Stanford MEDICINE | Department of Medicine

Stanford Medicine Residency Research Interest Group Newsletter

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Dear Colleagues,

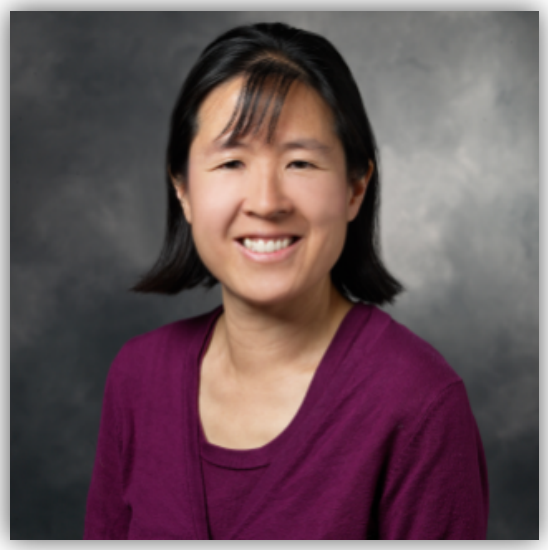
Welcome to the Fall 2019 edition of our medicine residency research newsletter! This publication is aimed at both highlighting our residents' exciting projects as well as informing trainees and recruits about the types of investigations being performed at Stanford. We define *research* comprehensively, including scholarly work done in quality improvement, global health, outcomes research, medical education, clinical investigation, translational research, implementation science, qualitative studies, clinical trials, and device/service innovation. Without further ado:

Resident Research Symposium:

The Second Annual Stanford Internal Medicine Research Symposium took place on April 30, 2019. Over 40 residents presented their research to a panel of some of the most prestigious research faculty at Stanford.

We would like to thank Dr. Angela Rogers and the Internal Medicine Residency Staff for organizing the symposium as well as the incredible research mentors and panelists who made this possible. Most of all we would like to congratulate all the residents for their inspiring work over the last year.

Stanford Faculty Researcher Spotlight:



For the Fall 2019 Newsletter, we have the great pleasure of spotlighting **Dr. Lisa Shieh, MD, PhD.** Dr. Shieh is a clinical professor of medicine and hospitalist in the Department of Medicine. She earned a MD from Harvard Medical School and PhD in medical engineering from the Massachusetts Institute of Technology. She moved to California, where she did her residency in internal medicine at Stanford Hospital and Clinics and later joined the faculty.

Dr. Shieh is currently the medical director for quality in the Division of Hospital Medicine and the associate physician improvement leader in the Department of Medicine. She is the unit based medical director for B3 and chairs the medicine professional practice evaluation committee. She is a member of the Stanford Clinical Effectiveness Leadership Training (CELT) Steering Committee and part of the Stanford team selected to participate in the Clinical Safety and Effectiveness Program Training program at The University of Texas Southwestern Medical Center in 2014

Dr. Shieh is known for her creation of Septris, an online game to teach basics of sepsis management, which was the winner of the Society of Hospital Medicine (SHM) innovation competition in 2013. She was then chosen by SHM to join the faculty of the Surviving Sepsis Campaign Moore Foundation collaboration between critical care and SHM. She was selected as the SHM representative at the 2016 update of the Surviving Sepsis Guidelines. In 2018, her work on "Safety Quest: Teaching QI through Gamification" was a SHM top 5 innovation oral presentation.

At SHC, Dr. Shieh was the inaugural winner of the SHC 2018 Excellence in Quality and Safety Award. She and her team also won the Malinda Mitchell Quality Award in 2018 for “Decreasing Inappropriate Use of IICU Level of Care Accommodations through Systematic Processes and Physician Engagement”. The project has saved $4.9 M over 11 months.

Dr. Shieh’s interests also include mentoring and teaching student and residents about quality improvement (QI) and patient safety. In 2014 she won the Distinguished Teacher and Mentor Award in the Regional American College of Physicians. She is currently the medical director of QI programs for Graduate Medical Education and program director of Stanford’s Resident Safety Council. She is the faculty sponsor for Stanford’s Medical Student QI interest Group and Stanford Medical School QI Scholarly Concentration.

