

Q1, March 2018

## from the Chair

### Dear alumni, trainees and faculty,

As many of you know, the surgical pathology fellowship has undergone a series of changes since it was first implemented by Dr. Dorfman and Dr. Kempson. At that time, that was the only pathology fellowship and it was truly a general consult service. Over time, with increased case volume and case complexity, the general consult service morphed into a somewhat specialized service with cases shown to the various subspecialty experts.



Continued growth required more fellows to handle the consults as well as the Hot Seat and the natural flow was to develop subspecialty fellowships. I am thrilled to announce we now have 14 fellowships in addition to the general surgical pathology fellowship. The current fellowships are: breast pathology, cytopathology, dermatopathology, hematopathology, gastrointestinal pathology, genitourinary pathology, gynecologic pathology, informatics, microbiology, molecular genetics, pediatric pathology, molecular pathology, neuropathology, and transfusion medicine with plans to introduce a renal pathology fellowship in the upcoming years. Never fear! Hot Seat still exists (in fact there are 2 now) and many of the subspecialty fellows rotate on Hot Seat in addition to their subspecialty rotations, which now include junior attending on frozen section and on resident sign-out. For many of you, the fellowship year was exhilarating, filled with hard work, long hours, tough cases...and fond memories. Many Alumni continue to contribute to that unparalleled fellowship experience whenever they send in a case for consultation. On behalf of our trainees, we thank you for that!

Sincerely,

**Tom Montine, MD, PhD, Chair,**  
**Stanford University, Department of Pathology**



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### Notable Pathology Events Featuring Stanford Pathologists

#### USCAP 2018 Annual Meeting

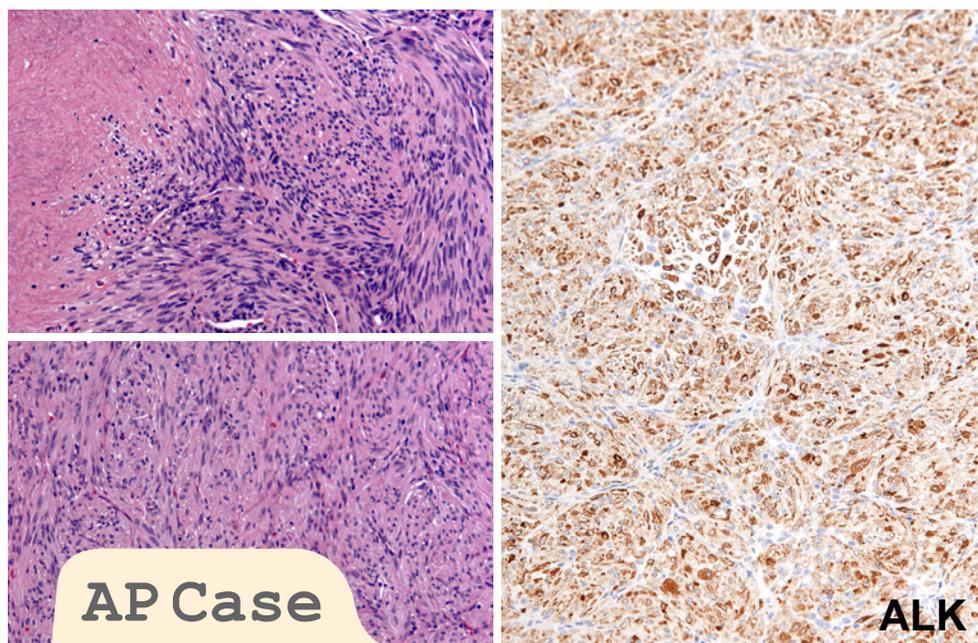
*Vancouver, BC, Canada, March 17-23, 2018 — Don't miss the reception on Sunday!...*

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## Critical Tips and Diagnoses (CRITDers)



**AP Case**

**ALK**

36 year-old G4P1 woman with a placenta previa who underwent a C-section delivery and resection of a 3 cm intrauterine mass.

