Research:

My path and lessons learned along the way

Chemistry Basic Science Research

- **Level of training:** Summer between freshman and sophomore year of college
- **How did I find this opportunity?** Email sent to a listserv from a research-focused seminar class
- **Overall goal:** To coat nanoparticles of a particular drug inside a slowly dissolving particle in order to improve delivery of slow-release medications
- **Day-to-day activities:** Fighting with a mass spectrometer, broken pieces and clogged tubes, little guidance from my mentor
- **Rating:** 2/10

Lesson #1

Use the resources already available to you.

Lesson #2

Every type of research is not for everybody. Find the research that fits you!

Bariatric Clinic Clinical Research

- **Level of training:** Gap year between college and medical school
- **How did I find this opportunity?** Email sent to a pre-med listserv
- **Overall goal:** To help conduct over 15 ongoing studies with patients who were considering and had already undergone bariatric surgery.
- **Day-to-day activities:** Helping patients fill out surveys and doing studies with them (there was a taste test!), occasionally proofreading manuscripts for submission, networking with medical students and surgeons in the clinic (great for rec letters!), exposure to minimally invasive surgical procedures
- **Rating:** 8/10

Curriculum Research

- **Level of training:** Summer between first and second years of medical school
- **How did I find this opportunity?** Email sent to the entire MS1 class
- **Overall goal:** To identify a problem or limitation of the current curriculum and improve it. My focus was Early Learner Clinical Experiences.
- **Day-to-day activities:** Reading evaluations from students about the current program, preparing Works-in-progress presentations to be reviewed by my peers, creating student-facing and faculty-facing guidelines for the curriculum changes to improve the experience, poster presentation at the end of the summer
- **Rating:** 7/10

Lesson #3

Research is only useful if you share it.

