bob Shaw	Research in Progress
3/24/2021	Casey Lamb	Research in Progress
3/31/2021	Mark Eid	Research in Progress
4/7/2021	<i>TEACHER (4:30-5:30)</i>	Surgical Education Projects
4/14/2021	Casey Lamb	Research in Progress
4/28/2021	Kunal Mehta	T Research in Progress
5/5/2021	Bob Shaw	Research in Progress
5/12/2021	Mark Eid	Research in Progress
5/26/2021	Phil Goodney/Kayla Moore	STRIVE Transition
6/2/2021	Casey Lamb	Research in Progress
6/9/2021	Kunal Mehta	Research in Progress
6/23/2021	Bob Shaw	Research in Progress

Surgical Trainees Advancing Research Symposium (STARS-9)

The Ninth Annual Surgical Trainees Advancing Research Symposium (STARS) was held on Friday, May 14, 2021. The event took the form of a virtual conference due to precautions and restrictions in place related to the COVID-19 pandemic. Twenty-one abstracts featuring original research conducted by DHMC surgical residents and medical students were submitted and reviewed by the judges panel, consisting of surgical faculty from various specialties: Drs. Eileen Duggan, Philip Goodney, Vernon M. Pais, Kari Rosenkranz, David Soybel, David H. Stone, Matthew Z. Wilson, Andrea B. Wolffing, Sandra L. Wong, and Asha M. Zimmerman. Seventeen of these abstracts were selected for presentation. Prizes were awarded for first and second place among the residents and a medical student prize was given to one student.

9th Annual Dartmouth-Hitchcock

STARS

Surgical Trainees Advancing Research Symposium


A Virtual Event

Friday, May 14, 2021, 6:30-8:30 AM



Symposium Co-Directors:
Philip P. Goodney, MD, MS
Kari Rosenkranz, MD

*Sponsored by the
Department of Surgery*

 Dartmouth-Hitchcock



Invitation and Event Details

When: Friday, May 14, 2021
6:30-8:30 AM

Location: Virtual event via WebEx:

[Click here to join the WebEx Meeting](#)

or paste link into your browser:

<https://dhvideo.webex.com/dhvideo/j.php?MTID=m94f96cbebef9d28f3b252b219e2ef77c>

Meeting number: 120 798 8570

Meeting password: faUruMP3Z36

What: Surgical trainees present original research and compete for fame, glory, and cash.

Details: For the program and other details, visit [STRIVE/Meetings and Events](#)

**Why be a STAR?
Fame. Glory. Cash.**

Prizes supported by the Department of Surgery

The Department of Surgery at Dartmouth-Hitchcock Medical Center



THE NINTH ANNUAL STARS

(SURGICAL TRAINEES ADVANCING RESEARCH SYMPOSIUM)



Ord.	Time	Presenting Author	Title
1	6:30	Robert D. Shaw, MD	Mental Health Diagnosis not PRO is Predictive of ERAS Failure Following Elective Colon Resection
2	6:37	Mark A. Eid, MD	Effect of a Decision Aid on Alignment of Patient Preference and Repair Type for Abdominal Aortic Aneurysm
3	6:44	Sadia Ilyas, MD	Sex and Racial Differences in Thrombotic Events Among Adults Hospitalized with COVID-19
4	6:51	Kunal Mehta, MD, MS	Trends in Patient Characteristics, Medications, and Mortality Among Medicare Patients Diagnosed with Peripheral Artery Disease
5	6:58	Aravind Ponukumati, MD	Stress Testing Prior to AAA Repair: What is Our Return on Investment?
6	7:05	Jennifer A. Wylie, BA	Opioid Dependence and Overdose After Surgery: Rate, Risk Factors and Reasons
7	7:12	Amanda J. Bastien, BA	Office Laryngoscopy in the Time of the Covid-19 Pandemic: Is it Aerosol-Generating?
8	7:19	Eleah D. Porter, MD	National Estimate of Surgery Prescription Opioid Misuse and Diversion in US Adults and Associated Risk Factors
9	7:26	Sarah Y. Bessen, MPH	An Effective Strategy for School-Based Hearing Screening in Rural Nicaragua Using Community Health Workers and Mobile Health Technology
10	7:33	Mary M. Leech, BA	Increased Cost Sharing Associated with Delayed and Complicated Presentation of Acute Appendicitis and Diverticulitis
11	7:40	Libby Copeland-Halperin, MD	Oral Cancer Patients Undergoing Resection with Free Flap Reconstruction: Predictors of Gastrostomy Tube Placement
12	7:47	Chiamaka L. Okorie, BSc	Using Electronic Health Records to Streamline Provider Recruitment for Implementation Science Studies
13	7:54	Charles Burney, MD	Impact of Rurality on Geriatric Emergency General Surgery Patients in New Hampshire
14	8:01	Imad S. Khan, MD, MBBS	Transfer Status as a Predictor of Increased Mortality in Patients Needing Ventricular Shunt Surgery
15	8:08	Casey R. Lamb, MD	Medical Students Recognize Different Qualities in Excellent Resident and Attending Teachers: A Qualitative Analysis of Nominations for Surgical Clerkship Teaching Awards
16	8:15	George Sanchez, BS	Patient's Age as a Prognostic Factor of Visual and Surgical Outcome After Surgical Repair of Primary Macula-Off. Rhegmatogenous Retinal Detachment
17	8:22	Naomi A. Cole, BS	Breast Cancer in Male-to-Female Transgender Patients: Multidisciplinary Considerations