**Differential Diagnosis:** Leiomyoma, myxoid leiomyoma, smooth muscle tumor of uncertain malignant potential (STUMP), inflammatory myofibroblastic tumor (IMT).

**Final Diagnosis:** Inflammatory myofibroblastic tumor (IMT). Histologic sections show a proliferation of spindle cells arranged in a whorled, fascicular pattern with variably myxoid stroma. A predominance of dilated thin-walled vessels and a patchy lymphoplasmacytic inflammatory infiltrate are notable at low-power. In addition, several foci of tumor cell necrosis are present. On high-power, atypia is mild and mitotic figures are infrequent (up to 3 mitotic figures per high-power field). Immunohistochemical stains for desmin, caldesmon and ALK are positive. ALK gene rearrangement is confirmed by FISH.

**AP Critical Tip:** Historically, IMTs have been under-recognized in the female gynecologic tract as they can have significant morphologic and immunohistochemical overlap with smooth muscle tumors. In particular, STUMPs are a heterogenous subgroup of tumors that can easily be confused with IMTs given that both can show variably myxoid stroma, increased mitotic indices, tumor cell necrosis, infiltrative borders, atypia, inflammatory infiltrates and smooth muscle marker positivity (e.g. desmin, caldesmon, smooth muscle actin). Since over 50% of IMTs contain rearrangements in ALK, usage of ALK immunohistochemistry and ALK FISH may help distinguish these two diagnoses. Importantly, ALK-rearranged IMTs are eligible for targeted therapy using tyrosine kinase inhibitors.

**References:** Devereaux KA, Kunder CA, Longacre TA. ALK-rearranged tumors are highly enriched in the STUMP subcategory of uterine tumors. [Devereaux K et al. Am J Surg Pathol, In Press.]

Contributors: Kelly Devereaux, Josh Segal, and Teri Longacre

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### CP Case

Thyroid function tests (TFTs) are ordered on a 56-year-old woman with a history of multiple sclerosis (MS) treated with natalizumab. The patient has had normal TFTs for many years and does not currently have any symptoms of hyperthyroidism. However, her thyroid stimulating hormone (TSH) is resulted as 0.02 uIU/mL (reference range: 0.40-4.00 uIU/mL), and her free thyroxine (T4) is >8.0 ng/dL (reference range: 0.6-1.6 ng/dL).

**Differential Diagnosis:** hyperthyroidism, factitious hyperthyroidism, biotin interference, mislabeled specimen

**Final iagnosis:** Biotin interference

**CP Critical Tip:** The TFT results alone are compatible with hyperthyroidism or factitious hyperthyroidism (from ingestion of exogenous thyroid hormone), but the patient would be expected to show signs and symptoms of overt hyperthyroidism with this degree of abnormality. Recently, there has been a surge in biotin (vitamin B7) supplementation for various reasons, including as a beauty product and as treatment for MS. In this case, clinical notes revealed that the patient had recently started high-dose biotin therapy.

Some automated assays use a biotin-streptavidin system for TFTs (and other tests), which may be affected by excess soluble biotin present in the sample. Biotin interference results in a falsely low TSH level and falsely high free T4 level, which may lead to an erroneous diagnosis of hyperthyroidism. In this case, TSH testing on the same sample was performed on a different platform that does not use a biotin-streptavidin system, resulting in a normal TSH level and also arguing against a mislabeled specimen.

**References:** Chun KY. Clin Chem. 2017;63: 619-62

Contributors: Hubert Lau and Run Zhang Shi

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## Alumni, Trainee, & Faculty Developments

### Alumni



#### **Michael R. Clay, MD (2014)**

Michael completed his AP residency at Stanford in 2014. He subsequently traveled to Emory University in Atlanta where he did a soft tissue fellowship with Dr. Sharon Weiss. He stayed in Emory to complete a molecular and genetic pathology fellowship before joining the faculty at St. Jude Children's Research Hospital in 2016 where he enjoys service responsibilities in both anatomic and molecular pathology. Michael's research focuses on the classification of sarcomas using high-density methylation arrays for the development of epigenetic tumor signatures. When not at work, Michael enjoys spending time with his wife Susan and their 5-year-old son Edrik on their farm outside of Memphis, TN. Michael and Susan have had great success on their farm, produce their own cheese, and recently delivered 6 baby goats.



