Welcome!

Dear colleagues,

Welcome to the Winter 2022 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 scholarly work taking place 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.

This cycle, we're also focusing on highlighting one of our residents to share a bit more about their own research experience in residency, as well as some quick tips from a faculty mentor for residents looking to be more involved in research!

Resident Spotlight

Matt, tell us about yourself!

The most important things to know about me are that I love skiing, dogs and Greek yogurt. I have spent time across a broad range of fields and across wet-lab, dry-lab and clinical research. My PhD work was focused on analytical biochemistry, developing high-performance liquid chromatography and mass spectrometry assays to study nitric oxide signaling. During med school I expanded into computational research by joining a machine learning lab at MIT working on natural language processing for clinical endpoint extraction from medical records. During residency I've been working on bioinformatics tools for cell-free DNA. Following residency I'll be joining the Division of Hospital medicine – very excited to be sticking around as part of the Stanford community!

Quite the journey you've had! What part of your current work excites you the most?

I am currently working with mentors in both hematology (Tian Zhang, MD, PhD) and genomics (David Kurtz, MD, PhD) to develop cell-free DNA analysis methods in AML to assess minimal residual disease and monitor for relapse. The fun part about this work is trying to build analysis pipelines that work just as well if you start with sequencing data from 10 patients or 100 patients. These kinds of coding problems are both fun to solve, and potentially quite clinically useful – for example similar bioinformatics pipelines sit behind the HemeSTAMP reports we use to guide decision-making on Med8.
A more general problem I am interested in improving the clinical research experience for residents. The hypothesis is that using computational tools such as R or python can both contribute to a more interesting research experience and also improve the quality, fidelity and scalability of data processing compared to manually editing excel sheets. I’m interested in making these types of computational tools more easily accessible to residents with or without coding experience. I’m also interested to see whether the recent advances in large language models and coding co-pilot tools could make it even easier to implement computational methods. One idea is to develop a repository of bioinformatics tools to help residents get up and running in a coding environment and have example models to work from and adapt – if this sounds interesting to you, please reach out!

Very impressive, Matt! Do you have any tips for those looking to be involved with research?

Doing research within the constraints of a residency schedule is flat-out hard. Hopefully the following suggestions can help:

1. Talk to your peers. Share what you’ve learned as you look for labs or projects that would be a good fit. Learn from what has or hasn’t worked from what your peers are doing.
2. Talk with R2s/R3s and fellows. R2/R3s can give you a general idea of which PIs might have research interests that could be a good fit. Fellows affiliated with labs you might be interested in working with can tell you more about the spectrum of projects that are active and might need an extra set of hands.
3. Talk to attendings you liked working with clinically. Ask them what projects they have in flight, what needs to fall in place for you to get involved (e.g., IRB approval, data transfers etc) and whether the project would be compatible with a resident schedule.

Lastly, think about pursuing a research angle that is relevant to the clinical work we do as residents - I have found this crossover helps reinforce the relevance of a given research project and builds appreciation for the technologies and knowledge base we rely on as clinicians.

Faculty Corner

We asked Fatima Rodriguez, the winner of our Resident Research Mentor Award this past spring during our 5th Annual Research Symposium, on more advice for those looking to become more involved in a research project. But first, a little about Dr. Rodriguez:

Fatima Rodriguez, MD, MPH is a preventive and general cardiologist in the Division of Cardiovascular Medicine at Stanford. Dr. Rodriguez received her medical training from Harvard Medical School. She completed her residency at Brigham and Women's Hospital and fellowship in Cardiovascular Medicine at Stanford University. She specializes in common cardiac conditions such as coronary artery disease, valvular heart disease, lipid disorders, and cardiovascular risk assessment in high-risk populations.

Dr. Rodriguez’s research includes a range of topics relating to racial, ethnic, and gender disparities in cardiovascular disease prevention and developing novel interventions to address disparities.

What do you look for in a mentee who wants to get involved in a project?

The most of important trait I look for in a trainee is persistence. Finishing what you start is a key part of research success.

What things do you do to cultivate and foster your particular mentorship style?

I have a “more red = more love” mentoring style. I expect my mentees to work hard, finish what they start, and feel comfortable asking for help when needed.

What should we be looking for in a mentor or project during residency?

I always advise our talented trainees to do work that is 1) interesting; 2) feasible; and 3) fun. It’s useful to find mentors with a track record of working with trainees that leads to presentations and publications.
Congratulations to the following residents for showcasing their research over the last few months! Below are the 66 posters, podium presentations, and publications (and likely more not being reported!) that you've reported and we've found on Pubmed over the past few months.


Liang, Emily C., Juliana Craig, Stefano Torelli, Kristen Cunanan, Maria Iglesias, Sally Arai, Matthew J. Frank, et al. 2022. “Allogeneic Hematopoietic Cell Transplantation for Adult Acute Lymphoblastic Leukemia in the Modern...


*We created a little script in Python to scrape PubMed for all resident-related research (and manually combed through some matches to remove any false positive hits). Want to learn more about our code? Come join the coding session Matt is putting together - details soon!*

Interested in Joining?
If you'd like to be more involved with the Research Interest Group, please don't hesitate to reach out to the current leaders:

Sulaiman Somani, R2, ssomani [at] stanford.edu

Jassi Pannu, R3, jassi [at] stanford.edu