UCSF Department of Medicine
ZUCKERBERG
SAN FRANCISCO GENERAL

CREATING A NURTURING ENVIRONMENT FOR LEARNERS IN MEDICINE

Medical education is one of our core missions. This month we highlight three clinician-educators in the ZSFG Department of Medicine who are leaders in training learners to be the next generation of outstanding physicians.

ZSFG Medicine Student Clerkships: Laying the Foundations of Excellence

"Becoming a physician is a long journey," said Binh An Phan, MD, ZSFG Site Director of Medicine Student Clerkships and Professor in the ZSFG Division of Cardiology. "Throughout that journey, you pick up knowledge and experiences that ultimately make you better."

At UCSF, medical students spend the first 18 months primarily in the classroom. They study various organ systems, epidemiology and biostatistics, and health systems improvement, and practice clinical skills in the simulation lab. Then they immerse themselves in the clinical setting for 14 months, rotating through various core clinical clerkships. They join teams led by physicians, fellows and residents, helping care for patients at UCSF Health, ZSFG, and the San Francisco Veterans Administration Medical Center (SFVAMC) , and sometimes additional sites such as Kaiser Permanente in Oakland or UCSF Fresno.

Binh An Phan, MD

"Students apply the foundational knowledge they learned in the first part of their training to the clinical care of patients," said Dr. Phan. "They learn how to interact with patients, perform a physical exam, take a patient history, and develop clinical reasoning skills." Students who rotate through ZSFG spend six weeks on the Medicine Inpatient Service with residents, caring for hospitalized medicine patients; two weeks on the ZSFG Cardiology Inpatient Service; and may also spend time on specialty consult services working with cardiologists, infectious disease specialists, gastroenterologists or nephrologists.

During this phase of their training, students also complete clerkships at various hospital sites in surgery, pediatrics, emergency medicine, and OB/GYN. They also have a longitudinal Family and Community Medicine clinic, spending a few days each month learning how to care for patients in the outpatient setting.

Medical students consistently appreciate their ZSFG medicine clerkships. "They love the diversity of our patients, the fact that we're a mission-driven institution, and that faculty members are so deeply vested in the care of those who are underserved," said Dr. Phan. "Having a medicine clerkship at the General allows them a wonderful opportunity to learn how to care for vulnerable populations. They may discover a passion for this pathway. Even if they don't focus their career in this setting, the more exposure students have to different settings and patient populations, the better doctors they will become. Having the greatest depth and breadth of education helps you grow, choose a specialty, and identify who you are as a physician."

Developing Core Skills

As medicine clerkship site director, Dr. Phan ensures that rotating students receive a solid orientation to ZSFG's history, mission, patient population, services and partners. He is a liaison between medical students and their attending physicians and internal medicine residents, addressing

any issues that impede the learning experience. He also helps evaluate students, integrating feedback from faculty and residents who have worked with them during their clerkships.

A big part of his work is overseeing the formal didactic curriculum for rotating medical students. He works closely with the two ZSFG inpatient internal medicine chief residents to curate three one-hour teaching sessions each week. They lead many of these modules themselves, and invite other faculty members to contribute their expertise. Some didactics focus on specific conditions that students may see, such as liver disease or infection. "These are very common, basic presentations [of disease] that students need to know," said Dr. Phan.

Another goal is teaching students how to perform a physical exam and establish rapport with patients. This is one of Dr. Phan's favorite aspects of medicine, and he leads many of these sessions himself. "When you do the physical exam, you're talking with the patient – letting them know what you're doing, telling them what you discover or letting them know the findings are normal," he said. "That all builds trust, provides opportunities for bonding and interaction, and allows you to create better relationships with patients.

"A lot of medical education has shifted to spending more time in front of computers," continued Dr. Phan. "Emphasizing the physical exam motivates students to return to the bedside and really spend time with patients. I want students to cherish the opportunity to have that interpersonal connection. That bond also leads to much better health care for patients, because they're more likely to trust you and be engaged. There are so many benefits from developing strong patient relationships, and I try to ensure that our students learn how to connect with each person."

The physical exam also is an excellent way to teach pathophysiology. "In order to understand why a patient has a particular disease, you have to understand their physiology, anatomy and pathology," said Dr. Phan. "When auscultating [listening to] the heart, you may detect a murmur. But to know why, you need to understand the anatomy of the heart, different diseases that produce a murmur, and how to differentiate between them. It's important for students to see both normal and abnormal physical exams. You can read about heart murmurs or listen to recordings, but the learning really happens when you put on your stethoscope and listen to a patient's heart."

Another critical skill set is how to interpret and present medical data through case-based presentations. "One of our foundational sessions gives students the opportunity to present a patient's history and data, as well as their clinical reasoning, differential diagnosis, and their plan for moving forward," said Dr. Phan. "All physicians need to develop this skill."

Building on what students learned during their pre-clerkship phase, Dr. Phan and his colleagues help them develop skills for diagnosing and treating patients, such as learning to ask patients the right questions to distinguish between different disorders, and thoughtfully choosing which lab and imaging studies they need to help them make a diagnosis. "For example, if a patient presents with chest pain, each part of this process helps students increase or decrease their suspicion of the potential cause, whether it is the heart, lung, or a rib or musculoskeletal problem," he said. "In the end, they bring all the data together to provide an assessment and plan."

Quality Learning in a Busy Environment

Because medical students are early in their journey to becoming physicians, they require more oversight than interns or residents. This can be challenging in a busy clinical environment, when residents and faculty are caring for large numbers of very sick patients. "Those supervising individuals may have less time or bandwidth to provide feedback or direct education to medical students," said Dr. Phan.

To ensure that medical students continue receiving outstanding training while maintaining excellent patient care, the ZSFG Department of Medicine has capped the number of patients each team of attendings and residents is responsible for on the MedicineInpatient Service. "That's a really important safeguard. Even when residents are busy, they still have time to devote to medical student education," said Dr. Phan. No students rotate through the Faculty Inpatient Service, which is staffed exclusively by faculty and does not have an educational component, since there are no trainees on the teams.

The sometimes hectic clinical environment makes formal didactic sessions even more important. "That protected time allows medical students to have robust didactics, and we try to ensure that medical students attend every session," said Dr. Phan. The focus of those hourlong didactics is purely educational; there is no patient care taking place, even though some modules, such as practicing the physical exam, may take place at the bedside.

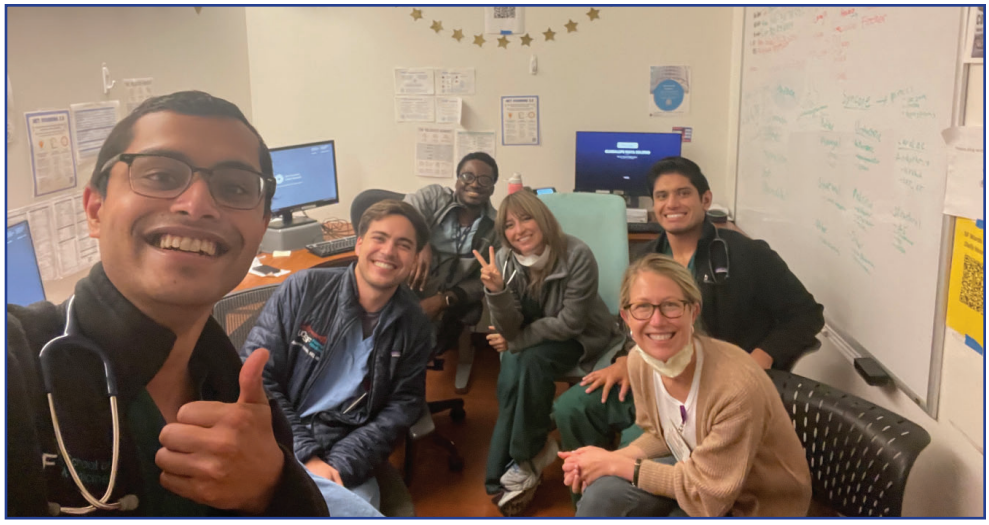
Evolving Opportunities and Challenges

In addition to overseeing day-to-day aspects of medicine clerkships, Dr. Phan also focuses on the big picture. "Medical education has evolved a lot," he said. "When I was a medical student, we only had to focus on learning basic sciences and how to care for patients, Nowadays, students also learn about the science of health systems, global health, how to interact with interprofessional teams, quality improvement, and many other aspects. It's all very important, and I love evolution. But as we have more expectations of students to develop a knowledge base in other aspects of medicine, I sometimes worry that it comes at a cost. Medical school is still only four years. As a medical educator and clerkship site director, I want to make sure that we preserve the foundational aspects of learning to be a physician, such as the physical exam and how to develop close relationships with patients."