Tell us a bit about yourself and the path you took, particularly in your early career, to reach where you are today.
LS: My parents were scientists, and I grew up thinking I would be one too! I grew up at Purdue University, and did summer jobs in labs during high school. I studied chemical engineering at Purdue as an undergraduate. Although I enjoyed it, I knew I did not want to become a traditional engineer like my peers. Instead, I really like the “medical” aspect of engineering. I chose to do a medical engineering PhD at the joint Harvard-MIT HST medical program. As part of that program, I rotated through clinical rotations with the other medical students. I found that to be very rewarding and really enjoyed clinical medicine. I finished a PhD and MD before coming to Stanford to do my internal medicine residency.

At Stanford, I really liked general inpatient medicine, and became the 2nd hospitalist in a very new program. I initially did all clinical work: inpatient wards, urgent care, and medicine consultation. With time, I found my passion in safety and quality improvement. I am lucky to have dedicated roles to run programs such as Resident Safety Council and the medicine QI elective. I am also the QI faculty mentor for the Stanford medical student QI interest group and the new QI scholarly concentration. This gives me the privilege and opportunity to work with interested residents and students in QI!

What is your advice for approaching research as budding academic physicians?
LS: One of my main goals as a QI mentor is to encourage residents and students who work with me to share their great QI projects through conference presentation and manuscripts. Quality improvement, safety and value is a relatively new field- with huge opportunities to publish in areas that have not been well explored. With every project we do, we always want to find one new innovative area that has not been published in the literature. We also have research leaders such as Dr. Paul Heidenreich, who can be great resources for residents interested in QI research. For example, Paul advocates for all studies to be enrolled in the ClinicalTrials.gov data base to increase rigor.

Designing good quality improvement research projects can be incredibly difficult. What advice do you have for our residents in thinking about and designing projects?
LS: The one fun thing about QI is that it is ok to iterate along the way (eg. small tests of change in a PDSA cycle). This means we learn from each cycle, and then can change for the better in the next cycle. If possible, I always encourage designing a randomized QI intervention. These randomized QI studies are then much more effective in studying our interventions since there are so many improvements happening at the same time. We also have the benefit in QI in the department of medicine to collaborate with statisticians in the quantitative sciences unit (and we have funding to cover their time with us as a benefit of the Stanford Improvement Capability Development Program (ICDP)). This consultation should ideally be done early, rather than later for our projects.

Any parting words of advice for our residents?
LS: As US Healthcare embraces more quality and value, this is a super exciting time to be involved in studying improvement. Also, the problem-solving tools used in QI are applicable to all of medicine and even self-improvement! Here is my QI share:

1. Do something you enjoy & share results with others
2. Align with the goals of your institution
3. Innovate when you can
4. Keep doors open
5. Fail early, fail often, fail forward

Stanford Resident Researcher Spotlight:

This Fall, we have the incredible opportunity to spotlight one of our true research superstars, **Aaron Yeoh**!

Tell us a little about yourself
AY: I was born in San Francisco and mostly grew up in Sacramento, CA. Both my parents are teachers and I attended a Waldorf school where I was immersed in the arts and humanities but barely any science. I left California to attend Kenyon College in Ohio and it was there that I dived into the biological sciences and joined a lab studying gut metabolism using insects. I did a research year at Mount Sinai in New York working in a cancer genetics lab and then moved to Boston for medical school at Harvard. I became interested in the epidemic of obesity and have been doing clinical research projects in this area during medical school and residency. I'm applying for GI fellowship this year and very excited for the match. Outside of work, I love to workout, cook new foods, play cello, and spend time with friends and my girlfriend.

Tell us about your current QI/research activities
AY: I am currently working on two projects within the Stanford GI division. The first examines cost-effectiveness of colorectal cancer screening of overweight and obese patients as substantially higher incidence of cancer is seen in this population. Our work has suggested that screening obese male patients as early as age 40 is cost-effective. My second project is leading a prospective clinical trial that utilizes novel oculometric technology to assess the impact of obesity and cirrhosis on eye movement. Our preliminary findings suggest that obesity may affect eye movement and our trial aims to understand the impact of weight loss after bariatric surgery on this outcome.

