

University of California, San Francisco
CURRICULUM VITAE

Name: Ronald Balassanian, MD

Position: HS Clinical Professor, Step 2
Pathology
School of Medicine

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EDUCATION

1984 - 1989	University of Washington, Seattle, WA	BS	Cell and Molecular Biology
1984 - 1989	University of Washington, Seattle, WA	BA	English Literature
1991 - 1996	University of Vermont, College of Medicine, Burlington, VT	MD	Surgery major
1994 - 1994	University of Vermont, Pathology, Burlington, VT	Student fellow	Pathology
1996 - 1997	New York University, New York, NY	PGY1 Resident	Pathology
1997 - 1998	University of California San Francisco, San Francisco, CA	Resident	Pathology
1998 - 1999	University of California San Francisco, San Francisco, CA	Resident	Pathology and Laboratory Medicine
1999 - 2000	University of California San Francisco, San Francisco, CA	Fellow	Surgical Pathology
2000 - 2000	University of California San Francisco, San Francisco, CA	Chief Resident	Pathology
2000 - 2001	University of California San Francisco, San Francisco, CA	Fellow	Cytopathology
2001 - 2002	University of California San Francisco, San Francisco, CA	Resident	Laboratory Medicine

LICENSES, CERTIFICATION

1998	California Physician and Surgeon Medical License #A066054
2002	New York State Medical License #225972-1
2003	American Board of Pathology, Anatomic and Clinical Pathology
2004	Pennsylvania Medical Board Physician and Surgeon License #MD425251
2005	American Board of Pathology, subspecialty certification in Cytopathology
2007	Commonwealth of Massachusetts, Board of Registration in Medicine #231336
2010	Certificate of Special Expertise in Ultrasound-Guided Fine Needle Aspiration, College of American Pathologists

PRINCIPAL POSITIONS HELD

2002 - 2003	Joan and Sanford I. Weill Medical College of Cornell University, New York, NY	Assistant Professor	Pathology and Laboratory Medicine
2002 - 2003	New York-Presbyterian Hospital, Weill-Cornell Medical Center, New York, NY	Assistant Attending	Pathology and Laboratory Medicine
2003 - 2004	Continuum Health Partners, Beth Israel Medical Center, Phillips Ambulatory Cancer Center, Fine Needle Aspiration Biopsy Clinic, New York, NY	Attending Pathologist	Pathology and Laboratory Medicine
2004 - 2007	University of Pittsburgh Medical Center, UPMC Presbyterian-Shadyside, Pittsburgh, PA	Attending Pathologist	Pathology and Laboratory Medicine
2004 - 2007	University of Pittsburgh, School of Medicine, Pittsburgh, PA	Assistant Professor	Pathology
2006 - 2007	University of Pittsburgh Medical Center, UPMC Shadyside, Pittsburgh, PA	Director, FNA Biopsy Clinic	Pathology
2007 - 2010	Harvard Medical School, Boston, MA	Instructor	Pathology
2007 - 2010	Massachusetts General Hospital, Boston, MA	Assistant Attending	Pathology
2011 - 2014	University of California San Francisco, San Francisco, CA	Assistant Clinical Professor	Pathology
2014 - 2019	University of California San Francisco, San Francisco, CA	Associate Clinical Professor	Pathology
2015 - 2017	University of California San Francisco, San Francisco, CA	Site Director, UCSF Mission Bay Hospital	Pathology

2016 - present	UCSF Helen Diller Family Comprehensive Cancer Center, San Francisco, CA	Member	Comprehensive Cancer Center
2019 - present	University of California San Francisco, San Francisco, CA	Clinical Professor	Pathology

OTHER POSITIONS HELD CONCURRENTLY

2003 - 2004	Continuum Health Partners, Saint Luke's-Roosevelt Hospital, New York, NY	Attending Pathologist	Pathology and Laboratory Medicine
2005 - 2007	University of Pittsburgh Medical Center, UPMC Magee Women's Hospital, Pittsburgh, PA	Attending Pathologist	Pathology and Laboratory Medicine

HONORS AND AWARDS

1991	Honorary Technical Consultant, Cancer Information Service of the Pacific, National Cancer Institute	Fred Hutchinson Cancer Research Center, Seattle, Washington
1995	Robert Lerner, M.D. Medical Student Loan Fund Award, College of Medicine	University of Vermont, Burlington VT
1996	James E. Demeules Surgical Research Prize, Surgery, College of Medicine	University of Vermont, Burlington VT
1998	Medical Student Teaching Award, Pathology	University of California, San Francisco, San Francisco, CA
2007	Outstanding Teaching in Anatomic Pathology, Residents and Fellows in Pathology	University of Pittsburgh, Pittsburgh, PA
2010	Excellence in Teaching Award in Anatomic Pathology, Residents and Fellows in Pathology	Massachusetts General Hospital, Harvard Medical School, Boston, MA
2015	Faculty Award of Excellence, Department of Pathology	University of California San Francisco
2017	UCSF Medical Center Exceptional Physician Award, honorable mention	University of California San Francisco, UCSF Health
2018	UCSF Medical Center Exceptional Physician Award, honorable mention	University of California San Francisco, UCSF Health
2019	Award for best poster Epidemiology and Population Science	UCSF Breast Oncology Program Scientific Retreat 2019
2021	Faculty Teaching Award, Department of Pathology, Residents and Fellows in Pathology	UCSF Department of Pathology

2021	Quality Improvement in Cytology Abstract Award	American Society of Cytopathology, 69th Annual Scientific Meeting
2022	The Yolanda Oertel Interventional Cytopathologist Award	Papanicolaou Society of Cytopathology
2022	Commencement Guest Hooder for Patrick Martin-Tuite, MD	University of California San Francisco, School of Medicine
2022	Commencement Guest Hooder for Adam Ross, MD	University of Vermont, Robert Larner College of Medicine
2022	Diversity Equity and Inclusion Leadership Award for Faculty, Department of Pathology	University of California San Francisco

KEYWORDS/AREAS OF INTEREST

Pathology, Cytopathology, fine needle aspiration (FNA) biopsy, breast cancer, patient-physician communication, patient-pathologist communication, image analysis, informatics

CLINICAL ACTIVITIES

CLINICAL ACTIVITIES SUMMARY

My primary clinical focus has been the FNA biopsy service, general cytology and breast surgical pathology. On the FNA service I successfully led an effort to incorporate Evaluation and Management (E&M) notes into the FNA reports. This effort, which required substantial changes to accepted practices at UCSF, has brought us into better compliance with JAHCO regulations, led to better documentation of the FNA procedures, and allows for more accurate and appropriate billing for the FNA service. In 2016, I worked with IT support services to upgrade our CoPath™ pathology reporting system to incorporate Microsoft Word™ functionality. From 2014 to 2017, I served as the Mission Bay Site Director for FNA service. In this role, I helped set up a new FNA clinic for outpatients as well as an FNA service for radiology guided biopsies. In June of 2009, I underwent training and certification by the College of American Pathologists for using ultrasound guidance for FNA biopsy. At UCSF, I have focused on expanding ultrasound guidance for FNA biopsy in the UCSF FNA Clinic. I present at the weekly UCSF Breast Tumor Board and the UCSF Sarcoma Tumor Board conferences.

During the Covid-19 pandemic, The FNA biopsy clinic at Mission Bay remained open and seeing patients. I took on additional clinical service work as needed to cover for staff who were unable to come in to work, either because they were in self-quarantine or because of child care issues.

Prior to joining UCSF in 2011, I was an Assistant Attending at Massachusetts General Hospital on the FNA/Cytology service and breast surgical pathology. Prior to working at MGH, I was the Director of the UPMC Fine Needle Aspiration Biopsy Clinic and Service at UPMC Shadyside, from Jan 2006 to May 2007.

PROFESSIONAL ACTIVITIES

MEMBERSHIPS

- 1997 - present College of American Pathologists
- 1998 - present American Society for Clinical Pathology
- 2000 - present United States and Canadian Academy of Pathology
- 2004 - present American Society of Cytopathology, member, Scientific Program Committee
- 2009 - present Papanicolaou Society of Cytopathology
- 2014 - 2019 National Comprehensive Cancer Network, member, Breast Cancer Panel
- 2016 - present Consortium of Universities for Global Health
- 2017 - present American Medical Association
- 2022 - present Society of Black Pathologists

SERVICE TO PROFESSIONAL ORGANIZATIONS

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| 2014 - 2017 | College of American Pathologists. Ultrasound Guided Fine Needle Aspiration AP3 course. Biannual educational program. | Faculty |
| 2014 - 2019 | National Comprehensive Cancer Network, Breast Cancer Panel | Institutional Representative |
| 2015 - 2018 | American Society of Cytopathology, Scientific Program Committee | Committee Member |
| 2015 - 2016 | American Society of Cytopathology, 63rd Annual Scientific Meeting, Chicago, IL | Moderator, Platform Presentations |
| 2015 - 2016 | United States and Canadian Academy of Pathology, Immersive Cytopathology Experience (ICE) | Faculty |
| 2017 - 2019 | Papanicolaou Society of Cytopathology, Standards of Practice Task Force | Member |
| 2018 - 2018 | Tanzania National Treatment Guidelines in Oncology | Breast and Lymphoma Panel representative |
| 2018 - present | American Society of Cytopathology, Clinical Practice Committee | Member |
| 2019 - present | American Society of Cytopathology Foundation Board | Member |
| 2019 - present | American Society of Cytopathology Task Force to the American Institute of Ultrasound Medicine Practice Parameters for the Performance of Selected Ultrasound Guided Procedures | ASC Representative |

- 2020 - present American Society of Cytopathology, Diversity, Equity and Inclusion Committee Member
- 2021 - present American Society of Cytopathology, Diversity Equity and Inclusion Committee, Sub-committee for Outreach Co-Chair
- 2021 - present American Society of Cytopathology, Reimagine Cytology Task Force Vice-Chair

SERVICE TO PROFESSIONAL PUBLICATIONS

- 2007 - present Ad-hoc referee for Archives of Pathology and Laboratory Medicine
- 2011 - present Ad-hoc referee for Diagnostic Cytopathology
- 2014 - present Ad-hoc referee for Journal of the American Society of Cytopathology
- 2015 - present Ad-hoc referee for Journal of the National Comprehensive Cancer Network
- 2015 - present Ad-hoc referee for Cancer Cytopathology
- 2107 - present Ad-hoc referee for PLOS ONE
- 2018 - present Ad-hoc referee for Acta Cytologica
- 2019 - present Editorial Board, Journal of the American Society of Cytopathology
- 2019 - present Editorial Board, Cancer Cytopathology
- 2021 - present Editorial Board, Cytopathology
- 2022 - present Editorial Board, Diagnostic Cytopathology

INVITED PRESENTATIONS - INTERNATIONAL

- 2004 "Criteria for Malignancy in Fine Needle Aspiration Biopsy of Mass Lesions in the Setting of Lactation" Platform presentation. United States and Canadian Academy of Pathology 93rd Annual Meeting, Vancouver, BC, Canada Speaker
- 2011 "Improving FNA technique with an Introduction to US guidance - A Practical Hands-on Workshop." Workshop presentation. 59th Annual Scientific Meeting, American Society Cytopathology, Baltimore, MD Lead faculty
- 2012 "Optimizing FNA Technique With an Introduction to US Guidance- Practical Hands-on Workshop." Workshop presentation. 60th Annual Scientific Meeting, American Society of Cytopathology, Las Vegas, NV Lead faculty
- 2013 "A Superior Technique for Cell Block Preparation for Fine Needle Aspiration" Platform presentation. United States and Canadian Academy of Pathology 102nd Annual Meeting, Baltimore, MD Speaker