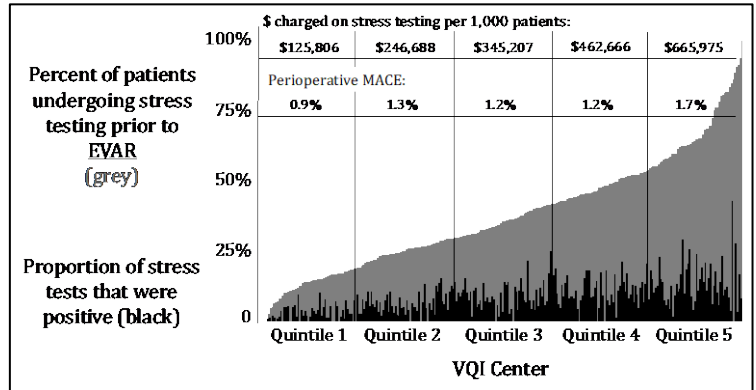
Co-Directors: Philip P. Goodney, MD, MS and Kari M. Rosenkranz, MD

Judges: Eileen Duggan, MD; Philip Goodney, MD, MS; Vernon M. Pais, MD; Kari Rosenkranz, MD; David Soybel, MD;

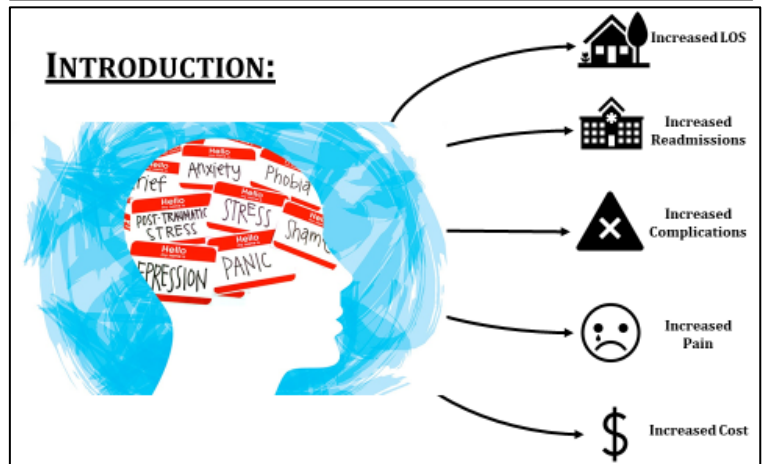
David H. Stone, MD; Matthew Z. Wilson, MD, MSc; Andrea B. Wolffong, MD; Sandra L. Wong, MD, MS; Asha M. Zimmerman, MD

STARS Prizes and Honorable Mentions

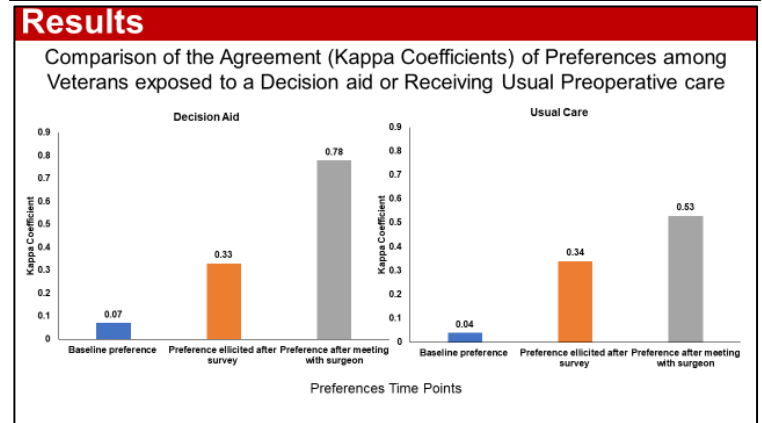
First Place **Stress Testing Prior to AAA Repair: What is Our Return on Investment?**
 Aravind Ponukumati, MD; Jesse Columbo, MD, MS; Stanislav Henkin, MD, MPH, Bjoern Suckow, MD, MS; Jocelyn Beach, MD, MS; Phillip Goodney, MD, MS; Salvatore Scali, MD; Mark Conrad, MD; Richard Powell, MD; David Stone, MD



Second Place **Mental Health Diagnosis not PRO is Predictive of ERAS Failure Following Elective Colon Resection**
 Robert D. Shaw, MD; Jackson T. Read, BS; Mark A. Eid, MD; Matthew Z. Wilson, MD, MSc, FACS, FASCRS; Srinivas J. Ivatury, MD, MHA, FACS, FASCRS



Second Place **Effect of a Decision Aid on Alignment of Patient Preference and Repair Type for Abdominal Aortic Aneurysm**
 Mark A. Eid, Jonathan A. Barnes, Kunal Mehta, Zachary Wanken, Jesse Columbo, Ravinder Kang, Karina Newhall, Vivienne Halpern, Joseph Raffetto, Panos Kougiass, Peter Henke, Gale Tang, Hasan Dosluoglu, Leila Mureebe, Jason Johanning, Edith Tzeng, Salvatore Scali, David Stone, Bjoern Suckow, Eugene Lee, Shipra Arya, Kristine Orion, Jessica O'Connell, Benjamin Brooke, Daniel Ihnat, Wei Zhou, Peter Nelson, Emily Spangler, Michael Barry, Brenda Sirovich, Philip Goodney



Medical Student Prize **Increased Cost Sharing Associated with Delayed and Complicated Presentation of Acute Appendicitis and Diverticulitis**
 Andrew P. Loehrer, MD; Mary M. Leech, BA; Julie E. Weiss, MS; Chad Markey, BA; Erik Wengle, BS; Joshua Aarons, BA; Stephen Zuckerman, PhD

