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University of California, San Francisco

CURRICULUM VITAE

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EDUCATION

1990 - 1996	Govt. Medical College, Patiala, India	Bachelor of Medicine, Bachelor of Surgery (MBBS)	
1997 - 1998	Govt. Medical College, Chandigarh, India	Junior resident	Transfusion Medicine
1998 - 2001	Govt. Medical College, Patiala, India	Resident	Pathology
2001 - 2002	Postgraduate Institute of Medical Education & Research, Chandigarh, India	Post doctorate	Cytopathology (partial)
2004 - 2005	University of California San Francisco, San Francisco, CA	Research assistant	Neuropathology
2005 - 2009	University of Massachusetts Medical Center, Worcester, MA	Resident	Anatomic Pathology & Clinical Pathology
2007 - 2007	Massachusetts General Hospital, Boston, MA	Elective	Gynecological Pathology
2007 - 2007	Brigham and Women's Hospital PTH, Boston, MA	Elective	Cytopathology
2009 - 2010	University of California San Francisco, San Francisco, CA	Fellow	Cytopathology

LICENSES, CERTIFICATION

2004	Educational Commission for Foreign Medical Graduates (ECFMG)

1996	Certificate of Registration, Punjab Medical Council, Punjab, India
2009	California Physician and Surgeon Medical License (A107178)
2009	American Board of Pathology, Anatomic Pathology and Clinical Pathology
2010	American Board of Pathology, subspecialty certification in Cytopathology
2010	ThinPrep Certification, Thin prep Path TM liquid based Pap test
2010	SurePath Certification, BD Sure Path TM liquid based Pap test
2014	Certificate of Special Expertise in Ultrasound-Guided Fine Needle Aspiration, College of American Pathologists

PRINCIPAL POSITIONS HELD

2004 - 2005	University of California San Francisco, San Francisco, CA	Research Assistant	Neuropathology
2007 - 2008	University of Massachusetts Medical Center, Worcester, MA	Chief Resident Clinical pathology	Pathology
2008 - 2009	University of Massachusetts Medical Center, Worcester, MA	Chief Resident Anatomic and Clinical pathology	Pathology
2011 - 2012	University of California San Francisco, San Francisco, CA	Clinical Instructor Anatomic Pathology	Pathology
2012 - 2018	University of California San Francisco, San Francisco, CA	Assistant Clinical Professor	Pathology
2016 - present	Zuckerberg San Francisco General Hospital, San Francisco, CA	Director of Cytopathology Division	Pathology
2016 - present	Zuckerberg San Francisco General Hospital, San Francisco, CA	Site Director Cytopathology fellowship	Pathology
2018 - present	University of California San Francisco, San Francisco, CA	Associate Clinical Professor	Pathology

HONORS AND AWARDS

2008	Chief Resident, Anatomic Pathology and Clinical Pathology	University of Massachusetts Medical Center, Worcester, MA
2007	Chief Resident, Clinical Pathology	University of Massachusetts Medical Center, Worcester, MA
2017	Hearts Grant Award	San Francisco General Hospital Foundation, San Francisco, CA

KEYWORDS/AREAS OF INTEREST

Pathology, Cytopathology, Fine needle aspiration biopsy, Ultrasound guided FNA, Bladder cytology, Breast pathology, Surgical pathology, Immunohistochemistry, Cancer, Medical education.

CLINICAL ACTIVITIES

CLINICAL ACTIVITIES SUMMARY

Director, Division of Cytopathology, ZSFG, 2016-Present
Site Director, Division of Cytopathology Fellowship, 2016-Present

My mission at University of California San Francisco (UCSF) is to provide high-quality and timely diagnostic cytopathology and surgical pathology service at the Zuckerberg San Francisco General Hospital (ZSFG) and Mission Bay campuses. I contribute to general surgical pathology with a subspecialty focus on breast pathology, as well as cytology. I perform fine needle aspiration (FNA) biopsies by palpation and ultrasound guidance, and immediately assess the specimen so that I can provide the treating physician with a preliminary diagnosis while the patient is still in the clinic. I regularly review intraoperative frozen section cases including night and weekend calls.

As Director of the Cytopathology service at ZSFG, I oversee the Cytopathology Laboratory, accredited by the Joint Commission (JC). This lab processes approximately 9,000 Pap tests, 1,000 non-gynecologic exfoliative specimens, and 850 fine needle aspiration biopsy specimens annually. The service is staffed with three faculty pathologists, two cytopathology fellows, one cytology supervisor, one cytotechnologist, and two lab technicians. I have daily interactions with the staff and other doctors to address individual case issues, assure JC laboratory regulatory compliance, validate new testing, implement process improvements and improve our facilities. For example, I have currently established a FNA clinic at ZSFG to provide state-of-the-art FNA diagnostic services, wherein the staff would offer real-time diagnostic consultations in cytopathology. Although, this has been a challenge for the past 30 years due to lack of clinical space, support, and advocacy, I was finally able to achieve this goal recently, which was very important for patient care and the team.

I spearheaded the acquisition of an ultrasound machine with the help of Hearts Grants for the FNA service, installed in 2017. I am in the process of training all Cytopathology faculty and fellows in using ultrasound for imaging FNA targets and to use ultrasound as a guide for FNA procedures, leading to a decrease in number of non-diagnostic FNAs and unnecessary second follow up patient’s visits for non-palpable masses.

At ZSFG, I have facilitated the establishment of cytology telepathology, remote medical technology (RMT), and currently I am training cytology fellows and cytotechnologists to assess rapid on-site evaluation of FNA procedures independently, under supervision remotely. This will help to expand the availability of FNA procedure coverage by pathology staff to clinicians and patients.

As a cytology fellowship site director for ZSFG, part of my responsibility is to recruit fellows who can practice cytopathology in an academic environment. I supervise their introduction to clinical practice and oversee educational curriculum that provides clinical, teaching, and research opportunities focused in cytology.

I participate in and present cases at numerous ZSFG multidisciplinary tumor boards including breast tumor boards twice a month; this role draws upon my expertise in both breast pathology and cytopathology. I serve as one of the pathologists at ZSFG providing daily quality assurance review of our immunohistochemistry lab. I am also responsible for pathology resident's and medical student's cytology rotation and I have laid out a schedule for cytology for residents at ZSFG.

PROFESSIONAL ACTIVITIES

MEMBERSHIPS

2005 - present United States and Canadian Academy of Pathologists

2005 - present College of American Pathologists

2010 - present American Society of Clinical Pathology

2013 - present Papanicolaou Society of Cytopathology

2016 - present South Bay Pathology Society

2018 - present American Society of Cytopathology, Case Study Committee member

SERVICE TO PROFESSIONAL ORGANIZATIONS

2018 - present	American Society of Cytopathology, Case Study Committee	Member
2020 - present	The Paris System for Reporting Urinary Cytology Working Group.	Member

SERVICE TO PROFESSIONAL PUBLICATIONS

2013 - present Ad-hoc reviewer for Diagnostic Cytopathology

2014 - present Ad-hoc reviewer for Cytojournal

2016 - present Ad- hoc reviewer Human Pathology case reports

2019 - present Ad-hoc reviewer for Journal of American Society of Cytopathology

2020 - present Ad-hoc reviewer for Cancer Cytopathology

INVITED PRESENTATIONS - INTERNATIONAL

2002	Clinico histopathological correlation of vesiculobullous lesions. 51st Annual Conference of Indian Association of Pathologists & Microbiologists. Kolkata, India\	Platform presentation
2007	RNA-binding protein IMP3 expression in neoplasms of the Schneiderian and squamous mucosa of the head and neck. United States and Canadian Academy of Pathology 96th Annual Meeting. San Diego, CA	Platform presentation