Why Stanford?
AY: I was drawn to Stanford for its strong research reputation, supportive clinical training environment and beautiful location close to home. During my interview day, I was impressed with all the residents I met and felt a real connection with my faculty interviewers and the program leadership. I knew that if I came to Stanford, I would have a strong clinical training but still be in an environment that supported other aspects of career development and a life outside of the hospital.

What advice do you have for interns and residents interested in scholarly activity?
AY: Don't feel the pressure to jump on the first research project that comes your way. Take time to meet in-person with multiple faculty mentors and learn about their research. Look for mentors that have a track record of working with residents and then publishing together. Try and identify a concrete project that can be completed before you finish residency but don't feel like you have to crank out your own manuscript during your first or second years. As long as you are passionate about your research and can show evidence that you are moving your project forward (e.g. poster/abstract), you will be fine!

Papers and Presentations:

Congratulations to the following authors for their recent publications and presentations in the past year!

Third Year Residents:

1. **Nadeem E. Abou-Arraj**, Chang AY, Rodriguez F. Interventions to Reduce Ethnic and Racial Disparities in Dyslipidemia Management. Current Treatment Options in Cardiovascular Medicine. 2019. [PMID: 31065884]
2. **Sarah Lechner**, Kian Keyashian. Mass Transition: From Cecal Mass to Small Bowel Ischemia. Digestive Diseases and Sciences. 2019. [PMID: 31292782]
3. **Ashwini Kerkar**, Hazard F, Caleshu CA, Shah RL, Reuter C, Ashley EA, Parikh VN. Pathological overlap of Arrhythmogenic Right Ventricular Cardiomyopathy and Cardiac Sarcoidosis. Circulation: Genomic and Precision Medicine. 2019. [PMID: 31542937]
4. **Eugenia Miranti**, Epstein D, Enriquez K, Medeiros B, Subramanian A, Ho D. Epidemiology of Invasive Fungal Infections During Induction Chemotherapy in Adults with Newly Diagnosed Acute Myeloid Leukemia without Antifungal Prophylaxis: A Retrospective Cohort Study. IDWeek 2019. Washington, DC. 2019. [Poster Presentation]
5. **Andrew R. Moore**, Roque J, Shaller B, Asuni T, Levitt J, Wilson J, Khatri P, Remmel M, Rawling D, Eshoo M, Sweeney T, Rogers AJ. Validation of a 12-mRNA set for mortality prediction in the critically ill. American Thoracic Society Conference. 2019. [Oral Presentation]
6. Sweeny T, **Andrew R. Moore**, Roque J, Shaller B, Asuni T, Levitt J, Wilson J, Khatri P, Remmel M, Rawling D, Liesenfeld O, Rogers AJ. Prospective validation of an 18-mRNA score for diagnosis of infection in critically ill patients. International Symposium on Intensive Care and Emergency Medicine. 2019. [Poster Presentation]
7. **Meera Ragavan**, Gardner R, Cunanan K, Sundaram V, Wakelee H, Han S. Impact of dual-eligible status on survival in Medicare patients with lung cancer. ASCO Quality Conference. San Diego, CA. 2019. [Poster Presentation]
8. **Meera Ragavan**, Parikh DA, Patel MI. Perspectives and Practices of Oncology Providers in Addressing Financial Toxicity. Journal of Clinical Oncology Online Abstract (accepted). ASCO Annual Meeting. 2019. [Online Abstract]
9. Parikh DA, **Meera Ragavan**, Patel MI. Demographic factors associated with financial toxicity: Results from the multi-site Cost Study. Journal of Clinical oncology Online Abstract (accepted). ASCO Annual Meeting. 2019. [Online Abstract]
10. Divya A. Parikh, **Meera Ragavan**, Khateeb S, Patel MI. Financial toxicity among veterans with cancer. ASCO Quality Conference. San Diego, CA. 2019. [Poster Presentation]
11. Parikh DA, **Meera Ragavan**, Maitra D, Aggarwal S, Patel MI. Financial toxicity of cancer treatment at a diverse county hospital. ASCO Quality Conference. 2018. [Poster Presentation]
12. **Thomas Sun**, Stehr H, Suarez CJ, Wakelee HA. Tumor heterogeneity and testing discrepancy confound ROS1 detection in NSCLC. Journal of Thoracic Oncology Epub ahead of print, 2019. [PMID: 30914313]
13. **Thomas Sun**, Sung AW, Neal JW. Steroid-sparing therapy for tyrosine kinase inhibitor-induced pneumonitis. Journal of Thoracic Oncology. 14(4):e75-77, 2019. [PMID: 30922583]
14. Gupta K, Levinsohn J, Linderman G, Chen D, **Thomas Sun**, Dong D, Taketo MM, Bosenberg M, Kluger Y, Choate K, Myung P. Single-Cell Analysis Reveals a Hair Follicle Dermal Niche Molecular Differentiation Trajectory that Begins Prior to Morphogenesis. Developmental Cell. 48(1):17-31, 2019. [PMID: 30595533]
15. **Thomas Sun**, Niu X, Chakraborty A, Neal JW, Wakelee HA. Efficacy of cabozantinib in treating resistant ROS1-positive non-small cell lung cancer. American College of Physicians Northern California Meeting, 2018. [Poster Presentation]
16. **Aaron Yeoh**, Ryou M. Single Intact Pill Causing Biliary Stent Obstruction. ACG Case Reports Journal 2019. 6(8): e00196. [Peer Reviewed Journal]
17. **Aaron Yeoh**, Wong K, Liston D, Papademetriou S, Okafor P. Visual Processing Impairments Detected by Oculometric Assessment Provide Evidence of Obesity-Related Neurological Dysfunction. American College of Gastroenterology Annual Scientific Meeting. Philadelphia, PA. 2018. [Poster Presentation]
18. **Aaron Yeoh**, Mannalithara A, Ladabaum U. Cost-effectiveness of early initiation and/or more intensive colorectal cancer (CRC) screening in overweight and obese patients. Digestive Disease Week. San Diego, CA. 2019. [Poster Presentation]