2013	"Improving FNA technique with an Introduction to US guidance - A Practical Hands-on Workshop." Workshop presentation. 61st Annual Scientific Meeting, American Society Cytopathology, Orlando, FL	Lead faculty
2013	"Dealing with Emotional Patients in the FNA Clinic." Roundtable Discussion. 61st Annual Scientific Meeting, American Society Cytopathology, Orlando, FL	Roundtable leader
2014	"Improving FNA technique with an Introduction to US guidance - A Practical Hands-on Workshop." Diagnostic Cytopathology Update 2014. United States and Canadian Academy of Pathology, Del Mar, CA	Lead faculty
2014	"Cell Block Techniques and Other Ancillary Tests in Cytology." Diagnostic Cytopathology Update 2014, United States and Canadian Academy of Pathology, Del Mar, CA	Faculty speaker
2014	"Optimizing FNA Technique With an Introduction to US Guidance- Practical Hands-on Workshop" Diagnostic Cytopathology Update 2014. United States and Canadian Academy of Pathology, Del Mar, CA	Lead faculty
2014	"Improving FNA technique with an Introduction to US guidance - A Practical Hands-on Workshop." Workshop presentation. 62nd Annual Scientific Meeting, American Society Cytopathology, Dallas, TX	Lead faculty
2014	"Practical and Proactive Techniques for Working With Patients in the FNA Clinic" Roundtable Discussion. 62nd Annual Scientific Meeting, American Society Cytopathology, Dallas, TX	Roundtable Leader
2015	"Developing a Breast FNA Biopsy Service in Peru." Papanicolaou Society of Cytopathology, Companion Society Meeting, United States and Canadian Academy of Pathology (USCAP), 104th Annual Meeting, Boston, MA	Faculty
2015	"Improving FNA technique- A Practical Hands-on Workshop." Workshop Presentation. 63rd Annual Scientific Meeting, 63rd Annual Scientific Meeting, American Society of Cytopathology, Chicago IL	Lead faculty
2016	"New and Recent Developments in Cytopathology: A Case Based Approach." Evening Cytopathology Specialty Conference, United States and Canadian Academy of Pathology, 105th Annual Meeting, Seattle, WA	Panelist/presenter

2016	"Immersive Cytopathology Experience" The Patient-Centered Ultrasound-Guided Fine Needle Aspiration Biopsy Practice, United States and Canadian Academy of Pathology Interactive Center, Palm Springs, CA	Faculty
2016	"Improving FNA technique with an introduction to US guidance - A Practical Hands-on Workshop." Workshop presentation. 64th Annual Scientific Meeting, American Society Cytopathology, New Orleans, LA	Lead faculty
2016	"Ask Your Pathologist-How To Communicate With Your Patients In The Era Of Personal Medicine." Workshop presentation. 64th Annual Scientific Meeting, American Society Cytopathology, New Orleans, LA	Lead faculty
2016	"Breast FNA Biopsy with a Focus on Papillary Lesions." Virtual Slide Seminar. 64th Annual Scientific Meeting, American Society of Cytopathology, New Orleans, LA	Faculty
2017	"FNA Biopsy Workshop" Robert Sofferman, MD Memorial Advanced Thyroid Ultrasound Course, 3rd World Congress on Thyroid Cancer, Boston, MA	Faculty
2017	"Slide Preparation and FNA Technique." Robert Sofferman MD Memorial Advanced Thyroid Ultrasound Course, World Congress on Thyroid Cancer, Boston, MA	Faculty
2017	"Breast Pathology" Ultrasound Guided Fine Needle Aspiration Workshop, Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania	Faculty
2017	"Lymph Node Cytology" Ultrasound Guided Fine Needle Aspiration Workshop, Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania	Faculty
2017	Ultrasound Guided Fine Needle Aspiration Workshop, Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania	Faculty
2017	"Cell Block Preparation Techniques" Cyto e-Conference, American Society of Cytopathology, On-line webinar.	Faculty
2017	"Breast FNA Biopsy with a Focus on Papillary Lesions," Video Microscopy Session. 65th Annual Scientific Meeting, American Society of Cytopathology, Phoenix AZ	Lead faculty speaker
2017	"Current Issues in Cytology: Rapid On-Site Evaluation (ROSE) - Live! In Action!." Panel Discussion. 65th Annual Scientific Meeting, American Society of Cytopathology, Phoenix, AZ	Faculty/moderator

2017	"Ultrasound FNA Biopsy." Workshop Presentation. 65th Annual Scientific Meeting, American Society of Cytopathology, Phoenix AZ	Lead faculty
2018	"Ask Your Pathologist: A Pilot Program for Patient Communication in Pathology." United States and Canadian Academy of Pathology, 107th Annual Meeting, Vancouver, BC.	Faculty/senior author
2018	"Rapid On-Site Evaluation; Live in Action!" Video Microscopy Tutorial, 66th Annual Scientific Meeting, American Society of Cytopathology, Washington, DC	Lead faculty
2018	"Ultrasound FNA Biopsy" Workshop. 66th Annual Scientific Meeting, American Society of Cytopathology, Washington, DC	Lead faculty
2018	"Fine Needle Aspiration is an Effective Method for Cell Surface Proteomics: Towards a Personalized Cancer Surfaceome." Platform Presentation. 66th Annual Scientific Meeting, American Society of Cytopathology, Washington, DC	2nd Senior Author
2018	"Cytology Shark Tank; ASC Foundation Young Investigator Grant." 66th Annual Scientific Meeting, American Society of Cytopathology, Washington, DC	Co-Investigator
2019	"Ultrasound Guided Fine Needle Aspiration Biopsy Workshop" 20th International Congress of Cytology, International Academy of Cytology, Sydney, Australia	Lead faculty
2019	"FNA Biopsy of the Breast with a Focus on Papillary Lesions" 20th International Congress of Cytology, International Academy of Cytology, Sydney, Australia	Faculty
2019	"Breast FNA biopsy in Low Resource Settings" 5th International Medical Congress of Armenia, Pathology companion session, Yerevan, Armenia	Faculty
2019	"FNA biopsy of lymph nodes" 5th International Medical Congress of Armenia, Hematology companion session, Yerevan, Armenia	Faculty
2019	"First Fine Needle Aspiration Biopsy Cytology Tutorial: performing and interpreting FNAB Cytology in the setting of endemic HIV infection." University of Botswana and Princess Marina Hospital, Gaborone, Botswana, Department of Health, Botswana and under the Auspices of the International Academy of Cytology.	Faculty
2019	"FNAB and Gynaecological Cytology Tutorial." Aga Khan Hospital, Nairobi, Kenya, Under the Auspices of the International Academy of Cytology	Faculty

2019	"Ultrasound FNA Biopsy" Workshop, 67th Annual Scientific Meeting, American Society of Cytopathology, Salt Lake City, UT	Lead faculty
2021	"Fine Needle Aspiration Biopsy Techniques." RAD-AID Ethiopia, RAD-AID International, On-line live presentation, hosted by Tatiana Kelil, MD	Faculty
2021	"Deteccion de Cancer de Mama en Entornos de Bajo Recursos/Breast Cancer Detection in Low-Resource Areas." Virtual Seminar, hosted by PATH, Seattle, WA	Invited faculty
2021	"Deteccion De Cancer De Mama En Paises De Ingresos Bajos Y Medianos/Detection of Breast Cancer in Low and Middle Income Countries." Virtual Seminar hosted by Gobierna Consultores and PATH, Lima, Peru	Invited faculty
2021	"Ultrasound Guided Fine Needle Aspiration Biopsy- Bridging the Gap." CYTOCON 2020-2021, 50th Annual Conference of the Indian Academy of Cytologists, on-line meeting, postponed from 2020, Mumbai, India	Faculty
2021	"Ultrasound Fine Needle Aspiration Biopsy" Workshop. 68th Annual Scientific Meeting, American Society of Cytopathology, Las Vegas, NV	Lead Faculty
2022	"Interventional Cytopathology: Pushing the Boundaries of Cytomorphologic Diagnosis," American Society of Clinical Pathology, Annual Meeting 2022, Chicago, IL	Faculty
2022	"Cell Block Technique" American Society of Clinical Pathology, Africa Calls lecture series. On-line presentation.	Faculty

INVITED PRESENTATIONS - NATIONAL

2000	"Fine Needle Aspiration Biopsy in Diagnosing Breast Cancer" and "Second Opinions in Pathology: How to get one and when are they indicated" Cancer Information Service for the Pacific, National Cancer Institute, Fred Hutchinson Cancer Research Center, Seattle, WA	Faculty
2005	"Decision Making Analysis in Pathology Diagnosis and Reporting" Seminar, Risk Center, Department of Social and Decision Science, Carnegie Mellon University, Pittsburgh, PA	Faculty moderator
2005	"Fine Needle Aspiration Biopsy of the Breast" Department of Pathology, Brigham and Women's Hospital, Boston, MA	Invited faculty
2005	"Fine Needle Aspiration Biopsy of the Breast" Department of Pathology, University of Rochester, Rochester, NY	Invited faculty

2007	"Fine Needle Aspiration Biopsy of the Breast" Department of Pathology, Massachusetts General Hospital, Boston, MA	Invited faculty
2008	"Fine Needle Aspiration Biopsy of the Lung" American Society for Clinical Pathology ASCP- Teleconference	Faculty
2009	"Cytopathology Seminar: Selected Areas with Special Problems" Current Concepts in Surgical Pathology, Harvard Medical School, Massachusetts General Hospital, Boston, MA	Faculty
2009	"Fine Needle Aspiration Biopsy of Lymph Nodes with Ancillary Testing Including Stains, Flow Cytometry, and FISH." Cytopathology for the Practicing Pathologist: Videomicroscopy Tutorials on Selected Topics, Harvard Medical School, Massachusetts General Hospital, Boston, MA	Faculty
2009	"Cytologic Diagnosis of Breast Biopsies" Department of Pathology, University of California San Francisco, San Francisco, CA	Invited faculty
2010	"Fine Needle Aspiration Biopsy: Small Group Slide Review." Current Concepts in Surgical Pathology, Harvard Medical School, Massachusetts General Hospital, Boston, MA	Faculty
2012	"Athena Breast Health Network: Pathology Harmonization Project." 2012 UCSF Breast Oncology Program Scientific Retreat, San Francisco, CA	Faculty
2012	"Breast Cytology." 2012 28th Annual UCSF Current Issues in Anatomic Pathology, Cytology Seminar, San Francisco, CA	Faculty
2013	"Pathology Heterogeneity" 2013 UCSF Breast Oncology Program Scientific Retreat, San Francisco, CA	Faculty
2013	"Diagnosis of Lymphomas by Fine Needle Aspiration." 2013 29th Annual UCSF Current Issues in Anatomic Pathology, UCSF, San Francisco, CA	Faculty
2013	"Interpreting FNA and Core Biopsies of the Breast: The Truth and Its Many Complexities." Women's Imaging in the Wine Country, UCSF Department of Radiology, San Francisco, CA	Faculty
2013	"Lymph Node Fine Needle Aspiration Biopsy with Ancillary Studies Including Flow Cytometry and Molecular Diagnostics." The 66th Annual Meeting, California Society of Pathologists, San Francisco, CA	Faculty