2007	p16 protein expression in neoplasms of the Schneiderian and squamous mucosa of the head and neck. States and Canadian Academy of Pathology 96th Annual Meeting. San Diego. CA	Poster presentation
2012	Challenges in fine needle aspiration of superficial soft tissue lesions. Indo US International CME in surgical pathology, cytology and hematology. Department of Pathology, Himalayan Institute of Medical Sciences in collaboration with Association of Indian Pathologists in North America (AIPNA) & Indian college of Pathologist (ICP). Uttaranchal, India	Invited speaker
2012	Challenges in fine needle aspiration of superficial soft tissue lesions. Department of Pathology, Govt. Medical College Patiala. Punjab, India (Invited)	Invited speaker
2012	Diagnostic challenges and pitfalls in FNAC of Salivary gland tumors. Annual Conference of Indian Academy of Cytologists, Cytocon. Bhubaneswar, India	Invited speaker
2013	Comparison of ER, PR and HER2 expression between breast carcinoma fine needle aspiration samples and corresponding surgical pathology specimens - a large retrospective study. United States and Canadian Academy of Pathology 102nd Annual meeting. Baltimore, MD	Poster presentation
2014	Cervical cytology. 19th AIPNA-ICP International CME 2014, Department of Histopathology, PGIMER. Chandigarh, India	Invited speaker
2014	Correlation between Fine Needle Aspiration Biopsies (FNA) and Surgical Specimens in the Diagnosis of Fibroepithelial Lesions of the Breast- A Large Retrospective Study. United States and Canadian academy of Pathology 103rd Annual Meeting, San Diego, CA, 2014.	Poster presentation
2015	Mucosal Proliferations in Completely Dissected Fallopian Tubes in a Blinded Study of Ovarian Serous Cystadenoma, Borderline Tumor and Low Grade Serous Carcinoma: Does a Precursor Tubal Lesion Exist?" United States and Canadian academy of Pathology 104th Annual meeting. Boston, MA	Co-Author
2016	Ultrasound FNA Biopsy Workshop. American Society of Cytopathology 64th Annual Scientific Meeting. New Orleans, LA.	Lead presenter
2017	A Paris System-Like Approach and Cell Block Utilization in Urine Cytology. United States and Canadian academy of Pathology 106th Annual meeting. San Antonio, TX.	Senior Author

2017	Breast Fine needle aspiration biopsy with a focus on papillary lesions. Virtual Slide Seminar. American Society of Cytopathology, 65th Annual Scientific Meeting. Phoenix, AZ	Invited speaker
2017	Ultrasound FNA Biopsy Workshop. American Society of Cytopathology 65th Annual Scientific Meeting. Phoenix, AZ	Lead presenter
2017	Rapid On-Site Evaluation; Live in Action!. Video Microscopy. American Society of Cytopathology. 65th Annual Scientific Meeting. Phoenix, AZ	Invited speaker
2017	Anal Cytology. American Society of Cytopathology Meeting, 65th Annual Scientific Meeting. Phoenix, AZ	Invited speaker
2018	Quantification and Viability Assessment of Cytopathologist-Performed Ultrasound-Guided Fine Needle Aspiration Biopsy (USFNA) of Nonpalpable Inguinal Lymph Nodes (LNs) in HIV-infected Adults. United States and Canadian Academy of Pathology 107th annual meeting. Vancouver BC.	Senior Author
2018	Clinical and Pathologic Features of Invasive Breast Cancers with OncotypeDx Recurrence Score Less Than 11. United States and Canadian Academy of Pathology 107th annual meeting. Vancouver BC.	Lead presenter
2018	Rapid On-Site Evaluation; Live in Action! Video Microscopy. American Society of Cytopathology 66th Annual Scientific Meeting. Washington DC	Invited speaker
2018	Ultrasound FNA Biopsy Workshop. American Society of Cytopathology 66th Annual Scientific Meeting, Washington DC	Lead presenter
2018	Anal Cytology. American Society of Cytopathology 66th Annual Scientific Meeting. Washington DC	Invited Speaker
2018	Fine Needle Aspiration Biopsy of Primary Pulmonary Adenocarcinoma Yields Higher Percentage of Tumor Cells for Molecular Studies: A 5-year Comparison Study to Needle Core Biopsy Sampling. American Society of Cytopathology 66th Annual Scientific Meeting. Washington DC.	Senior Author
2018	Ultrasound-guided Fine Needle Aspiration Biopsy (USFNB) is an Effective Method to Measure HIV Reservoirs in Lymph Nodes., American Society of Cytopathology 66th Annual Scientific Meeting, Washington DC	Senior Author

2019	Genomic Profiling of Basaloid Breast Carcinomas Reveals Recurrent Alterations in CREBBP and Distinct Genetics from Other Triple Negative Breast Cancers. United States and Canadian Academy of Pathology 108th annual meeting. Vancouver BC	Platform presentation. Co-Author
2019	Truong K, Ung R, Vohra P, Joshua Menke J, Ng DL. Evaluation of Cytologic-Histologic Discordance Rates in Anal Dysplasia and Cancer Screening. United States and Canadian Academy of Pathology 108th Annual meeting. Baltimore, Maryland	Poster presentation
2019	Ultrasound FNA Biopsy Workshop. 20th International Congress of Cytology, Sydney, Australia	Invited presenter
2019	Ultrasound FNA Biopsy Workshop. American Society of Cytopathology 67th Annual Scientific Meeting. Salt Lake City, Utah	Lead presenter
2019	Troung K, Ng D, Ung R, Vohra P. Evaluating Hidden Biases in Clinical Cytopathology Practice. American Society of Cytopathology 67th Annual Scientific Meeting. Salt Lake City, UT	Poster presentation
2019	Margin detection mini-symposium. 5th World Congress on controversies in Breast Cancer. San Francisco, CA	Invited speaker
2020	Fine Needle Aspiration and Core Needle Biopsy Have Similar Diagnostic Performance for Fibroepithelial Lesions of Breast. United States and Canadian Academy of Pathology 109th Annual meeting. Los Angeles, CA	Poster presenter
2020	Chondroid Matrix-Producing Metaplastic Carcinomas of the Breast are Genetically Distinct from Mixed Metaplastic Carcinomas with Chondroid Differentiation. United States and Canadian Academy of Pathology 109th Annual meeting. Los Angeles, CA	Platform presentation, Co-Author
2020	Breast Hidradenoma and Breast Mucoepidermoid Carcinoma Share Pathologic Features and Molecular Alteration. The American Society of Dermatopathology, 57th Virtual Annual Meeting.	Platform presentation Co-Author
2021	Upper Urinary Tract Cytology Performance Before and After the Implementation of the Paris System for Reporting Urinary Cytology (TPS). United States & Canadian Academy of Pathology's 110th Virtual Annual Meeting.	Presentation