Second Year Residents:

1. **James Dickerson**, Harriel KL, Dambrino RJ, Taylor LI, Rimes JA, Chapman RW, Desrosiers AS, Washington CW. Screening Duplex Ultrasonography in Neurosurgery Patients Does Not Correlate with a Reduction in Pulmonary Embolism Rate or Decreased Mortality. Journal of Neurosurgery. 2019. [PMID: 31026839]
2. Hall ET, Singhal S, Dickerson J, **Brooke Gabster**, Wong HN, Aslakson RA, Schapira L. Patient reported outcomes for cancer patients receiving immunotherapy: opportunities for palliative care – A Systematic Review. J Pain Symptom Manage. 2019. [PMID: 30905677]
3. Hantel A, **Brooke Gabster**, Cheng JX, Golomb H, Gajewski TF. Severe hemophagocytic lymphohistiocytosis in a melanoma patient treated with ipilimumab + nivolumab. J Immunother Cancer. 2018. [PMID: 30012206]
4. **Brooke Gabster**, Hall ET, Singhal S, **James Dickerson**, Schapira L "If you don't ask, you won't know": Do patient reported outcome (PRO) instruments capture the symptom experience of patients treated with immune checkpoint inhibitors (ICIs)? 2019 American Society of Clinical Oncology Annual Meeting. Chicago, IL. 2019. [Abstract and Poster Presentation]
5. **Joseph M Garagliano**, Katsurada A, Miyata K, Derbenev AV, Zsombok A, Navar LG, Satou R. Advanced Glycation End Products Stimulate Angiotensinogen Production in Renal Proximal Tubular Cells. The American Journal of the Medical Sciences. 2019 Jan;357(1):57-66. [PMID: 30466736]
6. Samson R, Milligan G, Lewine E, Sindi F, **Joseph M Garagliano**, Fernandez C, Moore R, DuCoin C, Oparil S, LE Jemtel TH. Effect of sleeve gastrectomy on hypertension. Journal of the American Society of Hypertension. 2018 Nov;12(11) [PMID: 30322789]
7. **Alex J Goodell**, Shete PB, Vreman R, McCabe D, Porco TC, Barry PM, Flood J, Marks SM, Hill A, Cattamanchi A, and Kahn JG. Outlook for tuberculosis elimination in California: An individual-based stochastic model. PloS One. 2019. [PMID: 30964878]
8. Tang WH, **Daniel Y. Li**, Hazen SL. Dietary metabolism, gut microbiome, and heart failure. Nature Reviews Cardiology. 2019, Mar;16(3): 137-154. [PMID: 30410105]
9. Kaelber D, **Daniel Y. Li**, Seeholzer E, Tarabichi Y, Flocke S. Coupling Electronic Health Record Tobacco Screening to Direct Messaging Quitline eReferral Augments Tobacco Documentation and Cessation Efforts. American Medical Informatics Association 2018 Annual Symposium; San Francisco, CA. 2018. [Oral Presentation]