2013	"Expert Roundtable: Skeptical About Cell Phones and Health?" Commonwealth Club of California, San Francisco, CA	Panel speaker
2014	"FNA biopsy of the Breast" 2014 30th Annual UCSF Current Issues in Anatomic Pathology, UCSF, San Francisco, CA	Faculty
2014	"HER2 Blood Test" and "Quantitative HER2 Determinations in Breast Cancer Guidelines," National Comprehensive Cancer Network Breast Cancer Panel Guidelines Meeting, Philadelphia, PA	Panel speaker
2014	"Ultrasound Guided Fine Needle Aspiration" Advanced Practical Pathology Program, College of American Pathologists." Chicago, IL	Faculty
2015	"Breast FNA Cytology" 2015 31st Annual UCSF Current Issues in Anatomic Pathology Cytology Seminar, San Francisco, CA	Faculty
2015	"Tubular and Mucinous Carcinomas and Breast Metastasis" and "Are TIL ready to be Incorporated into Practice" and "Testing Recurrent Breast Cancer for ESR Mutation." National Comprehensive Cancer Network Breast Cancer Panel Guidelines Meeting, Philadelphia, PA.	Panel speaker
2015	"Ultrasound Guided Fine Needle Aspiration" Advanced Practical Pathology Program, College of American Pathologists, Englewood, NJ	Faculty
2016	"Ultrasound Guided Fine Needle Aspiration" Advanced Practical Pathology Program, College of American Pathologists, Chicago, IL	Faculty
2016	"The Spectrum of Breast FNA with a Focus on Papillary Lesions." Lunch Tutorial 2016 32nd Annual UCSF Current Issues in Anatomic Pathology, San Francisco, CA	Faculty
2016	"Cancer Patients and Pathology" Cancer Information Service for the National Cancer Institute, Fred Hutchinson Cancer Research Center, Seattle, WA	Invited faculty
2016	"Fine Needle Aspiration Biopsy of the Breast," Grand Rounds, Department of Pathology, University of Washington, Seattle, Washington	Invited faculty
2016	"Breast Fine Needle Aspiration Biopsy with a focus on Papillary Lesions," Department of Pathology, University of California San Diego, San Diego, CA	Invited faculty

2017	"Breast Fine Needle Aspiration Biopsy" Department of Pathology, University of California Davis, Sacramento, CA	Invited faculty
2017	"Lymph Node FNA Node Cytology." 33rd Annual UCSF Current Issues in Anatomic Pathology, Cytology Seminar, San Francisco, CA	Faculty
2017	"Defining Favorable Histology in Breast Cancer" and "Defining Mucinous Breast Carcinoma on Core Biopsy and Excision." National Comprehensive Cancer Network Breast Cancer Panel Guidelines Meeting, Philadelphia, PA.	Panel speaker
2019	"Fine Needle Aspiration Biopsy of the Breast, Focus on Papillary Lesions," 34th Annual UCSF Current Issues Cytology Seminar, UCSF, San Francisco, CA.	Faculty
2019	"Breast FNA Cytology" 2019 35th Annual UCSF Current Issues in Anatomic Pathology Cytology Seminar, San Francisco, CA	Faculty
2022	"FNA Biopsy of Soft Tissue " 2022 36th Annual UCSF Current Issues in Anatomic Pathology Cytology Seminar (postponed from 2020).	Faculty

INVITED PRESENTATIONS - REGIONAL AND OTHER INVITED PRESENTATIONS

2011	"Breast Cytopathology" UCSF Pathology Resident's Teaching Conference, Annual Lecture	Faculty
2012	"Breast Cytopathology" Resident's Lecture, UCSF Department of Radiation Oncology, San Francisco, CA	Faculty
2012	"Breast Cytopathology" UCSF Pathology Resident's Teaching Conference, Annual Lecture	Faculty
2013	"Interpreting FNA and Core Biopsies of the Breast" Residents and Fellows Lecture, UCSF Department of Radiology and Bioimaging, Women's Imaging	Faculty
2013	"Breast Cytopathology" UCSF Pathology Resident's Teaching Conference, Annual Lecture	Faculty
2013	"Interpreting FNA and Core biopsy of the Breast" UCSF Breast Imaging Fellows Teaching Conference	Faculty
2014	"Breast Cytopathology" Resident's Lecture, UCSF Department of Radiation Oncology. San Francisco, CA	Faculty
2014	"Breast Cytopathology" UCSF Pathology Resident's Teaching Conference, Annual Lecture	Faculty
2014	"Introduction to Pathology" UCSF Carol Franc Buck Breast Care Center Pre-med Intern Program, San Francisco, CA	Faculty

2015	"Introduction to Pathology" UCSF Carol Franc Buck Breast Care Center Intern Program, San Francisco, CA	Faculty
2015	"Breast Cytopathology" UCSF Pathology Resident's Teaching Conference, Annual Lecture	Faculty
2015	"Ask Your Pathologist- Everything you ever wanted to know about breast pathology" Taste for the Cure: A Taste of Science, UCSF Carol Franc Buck Breast Care Center, San Francisco, CA	Faculty
2015	"Ask Your Pathologist" Multi-Headed Microscope Science Demonstration. Taste for the Cure: A Taste of Science, UCSF Carol Franc Buck Breast Care Center, San Francisco, CA	Faculty
2016	"Ask Your Pathologist" Multi-Headed Microscope Science Demonstration. Taste for the Cure: A Taste of Science, UCSF Carol Franck Breast Care Center, San Francisco, CA	Faculty
2016	University of California Berkeley, College of Chemistry pre-med panel	Panel faculty speaker
2016	"Breast FNA biopsy." Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania	Faculty
2016	"The Spectrum of Breast FNA Cytology: Challenging and Not So Challenging Lesions." Grand Rounds, CellNetix, Seattle, WA	Faculty
2016	"Fine Needle Aspiration Biopsy of the Breast". Department of Pathology Grand Rounds, University of Washington, Seattle, WA	Faculty
2016	"Ask Your Pathologist; Everything You Always Wanted to Know About Pathology But Never Got a Chance to Ask" Fred Hutchinson Cancer Research Center, Cancer Information Service, Seattle, WA	Faculty
2017	"Introduction to Breast Pathology" UCSF Breast Care Center, Pre-med student Intern Program.	Faculty
2017	"Breast Pathology" Resident and Fellows Lecture, UCSF Department of Radiation Oncology, San Francisco, CA	Faculty
2017	"Developing a Breast FNA Biopsy Service in Peru" UCSF Department of Pathology, San Francisco, CA	Faculty
2017	"Fine Needle Aspiration Biopsy of the Breast" Department of Pathology Grand Rounds, UCSD, San Diego, CA	Faculty
2018	"Fine Needle Aspiration Biopsy of the Breast" Department of Pathology Grand Rounds, UC Davis, Sacramento, CA	Faculty

2018	"Breast Pathology" Resident and Fellows Lecture, UCSF Department of Radiation Oncology, San Francisco, CA	Faculty
2018	"Implementation of a Breast FNA Biopsy Service in Peru" PATH, Seattle, WA	Faculty
2018	"Ask Your Pathologist" Multi-Headed Microscope Science Demonstration. Taste for the Cure: A Taste of Science. UCSF Carol Franck Breast Care Center, San Francisco, CA	Faculty
2018	"Introduction to Breast Pathology" Residents and Fellows Lecture, UCSF Department of Radiology and Bioimaging, Women's Imaging	Faculty
2019	"Breast Pathology and Cytopathology" Resident and Fellows Lecture, UCSF Department of Radiation Oncology, San Francisco, CA	Faculty
2019	"Breast Pathology" UCSF Breast Care Center, Pre-med Student Intern Program, San Francisco, CA	Faculty
2019	"Breast Pathology" Resident and Fellows Lecture. UCSF Department of Radiation Oncology, San Francisco, CA	Faculty
2020	"Breast Pathology" Radiation Oncology Grand Rounds, UCSF Department of Radiation Oncology, San Francisco, CA	Faculty
2020	"Introduction to Breast Pathology" UCSF Carol Franc Buck Breast Care Center, Nursing and Allied Health Staff	Faculty
2020	"Covid update" University of Washington, Phi Kappa Sigma fraternity, Seattle, WA	Faculty
2021	"Introduction to Breast Pathology" UCSF Breast Care Center, Pre-med Student Intern Program, San Francisco, CA	Faculty

CONTINUING EDUCATION AND PROFESSIONAL DEVELOPMENT ACTIVITIES

2007	American Society of Cytopathology, 55th Annual Scientific Meeting, Houston, TX
2007	United States and Canadian Academy of Pathology, 96th Annual Meeting, San Diego, CA
2008	American Society of Cytopathology, 56th Annual Scientific Meeting, Orlando, FL
2008	United States and Canadian Academy of Pathology, 97th Annual Meeting, Denver, CO
2009	American Society of Cytopathology, 57th Annual Scientific Meeting, Denver, CO

- 2009 United States and Canadian Academy of Pathology, 98th Annual Meeting, Boston, MA
- 2009 CAP USFNA certification workshop, Chicago, IL
- 2010 United States and Canadian Academy of Pathology, 99th Annual Meeting, Washington, DC
- 2011 United States and Canadian Academy of Pathology, 100th Annual Meeting, San Antonio, TX
- 2012 “ Medical Philanthropy 20/20: Vision and Practice for Funding the Future,” Advancement Resources & UCSF. Fundraising training for UCSF Faculty and Staff, San Francisco, CA
- 2012 2012 UCSF Breast Oncology Program Scientific Retreat, San Francisco, CA
- 2012 United States and Canadian Academy of Pathology, 101th Annual Meeting, Vancouver, BC
- 2012 American Society of Cytopathology, 60th Annual Scientific Meeting, Las Vegas, NV
- 2013 2013 UCSF Breast Oncology Program Scientific Retreat, San Francisco, CA
- 2013 American Society of Cytopathology, 61st Annual Scientific Meeting, Orlando, FL
- 2013 United States and Canadian Academy of Pathology, 102nd Annual Meeting, Baltimore, MD
- 2014 2014 UCSF Breast Oncology Program Scientific Retreat, San Francisco, CA
- 2014 United States and Canadian Academy of Pathology, 103rd Annual Meeting, San Diego, CA
- 2014 American Society of Cytopathology, 62nd Annual Scientific Meeting, Dallas, TX
- 2015 United States and Canadian Academy of Pathology, 104th Annual Meeting, Boston, MA
- 2015 American Society of Cytopathology, 63rd Annual Scientific Meeting, Chicago IL
- 2016 United States and Canadian Academy of Pathology, 105th Annual Meeting, Seattle, WA
- 2016 Symposium on Global Cancer Research, 4th Annual, San Francisco CA
- 2016 Consortium of Universities for Global Health, 7th Annual Global Health Conference
- 2016 United States and Canadian Academy of Pathology, Immersive Cytopathology Experience, Palm Springs, CA
- 2016 American Society of Cytopathology, 64th Annual Scientific Meeting, New Orleans, LA