INVITED PRESENTATIONS - NATIONAL

2006	KOC (K-Homology-Domain-Containing-Protein Over-expressed in Cancer. Annual Meeting of the American Thyroid Association (ATA). Phoenix, Arizona	Poster presentation
2006	Vascular Endothelial Growth Factors (VEGF-D) In Papillary and Follicular Thyroid Tumors. Annual Meeting of the American Thyroid Association. Phoenix Arizona .	Lead presenter
2013	iagnosis of Rare and Sometime-Not-So-Rare Superficial Soft Tissue Tumors on FNAB . Annual UCSF Current Issues, Cytology Seminar. San Francisco, CA	Invited speaker
2014	17th Annual UCSF Current Issues, Cytology Seminar. Atypical glandular cells" Cervical cytology	Invited speaker
2015	18th Annual UCSF Current Issues, Cytology Seminar. Anal cytology.	Invited speaker
2016	CA Society of Pathologists (CSP) 69th Annual Meeting, San Francisco Nov 30th. The Paris system for reporting urinary cytology.	Invited speaker
2017	Paris system for reporting urinary cytology. 19th Annual UCSF Current Issues, Cytology Seminar. San Francisco, CA	Invited speaker
2018	Cervical Cytology. Annual 20th UCSF Current Issues, Cytology Seminar, San Francisco, CA	Invited speaker
2018	Anal cytology. Society for Cytotechnology (ASCT) Educational Webinar	Invited speaker
2018	Primary Effusion Lymphoma: Expanding Our Differential Diagnosis for SBP. SGIM national conference. Chicago, IL	Poster presentation
2019	Myoepithelial lesions of the Breast. Annual 21st Current Issues in Anatomic Pathology and Cytology, UCSF. San Francisco, CA	Invited speaker
2019	The Paris system for reporting urinary cytology. California Society of Pathologists (CSP) Annual Meeting. San Francisco, CA	Invited speaker
2019	Case presentation and Kidney FNA. California Society of Pathologists (CSP) Annual Meeting. San Francisco, CA	

INVITED PRESENTATIONS - REGIONAL AND OTHER INVITED PRESENTATIONS

2011	Diffuse large B cell lymphoma vs. Burkitt's lymphoma. Medical Grand Rounds HIV/AIDS, Zuckerberg San Francisco General Hospital. San Francisco, CA	Invited speaker

2011	Practical and pertinent issues in cytology (IR guided FNA specimens), Department of Radiology IR staff conference. Zuckerberg San Francisco General Hospital . San Francisco, CA	Invited speaker
2017	EBV associated smooth muscle tumor. South Bay Pathology Society meeting. Palo Alto, CA	Presenter
2017	Medical Grand Rounds HIV/AIDS. EBV associated smooth muscle tumor in liver at Zuckerberg San Francisco General Hospital.	Invited Speaker
2018	Clear cell variant of follicular carcinoma thyroid metastatic to bone South Bay Pathology Society meeting. Palo Alto, CA	Presenter
2018	Clinical Vignette for the Primary Effusion Lymphoma: Expanding Our Differential Diagnosis for SBP. Society of General Internal Medicine Regional Conference.	Poster presentation
2019	Head and Neck Cytology resident slide session review, Stanford University. Stanford. Palo Alto, CA	Invited presentation
2019	The impact of The Paris System for reporting urinary cytology. Stanford University. Stanford. Palo Alto, CA	Invited speaker

CONTINUING EDUCATION AND PROFESSIONAL DEVELOPMENT ACTIVITIES

2000	Indo-US Symposium and Slide Seminar, Endocrine Surgical Pathology. Lucknow, India
2010	13th Annual UCSF Current issues in Anatomic Pathology. San Francisco, CA
2011	United States and Canadian Academy of Pathology Annual Meeting. San Antonio, TX
2011	CAP inter laboratory performance improvement program in surgical pathology PIP-D
2011	CAP inter laboratory performance improvement program in cytopathology PIP-D
2011	UCSF Department of Pathology Mechanisms of Disease lecture series. San Francisco, CA
2011	14th Annual UCSF Current issues in Anatomic Pathology. San Francisco, CA
2012	UCSF Department of Pathology Mechanisms of Disease lecture series. San Francisco, CA
2012	15th Annual UCSF Current issues in Anatomic Pathology. San Francisco, CA
2013	United States and Canadian Academy of Pathology Annual Meeting. Baltimore, MD
2013	16th Annual UCSF Current issues in Anatomic Pathology. San Francisco, CA

2014	CAP USFNA certification workshop. Chicago, IL
2014	United States and Canadian Academy of Pathology Annual Meeting. San Diego, CA
2014	17th Annual UCSF Current Issues in Anatomic Pathology. San Francisco, CA
2015	18th Annual UCSF Current Issues in Anatomic Pathology. San Francisco, CA
2016	American Society of Cytopathology. 64th annual scientific meeting. New Orleans, LA
2016	United States and Canadian Academy of Pathology Annual Meeting. Seattle, WA
2017	Improving patient experience through communication organized by University of Arkansas for Medical sciences. San Francisco,CA
2017	American Society of Cytopathology. 65th annual scientific meeting. Phoenix, AZ
2017	United States and Canadian Academy of Pathology Annual Meeting, San Antonio TX
2017	Annual UCSF Current Issues in Anatomic Pathology, San Francisco, CA
2018	Annual UCSF Current Issues in Anatomic Pathology, San Francisco,CA
2018	American Society of Cytopathology. 66th annual scientific meeting. Washington DC
2018	United States and Canadian Academy of Pathology Annual Meeting. Vancouver BC
2019	South Bay Pathology Society Meeting. Palo Alto, CA
2019	United States and Canadian Academy of Pathology Annual Meeting. Baltimore, MD
2019	Annual UCSF Current Issues in Anatomic Pathology, San Francisco, CA
2019	American Society of Cytopathology. 65th annual scientific meeting. Salt Lake City, Utah
2019	20th International Congress of Cytology. Sydney, Australia
2020	United States and Canadian Academy of Pathology Annual Meeting. Los Angeles, CA
2020	South Bay Pathology Society meeting. Virtual.

UNIVERSITY AND PUBLIC SERVICE

SERVICE ACTIVITIES SUMMARY

I have been involved in monthly performance improvement patient safety (PIPS) meetings in the ZSFG pathology department to ensure quality assurance in the delivery of pathology services.

I am a member of the Cancer Committee at ZSFG and attend monthly meetings to discuss ongoing issues in tumor staging and to improve multidisciplinary care of cancer patients. On an annual basis, I report pathology department compliance with Std.5.1: College of American Pathologists Protocols and Synoptic reporting, which states that, ninety percent (90%) of the eligible cancer pathology reports are structured using synoptic reporting format as defined by the College of American Pathologists (CAP) cancer protocols, including containing all core data elements within the synoptic format.

UCSF CAMPUSWIDE

2013 - present	Cytopathology Fellowship Clinical Competence Committee (CCC). University of California San Francisco. San Francisco, CA	Committee member
2014 - present	Cancer Committee, Zuckerberg San Francisco General Hospital. San Francisco, CA	Committee member
2014 - present	Commission on Cancer (CoC) Quality program project on at least15 lymph nodes removed and pathologically examined in resected gastric cancers. Zuckerberg San Francisco General Hospital. San Francisco, CA	Presenter
2014 - present	Commission on Cancer (CoC) Quality program project on at least 10 lymph nodes removed and pathologically examined in AJCC stage IA, IB, IIA and IIB resected non-small cell lung cancers. Zuckerberg San Francisco General Hospital. San Francisco, CA	Presenter
2019 - present	Global Cancer Program. University of California San Francisco. San Francisco, CA	Member
2020 - present	Anatomic Pathology resident (UCSF) Clinical Competency Committee (CCC). University of California San Francisco. San Francisco, CA	Member

SCHOOL OF MEDICINE

2007 - 2009	Graduate Medical Education Council, UMASS	Resident representative
2017 - 2017	Faculty Search Committee (JPF01092), UCSF Pathology.	Committee member
2017 - 2017	Faculty Search Committee (JPF01177), UCSF Pathology.	Committee member
2018 - 2018	Faculty Search Committee (JPF01806), UCSF Pathology	Committee member
2019 - 2019	Faculty Search Committee (JPF02538), UCSF Pathology	Co-Chair

DEPARTMENTAL SERVICE

2009 - 2010	Multidisciplinary Gynecology Tumor Board, ZSFG Hospital. San Francisco	Review and present cases.
2009 - 2010	Multidisciplinary Breast Interdisciplinary Tumor Board, ZSFG Hospital. San Francisco, CA	Review and present cases.

2011 - present	Performance Improvement Patient Safety (PIPS) meetings, ZSFG Hospital. San Francisco, CA	Member
2011 - present	Multidisciplinary Surgical Tumor Board, ZSFG Hospital. San Francisco, CA	Review and present cases.
2013 - present	Multidisciplinary Breast Interdisciplinary Tumor Board, ZSFG Hospital. San Francisco, CA	Review and present cases.
2016 - present	Director Cytopathology, ZSFG Hospital. San Francisco, CA	Director
2016 - present	Cytopathology Fellowship Site Director, ZSFG Hospital. San Francisco, CA	Site Director
2016 - present	Pathology Consensus Conference twice weekly, ZSFG Hospital. San Francisco, CA	Present cases

COMMUNITY AND PUBLIC SERVICE

2019 - present	Partners in Cancer Diagnosis and Treatment in Africa Coalition. American Society of Clinical Pathology (ASCP). African telepathology initiative.	Consultant

CONTRIBUTIONS TO DIVERSITY

CONTRIBUTIONS TO DIVERSITY

I have been committed to diversity since I was a fellow and, subsequently, as faculty at ZSFG since 2011. By working in a community hospital, we serve broadly diverse and underrepresented populations including different religions, genders, sexual orientations, and patients with economic disadvantage, as well as recent immigrants.

In my current role as a cytology director at ZSFG, I am committed to building a workplace that reflects the diversity of the community we serve. People from different backgrounds serve in a number of roles in my department and share the same goal of providing high-quality patient care. My cytology team offers direct patient care in a multidisciplinary, subspecialty walk-in fine needle aspiration (FNA) clinic that values and strongly supports equitable access to cytopathology for the diverse population at ZSFG.

I both teach the improvement process and engage fellows in quality improvement projects that have a direct bearing on equitable care. Kent Truong and Lucy Han, our cytology fellows in 2019-2020, successfully completed A3 training titled “Local Anesthesia (LA) Administration: Improvements in Clinical Cytopathology Practice” as part of the hospital-wide House staff performance improvement program for 2019-2020 at the ZSFG. Previously collected data (2017-2018) on lidocaine administration prior to FNA biopsy indicated discrepancies in usage rates across races and between genders. Fewer than 40% of our patients received lidocaine and the coefficient of variance (CV) between groups was ~30% (higher CV implies greater discrepancy between race and gender). The aim of this project was to mitigate the impacts of any potential unconscious/implicit bias on the decision of whether or not to use LA prior to FNA. Institutional policies are one method to eliminate unconscious/implicit bias. In order to reach the goal, my cytology team took the following measures: 1. Initiated a departmental policy in which all patients would receive local lidocaine prior to FNA biopsy. 2. Coordinated with various clinics in which we perform FNAs to ensure that lidocaine was available when

needed. 3. Established our own FNA clinic in which we could control the availability of lidocaine. 4. Performed cytopathology staff education to ensure awareness of the potential impacts of unconscious/implicit bias on our decision to administer lidocaine. 5. Explained to every patient the reasons for lidocaine use prior to FNA to ensure patient comfort and satisfaction. With these measures, significant improvements in LA administration were made since 2017-2018, and our goal of LA administration to greater than 95% among all races/genders was met in 2019. This initiative directly relates to the UCSF commitment to Differences Matter in regard to both patient experience and patient quality of care. Our current cytopathology fellows are designing and implementing patient satisfaction surveys post-FNA procedure as their A3 project this year.

Other examples of a continual focus on inclusion and diversity:

I participated in a workshop “Improving patient experience through communication” organized by University of Arkansas for Medical Sciences in October 2017. This was designed to support and encourage an inclusive environment for healthcare delivery and enhance communication skills.

Since January 2019, I have participated in diversity initiatives by volunteering to review consult cases from Tanzania and being a part of “Partners in Cancer Diagnosis and Treatment in Africa Coalition” which is an American Society of Clinical Pathologists for Africa telepathology initiative. I also recently became a member of the Global Cancer Program.

I am very proud to be a Pathology faculty member at the ZSFG, where diversity is welcomed and celebrated with pride.

TEACHING AND MENTORING

TEACHING SUMMARY

There are three areas of teaching in my various roles at UCSF:
(1) As Director of the Cytopathology Service and the ACGME accredited Cytopathology Fellowship Site Director at ZSFG, I play an active role in designing and implementing the curriculum for teaching cytopathology to residents and fellows, and in continuing education for cytotechnologists. In 2015, I introduced a new cytology schedule and laid out a plan to reach a new ACGME requirement for cytology for residents at ZSFG.

In 2017, I initiated didactic lectures and conferences of interesting cases in cytology for residents and fellows. These conferences provide an understanding of how pathologists arrive at diagnosis with specific examples. In this setting, I use multiple-choice questions at the end to gauge the effectiveness of the lecture and to reinforce key learning points. These lectures also help trainees to prepare for AP/CP and Cytology boards. Cytology teaching at ZSFG is a highlight of every exit interview with the residents.

(2) As an attending pathologist, I participate in one-on-one microscope-based teaching of pathology residents and cytopathology fellows. I also teach residents as I review the gross specimens and microscopic slides of clinical cases as part of routine clinical sign-out.

In addition, I teach residents and fellows how to perform FNA biopsies and prepare and interpret all types of cytology samples. For teaching FNA biopsy technique, I established a weekly FNA workshop where the residents and medical students on cytology have the opportunity to practice palpation and ultrasound guided FNA biopsy on a phantom mold. This

enables residents to acquire a degree of proficiency before performing their first FNA on a patient.

(3) As the faculty supervisor for the medical student rotations at ZSFG, I lead an integral component of our Pathology 150.03 elective for MS3s and MS4s and have the primary responsibility for this component of the student elective experience. I interact directly with the students, and I make sure they spend the appropriate time on the cytology and surgical pathology services to have a complete UCSF experience. Our cytology curriculum for medical students includes FNA rounds, cytology teaching and unknown cases sessions twice a week, and daily sign-outs at the microscope. In addition, medical students are introduced to cytology preparation techniques in the cytology laboratory during this period. Recently, I participated in the “Ultrasound- guided FNA skills session for medical students” and gave a Medical Student Senior Virtual Pathology elective course on "Cervical and Anal Cytology” in the remote version of Pathology 150.03.

At the international level, I teach a workshop for the American Society of Cytopathology on FNA biopsy with US guidance and have been doing consistently since 2016. In addition, I have also given several well-received educational lectures and microscopic tutorials in cytology, regional, national and international conferences, including the UCSF Current Issues as well as the American Society of Cytopathology Annual Meeting, California Society of Pathology conferences, and the American Society for Cytotechnology webinars.

INFORMAL TEACHING

2007 - 2009 As a Chief Resident: Special Gross Conferences: I reviewed interesting and classic gross presentations of disease entities (monthly presentation) .Unknown Conferences: I presented challenging unknown cases of the week, a conference geared towards teaching residents an organized approach to diagnosis (Bi-weekly presentation)

2009 - 2010 As A Cytology Fellow: I presented tutorials for medical students (monthly at Moffitt Hospital). I reviewed the sides and presented at the Tumor board conference (monthly at SFGH). I also presented thyroid cytology interdepartmental conference (monthly at SFGH).

2011 - 2012 As a Clinical Instructor: Cytology unknown slide conferences (weekly at SFGH) Interesting cases in cytology conferences (weekly at SFGH). Monthly cytotechnologist conference (at SFGH). Daily teaching during sign out sessions with fellows and residents rotating on surgical pathology and cytopathology services. Informal teaching and supervision of pathology residents/fellow performing and interpreting FNA biopsies .

2012 - 2018 As an Assistant Clinical Professor: Responsible for daily teaching during sign-out sessions with fellows and residents rotating on surgical pathology and cytopathology services including teaching in FNA workshop developed for training of FNA technique and smear making for residents and medical students. Responsible for teaching and supervision of medical student elective rotation in pathology geared towards UCSF and visiting students interested in pursuing residency in anatomic pathology and laboratory medicine one week in a month in cytology at ZSFG.

2012 - present Twice a month breast interdepartmental conference in collaboration with the department of Radiology, Oncology and Surgery faculty,fellows, and residents.

2018 - 2018 - present As an Associate Clinical Professor: Responsible for daily teaching during sign-out sessions with fellows and residents rotating on surgical pathology and cytopathology services including teaching in FNA workshop developed for training of FNA technique and smear making for residents and medical students. Teaching and supervision of medical student elective rotation in pathology geared towards UCSF and visiting students interested in pursuing residency in anatomic pathology and laboratory medicine one week in a month in cytology at ZSFG.

MENTORING SUMMARY

As the director of the Cytopathology fellowship program, I serve as the faculty advisor for both residents and cytopathology fellows, as they spend about 50% of their rotation time at the ZSFG campus. I specifically train the fellows on FNA sampling technique and supervise their work in the clinic with patients on a daily basis. I mentor the fellows in creative activities such as A3/LEAN Management Fellow Incentive Program and IHC validation projects and strongly encourage every fellow to perform a project aiming at peer-reviewed publication during the fellowship year.

As others have mentored me in the past (and continue to do so), I informally mentor residents and younger faculty members and advise them on various academic activities, promotion requirements, and career decisions. Several trainees have progressed on to faculty positions; some are continuing their training, and some are in private practice.

I have mentored fellows to teach medical students in special skills sessions: in December 2020, both the cytopathology fellows participated in the ultrasound-guided FNA skills session hosted by our Pathology Student Interest Group in the Kanbar Simulation Center at Parnassus. In addition, I invited on of our fellows to give a teaching session to medical students in the remote version of our senior Pathology elective, course code Path 150.03. This session in April 2020 was one of the earliest examples of Zoom-based remote teaching for our students as we adapted to a new workflow due to COVID precautions.

RESEARCH AND CREATIVE ACTIVITIES SUMMARY

I am currently in a Health Sciences Clinical Series with clinical, teaching and scholarly/creative work responsibilities.

My research activities have focused on translational research in cytopathology with a focus in bladder cytology and surgical breast pathology focusing on clinical applications of refining morphological criteria, immunohistochemistry and molecular diagnostics.

I have recently contributed to 2 book chapters (Adequacy and Upper Urinary Tract Cytology (UUT)) in the second edition of “The Paris System for Reporting Urine Cytology 2.0”. In addition, I have recently published 2 comprehensive reviews on “Upper Tract Urinary Cytology” with an international collaboration in Cancer Cytopathology and Journal of American Society of Cytopathology (JASC). The objective of these studies was to systemically review the published literature on the utility and performance of UUT cytology in identifying upper tract urothelial carcinoma (UTUC) before and after implementation of The Paris System.

I am also a co-investigator with the “SCOPE STUDY” by Dr. Steven Deeks in examining HIV-associated immune dysfunction and its impact on HIV persistence (the reservoir). SCOPE is an observational, prospective study of HIV-1 infected volunteers designed to provide a specimen bank of samples with carefully characterized clinical data. SCOPE specimens are used to examine multiple questions involving virologic, immunologic, and host factors involved in HIV-1 infection, progression, non-progression, response to treatment, control of HIV-1 virus, and evolution of drug resistance. My role as a leading pathologist is to procure lymph node samples by fine needle aspiration under ultrasound guidance and to perform rapid on-site interpretation of the samples. I recently submitted an abstract based on our experience titled “The use of fine needle aspiration of the inguinal lymph nodes to support HIV pathogenesis studies” to the USCAP and American Society of Cytopathologists (ASC). This study has demonstrated that cytopathologist performed US-guided FNAB of non-palpable inguinal lymph nodes in HIV-infected adults is a well-tolerated and safe procedure and provides sufficient and viable samples for various HIV-1 reservoir and pathogenesis studies. Additionally, US-guided FNAB is an excellent alternative to LN excision for various research methodologies. Another advantage is that US-guided FNAB provides the capacity to study the same site longitudinally over time, which will allow for more precise assessment of how a variety of potentially HIV curative interventions affect immune function and the reservoir instead of lymph node excisions. As a part of this project, I coauthored a study "Phenotypic Analysis of the Unstimulated In Vivo HIV CD4 T Cell Reservoir", which has been accepted for publication in eLife, 2020. This manuscript describes a method that leverages validated high-dimensional phenotyping to trace latently HIV-infected cells. The results suggest that contrary to common assumptions, the reservoir is not randomly distributed among cell subsets, and is conserved between individuals. This work addresses an important area of research as the identification and characterization of the latent HIV reservoir is critical to efforts to develop curative strategies. The techniques described provide a tool for identifying the latently-infected CD4+ T cell subsets and suggests potential applications in the design of therapeutic strategies to precisely study and target latently-infected cells.

I served as a corresponding author of case study series of gastric-type endocervical adenocarcinoma (GAS) diagnosed over two years at ZSFG. GAS is a diagnostic challenge due to its rarity, subtle histologic and cytologic features, and lack of association with HPV. The aim of this study was to evaluate the cytologic features of GAS in comparison to reported features of GAS with an emphasis on diagnostic pitfalls. Awareness of the morphologic features of GAS will enhance pathologists’ ability to recognize this difficult tumor. Our findings were published in the journal Cytopathology in 2020.

I served as a first author of a project which was accepted for publication in September 2019 in the Journal of the National Comprehensive Cancer Network (JNCCN). In this study, we compared concurrently obtained core needle biopsies (CNBs) and fine needle aspiration biopsy- cell blocks (FNAB-CBs) in terms of diagnostic accuracy, tumor cell concentration, and overall tumor cellularity of primary and metastatic liver lesions. Although both biopsy techniques are adequate for diagnosis, we demonstrated that the FNAB-CB provided superior tumor cell concentration and overall cellularity in a large subset; thus, making it an excellent substrate for next generation sequencing and similar studies. Our results, coupled with the preferred safety profile of FNABs, underscore the value of cytopathology in current practice.

I was the Principal Investigator for a study diagnostic precision of urine cytology by implementation of The Paris System and the use of cell blocks which was published in Cancer Cytopathology in 2018. To our knowledge, this is the first report on the utility of cell blocks in

urine cytology specimens. We demonstrated that application of stringent cytologic criteria, correlation with cystoscopic findings and use of cell blocks helped to improve the diagnostic accuracy of voided urine cytology.

Currently, I am the principal investigator for a project correlating Oncotype DX Recurrence score in ductal carcinoma in situ (DCIS) patients with immunohistochemical staining as well as clinical and histopathological features including grade, mitotic activity, dense periductal inflammation and comedonecrosis. The goal is to identify which test will best stratify patients most likely to benefit from adjuvant chemotherapy.

I am a principal investigator in another project determining the correlation between fibroepithelial lesions diagnosed by FNA with surgical excision and core needle biopsy (CNB). This is a large retrospective histopathologic correlation study between FNA and surgical specimens of fibroepithelial lesions. So far, our results show that FNA is an excellent screening tool for fibroepithelial lesions if we incorporate clinical/imaging/pathologic correlation.

I served as the first author for a study reviewing all fine needle aspiration (FNA) biopsies and corresponding surgical pathology specimens of breast cancer performed from 2002-2014 at UCSF. Our findings were published in Cancer Cytopathology. The main aim of this study was to assess and compare ER, PR, and HER2 expression between fine needle aspiration samples (cell block) and corresponding surgical pathology specimens. Our results in this study supported the equivalency of ER and HER2 evaluation performed on FNA cell blocks compared with surgical tissue blocks.

Between 2013 and 2015, I served as a consultant and member of the West Coast AIDS Cancer Specimen Resource (ACSR). The purpose of ASCR is to support translational research of HIV-related malignancies and to acquire, store and distribute tumor tissues and biological fluids with associated clinical, pathological, diagnostic and demographic data from patients with HIV-associated malignancies. The mission of ASCR was to meet the emerging needs of the HIV research community by contributing to drug development timelines and facilitating the development of novel diagnostic and therapeutic approaches to HIV associated malignancies. My role was to supervise tissue microarray and validate diagnostic material submitted to ACSR. I also provided technical oversight for pathology related procedures

PEER REVIEWED PUBLICATIONS

1. Tihan T, **Vohra P,** VBerger MS, Keles GE. Definition and diagnostic implications of gemistocytic astrocytomas: a pathological perspective. J Neurooncol. 2006 Jan; 76(2):175-83. PMID: 16132490

2. Khan A,**Vohra P,** Quinlan RF. The Role Sentinel Lymph Node Biopsy in the Management of Breast Cancer. A review article. Journal of Indian association of pathologists and microbiologists. 2014 Apr; 50 (2):261-9. PMID : 17883042

3. Slosar M, **Vohra P,** Prasad M, Fischer A, Quinlan R, Khan A. Insulin-like growth factor mRNA binding protein 3 (IMP3) is differentially expressed in benign and malignant follicular patterned thyroid tumors. Endocr Pathol. 2009; 20(3):149-57. PMID: 19449140

4. Lu D, **Vohra P,** Chu PG, Woda B, Rock KL, Jiang Z. An oncofetal protein IMP3: a new molecular marker for the detection of esophageal adenocarcinoma and high-grade dysplasia. Am J Surg Pathol. 2009 Apr; 33(4):521-5. PMID: 19047899

5. **Vohra P,** Ljung BM, Miller TR, Hwang ES, van Zante A. Paget's disease of the breast masquerading as squamous cell carcinoma on cytology: a case report. Diagn Cytopathol. 2012 Nov; 40(11):1015-8. PMID: 21548119
6. Kohi MP, Brasic N, **Vohra P**, Price ER, Joe BN. Breast metastasis from testicular leiomyosarcoma. Breast J. 2013 May-Jun; 19(3):336-7. PMID: 23600884
7. Krings G, Nystrom M, Mehdi I, **Vohra P**, Chen YY. Diagnostic utility and sensitivities of GATA3 antibodies in triple-negative breast cancer. Hum Pathol. 2014 Nov;45(11):2225-32. PMID: 25150746
8. Rabban JT, **Vohra P,** Zaloudek CJ. Nongynecologic metastases to fallopian tube mucosa: a potential mimic of tubal high-grade serous carcinoma and benign tubal mucinous metaplasia or nonmucinous hyperplasia. Am J Surg Pathol. 2015 Jan; 39(1):35-51. PMID: 25025442
9. Liu SY, Joseph NM, Ravindranathan A, Stohr BA, Greenland NY, **Vohra P**, Hosfield E, Yeh I, Talevich E, Onodera C, Van Ziffle JA, Grenert JP, Bastian BC, Chen YY, Krings G. Genomic profiling of malignant phyllodes tumors reveals aberrations in FGFR1 and PI-3 kinase/RAS signaling pathways and provides insights into intratumoral heterogeneity. Mod Pathol. 2016 Sep; 29(9):1012-27. PMID: 27255162
10. **Vohra P**, Buelow B, Chen YY, Serrano M, Vohra M, Berry A, Ljung BM. ER, PR, and HER2 Expression in Breast Cancer Fine Needle Aspiration Cell Blocks and Paired Histologic Specimens - a Large Retrospective Study. Cancer Cytopathology 2016 Nov;124(11):828-835. PMID: 27315045
11. Can NT, Grenert JP, **Vohra P**. Concomitant Epstein-Barr Virus-associated smooth muscle tumor and granulomatous inflammation of the liver. Pathol Res Pract. 2017 Oct; 213(10):1306-1309. PMID: 28756985.
12. Chan E, Balassanian R, Tabatabai ZL, Lou H, **Vohra P.** Improved diagnostic precision of urine cytology by implementation of The Paris System and the use of cell blocks. Cancer Cytopathol. 2018 Sep;126(9):809-816. doi: 10.1002/cncy.22034. Epub 2018 Sep 11. PMID: 30203925.
13. Goldhoff PE, **Vohra P*** , Kolli KP, Ljung BM. Fine-Needle Aspiration Biopsy of Liver Lesions Yields Higher Tumor Fraction for Molecular Studies: A Direct Comparison With Concurrent Core Needle Biopsy. J Natl Compr Canc Netw. 2019 Sep 1;17(9):1075-1081. doi: 10.6004/jnccn.2019.7300. PMID: 31487685.* **Contribution as first author.**
14. Beca F, Krings G, Chen YY, Hosfield EM, **Vohra P**, Sibley RK, Troxell ML, West RB, Allison KH, Bean GR. Primary mammary angiosarcomas harbor frequent mutations in KDR and PIK3CA and show evidence of distinct pathogenesis. Mod Pathol. 2020 Aug;33(8):1518-1526. doi: 10.1038/s41379-020-0511-6. Epub 2020 Mar 2. PMID: 32123305.
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16. Zhang ML, VandenBussche CJ, Hang JF, Miki Y, McIntire PJ, Peyton S, **Vohra P.** A review of urinary cytology in the setting of upper tract urothelial carcinoma. J Am Soc Cytopathol.

2020 Jul 17:S2213-2945(20)30130-7. doi: 10.1016/j.jasc.2020.06.011. Epub ahead of print. PMID: 32792229.

17. Greenland NY, Wolsky RJ, Darragh TM, **Vohra P**. Gastric-type endocervical adenocarcinoma and cervical cytology: Experience at a general hospital and review of the literature. Cytopathology. 2020 Aug 27. doi: 10.1111/cyt.12907. Epub ahead of print. PMID: 32851700.
18. Zhang ML, Miki Y, Hang JF, Vohra M, Peyton S, McIntire PJ, VandenBussche CJ, **Vohra P**. A review of upper urinary tract cytology performance before and after the implementation of The Paris System. Cancer Cytopathol. 2020 Sep 8. doi: 10.1002/cncy.22343. Epub ahead of print. PMID: 32897658.

NON-PEER REVIEWED PUBLICATIONS

1. Metastatic meningioma to liver presented as a case study in American society of cytopathology (ASC).

BOOKS AND CHAPTERS

1. Contributed to Chapters on Adrenal in Path Consult Project. www.pathconsultddx.com/pathcon/home.2006
2. Contributed to Chapters on Thyroid Pathology in Path Consult Project. www.pathconsultddx.com/pathcon/home. 2006
3. Contributed to Chapters on Breast Pathology in Path Consult Project. www.pathconsultddx.com/pathcon/home. 2006
4. **Vohra P**, Krings G, Chen YY. Breast core biopsy "Other less common triple negative breast cancer". In: A Comprehensive Guide to Needle Core Biopsies of the Breast. 2016
5. Contributing author "The Paris System for Reporting Urinary Cytology". Upper Tract Urinary Cytology Chapter 2.0. 2020
6. Contributing author "The Paris System for Reporting Urinary Cytology". Adequacy chapter 2.0. 2020

SIGNIFICANT PUBLICATIONS

1. Zhang ML, VandenBussche CJ, Hang JF, Miki Y, McIntire PJ, Peyton S, **Vohra P**. A review of urinary cytology in the setting of upper tract urothelial carcinoma. J Am Soc Cytopathol. 2020 Jul 17:S2213-2945(20)30130-7. doi: 10.1016/j.jasc.2020.06.011. Epub ahead of print. PMID: 32792229.

   Contribution: Corresponding author. Role: Research design, review of literature, data analysis, writing of the manuscript.

2. Greenland NY, Wolsky RJ, Darragh TM, **Vohra** P. Gastric-type endocervical adenocarcinoma and cervical cytology: Experience at a general hospital and review of the literature. Cytopathology. 2020 Aug 27. doi: 10.1111/cyt.12907. Epub ahead of print. PMID: 32851700.

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3. Zhang ML, Miki Y, Hang JF, Vohra M, Peyton S, McIntire PJ, VandenBussche CJ, **Vohra P.** A review of upper urinary tract cytology performance before and after the implementation of The Paris System. Cancer Cytopathol. 2020 Sep 8. doi: 10.1002/cncy.22343. Epub ahead of print. PMID: 32897658.

   Contribution: Senior last author Role: Research design, review of literature, data analysis, writing of the manuscript.

4. Goldhoff PE, **Vohra P**, Kolli KP, Ljung BM. Fine-Needle Aspiration Biopsy of Liver Lesions Yields Higher Tumor Fraction for Molecular Studies: A Direct Comparison With Concurrent Core Needle Biopsy. J Natl Compr Canc Netw. 2019 Sep 1;17(9):1075-1081. doi: 10.6004/jnccn.2019.7300. PMID: 31487685.

   Contribution: First author Role: Contribution as a first author. Research design, retrieval of archival cases, review of cases, interpretation of immunohistochemistry, data analysis, writing of the manuscript.

5. Chan E, Balassanian R, Tabatabai ZL, Lou H, **Vohra P**. Improved diagnostic precision of urine cytology by implementation of The Paris System and the use of cell blocks. Cancer Cytopathol. 2018 Sep;126(9):809-816. doi: 10.1002/cncy.22034. Epub 2018 Sep 11. PMID: 30203925.

   Contribution: Corresponding author. Role: Research design, retrieval of archival cases, review of cases, interpretation of immunohistochemistry, data analysis, writing of the manuscript.

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   Contribution: Corresponding author. Role: Research design, retrieval of archival cases, review of cases, interpretation of immunohistochemistry, data analysis, writing of the manuscript.

7. **Vohra P**, Buelow B, Chen YY, Serrano M, Vohra M, Berry A, Ljung BM. ER, PR, and HER2 Expression in Breast Cancer Fine Needle Aspiration Cell Blocks and Paired Histologic Specimens - a Large Retrospective Study. Cancer Cytopathology. 2016 Nov; 124(11): 828-835. PMID: 27315045

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   Contribution: Co-author Role: Review of cases and writing part of the manuscript.

9. **Vohra P**, Ljung BM, Miller TR, Hwang ES, van Zante A. Paget's disease of the breast masquerading as squamous cell carcinoma on cytology: a case report. Diagn Cytopathol. 2012 Nov; 40(11):1015-8. PMID: 21548119

   Contribution: First author. Role: Review of literature and writing of manuscript.

10. Khan A,**Vohra P**, Quinlan RF. The Role Sentinel Lymph Node Biopsy in the Management of Breast Cancer. A review article. Journal of Indian association of pathologists and microbiologists. 2014 Apr; 50 (2):261-9. PMID : 17883042.

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11. Lu D, **Vohra P,** Chu PG, Woda B, Rock KL, Jiang Z. An oncofetal protein IMP3: a new molecular marker for the detection of esophageal adenocarcinoma and high-grade dysplasia. Am J Surg Pathol. 2009 Apr; 33(4):521-5. PMID: 19047899

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    Contribution: Co-author Role: Research design, retrieval of archival cases, review of cases, interpretation of immunohistochemistry, data analysis, writing of manuscript.

CONFERENCE ABSTRACTS

1. **Vohra P**, Bal MS, Mittal RR, Jindal K, Surinder K. Clinico histopathological correlation of vesiculobullous lesions. 51st Annual Conference of Indian Association of Pathologists & Microbiologists, Kolkata India

2. **Vohra P**, Prasad ML, Slosar M, Fischer A, Quinlan R, Safran M, Khan A. Vascular Endothelial Growth Factors (VEGF-D) In Papillary and Follicular Thyroid Tumors. 77th Annual Meeting of the American Thyroid Association (ATA). Phoenix, AZ

3. Slosar M, Prasad M, **Vohra P,** Safran M, Kenneth L. KOC (K-Homology-Domain-Containing-Protein Overexpressed in Cancer) Expression in Thyroid Neoplasms. 77th Annual Meeting of the American Thyroid Association (ATA). Phoenix, AZ

4. **Vohra P,** Li C, Dresser K, Zona M, Prasad ML. RNA-binding protein IMP3 expression in neoplasms of the schneiderian and squamous mucosa of the head and neck. United States and Canadian Academy of Pathology Annual Meeting. San Diego,CA

5. **Vohra P**, Li C, Prasad ML. p16 protein expression in neoplasms of the schneiderian and squamous mucosa of the head and neck. United States and Canadian Academy of Pathology Annual Meeting. San Diego, CA

6. **Vohra P**, Serrano M, Chen YY, Ljung BM. Comparison of ER, PR and HER2 expression between breast carcinoma fine needle aspiration samples and corresponding surgical pathology specimens - a large retrospective study. United States and Canadian Academy of Pathology Annual Meeting. Baltimore, MD.

7. Lindsey JM, Chen YY, Vohra M, Taylor J, **Vohra P.** Correlation between Fine Needle Aspiration Biopsies (FNA) and Surgical Specimens in the Diagnosis of Fibroepithelial

Lesions of the Breast- A Large Retrospective Study. United states and Canadian academy of Pathology annual meeting. San Diego, CA

8. Krings G, Nystrom M, **Vohra P**, Chen YY. Sensitivity and Utility of Commonly Used GATA3 Antibodies in Triple Negative Breast Cancers (TNBC). United states and Canadian academy of Pathology annual meeting. San Diego, CA
9. Jacobs TW, Chen YY, Guinee DG, Eby PR, Thike AA, **Vohra P,** Tan PH. Phyllodes Tumor (PT) Subsequent to a Diagnosis of Fibroadenoma (FA) on Breast Core Needle Biopsy (CNB): Frequency and Characteristics. United states and Canadian academy of Pathology annual meeting. San Diego, CA
10. Rabban J, **Vohra P**, Garg K, Zaloudek C. Intramucosal Growth in Fallopian Tube Fimbriae by Tumors of Non-Gynecologic Origin May Mimic Serous Tubal Intraepithelial Carcinoma and Tubal Mucinous Metaplasia.United states and Canadian academy of Pathology annual meeting. San Diego, CA
11. Wolsky R, **Vohra P**, Garg K, Zaloudek C, Rabban J. University of California, San Francisco, CA. Mucosal Proliferations in Completely Dissected Fallopian Tubes in a Blinded Study of Ovarian Serous Cystadenoma, Borderline Tumor and Low Grade Serous Carcinoma: Does a Precursor Tubal Lesion Exist?United states and Canadian academy of Pathology annual meeting. Boston, MA
12. **Vohra P,** Krings G, Vohra M, Chen YY. Correlation of OncotypeDx Recurrence Score with IHC3/IHC4 and Grade in Ductal Carcinoma In Situ (DCIS). United States and Canadian academy of Pathology annual meeting. Seattle, WA
13. Goldhoff P, **Vohra P,** Khanafshar E, Ljung BM. Fine Needle Aspiration Biopsy Material of Liver Lesions Yields Higher Percentage of Tumor Cells for Molecular Studies: A Direct Comparison to Concurrent Core Biopsy. United States and Canadian academy of Pathology annual meeting. Seattle, WA
14. Liu S-Y, Joseph N, Chen YY, **Vohra P**, Krings G. Analysis of Malignant Phyllodes Tumor (MPT) Genomic Landscape Using Capture-Based Next Generation Sequencing (Cb-NGS). United States and Canadian academy of Pathology annual meeting. Seattle, WA
15. Liu S-Y, Chen YY, Joseph N, **Vohra P,** Krings G.Analysis of MED12 and TERT Promoter Mutations in Fibroepithelial Lesions (FEL), Metaplastic Carcinomas (MC) and Spindle Cell Lesions (SCL) of the Breast.United States and Canadian academy of Pathology annual meeting. Seattle, WA
16. Chan E, Tabatabai L, **Vohra P**. A Paris system-like approach and cell block utilization in urine cytology. United States and Canadian academy of Pathology annual meeting. San Antonio, TX.
17. Pardons M, Fromentin R, Leyre L, Pagliuzza A, Hoh R, Milush J, Hecht F, Deeks S, **Vohra P,** Chomont N. HIV persistence in lymph nodes from virally suppressed individuals : residual production VS latency. Miami HIV workshop. Miami, FL
18. Ng D, Nishimura S, Deeks S, Ruiz R, Hunt P, Ung R, Hoh H, Tai V, Roan N, Milush J, Vohra P. Quantification and Viability Assessment of Cytopathologist-Performed Ultrasound-Guided Fine Needle Aspiration Biopsy (USFNA) of Nonpalpable Inguinal Lymph Nodes (LNs) in HIV-infected Adults. United States and Canadian academy of Pathology annual meeting. Vancouver BC

19. **Vohra P,** Krings G, Chu T, Chen YY. Clinical and Pathologic Features of Invasive Breast Cancers with Oncotype Dx Recurrence Score Less Than 11. United States and Canadian academy of Pathology annual meeting. Vancouver, BC
20. Dianna L. Ng, Balassanian R, Milush J, Hoh R, Ung R, Tai V, Deeks S, Vohra P. Ultrasound-guided Fine Needle Aspiration Biopsy (USFNB) is an Effective Method to Measure HIV Reservoirs in Lymph Nodes. 66th Annual Scientific Meeting, American Society of Cytopathology Meeting. Washington DC
21. Ruiz J, Tabatabai ZL, **Vohra P.** Fine Needle Aspiration Biopsy of Primary Pulmonary Adenocarcinoma Yields Higher Percentage of Tumor Cells for Molecular Studies: A 5-year Comparison Study to Needle Core Biopsy Sampling. 66th Annual Scientific Meeting, American Society of Cytopathology Meeting. Washington DC
22. Truong K, Ung R ,**Vohra P ,** Menke J, Ng DL .Evaluation of Cytologic-Histologic Discordance Rates in Anal Dysplasia and Cancer Screening.United States and Canadian academy of Pathology annual meeting. Baltimore, MD
23. Shamir E, Vohra P, Bean G, Zaloudek C, McCalmont T, Joseph N, Wolsky R, Garcia R, Chen YY, Krings G. Genomic Profiling of Basaloid Breast Carcinomas Reveals Recurrent Alterations in CREBBP and Distinct Genetics from Other Triple Negative Breast Cancers. United States and Canadian academy of Pathology annual meeting. Baltimore, MD
24. Troung K, Ng D, Ung R, **Vohra P**. Evaluating Hidden Biases in Clinical Cytopathology Practice.67th Anncal Scientific Meeting, American Society of Cytopathology Meeting. Salt Lake City, UT.
25. Shamir E, Chen YY, Bean G, **Vohra P,** Sanders M, and Krings G. Chondroid Matrix-Producing Metaplastic Carcinomas of the Breast are Genetically Distinct from Mixed Metaplastic Carcinomas with Chondroid Differentiation. United States and Canadian academy of Pathology annual meeting. Los Angeles, CA
26. Beca F, Krings G, Chen YY, Hosfield E, **Vohra P**, Sibley R, Troxell M, West R, Allison K, Bean G. Genomic Profiling of Primary Angiosarcoma of the Breast. United States and Canadian academy of Pathology annual meeting. Los Angeles, CA
27. Truong K , Ng D, Castillo F, **Vohra P**. Fine needle Aspiration and Core Needle Biopsy Have Similar Diagnostic Performance for Fibroepithelial Lesions of Breast. United States and Canadian academy of Pathology annual meeting. Los Angeles, CA
28. Neumann NM, Devine P, **Vohra P**, Otis C, Bean G, Chen YY, Cohen J. Breast Hidradenoma and Breast Mucoepidermoid Carcinoma Share Pathologic Features and Molecular Alteration. The American Society of Dermatopathology 57th Annual Virtual Meeting.
29. Lee H, Greenland N, Tabatabai LZ, Ding C, **Vohra P**.Upper Urinary Tract Cytology Performance Before and After the Implementation of the Paris System for Reporting Urinary Cytology (TPS). United States & Canadian Academy of Pathology's 110th Virtual Annual Meeting

OTHER CREATIVE ACTIVITIES

1. Medical School Graduation Thesis "Clinico histopathological correlation of vesiculobullous lesions". Study of 50 cases. Govt. Medical College Patiala. Punjab, India

2. FNA workshop at ZSFG (2015- Present). I have established a workshop to specifically train the residents, cytology fellows and medical students on fine-needle aspiration sampling technique.