First Year Residents:

1. **Christian O'Donnell**, Migliore E, Grandi,FC, Lingampalli N, Raghu H, Giori NJ, Indelli PF, Sebastiano V, Robinson WH, Bhutani N, Chu CR. Platelet-Rich Plasma (PRP) from Older Males with Knee Osteoarthritis Depresses Chondrocyte Metabolism and Upregulates Inflammation. Journal of Orthopedic Research. 2019. [PMID: 31042308]
2. **Christian O'Donnell**, Wang H, Tran P, Miller S, Shuttleworth P, Boyd J. Utilization of Del Nido Cardioplegia in Adult Coronary Artery Bypass Grafting — A Retrospective Analysis. Circulation Journal. 2019. [PMID: 30531128]
3. Wang H, Hironaka CE, **Christian O'Donnell**., Pargaonkar VS, Abbot CJ, Rogers IS, Tremmel JA, Fischbein MP, Mitchell RS, Schnittger I, Boyd JH. Outcomes of Minimally Invasive Myocardial Bridge Unroofing In Adults. International Society of Minimally Invasive Cardiothoracic Surgery. New York City, NY. 2019. [Abstract]
4. Brodt JL, **Christian O'Donnell**, Peterson A, Horn JL, Tsui BCH. Potential Opioid Sparing effect of Erector Spinae Plane Catheters for Cardiac Surgery Patients. Society of Cardiovascular Anesthesiologists. Chicago, IL. 2019. [Abstract]
5. **Elena C. Vasti**, Hoffman A, Tabas, J, Pletcher, M. Liver Enzymes in the Emergency Department and Subsequent Heart Failure Diagnosis. JAMA Internal Medicine. 2019 [Under Review]
6. **Elena C. Vasti**, Von Stein, E. Kvam, K. Subacute Osmotic Demyelination Syndrome in a Liver Transplant Patient. American College of Physicians, Northern California Chapter. San Jose, CA. 2019 [Abstract]

Recent Graduates:

1. Singal G, Miller P, **Vineeta Agarwala**, et al. Association of Patient Characteristics and Tumor Genomics ith Clinical Outcomes Among Patients With Non-Small Cell Lung Cancer Using a Clinicogenomic Database. JAMA. 2019. [PMID: 30964529]
2. Leonard Martinez, Verma R, Croda J, Horsburgh Jr C, Walter K, **Nicholas Degner**, Middelkoop K, Koch A, Hermans S, Warner D, Wood R, Cobelens F, Andrews J. Detection, survival and infectious potential of Mycobacterium tuberculosis in the environment: A review of the evidence and epidemiological implications. European Respiratory Journal. 2019. [PMID: 31048345]
3. **Lakshman Manjunath**, Hu J, Palaniappan L, Rodriguez F. Years of Life Lost from Cardiovascular Disease Among Hispanics. Ethnicity & Disease. 2019. [PMID: 31367168]
4. **Lakshman Manjunath**, **Apurva Yeluru**, Rodriguez F. 27-Year-Old Man with a Positive Troponin: A Case Report. Cardiology and Therapy. 2018. [PMID: 30367446]
5. Yang S, **Lakshman Manjunath**, Willemink M, Nieman K. The role of coronary CT angiography in the era of high-sensitivity troponins. Journal of Cardiovascular Computed Tomography. 2019. [PMID: 31235403]
6. Nieman K, **Lakshman Manjunath**. Valvular Imaging. In: Nicol E, Stirrup J, Padley S, Bull R, Williams M (Ed.) Cardiovascular Computed Tomography (Oxford Specialist Handbooks in Cardiology - 2nd Edition). 2019. [In Print- Textbook Chapter]
7. Zhao EJ, **Apurva Yeluru**, **Lakshman Manjunath,** Zhong LR, Hsu HT, Lee CK, Wong AC, Abramian M, Manella H, Svec D, Shieh L. A long wait: barriers to discharge for long length of stay patients. 2018. [PMID: 30301835]
8. **Lakshman Manjunath**, Willemink M, Fleischmann D, Nieman K. The Effect of Ventricular Dyssynchrony on Coronary CT Angiography. Society for Cardiovascular Computed Tomography Annual Scientific Meeting. Dallas, TX, 2018 [Poster Presentation]
9. **Lakshman Manjunath**, Chung S, Li J, Palaniappan L, Yong CM. Prevalence, Treatment, and Outcomes Among Asian Subgroups with Coronary Artery Disease. American Heart Association Scientific Sessions. Chicago, Il, 2018. [Moderated Poster Presentation]
10. Hall ET, **Surbhi Singhal**, Dickerson J, Gabster B, Wong HN, Aslakson RA, Schapira L. Patient reported outcomes for cancer patients receiving immunotherapy: opportunities for palliative care – A Systematic Review. J Pain Symptom Manage. 2019. [PMID: 30905677]
11. Gabster B, Hall ET, **Surbhi Singhal**, Dickerson J, Schapira L "If you don't ask, you won't know": Do patient reported outcome (PRO) instruments capture the symptom experience of patients treated with immune checkpoint inhibitors (ICIs)? 2019 American Society of Clinical Oncology Annual Meeting. Chicago, IL. 2019. [Abstract and Poster Presentation]
12. **Justin Slade**, Rohatgi N, Wang Y, Bentley J, Hom J, Ahuja, N. Comparison of Outcomes for Adult Inpatients with Sickle Cell Disease Cared for by Hospitalists vs. Hematology Specialists. Society of Hospital Medicine. National Harbor, MD. March 2019. [Poster Presentation]
13. **Justin Slade**, Shieh L, Svec D. Reducing Inappropriate Utilization of the Intermediate Intensive Care Unit Amongst Cardiovascular Medicine Providers. American College of Cardiology: Cardiovascular Summit. Orlando, FL. February 2019. [Poster Presentation]
14. Werbaneth K, **Justin Slade**, Katznelson L, Shieh L. Resident Safety Council: Building a Culture of Resident Engagement in Quality Improvement. Institute for Healthcare Improvement. Orlando, FL. December 2018. [Poster Presentation]
15. Zhang JZ, **Vittavat Termglinchan**, Shao NY, Itzhaki I, Liu C, Ma N, Tian L, Wang VY, Chang ACY, Guo H, Kitani T, Wu H, Lam CK, Kodo K, Sayed N, Blau HM, Wu JC. A Human iPSC Double-Reporter System Enables Purification of Cardiac Lineage Subpopulations with Distinct Function and Drug Response Profiles.Cell Stem Cell. 2019. [PMID: 30880024]
16. Chang ACY, Chang ACH, Kirillova A, Sasagawa K, Su W, Weber G, Lin J, **Vittavat Termglinchan**, Karakikes I, Seeger T, Dainis AM, Hinson JT, Seidman J, Seidman CE, Day JW, Ashley E, Wu JC, Blau HM. Telomere shortening is a hallmark of genetic cardiomyopathies. Proc Natl Acad Sci U S A. 2018. [PMID: 30150400]
17. **James Tooley**, Ouyang D, Hadley D, Turakhia M, Wang P, Ashley E, Froelicher V, Perez M. Comparison of QT Interval Measurement Methods and Correction Formulas in Atrial Fibrillation. Am J Cardiol. 2019 Mar 13. [PMID: 30961909]

Best,
Stanford Internal Medicine Research Interest Group

If you have research you'd like to have highlighted in the newsletter (or know of work other residents or recent graduates have taken part in) or are interested in being involved in the research interest group please make sure to email us at armoore7@stanford.edu.