- 2017 United States and Canadian Academy of Pathology, 106th Annual Meeting, San Antonio, TX
- 2017 American Society of Cytopathology, 65th Annual Scientific Meeting, Phoenix, AZ
- 2018 United States and Canadian Academy of Pathology, 107th Annual Meeting, Vancouver, BC
- 2018 American Society of Cytopathology, 66th Annual Scientific Meeting, Baltimore, MD
- 2019 United States and Canadian Academy of Pathology, 108th Annual Meeting, Washington, DC
- 2019 American Society of Cytopathology, 67th Annual Scientific Meeting, Salt Lake City, Utah
- 2020 American Society of Cytopathology, 68th Annual Scientific Meeting, on-line virtual meeting
- 2021 United States and Canadian Academy of Pathology, 109th Annual Meeting, on-line virtual meeting
- 2021 American Society of Cytopathology 69th Annual Scientific Meeting, Las Vegas, NV
- 2022 United States and Canadian Academy of Pathology, 110th Annual Meeting, Los Angeles, CA
- 2022 American Society of Cytopathology 70th Annual Scientific Meeting, Baltimore, MD

GOVERNMENT AND OTHER PROFESSIONAL SERVICE

- 2007 - 2007 National Cancer Institute, Thyroid Fine Needle Aspiration State of the Science Conference, Bethesda, MD. Participant
- 2011 - present Breast FNA Biopsy, Train the Trainers Program, Community-based Program for Breast Health, Peru. A collaboration with PATH (Seattle WA), Peru National Cancer Institute (Lima, Peru), the Regional Cancer Institute in Trujillo (Trujillo, Peru), and the Ministry of Health (Lima, Peru) Faculty
- 2018 - 2019 Tanzania National Treatment Guidelines in Oncology, Breast Panel & Lymphoma Panel Committee Member

UNIVERSITY AND PUBLIC SERVICE

SERVICE ACTIVITIES SUMMARY

In the School of Medicine, I have served on the UCSF School of Medicine Admissions Interview Committee since 2014. In 2016, I became the Confidential Career Advisor for Pathology for the UCSF School of Medicine. In this role I served as a trusted source of

information for medical students at all levels who are exploring Pathology as a career. The advising sessions, which can be quite detailed and intense, support the students as they consider pathology and when they are going through interview selections and residency matching. The position has allowed me to support and advise UCSF medical students including those from under-represented minorities, many of whom have proceeded on to successful careers in Pathology.

At the university level, I was a member of the UCSF LGBTQ+ committee from 2017-2021, reporting to Vice Chancellor Renee Navarro and the Office of Diversity and Outreach. The committee meets monthly and is charged with addressing campus wide issues for the underrepresented members of the LGBTQ+ community. I was chair of the sub-committee for PRIDE, organizing and advising UCSF representation at the annual San Francisco LGBTQ Pride Parade. I also served as chair of the Community Outreach sub-committee developing strategies for engaging community organizations with UCSF. Separately, I am also a member of the Community Engagement Work-group for LGBTQ organizations at UCSF Health working with the hospital system to develop policies for the LGBTQ patient population. We advised on developing a system for identifying LGBTQ providers and allies for patients as well as a UCSF Health website to connect patients with UCSF and community based resources (www.ucsfhealth.org/about/lgbtq).

In the Department of Pathology, I was head of the search committee for cytopathology faculty in 2022 with 2 successful recruits. I have also served as a member for multiple search committees in the department of Pathology and Breast Imaging in Radiology. I have worked to update and expand informational technology resources for reporting pathology results. This includes detailed planning and implementing a change in CoPath™, our pathology reporting software, to include Microsoft Word™ functions to increase efficiency in writing reports. Additionally, I serve as the APEX super-user representative for the department, testing out new functions in the Electronic Medical Record system. I was able to implement a major change in how we report FNA biopsies at UCSF by developing an easy to use template for Evaluation and Management (E&M) notes for FNA clinic patients and UCSF inpatients. These E&M notes are entered into APEX and copied into the final FNA report in CoPath. Incorporating E&M reports into our FNA service has allowed us to improve procedure documentation, be in better compliance with hospital regulations, and bill for our services more appropriately and accurately. In 2021, Dr. Jay Debnath, the new Chair of the department, developed Strategic Planning Committees to organize and plan for various issues facing the department. I serve as the Chair of the Global Pathology Committee, charged with developing a plan to expand the clinical service, teaching and research missions of the department internationally. I am also a member of the Operations and Finance Committee tasked with improving efficiency across the different facets of the department.

My community and public service work is focused on patient education and breast cancer awareness. The Taste for the Cure event is a community awareness and educational program hosted by the UCSF Breast Oncology Program. I have been a regular presenter at this event with an Ask Your Pathologist session reviewing glass slides at a microscope with patients to show them examples of common findings such as lymph node metastasis and ductal carcinoma in-situ. In 2020-2022, the event was switched to an online format and I have not been able to participate. I expect to return when in person sessions resume. I also participate in the Tri-Valley SOCKS breast cancer fundraiser with a large team from UCSF from 2014 to 2022.

UCSF CAMPUSWIDE

2011 - 2015	Tissue Oversight Committee, UCSF	Committee member
2015 - 2018	University of California San Francisco, Global Cancer Program, Steering Committee	Committee member
2019 - 2021	LGBTQ+ Committee, Office of Diversity and Outreach, UCSF	Committee member
2020 - 2021	UCSF Health Community Engagement Work-group for LGBTQ Organizations	Committee member

SCHOOL OF MEDICINE

1992 - 1995	Medical Student Admissions Committee, University of Vermont, College of Medicine Burlington, VT	Member
1998 - 2000	UCSF School of Medicine, Residency Advisory Committee, Pathology and Laboratory Medicine	Member
2000 - 2001	UCSF Medical Staff Training Committee	Member
2000 - 2001	UCSF Chief Resident's Committee	Member
2004 - 2007	Patient Safety & Total Quality Council, UPMC Shadyside, Pittsburgh, PA	Member
2006 - 2007	Residency Committee, Department of Pathology, University of Pittsburgh, Pittsburgh, PA	Member
2009 - 2010	Resident Pathology Training Committee, Department of Pathology, Massachusetts General Hospital, Boston, MA	Member
2012 - 2013	Faculty Search Committee, Breast Pathology, Department of Pathology, UCSF	Member
2013 - 2014	Faculty Search Committee, Breast Imaging, Department of Radiology, UCSF	Member
2014 - 2016	Faculty Search Committee, Director of Cytology, Department of Pathology, UCSF	Member
2017 - 2018	Faculty Search Committee, Breast Imaging, Department of Radiology, UCSF	Member
2020 - 2020	Faculty Search Committee, Breast Imaging, Department of Radiology, UCSF	Member
2014 - present	Admissions Committee, Interview Committee, UCSF School of Medicine, San Francisco, CA	Member
2022 - 2023	Faculty Search Committee, Cytopathology/Molecular Pathology, Department of Pathology, UCSF	Chair

2022 - 2022	Faculty Search Committee, Breast Imaging, Department of Radiology, UCSF	Member
2022 - 2023	Head Faculty Search Committee, Cytopathology, Department of Pathology, UCSF	Head
2016 - present	Confidential Career Advisor for Pathology, UCSF School of Medicine, San Francisco, CA	Advisor, UCSF Medical Students

DEPARTMENTAL SERVICE

2012 - 2012	Pathology, CoPath upgrade to Word	Planning and implementation
2014 - present	Clinical Competency Committee, UCSF Cytopathology Fellowship program	Member
2016 - present	Pathology and Laboratory Medicine, Grand Rounds Mechanism of Disease faculty feedback group	Faculty mentor
2019 - present	APEX superuser representative for the department of Pathology	Representative
2021 - present	Global Pathology, Strategic Planning Committee, UCSF Pathology	Chair
2021 - present	Operations and Finance, Strategic Planning Committee, UCSF Pathology	Member

SERVICE AT OTHER UNIVERSITIES

2011 - present	Instituto Regional Enfermedades Neoplasicas (IREN) Norte, Trujillo, Peru Visiting Faculty, Advisor	
2017 - present	Muhimbili University of Allied Health Sciences, Department of Pathology, Visiting Faculty/Advisor/Mentor	Dar es Salaam, Tanzania

COMMUNITY AND PUBLIC SERVICE

2011 - 2011	UCSF Mt Zion Health Fair. FNA Clinic and Pathology Department Booth	Organizer/Representative
2013 - present	Breast FNA biopsy implementation in Peru, a collaboration with PATH and the Community Based Program for Breast Health, Peru.	Faculty
2015 - 2019	"Ask Your Pathologist: Everything you ever wanted to know about breast pathology" Lecture. Taste for the Cure: A Taste of Science. UCSF Carol Franc Buck Breast Care Center, San Francisco, CA	Faculty speaker

2015 - 2019	"Ask Your Pathologist" Annual Multi-Headed Microscope Science Demonstration. Taste for the Cure: A Taste of Science. UCSF Carol Franc Buck Breast Care Center, San Francisco, CA	Faculty speaker
2014 - 2022	Tri-Valley Stepping Out for Cancer Kures (SOCKS), Bras for the Cause, Breast Cancer Walk	UCSF participant and fundraiser

CONTRIBUTIONS TO DIVERSITY

CONTRIBUTIONS TO DIVERSITY Contributions to Diversity, Equity & Inclusion Guidance

I have contributed to diversity at UCSF as an openly gay man since I first visited UCSF as a medical student in 1994, when I started residency in 1997, and when I joined the faculty in 2011. I have been involved with lesbian, gay bisexual and transgender (LGBT) organizations affiliated with UCSF during all of these times. In the mid-nineties, UCSF was still formulating policies around LGBT inclusion and some trainees and even faculty were not comfortable with being open about their sexual identity. As an openly gay man at UCSF, I served as an example, a role model and a mentor to other LGBT members of the UCSF community, including students, residents, fellows, faculty and staff. Informal mentor-ship has included helping UCSF colleagues at all levels address issues relating to real and perceived anti-LGBT discrimination both in the workplace and in social settings. In 2013, I took a lead role with the Pathology department to organize a memorial in recognition of a gay pathology resident who died of AIDS during his training. In 2019 I became a member of the UCSF LGBTQ+ Committee in the Office of Diversity and Outreach, reporting to Vice Chancellor Renee Navarro, where I served on the sub-committee for community engagement. I also led the sub-committee for organizing and increasing UCSF participation the annual SF Pride march. In addition, I was selected to work with Shane Snowdon for the UCSF Health Community Engagement Group to develop outreach to local LGBTQ+ organizations. I am very proud to be a faculty member and to represent the LGBTQ community at UCSF where diversity is welcomed and celebrated with pride.

- 1997 Bay Area Physicians for Human Rights, member
- 1999 UCSF Out-List, Member
- 2011 San Francisco Gay-Straight Alliance, member
- 2011 UCSF LGBTQI List-serve member.
- 2013 San Francisco Aids Foundation, member
- 2019-21 UCSF LGBTQ+ Committee, Office of Diversity and Outreach
- 2020-22 UCSF Health Community Engagement Work-group for LGBTQ Organizations
- 2020 UCSF Differences Matter, Diversity Equality and Inclusion Champion Training, School of Medicine and Enact Leadership
- 2020-21 GME Diversity Virtual 1st Look Specialty Specific Program (Pathology), faculty representative for UCSF.
- 2021-22 American Society of Cytopathology, Diversity Equity and Inclusion Committee member; Outreach subcommittee co-chair.
- 2022 American Society for Clinical Pathology, Critical Values, News for the Entire Laboratory Team, LGBTQ+ Pride Issue, June 2022.
- 2022 DEI Leadership Award for Faculty, Department of Pathology UCSF

- 2022 Society of Black Pathologists, member.
- 2023 Diversify in Path; Episode with Ron Balassanian, MD

I have also contributed to diversity at UCSF through my work in Global Health by mentoring visiting scholars through training programs and capacity building projects first in Peru, and more recently in Tanzania. I have helped develop resource appropriate programs targeting under-served communities in low resource settings. Through these projects, I mentored and sponsored visiting pathologists at UCSF that included visiting scholars from Instituto Nacional de Enfermedades Neoplasicas (INEN) in Lima Peru and Instituto Regional Enfermedades Neoplasicas (IREN) Norte in Trujillo Peru, as well as visiting scholars from Muhimbili University of Allied Health Sciences (MUHAS) in Dar es Salaam, Tanzania.