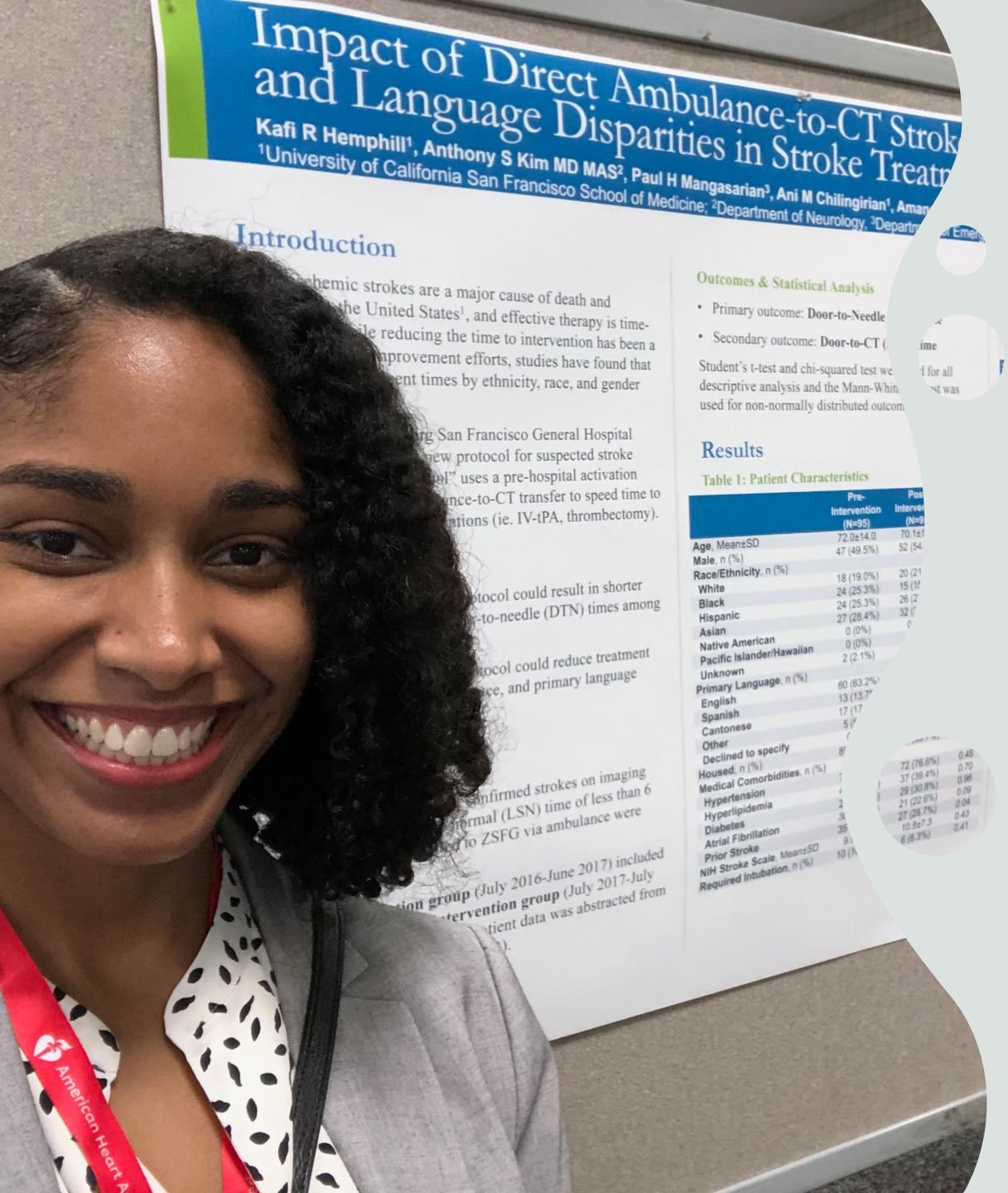
Global Health Database Research

- **Level of training:** Gap year between third and fourth year of medical school
- **How did I find this opportunity?** All medical students had the opportunity to apply for research tracks and a gap year
- **Overall goal:** To better understand stroke care and outcomes in a global context, focusing on low- and middle-income countries.
- **Day-to-day activities:** Attending TICR classes to learn how to conduct database research from study design to statistical analysis, meeting with my mentor every other week to clarify the research question and then identify potential biases in analysis, gathering and organizing large amounts of data from >195 countries over a 20-year span, submitting abstracts to conferences
- **Rating:** 7/10

Lesson #4

Research is done in teams, so find your role.

Are you the writer? The statistician? The coordinator? The data cleaner?



Health Disparities Research

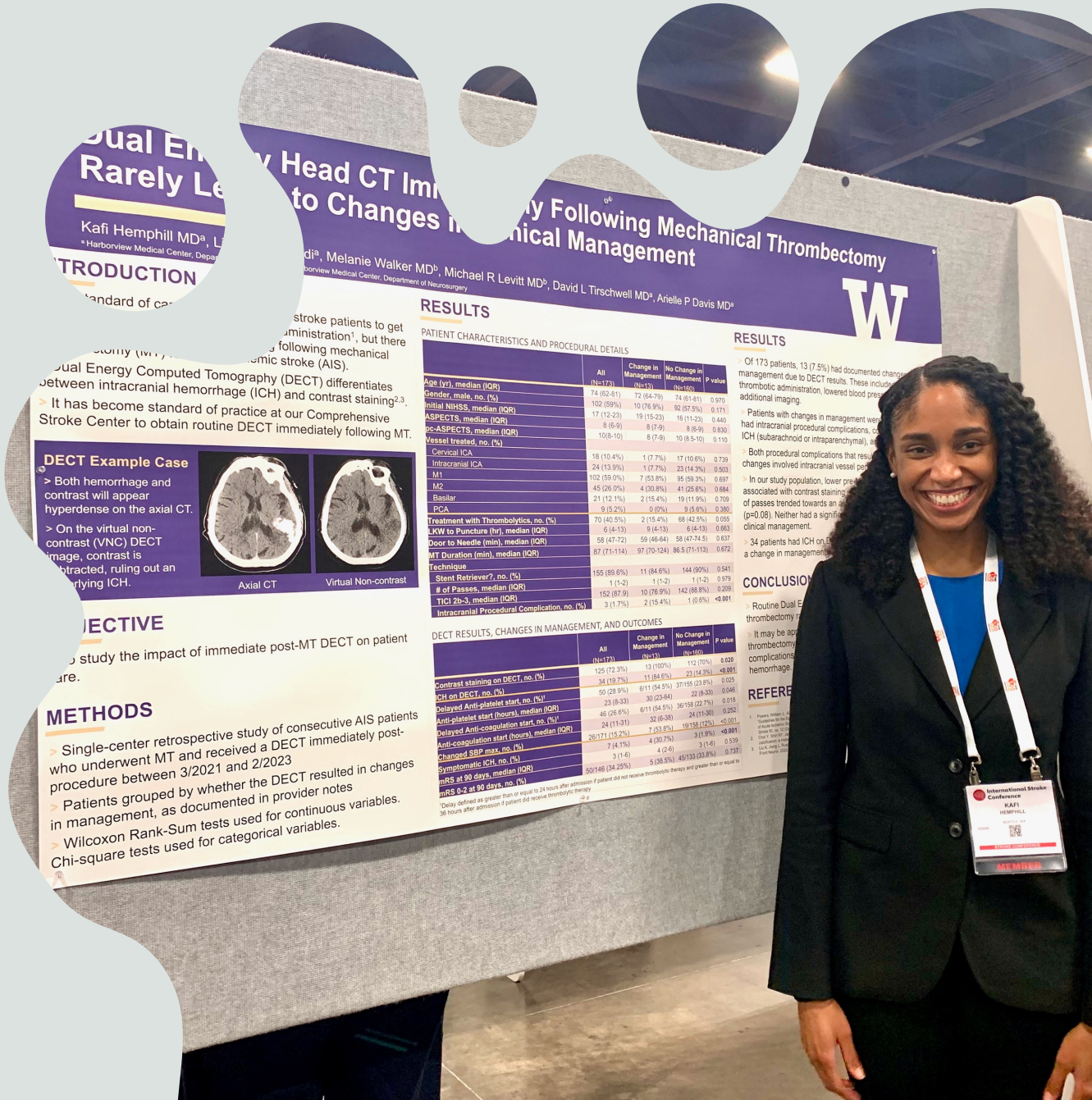
- **Level of training:** Gap year between third and fourth year of medical school
- **How did I find this opportunity?** My research mentor for the Global Health project connected me with junior faculty that he was helping with this project
- **Overall goal:** To see if ALL patients (regardless of race, gender, or primary language) benefitted from a change in triaging acute stroke patients in the Emergency Department
- **Day-to-day activities:** Chart review to collect patient information, organizing and cleaning data for acute stroke patients at a single Comprehensive Stroke Center, data analysis in STATA
- **Rating:** 9/10

Qualitative Research

- **Level of training:** Fourth year of residency
- **How did I find this opportunity?** Residency allowed 4-6 months for research time, but I produced my own research question, found a mentor, and designed the research
- **Overall goal:** To understand how patient de-escalation teams work in Bay Area academic, public, and VA hospitals
- **Day-to-day activities:** Observation shifts with the de-escalation teams, interviews with key members of each team, literature review, chart review for outcomes of de-escalation team responses
- **Rating:** 6/10

Quality Improvement Research

- **Level of training:** First year of Fellowship
- **How did I find this opportunity?** I identified a mentor and we both produced a research question
- **Overall goal:** To determine if getting a CT scan immediately after mechanical thrombectomy for LVO patients changes management
- **Day-to-day activities:** Chart review, data organization and cleaning, statistical analysis. After the research is completed, discussion with administrators to make changes to our protocols.
- **Rating:** 10/10



Lesson #5

Build skills early because the further you get in training, the less protected time there is for research.

Summary

There are **MANY** different types of research. Find one that you really like!

Look for a knowledge gap in your field of interest and see if you can find a way to creatively tackle that question.

Academia encourages research, so at an academic hospital, most doctors are interested in having someone help them do research. Make sure that your goals align with theirs before you sign on.

When considering a project, look at the overarching goal AND the day-to-day realities of conducting that research.

Invest in your own research skills early, whether this is on how to design a study to avoid bias, how to choose the appropriate statistical test, or how to write in scientific prose. Some programs may even pay for you to take these classes!

Poster presentations and publications are what earn respect in research, so set this as a goal when planning out projects.