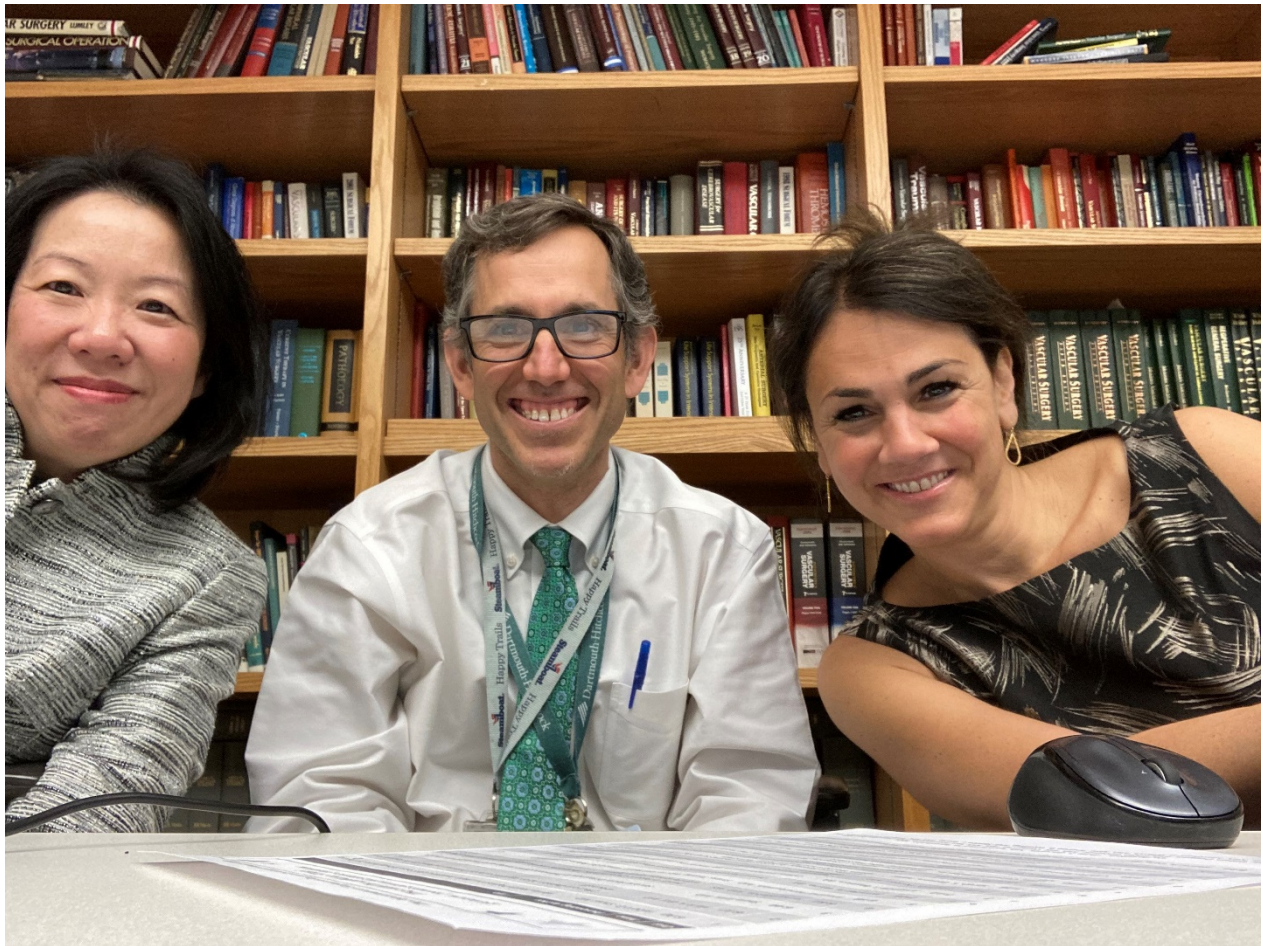
Results

Additional characteristics associated with early, uncomplicated disease presentation:

- ✓ Age 18 – 24 years
- ✓ Female sex
- ✓ Low comorbidities
- ✓ No clear difference between urban and rural patients

Sensitivity analysis of the primary outcome were consistent by:

- ✓ Age: the 25-64 age group
- ✓ Threshold: above \$800
- ✓ Alternative definition: high-deductible plan
- ✓ Stratified Disease: appendicitis and diverticulitis individually



STARS Sponsor and Co-Directors from left to right, Sandra Wong, MD, MS; Philip Goodney, MS, MS, Kari Rosenkranz, MD

Resident Travel Funds For Research Support

The Department of Surgery provides funding for travel expenses for residents to present original scientific work at regional and national professional society meetings. Trips are pre-approved by the Vice Chair for Research and expenses are monitored by the STRIVE Program Manager. In AY 2021, travel was significantly curtailed due to the COVID-19 pandemic, with all travel for DHMC employees prohibited until July 2021. In total, the DoS covered registration fees for 6 talks delivered by residents presenting original research at a virtual conference (New England Surgical Society, Academic Surgical Congress, Association of Surgical Education, Association of Program Directors in Surgery, and American Society of Colon and Rectal Surgeons) totaling \$740 in expenditures between July 2020 and June 2021. Numerous other presentations were made by residents which did not incur any fees.

Looking Ahead

The STRIVE Program marks the transition of each year with a meeting convening incoming and outgoing research residents. This provides a valuable opportunity for residents and leaders to reflect on individual and collective successes and challenges from the prior year, and goals for the coming year. As COVID 19 pandemic continued to evolve on an unpredictable course, residents and faculty noted ways in which this has and will continue to affect residents' academic development time. The pandemic has resulted in fewer opportunities for live, in-person presentations and professional networking, and required residents to be more proactive with e-mail outreach to cultivate their professional network, yet also increased access to content from conferences now made available online. The transition also serves as an opportunity for past residents to contribute new content to the STRIVE Sharepoint site and share tips for time management, project execution and thoughts on how to successfully balance academic and professional development opportunities with personal growth and well-being.

In the coming year, the STRIVE program will continue to support surgical residents during their academic development time and provide access to resources and opportunities to develop foundational skills as clinician-researchers. Three new incoming research residents, Drs. Xavier Fowler, Peter Congelosi, and Matthew Carrol will join Robert Shaw for the 2022 Academic Year. Ms. Moore has meet with each of them to identify their overall goals and project ideas and will continue to meet with them individually throughout the year to support and encourage their progress.