2013-present Community Based Program for Breast Health, Peru. Collaboration with central and regional cancer centers Instituto Nacional de Enfermedades Neoplasicas (INEN) and Regional Institute of Neoplastic Diseases-Norte (IREN -Norte) for training and capacity building.

2016-present Muhimbili University of Allied Health Science (MUHAS), Dar es Salaam, Tanzania. Collaboration with pathologists to develop clinical services and research programs in conjunction with teaching affiliation at UCSF.

I have mentored and advised premed students from underrepresented minorities. Adam Ross was technician working in the UCSF Department of Pathology when I first met him in 2016. I mentored and advised him closely during 3 cycles of medical school applications, and throughout medical school and residency applications. In 2022, I was honored to be his guest hooder for commencement at the University of Vermont Robert Larner College of Medicine. Dr. Adam Ross is now my colleague in his residency training program in Psychiatry at the Kaiser San Jose.

TEACHING AND MENTORING

TEACHING SUMMARY

I teach pathology residents and cytology fellows during their rotations in the FNA clinic and on the cytology and breast services. In cytology, I conduct one-on-one FNA biopsy practice sessions, called "FNA Boot Camp" with residents and fellows at the beginning of their cytology rotation and throughout the year. I also instruct them on ultrasound guidance techniques using phantoms. For the Resident's Teaching Conference (RTC), I present a didactic lecture on breast cytology with a breast FNA unknowns session annually. In 2015, I instituted a weekly RTC cytology conference reviewing interesting FNA cases at Mission Bay at a multi-headed scope. During the pandemic, this conference switched to an online format and allowed for greater participation by residents at all the training sites. In 2021, I received the Faculty Teaching Award for Excellence in Teaching from the UCSF Pathology Residents and Fellows.

Since 2016 I have taught the UCSF Medical Students through the Bridges curriculum in the Life Stages sections on Placenta, Prostate, Breast, Uterus and Ovary. In the 2021-22 academic year, I started as a Specialty Practice Ambulatory sub-internship (SPAN) preceptor through the UCSF Bridges Curriculum. Students develop clinical exam skills in the ambulatory setting working with me in the FNA clinic at least 12 half days throughout their 4th year. Four students have gone through the program and we are expecting to expand next year.

I provide an annual lecture on “ Introduction to Breast Pathology” for a group of approximately 20 pre-med interns in the UCSF Carol Franc Buck Breast Care Center at the beginning of their internship. I also serve as an advisor for the students as they go through the medical school application process.

At the international level, I developed and run a workshop for the American Society of Cytopathology (ASC) on ultrasound guided FNA biopsy. The workshop has been renewed for 11 consecutive years at the ASC Annual Scientific Meeting since 2011. In 2020 the conference postponed due to the Covid-19 pandemic. However, we returned to an in-person session in 2021. I served as faculty for the United States and Canadian Academy of Pathology at the Immersive Cytopathology Experience course in 2016 as well as the Diagnostic Pathology Update in 2014. At the national level, I served as faculty for the College of American Pathologists Advanced Practical Pathology Program on US-FNA biopsy from 2014 to 2017. In 2017, working with the Muhimbili University of Allied Health Sciences (MUHAS), the UCSF Global Cancer Program, Dianna Ng, MD and Amie Lee, MD, we developed a training course at MUHAS training pathologists and radiologists jointly in performing and interpreting ultrasound guided FNA biopsy. We were invited to return to MUHAS in January 2019 to teach the course again. Working with the national and regional cancer centers in Peru (INEN and IREN) as well as PATH in Seattle we developed a training program for breast FNA biopsy in Trujillo Peru, training Pathologists, Gynecologists in performing and interpreting breast FNA biopsy as part of the Community Based Program for Breast Health, Peru. The goal of the program is to train pathologists, gynecologists and mid-wives to deliver effective breast cancer screening in low resource settings. We continue to assess and refine the program. In 2019, I was faculty for intensive cytopathology tutorials organized by Dr. Andrew Field, MBBS and the International Academy of Cytopathology at the University of Botswana in Gabarone Botswana, and at the Agha Khan Hospital, Nairobi Kenya. The program was intended to be on-going but halted during the pandemic.

FORMAL TEACHING

	Academic Yr	Course No. & Title	Teaching Contribution	School	Class Size
	2011 - present	"Breast Cytopathology" UCSF Pathology Resident's Teaching Conference, Annual Lecture	Faculty presenter	Medicine	15
	2013 - 2018	Cytology-Hematology Correlation Conference. Quarterly review of interesting cytology and correlating hematology cases. UCSF Laboratory Medicine Residents and Fellows	Faculty presenter	Medicine	10

	Academic Yr	Course No. & Title	Teaching Contribution	School	Class Size
	2013 - 2016	"Interpreting FNA and Core biopsy of the Breast" UCSF Breast Imaging Fellows Teaching Conference	Faculty presenter	Medicine	10
	2016 - 2018	"Classification of Neoplasms" MS1 USCF Bridges Medical Curriculum.	Faculty	Medicine	12
	2016 - 2016	University of California Berkeley, College of Chemistry pre- med panel (Invited)	Faculty	Medicine	46
	2017 - 2018	MS1 Medical Student ABC Block Myocardial Pathology; Obstructive & Restrictive Lung Disease; Lung Cancer.	Faculty	Medicine	10
	2017 - present	MS2 Medical Student Bridges Curriculum Life Stages.Placenta, Prostate, Breast, Ovary, Uterus	Faculty	Medicine	10
	2017 - 2021	"Breast Pathology" UCSF Radiation Oncology Residents and Fellows Teaching conference	Faculty	Medicine	12
	2018 - 2019	MS1,2 Demystifying Pathology	Faculty	Medicine	2
	2018 - 2019	MS2 Pathology observership	Faculty	Medicine	1
	2021 - 2022	MS4 Bridges SPAN longitudinal preceptor.	Faculty	Medicine	1
	2022 - 2023	MS4 Bridges SPAN longitudinal preceptor.	Faculty	Medicine	2

INFORMAL TEACHING

- 1994 - 1994 Second Year Medical Student Pathology Course, University of Vermont, College of Medicine, Department of Pathology, Laboratory Assistant, 90 medical students, 2-6 hours per week.
- 1996 - 1997 Second Year Medical Student Pathology Course, New York University, Department of Pathology, Laboratory Assistant, 30 medical students, 2-6 hours per week.
- 1997 - 1998 Second Year Medical Student Pathology Course, University of California San Francisco, Department of Pathology, Laboratory Assistant, 30-60 medical students, 2-6 hours per week.
- 1999 - 2000 Fellow, Surgical Pathology, Responsible for supervising junior residents in pathology, Estimate of hours per year: 1560 hours per year (30-60 hours per week).
- 2000 - 2001 Fellow, Cytopathology, Responsible for supervising junior residents in cytopathology, Estimate of hours per year: 520 hours per year (10 hours per week).
- 2002 - 2003 Assistant Professor, Weill Medical College of Cornell University/NY Presbyterian Hospital, Responsible for training residents and fellows in cytopathology, Estimate of hours per year: 1040 hours per year (20 hours per week).
- 2003 - 2004 Attending Pathologist, Beth Israel Medical Center, Continuum Health Partners, Responsible for training visiting residents in cytopathology, Estimate of hours per year: 104 hours per year (2 hours per week).
- 2004 - 2007 Assistant Professor, University of Pittsburgh/UPMC, Responsible for training residents and fellows in cytopathology, Estimate of hours per year: 1560 hours per year (30-60 hours per week).
- 2006 - 2007 Cytology Rotation Director, University of Pittsburgh/UPMC Shadyside, Responsible for overseeing resident rotations through the UPMC FNA biopsy clinic and general cytology service.
- 2007 - 2010 Instructor in Pathology, Harvard Medical School/Massachusetts General Hospital, Responsible for training residents and fellows in pathology, Estimate of hours per year 1560 hours per year (30 hours per week).
- 2011 - 2014 Assistant Clinical Professor, UCSF, Responsible for training and supervising residents and fellows on the cytology service and breast pathology service. Estimate of hours per year 1560 hours per year (30 hours per week).
- 2014 - 2019 Associate Clinical Professor, UCSF, Responsible for training and supervising residents and fellows on the cytology service and breast pathology service. Estimate of hours per year 1560 hours per year (30 hours per week).
- 2019 - 2020 Clinical Professor, UCSF, Responsible for training and supervising residents and fellows on the cytology service and breast pathology service. Estimate of hours per year 1560 hours per year (30 hours per week).

MENTORING SUMMARY

I have closely trained and advised a number of residents and fellows through collaboration on research projects as well as direct supervision of their clinical work as the attending on service. Several trainees have progressed on to faculty positions; some are continuing their training, and some are in private practice.

I am a member of the faculty feedback group for the UCSF Pathology and Laboratory Medicine resident conference "Mechanism of Disease".

I serve as the Confidential Career Advisor for Pathology for UCSF medical students and mentor them through the residency application process.

PREDOCTORAL STUDENTS SUPERVISED OR MENTORED

Dates	Name	Program or School	Mentor Type	Role	Current Position
2012 - 2013	Katherine Serrurier	UCSF Carol Franc Buck Breast Care Center	Career Mentor	Pre-med advisor	Biotech
2014 - 2015	Abhi Jairam	UCSF Carol Franc Buck Breast Care Center	Project Mentor	Pre-med Intern	University of California Davis Medical School graduate.
2013 - 2014	Timothy Henderson	UCSF Carol Franc Buck Breast Care Center	Project Mentor, Career Mentor	Pre-med Intern	University of Vermont, Larner College of Medicine graduate
2015 - 2018	Sarah Bowman	UC Berkeley Extension	Career Mentor	Pre-med advisor	UCSF Manager Digital Pathology
2015 - 2022	Patrick Martin-Tuite	UCSF Carol Franc Buck Breast Care Center	Research/Scholarly Mentor, Project Mentor, Career Mentor	Pre-med advisor/medical school advisor Mentor	Urology resident, Washington University

Dates	Name	Program or School	Mentor Type	Role	Current Position
2015 - 2020	Adam Ross	University of Vermont, Larner College of Medicine, Medical Student	Career Mentor	Pre-med advisor/Mentor	Psychiatry resident, Kaiser San Jose
2016 - 2017	Nicole Croom	UCSF Medical Student	Career Mentor	Confidential Career Advisor	Forensic Pathologist, Detroit MI
2017 - 2018	Nebil Mohammed	UCSF Medical Student	Career Mentor	Confidential Career Advisor	UCSF Pathology Resident
2017 - 2018	Calixto-Hope Lucas	UCSF Medical Student	Career Mentor	Confidential Career Advisor	Faculty, John Hopkins, Department of Pathology
2018 - 2019	Aaron Chin	UCSF Medical Student	Career Mentor	Confidential Career Advisor	Resident, Internal Medicine, Baylor TX
2019 - 2020	Alex Craig	UCSF Medical Student	Career Mentor	Confidential Career Advisor	UCSF Pathology Resident
2019 - 2020	Kara Tanaka	UCSF Medical Student	Career Mentor	Confidential Career Advisor	UCSF Pathology Resident
2020 - 2021	Carol Tran	UCSF Medical Student	Career Mentor	Confidential Career Advisor	UCSF Radiology Resident
2020 - 2021	Jon Zhang	UCSF Biophysics PhD Student	Career Mentor	Career Advisor	UCSF Graduate Student
2021 - 2022	Heidi Vaughan	UCSF Medical Student	Career Mentor	Confidential Career Advisor	Pathology Resident, University of Virginia

Dates	Name	Program or School	Mentor Type	Role	Current Position
2022 - 2023	Alex Weickhardt	UCSF Medical Student	Career Mentor	Confidential Career Advisor	UCSF Medical Student
2022 - 2023	Emily Kelly	UCSF Medical Student	Career Mentor	Confidential Career Advisor	UCSF Medical Student
2022 - 2023	Abiana Abramson	UCSF Medical Student	Research/Scholarly Mentor, Career Mentor	Confidential Career Advisor Deep Explore mentor	UCSF Medical Student

POSTDOCTORAL FELLOWS AND RESIDENTS MENTORED

Dates	Name	Fellow	Mentor Role	Faculty Role	Current Position
2005 - 2006	Olga Navolotskaia, MD	Fellow	Project Mentor, Career Mentor, Co-Mentor/Clinical Mentor	Attending	UPMC faculty
2006 - 2007	Sara Monaco, MD	PGY4	Research/Scholarly Mentor, Project Mentor, Career Mentor, Co-Mentor/Clinical Mentor	Attending	UPMC faculty
2007 - 2008	Stewart Knoepf, MD PhD	Fellow	Project Mentor, Career Mentor	Attending	Private practice
2007 - 2011	Jill Ono, MD	Fellow	Career Mentor, Co-Mentor/Clinical Mentor	Attending/research collaborator	Private practice, Las Vegas, NV
2007 - 2008	Kenan Sauder, MD	Fellow	Career Mentor, Co-Mentor/Clinical Mentor	Attending, research collaborator	Private practice NWH, Newton, MA

Dates	Name	Fellow	Mentor Role	Faculty Role	Current Position
2007 - 2011	Johanna Baran, MD	Resident	Career Mentor, Co-Mentor/Clinical Mentor	Attending/research collaborator	Private practice, San Luis Obispo, CA
2011 - 2014	Sara Barcia, MD	Fellow	Career Mentor, Co-Mentor/Clinical Mentor	Attending	Private practice, Boston MA
2011 - 2014	Brandie Firetag	Fellow	Career Mentor, Co-Mentor/Clinical Mentor	Attending	Private practice, San Luis Obispo, CA
2012 - 2014	Sarah Calkins	Fellow	Project Mentor	Research collaborator	UCSF Faculty
2012 - 2017	Dianna Ng	Fellow	Research/Scholarly Mentor, Project Mentor, Career Mentor, Co-Mentor/Clinical Mentor	Research collaborator	UCSF Faculty
2012 - 2017	Josh Menke	Fellow	Research/Scholarly Mentor, Project Mentor, Career Mentor	Research collaborator	Stanford Faculty
2017 - 2019	Marie-Claire Ndayisaba	Resident	Project Mentor	Research Project Mentor	University Teaching Hospital of Kigali, Rwanda
2017 - 2020	Rachel Daffolyn Fels Elliott	Resident, Fellow	Project Mentor, Co-Mentor/Clinical Mentor	Research Project Mentor	University of Michigan, Pathology Fellow
2021 - present	Julia Ye	Resident	Research/Scholarly Mentor, Project Mentor	Research Project Mentor	UCSF Resident

FACULTY MENTORING

Dates	Name	Position while Mentored	Mentor Type	Mentoring Role	Current Position
2014 - 2016	Sarah Calkins, MD	Faculty	Research/Scholarly Mentor, Project Mentor, Career Mentor	Research collaborator	UCSF Faculty
2017 - 2019	Dianna Ng, MD	Faculty	Research/Scholarly Mentor, Project Mentor, Career Mentor	Research collaborator	Memorial Sloan Kettering Faculty
2019 - 2020	Tatiana Kelil, MD	Faculty	Research/Scholarly Mentor	Research collaborator	UCSF Faculty
2016 - present	Poonam Vohra, MD	Faculty	Research/Scholarly Mentor, Project Mentor, Career Mentor	Research collaborator/career advisor	UCSF Faculty

VISITING FACULTY MENTORED

2017 - present Edda Vuhahula, DDS PhD, Chief of Pathology Muhimbili University for Allied Health Sciences

RESEARCH AND CREATIVE ACTIVITIES**RESEARCH PROGRAM (SEPARATE SUMMARY)**

As an academic cytopathologist, my career mission statement is: To bridge pathology and clinical practice and improve patient care and communication. My research is mainly focused on two areas, FNA biopsy and breast pathology. My research in breast cancer is often patient centered. I explore ways to expand the diagnostic utility of FNA biopsy, particularly through ancillary molecular testing and empower patients to understand the basis of their pathology diagnosis.

Ask Your Pathologist is a project I initiated which allows patients to gain a visual understanding of their diagnoses by reviewing their slides with a pathologist at a multi-headed microscope. Working with the Breast Care Center pre-med intern program, we identify patients who have questions about their breast pathology diagnoses and how it relates to their treatment options. These patients are invited to review their slides at a multi-headed microscope with me and to discuss the findings in their reports. Following the session, the patients receive a written summary, an audio recording of the session and are surveyed about their experience. At the close of the study, we will measure outcomes in patient satisfaction and understanding of their diagnosis. The project is currently funded through the Athena Program, the UCSF Breast Care Center, and through an unrestricted gift to the Pathology department from an individual UCSF donor in my name. Our findings were presented as a platform presentation at the United States

and Canadian Academy of Pathology (USCAP) Annual Meeting in 2018. During the Covid-19 pandemic, we initially deferred patient requests for the Ask Your Pathologist program. However, we have recently incorporated digital pathology as a tool to allow patients to review their pathology with me remotely via Zoom conferencing. We also plan to study the efficacy of switching to this modality.

I am co-investigator on a project sponsored by Cepheid working with Drs. Dianna Ng (Memorial Sloan Kettering Pathology and Edda Vuhahula (Muhimbili University of Allied Health Sciences (MUHAS) Pathology), in Dar es Salaam, Tanzania. We are developing FNA biopsy with point-of-care testing for estrogen receptor (ER), progesterone receptor (PR) and Her2 neu expression using a GeneXpert PCR based assay with a 2 hour turn-around time. This will allow for rapid on-site diagnosis for breast cancer patients in Tanzania. The goal is to have patients diagnosed by FNA biopsy with ER, PR and Her2 assays performed at the bedside, so they can be sent home with a prescription for anti-estrogen therapy as appropriate. The project is a validation study funded by Cepheid and the UCSF Global Cancer Program.

My work in Tanzania also includes implementation of an FNA biopsy service at MUHAS. Working with Drs. Amie Lee and Tatiana Kelil in the UCSF Department of Radiology, we conducted US FNA training workshops at MUHAS to train residents, pathologists and radiologists. We measured the efficacy of our training program with pre and post assessment and published our findings in the Journal of Global Oncology. A follow up study is currently underway.

PATH is a non-governmental organization based in Seattle, with a mission to improve global health. Working with PATH, we developed a program for community based breast health, using ultrasound and FNA biopsy to screen and triage women in rural and under-served areas of Peru. Our initial work was based at the northern regional cancer center IREN, in Trujillo, Peru. We trained pathologists, gynecologists and midwives on performing and interpreting FNA biopsy of the breast and then followed up with on-site visits to IREN-Norte to perform quality assessment and measure outcomes by reviewing FNA biopsies performed before and after training. Our long-term goal is to work with PATH to expand this program to other low and middle income countries around the world.

While in Peru, as a co-investigator for a project in Laura Fejerman's lab (formerly UCSF now UC Davis) and Dr. Ruiz Cordero (UCSF Pathology) and I reviewed immunohistochemical staining for breast biomarkers ER, PR, Her2 for breast cancer patients at the national cancer center (INEN) in Lima Peru, to validate genetic testing performed on samples sent to UCSF. We were able to demonstrate Her2 positive breast cancer is associated with Indigenous American ancestry in Peru. Our findings were published in Cancer Research in 2020.

I am the principle investigator for a multi-institutional project working with Miguel Sanchez MD (Englewood, New Jersey) and Celeste Powers MD, PhD (Virginia Commonwealth University), examining the long-term outcome of breast biopsy techniques, comparing FNA biopsy with core biopsy. The project will examine the rate of lymph node and distant metastasis in women diagnosed with breast cancer by either FNA or core biopsy. The project is a follow up to a smaller study done at the Karolinska Institute in Stockholm Sweden, which demonstrated a higher rate of lymph node metastasis in women who were diagnosed with breast cancer by core biopsy rather than by FNA. Our goal is to repeat the study with a larger cohort of patients across different institutions in a more controlled and statistically rigorous manner. Working with Julia Ye in the department of Pathology, we are refining the chart review and analyzing the data.

I-SPY2 is a prospective study for women who present with advanced breast cancer. I am a coinvestigator for the study, a lead member of the Pathology Working Group and involved with pathology reviews and developing protocols. Using MRI and core biopsies of the breast, along with molecular profiling, breast cancer patients are screened for potential response to neo-adjuvant therapy with various investigational drugs. My role is to assist with reviewing core biopsies to determine adequacy for molecular profiling. I also review mastectomy specimens following neo-adjuvant therapy to record the residual cancer burden for the patient following treatment. In 2020, I helped to develop protocols for performing core biopsies of the tumor bed after 12 weeks of neoadjuvant therapy to identify women who may be able to forgo further therapy.

The Athena Breast Health Network is a multiinstitutional collaboration involving all five University of California medical centers. The project seeks to enroll 150,000 breast cancer patients and standardize of all aspects of their breast care including prevention, diagnosis, pathology, imaging, treatment and prognosis. I am one of the UCSF site pathologists. I took a lead role in a breast biomarker harmonization project standardizing assays for ER, PR, Her-2 and Ki-67 across all sites. I was a coinvestigator for a web based training tool to help harmonize pathology interpretation called Score the Core, to train participating pathologists to interpret various breast core biopsies in a uniform fashion. In collaboration with the Karolinska Institute, we examined a cohort of 700 cases of archival breast cancer tissue from women and determined the effect on long term survival of estrogen receptor heterogeneity in breast cancer. Our findings were published in the Journal of the National Cancer Institute. Additional collaborative efforts with the Athena group are ongoing.

I am a coinvestigator for a project with investigators at Duke University including Drs. Shelly Hwang (breast surgery) and Ashutosh Chilkoti (Biomedical Engineering) developing a hand-held point of care test using artificial intelligence for cellular and molecular pathology of breast tumors. The goal of the project is to develop a module that can be used in underserved low resource settings in Tanzania to screen patients for referral to the main cancer center in Dar es Salaam. I am the site PI for the study and my role is to develop the artificial intelligence with digital imaging of the breast FNA study sets at UCSF. As a coinvestigator with Drs. Catherine Park (UCSF Radiation Oncology) and Valerie Weaver (UCSF Center for Bioengineering and Tissue Regeneration) we develop protocols for using artificial intelligence and digital imaging “ histiomics” of stromal collagen to predict the risk of recurrence in breast ductal carcinoma in-situ.