#### **Salma Dabiri, MD (2011)**

Salma completed her AP/CP residency at Stanford in 2011. She subsequently completed a dermatopathology fellowship at University of California at Los Angeles. Salma is now in her fifth year of private practice in the South Bay, where she practices all of surgical pathology and serves as her group's dermatopathologist. She lives in San Francisco with her husband, Scott and beloved Airedale Terrier, Sully. She enjoys spending time with family and friends and occupies her free time with urban hikes, music concerts, plays and art shows in the city. She still enjoys daily workouts at the Palo Alto Equinox (which also helps to break up that horrendous evening commute) and is finally able to travel a bit more. She continues to stay in close contact with many of her fellow residents from Stanford, all of whom she considers lifelong friends.

### Trainees



#### **Jenny Hoffman, MD**

Jenny is completing her surgical pathology fellowship and rounding out her training with an additional year as a Stanford hematopathology fellow. With her stellar resume, and broad pathology skills, she is currently beginning her search for jobs throughout the United States.



#### **Joshua Menke, MD**

Joshua is thrilled to be a fellow in the hematopathology fellowship program at Stanford. He previously completed cytopathology fellowship at UCSF and a surgical pathology clinical instructor year at Johns Hopkins. His research interest includes molecular testing of cytology and hematopathology specimens. He is currently applying for positions in the Bay Area.

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**Brooke Howitt, MD**  
**(Gynecologic pathology and soft tissue pathology)**

Brooke joined the department in December 2017. She completed medical school and a post-sophomore fellowship in Pathology at Stanford before moving to Boston for an anatomic pathology residency and Women's and Perinatal Pathology fellowship at Brigham and Women's Hospital. After training she joined the faculty at BWH for 3.5 years before returning to Stanford as an Assistant Professor. In her spare time she and her husband chase their toddler around and enjoy exploring the outdoors and traveling.



**Eric Yang, MD, PhD**  
**(Gynecologic pathology and cytopathology)**

Eric joined the department in July 2015. He completed his AP residency at Brigham and Women's Hospital, followed by fellowships in Women's and Perinatal Pathology and Cytopathology also at the Brigham. His research interests include in vivo microscopy and its application to cancer screening of the lower anogenital tract. He is a bay area native and is thrilled to be back in sunny California!

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**Napa Valley Pathology Conference**

Napa, California, May 2018

**Great Lakes Pathology Conference**

Traverse City, Michigan, June 2018

**4th Annual Dr. Richard L. Kempson Diagnostic Pathology Course:  
 Making Diagnoses That Matter: Timely Updates in Lung, Head & Neck, & Skin**

Maui, Hawaii, July 2018

**Third Cancer Biomarker Conference (CBCIII)**

Houston Methodist Research Institute Auditorium, September 2018

**USCAP Interactive Learning Center**

Palm Springs, California, September 2018.

**College of American Pathologists**

Chicago, October 2018

**Arab Division of the International Academy of Pathology,  
 The XXXII Congress of the International Academy of Pathology**

King Hussein Bin Talal Convention Centre, Dead Sea, Jordan, October 2018



Any suggestions, news items, job postings, or other possible newsworthy bits are welcome and should be directed to one or both of the faculty editors (see below). Also, please contact us if you wish to be removed from the list or better yet, if you know of an alumnus who would like to be added to the list (with the appropriate contact info).

**Faculty Editors:** Bob Ohgami (rohgami@stanford.edu) and Teri Longacre (longacre@stanford.edu)

**Resident Editor:** Jenny Hoffmann (Jcheng35@stanford.edu)

**Production:** Norm Cyr (norm.cyr@stanford.edu)

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