Another part of that evolution is technology. "In some ways, technology allows us to offer more advanced tests, diagnoses and treatments," said Dr. Phan. "We now have different ways for them to learn, whether it's technology in the classroom, videos, or interactive simulations. When students get onto the wards, thanks to the electronic health record (EHR), they can not only see all the data in one place, but also read and write chart notes. That's been really fantastic."

However, the EHR also presents new challenges. "It's very easy for students to copy and paste what a provider or resident has written, without creating their own documentation," said Dr. Phan. "They really need to learn how to write their own notes.

And now with AI, students could write notes or differential diagnoses using things like ChatGPT. We're still in the beginning stages of deciding whether that's good or bad. Could we use it to augment student education? What skill sets do students need to learn? It is typing? Is there a way to leverage AI, chatbots and large language models to support medical education? We're still at the beginning of figuring out possible threats, and how these new tools could be leveraged."



Medical Students and Residents from left to right: Yash Huilgol (Medical Student), Alex Wells (Internal Medicine Resident), Sam Olanrewaju (Internal Medicine resident), Guadalupe Maya Solorio (Psychiatry Resident), Adrian Vallejo (Medical Studey), and Rebeccah Brusca (Medicine Inpatient Site Director).

Finding Their Path and Their Passion

Some of the most rewarding aspects of his role are helping students reach their full potential. "It's common for students to struggle during medical school, which may cause them to doubt themselves or even their future as a physician," said Dr. Phan. "I love helping them identify what they need, whether it's foundational medical knowledge or how to connect with a patient, gather data, develop a differential diagnosis, or interact with other team members. The moments I feel most joyful is when I'm assisting these students, seeing them develop skills and gain confidence as they become a great physician. When I was a medical student, there were things that I struggled with. I really appreciated faculty members who helped me overcome challenges, and the physician I am today is a partly testament to the help I received. Now I have the opportunity to give back. It's part of the arc of life as a faculty member. I also want to help them become the best possible physicians, because someday they may take care of me!"

As students enter their final year of medical school, Dr. Phan helps them navigate their future career paths. "I advise them on which rotations would best prepare them for the kind of residency they want to pursue," he said. "I also help them decide which programs are best suited to their personal and professional goals. I do mock interviews, help students develop a good application – including asking for letters of recommendation and writing a strong personal statement – and assist them in developing a rank list of their top programs."

Dr. Phan finds particular satisfaction in working with medical students. "It's an amazing opportunity to work with people who are undifferentiated and in the early stages of developing their identities as physicians," he said. "It's rewarding to help them develop healthy habits that they will carry with them. I also feel like I have a tremendous impact on helping them decide what they ultimately want to do. Students sometimes come back and tell me, 'You helped me identify my passion.' That is such a rewarding aspect of my job."

ZSFG Internal Medicine Residency Rotations: Creating a Joyous Community

Once students graduate from medical school, they specialize in an area such as internal medicine, surgery, or pediatrics by completing a multi-year residency program. The UCSF Department of Medicine offers an outstanding internal medicine residency program, with the opportunity to train at ZSFG, UCSF Health, and the SFVAMC. Each campus has an inpatient site director who supports rotating residents.

Rebeccah Brusca, MD, MPH

"Residency is a lot of work, but it's also one of the most formative times in a person's life," said Rebeccah ("Becky") Brusca, MD, MPH, Assistant Professor in the ZSFG Division of Hospital Medicine and ZSFG Inpatient Site Director for the Internal Medicine Residency. "Some of my happiest moments occurred in residency, including meeting my husband…. One of the strengths of UCSF residency is the joy that comes with creating a community of colleagues who are reveling in their professional growth during residency. We deal with a lot of serious, challenging things, but we get to work with very compassionate, driven people who are here to support you."

Dr. Brusca mentors and works closely with ZSFG's two inpatient chief residents, and partners with educational, divisional and departmental leaders throughout ZSFG and UCSF. She guides resident educational activities and oversees rotation structure for the internal medicine, cardiology and medical intensive care unit rotations at ZSFG. She also works with residents, faculty and leadership to guide operational changes that support education and patient care.

Returning to In-Person Education

Now that the pandemic has subsided, she and her colleagues have been reimagining how best to teach residents. "At ZSFG, we have such a rich educational culture, and our residents really value that learning," said Dr. Brusca. "During the COVID era we moved to all remote educational experiences. Our chief residents have put in an

enormous amount of effort to reinvigorate that educational culture and prioritize formal education in a group setting."

This year all educational sessions have returned to a fully in-person format. "Before COVID, in-person conferences were the norm, but it's amazing how hard it can be to return to that norm when people aren't used to attending in person," said Dr. Brusca. "Reshaping those expectations is a real challenge, and speaks volumes to our chiefs' efforts, thinking outside the box to improve engagement. Our residents have also been very committed, because it's a big frame shift in how they work, provide care, and view their engagement with education."
Since all conferences were virtual during COVID, residents might have felt pressured to multitask, listening in while performing patient care or responding to pages. "When you're in person, you are much more engaged than you would be virtually," said Dr. Brusca. "You don't feel as compelled to reply to non-urgent chats and pages that could wait 30 or 45 minutes. Humor lands in a different way. It's easier to foster small group discussions with colleagues or a faculty member. Residents can talk with faculty members afterwards who might be a good fit for a research interest or mentorship relationship. All these informal conversations help build a stronger community, which is one big focus of the residency."

To maximize attendance, Dr. Brusca and the chief residents rescheduled sessions that used to take place in the morning to noon or early afternoon, so trainees can maximize their learning opportunities at the bedside with their rounding teams earlier in the day. "That's been very successful in improving attendance and engagement," she said. They also consolidated various conferences, so there are fewer per week that more people can attend.

Dr. Brusca is also working with her colleagues to incorporate Diversity, Equity and Inclusion (DEI) into every phase of the residency program, starting at recruitment, to ensure that UCSF has a diverse group of residents who are equitably trained throughout their residency. The Residency Diversity Community holds events and connects residents to mentors through both formal and informal mentorship programs. There is also a DEI curriculum and conference series, as well as an anti-racism symposium.

Improving Resident Well-Being

One of the biggest challenges is improving well-being among residents while maintaining clinical excellence, especially with increasing numbers of patients. "We have more patients coming to the hospital, which is echoed nationwide but is felt very acutely here in our safety net hospital," said Dr. Brusca.

The reasons are not fully understood, but contributing factors include the fentanyl crisis, disruptions to preventative medicine and health care access during the pandemic, and the housing crisis and other social determinants of health which were exacerbated by COVID. "We are seeing a lot of these nationwide crises really affecting our specific patient population in large numbers," said Dr. Brusca. "We see this more acutely in the winter when it's colder and there are more respiratory viruses circulating, but we now see it throughout the year, which speaks to these ongoing factors."

Given this high patient census, Dr. Brusca and her colleagues work to balance patient care with efforts to prevent resident burnout and supporting a robust environment for learning. "We want our residents to be in their stretch zone, where they are working hard and learning, but still able to optimize the educational experience we offer them," she said.

Dr. Brusca partnered with the Division of Hospital Medicine and the Department of Medicine to balance residents' workload, sometimes redistributing patients across teams to ensure an equitable division of work as well as patient safety. To address admitting surges, she recently helped broker service sharing agreements, enabling other inpatient services to admit patients to their own service once another service has reached their admitting capacity. Formalizing this process has helped lower the burden on individual teams to sort this out, and provides institutional support for improved patient flow through the Emergency Department.

Supporting Team Continuity

Another significant operational change that Dr. Brusca helped lead was transitioning from 28-hour overnight shifts to day/night schedules for the inpatient medicine and cardiology rotations. "During call days, residents would come in the morning, participate in rounds, admit new patients until the early evening, remain overnight to cross-cover patients, round again the next morning with the team, then leave after a 28-hour shift in the hospital," she said. "That was how I trained, and there are a lot of benefits. You see patients from admission and how they evolve in the early part of their hospitalization, which can often be quite dynamic."

However, there are disadvantages. "That's a very long time to remain in the hospital, awake," said Dr. Brusca. "Sometimes you can get a little sleep overnight, but often you can't." Another downside is lack of team continuity. When a resident leaves the hospital in the late morning after a 28-hour shift, it leaves their team without a senior resident until the next day. This was exacerbated when the residency program added an additional day off per month. It was part of an effort to avoid duty hour violations – going over the caps for shift length and total weekly hours set by the Accreditation Council for Graduate Medical Education (ACGME) – but also meant less time together as a team."

To address these challenges, the ZSFG medicine and cardiology services recently changed to a day/night schedule. Residents spend several weeks at a time rotating through 12-to-14 hour shifts that start in the morning, midday, or night. The residency also instituted site-specific swing and night shift roles. "Hopping between sites, each with its own operational intricacies, was quite challenging for an already hard rotation of being on nights," said Dr. Brusca. "Now residents cross-cover the same service for four or five nights in a row and get to know the patients, especially those who are sicker, and can provide better care for them. That's been a positive change we've instituted this year."

The downside of instituting a day/night schedule is more handoffs. "Day residents hand off more patients to an overnight cross-covering provider," said Dr. Brusca. "Sometimes there is less conti-

nuity with a night cross-covering provider. They may know about the contingency plan if something happens overnight with their patient, but they weren't a part of the richer, deeper morning rounds discussion with the attending and other team members. That can sometimes impact patient care. We haven't seen any adverse events, but it's something to note."

However, there are significant upsides as well. "There is an art to handing off patients well and thoroughly, but also in a timely manner," said Dr. Brusca. "That's something that our residents have learned to do really well. Also, we now have the post-call resident there on rounds throughout their entire post-call day. While a patient's course can be dynamic overnight, it's also really dynamic during the day. That's when non-urgent consults are placed, the team comes together to think through a plan and implement it, and you're contacting family members, primary care providers, and other care team members to get more information. We've received positive feedback from faculty members, residents and interns that having a senior resident present to guide, support and lead the team on that day has been really helpful. Residents have also responded well from a wellness perspective."

Dr. Brusca worked closely with the chief residents, residents, associate program directors, and division and departmental leaders before and after this change. "Stakeholder involvement has been so critical," she said. She gathered input through feedback sessions, town halls, surveys, checking in with residents at the end of their shifts, reviewing work hour data, and other sources of information, and continues making adjustments in response. "Balancing patient safety, resident and faculty well-being, and our educational mission is really challenging," she said. "There are tradeoffs for any of these operational structures. Where we are now seems to work well."

'*Keep Your Values Close*'

She looks forward to welcoming the incoming interns in a few months, and has suggestions for making the most of their residency. "I encourage people to be open-minded about both their clinical interests as well as the different realms of practice that they are exposed to at the three different sites," said Dr. Brusca. "The skills you're learning will help you grow into competent, independent, compassionate physicians. Residency can be a lot of fun, but it can be hard. Keep your values, mission, and knowledge close, because they can be really helpful as you're going through your residency."

Dr. Brusca finds enormous joy in her work. "Being able to care for our patients at San Francisco General is a true privilege," she said. "Residents learn so much through the work they do here. I see it, and I read it in their rotation evaluations…. Everyone here is so wonderful. They are so dedicated to the mission of the General, improving our educational culture, and partnering in the face of challenges. I'm lucky to be in this role – it's a real gift."

DOM Fellowships Ombuds: Solving Problems, Supporting Potential

In addition to training medical students and internal medicine residents, the UCSF Department of Medicine (DOM) has about 200 trainees enrolled in nearly 40 fellowship programs, including both ACGME and non-ACGME fellowships. All fellows have completed internal residency training and are devoting additional years to becoming specialists or subspecialists. In addition to continuing their clinical and research training and teaching medical students and residents, they continue their own professional and career development.

Vanessa Thompson, MD

To help fellows navigate this important part of their training, Pat Cornett, MD, former Associate Chair for Education for the DOM, conceptualized the position of the DOM Fellowship Ombuds. This is a designated faculty member outside of fellows' specialty areas who provides confidential support, connects fellows with resources to help them do their best work, and facilitates evaluation of fellowship programs from the trainee perspective.

Vanessa Thompson, MD, Professor in the ZSFG Division of General Internal Medicine and a clinician-educator, has held this role since it was created in 2013. She continues to work in this capacity with Brian Schwartz, MD, current Associate Chair for Education for the DOM. As DOM Fellowship Ombuds, Dr. Thompson supports all DOM fellows as well as residents in the UCSF Occupational and Environmental Medicine Training Program.

"The Department of Medicine has invested in my time to offer a resource for fellows and fellowship programs because they are committed to improving the trainee experience within the department," said Dr. Thompson. "That's putting your money where your mouth is."

An Impartial Sounding Board

Her work with individual fellows is confidential, and tailored to their specific questions and needs. Because she is a primary care physician rather than a specialist, by definition she is outside of fellows' home divisions. They may feel more comfortable approaching Dr. Thompson to get perspective about sensitive issues because she is not one of their attending physicians, and is not someone they need to ask for letters of recommendation. "Part of my work is helping fellows navigate complex dynamics," she said.

For example, she might listen to their concerns about division scheduling practices or family leave policies, provide insight into systems and processes, and share institutional knowledge that may not be readily accessible elsewhere. Dr. Thompson may point them to resources, share how other programs might handle similar issues, or help them strategize about how to most effectively advocate for their needs. "I'm here if conflicts arise within your fellowship and you need an impartial listener, or if you are struggling with an issue you do not want to share with your fellowship leadership," she said.

As fellows get closer to applying for faculty or attending physician positions, she can provide context for hiring processes and outline approaches that have been useful for other people who have

transitioned from fellowship positions to the next step in their careers. Because Dr. Thompson is not involved in those hiring decisions, fellows may feel they can speak more frankly with her than some senior faculty in their own specialty whom they might normally consult. "My role is not to intervene on their behalf, but to support their self-efficacy and figure out how they can make things work," she said.

Much of her work as a medical educator has focused on increasing well-being among trainees. If fellows express a desire for more support in their clinical, professional or personal development, Dr. Thompson can work with them to better understand the challenge they are facing and connect them with resources. For example, she may refer them to the Graduate Medical Education coaching program; Ginger, an online coaching program available to all fellows; or the Faculty and Staff Assistance Program (FSAP), a free, confidential employee counseling service.

Partnering with Fellows and Fellowship Programs

The biggest part of Dr. Thompson's job as DOM Fellowship Ombuds is helping to evaluate fellowship programs from the trainees' perspective. Each year, she and Dr. Schwartz designate three to five fellowship programs to review, with the goal of evaluating every fellowship program with some regularity, as well as prioritizing those where fellows have expressed some challenges.

Dr. Thompson leads structured, confidential interviews with focus groups or individual fellows, asking open-ended questions about their clinical experience, didactics, the learning environment, career development, research support, program administration and leadership, and other aspects of the program. "Fellows are incredibly forthcoming, and the feedback runs the gamut, from program structure to day-to-day issues that affect the fellow experience," she said. Dr. Thompson takes that feedback, de-identifies the content to protect confidentiality, and compiles a report highlighting various themes. She shares that report with leaders of the fellowship program and division, with the goal of improving the learning climate and experience for fellows.

"In addition to the faculty and patient experience, fellows' perspectives provide a very important point of view," said Dr. Thompson. "In general, programs and divisional leadership have responded really positively to trainee feedback, and there is a universal commitment to the trainee experience." She also makes herself available to as a resource to leadership to help them respond to trainee feedback, such as connecting them with best practices and new, innovative approaches piloted by other DOM training programs.

Because some of the DOM fellowship programs are quite small – taking just one or two trainees a year – the DOM Fellowship Ombuds is a way to support these programs in a practical way. "It would be difficult for each fellowship to designate someone like me as an ombuds, but this way we can leverage economies of scale," said Dr. Thompson.

Whether she is working with individual fellows or fellowship programs as a whole, she appreciates getting to be a neutral third party, serving as an honest broker of information and resources. "I see myself as partnering with fellows to navigate systems, as well as partnering with programs to improve and better meet the needs of fellows, faculty and patients," said Dr. Thompson. "I find joy in helping individuals tap into their true potential and develop their sense of self. I also find it inspirational to work with trainees and fellowship programs to identify solutions to trainee-identified problems. My overarching goal is to contribute to an inclusive learning environment that is responsive to the needs of trainees."

Elizabeth Chur
Editors: Neil Powe, Laurae Pearson

SPOTLIGHT

Jeff Critchfield, MD, Division of Hospital Medicine will assume the role of Interim Vice Dean of the UCSF School of Medicine at ZSFG, effective July 1, 2024, as Elena Fuentes Afflick, MD, MPH, is stepping down.

Mary Gray, MD, Division of Cardiology, has been named Interim Division Chief effective May 1, 2024, as Priscilla Hsu, MD, is stepping down.

Delphine Tuot, MD, Division of Nephrology, has been named Division Chief effective April 1, 2024.

Diane Havlir, MD, Division of HIV, ID, and Global Medicine has received the UCSF Chancellor Award for Public Service.

Payam Nahid, MD, MPH, Division of Pulmonary and Critical Care Medicine, has been named the UCSF Institute for Global Health Scicnes Executive Director.

Congratulations to our 2024 Master Clinicians!

Joan Addington-White, MD, Division of General Internal Medicine

Jonathan Davis, MD, Division of Cardiology

Marlene Martin, MD, Division of Hospital