RESEARCH AWARDS - CURRENT

1. P0555707	Lead Site investigator	25 % effort	Hwang (PI)
National Institutes of Health		09/21/2021	09/01/2023
Point-of-care Cellular and Molecular pathology of Breast Tumors		\$ 50,000 direct/yr 1	\$ 100,000 total

Developing a portable handheld imaging device using artificial intelligence on FNA breast biopsies to screen women in low resource settings in Tanzania for referral to tertiary care centers.

I am developing the artificial intelligence using digital imaging of UCSF breast FNA glass slide study sets.

RESEARCH AWARDS - PAST

1.	R01-HS13321	expired		
	Project: Improving Patient Safety by Examining Pathology Errors. Ongoing projects examining efficacy of FNA biopsy of the thyroid, lung lymph nodes and breast. Role: Co-investigator.		01/01/2005	01/01/2007
2.		Recipient		Balassanian (PI)
	National Institutes of Health		07/01/2007	06/30/2009
	Loan Repayment Program		\$ 35,000 direct/yr 1	\$ 70,000 total
	The NIH Loan Repayment Program provides direct payment for medical school loans for individuals with a 50% commitment to clinical research.			
3.	MGH Vickery Fund			
	Project: Optimizing cell block assays from FNA biopsy samples. Role: Project Investigator		09/1/2008	12/01/2010
4.	R43 CA114896			
	NIH/NCI (STTR through Physical Sciences Inc)		04/01/2009	03/01/2011
	High Resolution Smart Probe for Breast Biopsy Guidance. PI: Nick Iftima. Role: Co-investigator		\$ 39,047 direct/yr 1	
5.		Principle Investigator		
			1/1/2013	12/31/2014
	Direct Cytologic Smears Are An Accurate And Reliable Substrate For Fluorescence In Situ Hybridization Testing In Synovial Sarcoma			
	Application of FISH to direct FNA smears for diagnosis of synovial sarcoma.			
6.	11-PIR-11	Co-Investigator/Pathologist		Balassanian (PI)
	Nektar Therapeutics		5/1/2012	6/30/2015

Nektar Beason TAP Study

\$ 5% salary support direct/yr 1 \$ 5% salary support total

TAP (Tissue Acquisition Protocol) involves obtaining tumor samples with FNA biopsy and collodion bag cell block for protein expression analysis.

7. DPA 404939 DepCode Principle Investigator
400961

Foundation. Directed donation to UCSF in support of research activities of Dr. Balassanian 01/01/2014 06/30/2020

Balassanian Research Fund \$ 20,000 total

Unrestricted donation to UCSF used to fund Ask Your Pathologist and work in the UCSF Global Oncology Program

8. Coinvestigator Ng, Dianna (PI)

Cepheid 08/01/2018 08/01/2019
GeneXpert Breast Cancer STRAT4 \$ 450,000 direct/yr 1

Validation of the GeneXpert Breast Cancer Assay for rapid analysis of breast cancer biomarker status from fine needle aspiration (FNA) biopsies in Tanzania

As coinvestigator I will help develop FNA techniques, and perform validation studies with immunohistochemical assays at UCSF.

9. Co-investigator /Lead author on current manuscript in draft Laura van 't Veer, Phd
Laura Esserman, MD (PI)

University of California Office of the President 1/1/2010 present
Athena Breast Health Network \$ 5.3M direct/yr 1

A prospective study with 5 UC hospitals, including Davis, UCSF, UCLA, UCI, UCD, to create a network of 150,000 breast patients with standardization of all aspects of breast health including prevention, detection, diagnosis, treatment, prognosis and survivorship.

10. Co-Investigator

PATH- A catalyst for global health 01/01/2013 present
Implementing FNA biopsy in Peru

Working with PATH we are developing a template for implementing FNA biopsy to diagnose breast cancer in rural under-served areas of Peru. This template will be used to implement similar programs in other countries.

- | | | | |
|-------------------------------|-----------------|--------------|---------------|
| 11. 1R01CA204797-01 | Co-investigator | 12% % effort | Fejerman (PI) |
| National Institutes of Health | | 09/01/2016 | 09/01/2021 |
- Biological implications of breast cancer protective variants in Latin American women with high Indigenous American ancestry
- This project will investigate the 6q25 region in Peruvian breast tumors to determine if there is a protective effect.
- I will be reviewing pathology and immunohistochemical staining on 2000 breast cancer cases from Peru to confirm pathology and determine the IHC4 score.

PEER REVIEWED PUBLICATIONS

1. Baehner R, Magrane G, **Balassanian R**, Chang C, Millward C, Wakil AE, Osorio RW, Waldman FM. Donor origin of neuroendocrine carcinoma in 2 transplant patients determined by molecular cytogenetics. *Hum Pathol.* 2000 Nov; 31(11):1425-9. PMID: 11112220
2. Chou SH, Chawla A, Lee TH, Zhou Y, Busch MP, **Balassanian R**, Ferrell L, Cowan MJ. Increased engraftment and GVHD after in utero transplantation of MHC-mismatched bone marrow cells and CD80low, CD86(-) dendritic cells in a fetal mouse model. *Transplantation.* 2001 Dec 15; 72(11):1768-76. PMID: 11740386
3. Gendler LS, Feldman SM, **Balassanian R**, Riker MA, Frencher SK, Whelan DB, Anne S, Gross JD, Cohen JM, Boolbol SK. Association of breast cancer with papillary lesions identified at percutaneous image-guided breast biopsy. *Am J Surg.* 2004 Oct; 188(4):365-70. PMID: 15474427
4. Valdes EK, Feldman SM, **Balassanian R**, Cohen JM, Boolbol SK. Diagnosis of recurrent breast cancer by ductoscopy. *Breast J.* 2005 Nov-Dec; 11(6):506. PMID: 16297117
5. Nodit L, **Balassanian R**, Sudilovsky D, Raab SS. Improving the quality of cytology diagnosis: root cause analysis for errors in bronchial washing and brushing specimens. *Am J Clin Pathol.* 2005 Dec; 124(6):883-92. PMID: 16416738
6. Raab SS, Vrbin CM, Grzybicki DM, Sudilovsky D, **Balassanian R**, Zarbo RJ, Meier FA. Errors in thyroid gland fine-needle aspiration. *Am J Clin Pathol.* 2006 Jun; 125(6):873-82. PMID: 16690487
7. Raab SS, Grzybicki DM, Sudilovsky D, **Balassanian R**, Janosky JE, Vrbin CM. Effectiveness of Toyota process redesign in reducing thyroid gland fine-needle aspiration error. *Am J Clin Pathol.* 2006 Oct; 126(4):585-92. PMID: 16938657
8. Owonikoko T, Agha M, **Balassanian R**, Smith R, Raptis A. Gemtuzumab therapy for isolated extramedullary AML relapse following allogeneic stem-cell transplant. *Nat Clin Pract Oncol.* 2007 Aug; 4(8):491-5. PMID: 17657254
9. Pazarentzos E, Giannikopoulos P, Hrustanovic G, St John J, Olivas VR, Gubens MA, **Balassanian R**, Weissman J, Polkinghorn W, Bivona TG. Oncogenic activation of the PI3-kinase p110 β isoform via the tumor-derived PIK3C β (D1067V) kinase domain mutation. *Oncogene.* 2015 May 18. PMID: 25982275
10. Engelberg JA, Retallack H, **Balassanian R**, Dowsett M, Zabaglo L, Ram AA, Apple SK, Bishop JW, Borowsky AD, Carpenter PM, Chen YY, Datnow B, Elson S, Hasteh F, Lin F,

- Moatamed NA, Zhang Y, Cardiff RD. "Score the Core" Web-based pathologist training tool improves the accuracy of breast cancer IHC4 scoring. *Hum Pathol*. 2015 Nov;46(11):1694-704. doi: 10.1016/j.humpath.2015.07.008. Epub 2015 Jul 29. PMID: 26410019
11. Gradishar WJ, Anderson BO, **Balassanian R**, Blair SL, Burstein HJ, Cyr A, Elias AD, Farrar WB, Forero A, Giordano SH, Goetz M, Goldstein LJ, Hudis CA, Isakoff SJ, Marcom PK, Mayer IA, McCormick B, Moran M, Patel SA, Pierce LJ, Reed EC, Salerno KE, Schwartzberg LS, Smith KL, Smith ML, Soliman H, Somlo G, Telli M, Ward JH, Shead DA, Kumar R. Breast cancer version 2.2015. *J Natl Compr Canc Netw*. 2015 Apr; 13(4):448-75. PMID: 25870381
 12. Gradishar WJ, Anderson BO, **Balassanian R**, Blair SL, Burstein HJ, Cyr A, Elias AD, Farrar WB, Forero A, Giordano SH, Goetz M, Goldstein LJ, Hudis CA, Isakoff SJ, Marcom PK, Mayer IA, McCormick B, Moran M, Patel SA, Pierce LJ, Reed EC, Salerno KE, Schwartzberg LS, Smith KL, Smith ML, Soliman H, Somlo G, Telli M, Ward JH, Shead DA, Kumar R. NCCN Guidelines Insights Breast Cancer, Version 1.2016. *J Natl Compr Canc Netw*. 2015 Dec; 13(12):1475-85. PMID: 26656517
 13. Valdes EK, Boolbol SK, Cohen JM, **Balassanian R**, Feldman SM. Clinical Experience With Mammary Ductoscopy. *Ann Surg Oncol*. 2016 Dec; 23(Suppl 5):9015-9019. PMID: 16897273
 14. Gradishar WJ, Anderson BO, **Balassanian R**, Blair SL, Burstein HJ, Cyr A, Elias AD, Farrar WB, Forero A, Giordano SH, Goetz M, Goldstein LJ, Hudis CA, Isakoff SJ, Marcom PK, Mayer IA, McCormick B, Moran M, Patel SA, Pierce LJ, Reed EC, Salerno KE, Schwartzberg LS, Smith KL, Smith ML, Soliman H, Somlo G, Telli M, Ward JH, Shead DA, Kumar R. Invasive Breast Cancer Version 1.2016, NCCN Clinical Practice Guidelines in Oncology. *J Natl Compr Canc Netw*. 2016 Mar; 14(3):324-54. PMID: 26957618
 15. Ly A, Ono JC, Hughes KS, Pitman MB, **Balassanian R**. Fine-Needle Aspiration Biopsy of Palpable Breast Masses: Patterns of Clinical Use and Patient Experience. *J Natl Compr Canc Netw*. 2016 May; 14(5):527-36. PMID: 27160231
 16. **Balassanian R**, Wool GD, Ono JC, Olejnik-Nave J, Mah MM, Sweeney BJ, Ljung B-M, Pitman MB. A Superior Method for Cell Block Preparation for Fine Needle Aspiration Biopsies. *Cancer Cyto* 2016. Apr 124(15). PMID:27105161
 17. Rugo HS, Olopade OI, DeMichele A, Yau C, van 't Veer LJ, Buxton MB, Hogarth M, Hylton NM, Paoloni M, Perlmutter J, Symmans WF, Yee D, Chien AJ, Wallace AM, Kaplan HG, Boughey JC, Haddad TC, Albain KS, Liu MC, Isaacs C, Khan QJ, Lang JE, Viscusi RK, Puzstai L, Moulder SL, Chui SY, Kemmer KA, Elias AD, Edmiston KK, Euhus DM, Haley BB, Nanda R, Northfelt DW, Tripathy D, Wood WC, Ewing C, Schwab R, Lyandres J, Davis SE, Hirst GL, Sanil A, Berry DA, Esserman LJ; **I-SPY 2 Investigators**. Adaptive Randomization of Veliparib-Carboplatin Treatment in Breast Cancer. *N Engl J Med*. 2016 Jul 7;375(1):23-34. PMID: 27406347 [I-SPY2 Coinvestigator]
 18. Park JW, Liu MC, Yee D, Yau C, van 't Veer LJ, Symmans WF, Paoloni M, Perlmutter J, Hylton NM, Hogarth M, DeMichele A, Buxton MB, Chien AJ, Wallace AM, Boughey JC, Haddad TC, Chui SY, Kemmer KA, Kaplan HG, Isaacs C, Nanda R, Tripathy D, Albain KS, Edmiston KK, Elias AD, Northfelt DW, Puzstai L, Moulder SL, Lang JE, Viscusi RK, Euhus DM, Haley BB, Khan QJ, Wood WC, Melisko M, Schwab R, Helsten T, Lyandres J, Davis SE, Hirst GL, Sanil A, Esserman LJ, Berry DA; **I-SPY 2 Investigators**. Adaptive Randomization of Neratinib in Early Breast Cancer. *N Engl J Med*. 2016 Jul 7;375(1):11-22. PMID: 27406346 [I-SPY2 Coinvestigator]

19. Gradishar WJ, Anderson BO, **Balassanian R**, Blair SL, Burstein HJ, Cyr A, Elias AD, Farrar WB, Forero A, Giordano SH, Goetz MP, Goldstein LJ, Isakoff SJ, Lyons J, Marcom PK, Mayer IA, McCormick B, Moran MS, O'Regan RM, Patel SA, Pierce LJ, Reed EC, Salerno KE, Schwartzberg LS, Sitapati A, Smith KL, Smith ML, Soliman H, Somlo G, Telli M, Ward JH, Shead DA, Kumar R. NCCN Guidelines Insights: Breast Cancer, Version 1.2017. *J Natl Compr Canc Netw*. 2017 Apr;15(4):433-451. PMID: 28404755
20. Maglione, KD, Lee AY, Ray, KM, Joe, BN, **Balassanian, R**. Radiologic-Pathologic Correlation for Benign Results after MRI-guided Breast Biopsy. *Am J Roent* 2017; 209: 1-12. PMID: 28537753
21. Lindström LS, Yau C, Czene K, Thompson CK, Hoadley KA, Van't Veer LJ, **Balassanian R**, Bishop JW, Carpenter PM, Chen YY, Datnow B, Hasteh F, Krings G, Lin F, Zhang Y, Nordenskjöld B, Stål O, Benz CC, Fornander T, Borowsky AD, Esserman LJ. Intratumor Heterogeneity of the Estrogen Receptor and the Long-term Risk of Fatal Breast Cancer. *J Natl Cancer Inst*. 2018 Jan 19. PMID: 29361175
22. Ng DL, Vuhahula E, Zhang L, Waterhouse EG, White KL, Mushi BP, Nyeriga MS, Philipo GS, Mmbaga EJ, Sheth S, Van Loon K, Lee AY, **Balassanian R**. Efficacy of an Intensive, Ultrasound-Guided Fine-Needle Aspiration Biopsy Training Workshop in Tanzania. *J Glob Oncol*. 2018 Oct; (4):1-9. PMID: 30372401
23. Qiao Y, Hayward JH, **Balassanian R**, Ray KM, Joe BN, Lee AY. Tuberculosis mastitis presenting as bilateral breast masses. *Clin Imaging*. 2018 Feb 23; 52:28-31. PMID: 29514120
24. Gradishar WJ, Anderson BO, **Balassanian R**, Blair SL, Burstein HJ, Cyr A, Elias AD, Farrar WB, Forero A, Giordano SH, Goetz MP, Goldstein LJ, Isakoff SJ, Lyons J, Marcom PK, Mayer IA, McCormick B, Moran MS, O'Regan RM, Patel SA, Pierce LJ, Reed EC, Salerno KE, Schwartzberg LS, Sitapati A, Smith KL, Smith ML, Soliman H, Somlo G, Telli ML, Ward JH, Kumar R, Shead DA. Breast Cancer, Version 4.2017, NCCN Clinical Practice Guidelines in Oncology. *J Natl Compr Canc Netw*. 2018 Mar; 16(3):310-320. PMID: 29523670
25. Chan, E, **Balassanian R**, Tabatabai L, Lou H, Vohra P. Improved diagnostic precision of urine cytology by the Paris system and the use of cell blocks. *Cancer Cyto* 2018. Sept. Vol 127. PMID: 30203925 DOI: 10.1002/cncy.22034
26. VanderLaan PA, Chen Y, Alex D, **Balassanian R**, Cuda J, Hoda RS, Illei PB, McGrath CM, Randolph ML, Reynolds JP, Spiczka AJ, VandeHaar MA, van Zante A, Sauter JL. Results from the 2019 American Society of Cytopathology survey on rapid on-site evaluation-Part 1: objective practice patterns. *J Am Soc Cytopathol*. 2019 Nov - Dec; 8(6):333-341. PMID: 31495750
27. Ng DL, **Balassanian R**. Granulomatous inflammation diagnosed by fine-needle aspiration biopsy. *J Am Soc Cytopathol*. 2019 Aug 14. PMID: 31636024
28. **Balassanian R**, Ng DL, van Zante A. Stop using expired plasma for cell blocks. *Cancer Cytopathol*. 2019 Nov 22. PMID: 31756044
29. Marker KM, Zavala VA, Vidaurre T, Lott PC, Vásquez JN, Casavilca-Zambrano S, Calderón M, Abugattas JE, Gómez HL, Fuentes HA, Picoaga RL, Cotrina JM, Neciosup SP, Castañeda CA, Morante Z, Valencia F, Torres J, Echeverry M, Bohórquez ME, Polanco-Echeverry G, Estrada-Florez AP, Serrano-Gómez SJ, Carmona-Valencia JA, Alvarado-Cabrero I, Sanabria-Salas MC, Velez A, Donado J, Song S, Cherry D, Tamayo

- LI, Huntsman S, Hu D, Ruiz-Cordero R, **Balassanian R**, Ziv E, Zabaleta J, Carvajal-Carmona L, Fejerman L; COLUMBUS Consortium. Human Epidermal Growth Factor Receptor 2-Positive Breast Cancer Is Associated with Indigenous American Ancestry in Latin American Women. *Cancer Res.* 2020 Apr 3. doi: 10.1158/0008-5472.CAN-19-3659. [Epub ahead of print]/> PMID: 32245796
30. Sauter JL, Chen Y, Alex D, **Balassanian R**, Cuda J, Flanagan MB, Griffith CC, Illei P, Johnson DN, McGrath CM, Randolph ML, Reynolds JP, Spiczka AJ, van Zante A, VanderLaan PA. Results from the 2019 American Society of Cytopathology survey on rapid onsite evaluation (ROSE)-part 2: subjective views among the cytopathology community. *J Am Soc Cytopathol.* 2020 Jul 21. PMID: 32861593
31. Wu CH, Yang CY, Wang L, Gao HX, Rakhshandehroo T, Afghani S, Pincus L, **Balassanian R**, Rubenstein J, Gill R, Bandyopadhyay S, McCormick F, Moasser M, Ai WZ. Cutaneous T cell lymphoma PDX drug screening platform identifies cooperation between inhibitions of PI3Ka/d and HDAC. *J Invest Dermatol.* 2020 Jun 27. PMID: 32603749
32. Im CJ, Miller A, **Balassanian R**, Mukhtar RA. Early onset, multiple, bilateral fibroadenomas of the breast: a case report. *BMC Womens Health.* 2021 Apr 21; 21(1):170. PMID: 33882939. PMCID: PMC8061223
33. Mou E, Falchi L, Sundaram V, Abramson JS, **Balassanian R**, Beygi S, Fitzpatrick MJ, Frank AK, Gupta S, Lin O, Long SR, Menke JR, Reed DR, Ruiz-Cordero R, Volaric AK, Xie Y, Wang L, Wen KW, Zadeh SL, Natkunam Y, Cheung MC, Gratzinger D, Cyto-Heme Institutional Collaborative (CHIC) consortium . Impact of initial biopsy type on the time to final diagnostic biopsy in patients with follicular lymphoma and suspected histologic transformation. *Leuk Lymphoma.* 2021 Jun 26; 1-9. PMID: 34176413
34. Aklilu S, Bain C, Bansil P, de Sanjose S, Dunstan JA, Castillo V, Tsu V, Contreras I, **Balassanian R**, Hayes Constant TK, Scheel JR. Evaluation of diagnostic ultrasound use in a breast cancer detection strategy in Northern Peru. *PLoS One.* 2021; 16(6):e0252902. PMID: 34115775. PMCID: PMC8195385
35. Zadeh SL, **Balassanian R**, Cheung MC, Falchi L, Hasserjian R, Lin O, Long SR, Menke JR, Mou E, Natkunam Y, Ruiz-Cordero R, Volaric AK, Wang L, Wen KW, Gratzinger D. Global Cytopathology-Hematopathology Practice Trends. *Am J Clin Pathol.* 2021 Sep 11. PMID: 34508545
36. Taliaferro AS, Price ER, Hayward JH, Wong J, **Balassanian R**, Fay JS, Freimanis RI, Joe BN, Lee AY. Utility and Outcomes of Pre-Operative Screening Breast MRI for Planned Bilateral Prophylactic Mastectomy in High-Risk Patients. *AJR Am J Roentgenol.* 2021 Sep 15. PMID: 34523953
37. Symmans WF, Yau C, Chen YY, **Balassanian R**, Klein ME, Pusztai L, Nanda R, Parker BA, Datnow B, Krings G, Wei S, Feldman MD, Duan X, Chen B, Sattar H, Khazai L, Zeck JC, Sams S, Mhawech-Fauceglia P, Rendi M, Sahoo S, Ocal IT, Fan F, LeBeau LG, Vinh T, Troxell ML, Chien AJ, Wallace AM, Forero-Torres A, Ellis E, Albain KS, Murthy RK, Boughey JC, Liu MC, Haley BB, Elias AD, Clark AS, Kemmer K, Isaacs C, Lang JE, Han HS, Edmiston K, Viscusi RK, Northfelt DW, Khan QJ, Leyland-Jones B, Venters SJ, Shad S, Matthews JB, Asare SM, Buxton M, Asare AL, Rugo HS, Schwab RB, Helsten T, Hylton NM, van 't Veer L, Perlmutter J, DeMichele AM, Yee D, Berry DA, Esserman LJ. Assessment of Residual Cancer Burden and Event-Free Survival in Neoadjuvant

Treatment for High-risk Breast Cancer: An Analysis of Data From the I-SPY2 Randomized Clinical Trial. *JAMA Oncol.* 2021 Sep 16. PMID: 34529000. PMCID: PMC8446908

38. Yau C, Osdoit M, van der Noordaa M, