



UCSF PATHOLOGY ALUMNI NEWSLETTER

ISSUE 4: SEPTEMBER 2019

Message from The Director of Surgical Pathology: Ryan Gill, MD, PhD

I recognized early in my training that there is something special about the UCSF Department of Pathology. Maybe it is the combination of academic leadership with a casual West Coast atmosphere; maybe it is the overall camaraderie and faculty dedication to mentoring trainees and colleagues; or maybe it is the fact that the UCSF USCAP party is twice as long and as those of our peer departments; in any event, I have yet to encounter anything similar in other academic pathology departments. I accepted the role of Surgical Pathology Director intent on maintaining this culture of excellence and collegiality as we respond to new challenges and opportunities. One of the ways in which UCSF will continue to lead in Academic Pathology is by protecting Surgical Pathology faculty time for scholarly work. Under Jay's leadership we are maintaining a target clinical effort, which allows our faculty to continue to publish numerous high impact papers in their subspecialty (184 papers were published by UCSF surgical pathology faculty in 2017 and 2018), lecture around the world, write the definitive textbook/WHO chapters, and edit the most popular series and journals in diagnostic pathology.

This approach draws the very best scholars to our department. For example, just in the last year we were able to recruit both established and future leaders in academic pathology. Bob Ohgami, an international expert in Hematopathology, left Stanford to join us as an Associate Professor and Chief of Hematopathology. Emily Chan, an up and coming leader in GU pathology, joined the faculty after completing a Clinical Instructor year at UCSF; she was recruited by another leading academic center, but chose to stay with UCSF. We also expect great success from Amir Qorbani, who was recruited from a Bone and Soft Tissue fellowship program at UCLA, and joined our department as an Assistant Professor. His training included participation in a year-long USCAP mentoring program with Sharon Weiss. Our fourth Surgical Pathology recruit, KW Wen, joined the department after completing UCSF Hematopathology and Liver/GI fellowships, and has already been recognized with a top award from USCAP (the F. Stephen Vogel award) for a publication as a trainee in Modern Pathology. This work was conducted under the mentorship of another rising star in Liver/GI pathology, UCSF Assistant Professor, Won-Tak Choi. As we prepare for the 2020/2021 academic year, we have already completed recruitment of a new GYN pathologist, our own Nick Ladwig, to start following Chuck Zaloudek's retirement. Our renowned faculty continue to engage the residents in their scholarly work and this allows us to recruit an exceptionally talented and diverse group of medical students into our residency program every year.

One of the challenges we faced along the way was how to distribute work to allow for more subspecialized practice. We began this journey ~8 years ago when we divided the work into three equal groups, which we termed clusters A, B, and C. Faculty signed out one primary cluster and one back-up cluster (and dropped the third cluster). In 2014, we then subdivided the three clusters into 2 or 3 sub-clusters to eventually arrive at our current 9 cluster system, which allows for subspecialized surgical pathology services dedicated to Breast pathology (cluster A), GI/Hepatopancreaticobiliary pathology (cluster B), Genitourinary pathology (cluster C), Bone and Soft tissue pathology (cluster D), Head and Neck/Endocrine Pathology (cluster E), Thoracic pathology (cluster F), Gynecologic pathology (cluster G), Renal pathology (cluster H), and Hematopathology (cluster J).

This newsletter will coincide with roll out of our new website, which I hope you will enjoy. We now provide dedicated pages for pathology consultation services, as well as a new consultation form, which you will find on the website. You will also note an updated calendar of CME events where you can engage with our faculty; as always, please drop by the UCSF party at USCAP, it is always great to catch up with UCSF alumni!

Message from Director of Neuropathology: Arie Perry, MD

As I embark on my 10th year as the Director of Neuropathology (NP) at UCSF, I couldn't be prouder of our division and especially, the amazing people within it! Being biased, it's easy for me to declare that we have one of the best (if not the best) NP Divisions in the country, but hearing it as often as I do from my colleagues outside UCSF, I feel justified in this bold claim. With the generous support of our prior chair, Abul Abbas and our current chair, Jay Debnath, we've grown considerably since 2010, even though it was already an excellent clinical and academic practice prior to my arrival. I highlight below some of the changes, areas of growth, and current features of our division overall.

With 8 full time faculty, 3 adjunct professors, 2 clinical instructors, and 4 NP fellows in training, we are undeniably one of the largest NP programs in the country and our embarrassment of riches affords us the luxury to subspecialize more than most. Our division is now subdivided into surgical (both adult and pediatric) [Drs. Bollen, Tihan, Pekmezci, Solomon, Lee, and Perry], autopsy [Drs. Huang-chief, Margeta, Phillips, Solomon, Nolan, and Perry], neuromuscular [Drs. Margeta-chief, Bollen, and Nolan], ophthalmologic [Drs. Pekmezci and Bloomer], molecular [Drs. Solomon-chief, Lee, and Pekmezci], neurodegenerative [Drs. Huang, Seeley, and Grinberg], and neuroscience research [Drs. Huang-chief, Solomon, Phillips, Margeta, Nolan, Seeley, and Grinberg] subspecialty areas. We now receive >3500 diagnostic cases per year in total, including over 1000 outside consults, many of which are brain tumors sent not only for second opinion, but also for molecular characterization. In fact, the latter has expanded exponentially over the last 4 years, warranting the formation of a new molecular NP section led by Dr. David Solomon. We are extremely fortunate to have the infrastructure to develop one of the most extensive immunohistochemistry (IHC) panels for surrogate molecular stains, not only within our main clinical lab, but also within a CLIA-certified Brain Tumor Center (BTC) lab run by Dr. Joanna Phillips. The latter allows us to perform R&D on rarer IHC antibodies at the BTC, with eventual transference of fully optimized protocols to the main Pathology lab once sufficient clinical volumes are achieved.

Beyond IHC, we have extensive molecular testing services utilizing fluorescence in situ hybridization (FISH), Sanger sequencing, methylation specific PCR for MGMT analysis, and an unsurpassed next generation sequencing (NGS) panel, designated "UCSF500" for its inclusion of roughly 500 cancer genes. Because it also strategically includes intronic sequences and baits that are spaced throughout the genome, it represents a highly cost efficient, sensitive, and specific genomic technique designed to pick up nearly all the currently known brain tumor associated mutations, gene fusions (including those of common sarcomas), and copy number alterations. For the neuropathologist, this has completely revolutionized our routine brain tumor workup and has greatly enhanced our diagnostic accuracy overall. For our oncology colleagues, this additionally provides specific alterations for targeted therapy strategies. The third version of this panel is coming soon and our greatest advantage over commercial providers, such as Foundation Medicine is the vast NP expertise applied to our brain tumor cases, incorporating the NGS findings with the histopathology. In other words, this allows for much more detailed explanations of each molecular alteration within the specific context of the pathology in order to reach the most accurate and clinically informative integrated final diagnosis possible. Most recently, we've added methylation profiling as a research tool and hope to have it validated in the near future for clinical use as yet another diagnostic tool.

One of my greatest sources of pride is our highly talented NP trainees, who represent the bright and promising future of our specialty. When I first arrived at UCSF, we were similar to the majority of U.S. NP centers in training one fellow per year within our two-year ACGME-accredited program, the first year being entirely clinical and the second year, predominantly research. However, it became evident that the volume was becoming too much for the clinical fellow to juggle and more importantly, our split campuses prohibited some of the valuable educational opportunities beyond our main teaching hospital at the Parnassus campus. For this reason, we doubled our complement of fellows and expanded the spectrum of their rotations. Working with such bright and enthusiastic young fellows has always been one of my most rewarding responsibilities and our fellows' insightful questions always keep us on our toes. We also encourage our fellows to present their research at annual U. S. and Canadian Academy of Pathology (USCAP) and American Association of Neuropathologists (AANP) meetings. In fact, at this year's AANP meeting, we received a record number of six awards for UCSF presentations, four of which featured trainee first authors. Our prior UCSF fellows are now thriving in a wide variety of academic, private practice, and industry careers throughout the country and abroad, many of whom have taken on leadership roles and become highly sought experts in their own right. Of course, I'm also extremely proud of our faculty, who tirelessly teach courses around the globe, publish cutting edge science, write/edit the definitive NP textbooks, represent our specialty at World Health Organization (WHO), USCAP, AANP, and College of American Pathologists (CAP) consensus meetings, and serve as officers, committee members, etc. within our professional societies. Their academic productivity is second to none.

I hope that you have already had a chance to interact closely with some of our NP division members or if not, will consider doing so in the future. We look forward to seeing you as part of our extended family at future meetings and UCSF gatherings!

Message from Director of Digital Pathology Implementation: Zoltan Laszik, MD

UCSF's Digital Highway

In 2014, our department, along with the Medical Center, made a strategic decision to invest into digital pathology (DP) to prepare for the future. Although the long-term vision was to adopt DP for primary diagnosis to improve patient care and safety, there was also an imminent need to find a solution for the frozen section service of our multisite set-up with the opening of the new Mission Bay Hospital. Actions followed, and by February 2015 the hardware core of our DP operations was in place with one large capacity Philips IMS scanner deployed into each of our three hospitals and a high-speed network built to secure seamless digital traffic. This allowed for reading of frozen sections from remote sites, adoption of DP for tumor boards, conduction of clinico-pathological conferences between various sites, and facilitation of intradepartmental consults. Over the next few years we experienced, first-hand, the ups and downs of early DP adoption, from which we gained useful knowledge that enabled us to design our digital future with more confidence. Our guiding principles were to build consensus in the department for every step we took in the digital adoption and build alliances with the hospital administration and clinician colleagues for support. The integration of Image Management Software (IMS) of Philips and the LIS (Cerner CoPath) was accomplished by 2016 and departmental working groups were organized with the participation of faculty, trainees, and staff to address every detail of the digital adoption, including limitations, and to come up with recommendations to solve potential problems. Subspecialty service validation for the fully digital workflow has been accomplished for the bone and soft tissue, thoracic, renal, and heart biopsy services and is in progress for the GU service. In order to be able to scale the operation, we purchased 2 new scanners and placed all of our 5 scanners in the histology laboratory to allow for seamless scanning and the delivery of up to 400,000 slides per year without any delays for interpretation. With the help of UCSF IT, a pipeline to store approximately 1.5 PB images in cloud that will be produced each year was designed and will be activated later this year. If everything goes as planned, we will be fully or near-fully digital by the end of next year. Precision medicine starts with precision pathology; at UCSF we are on track to deliver the promise of better health care to our patients. The next "big thing" will be to embark upon computational pathology built on the foundation of D.P.

Recent & Upcoming Events

USCAP 2020 in Los Angeles

Registration Opens November 1st

Hotel Reservations Now Open

Precision Center Medical Building is NOW OPEN

Most of our Cytopathology Faculty has moved into the new their new offices at Mission Bay.

As we look forward to the future for the department and the exciting initiatives ahead, please consider supporting us. Your support impacts the greatest needs of the department, clinical research, and education and training

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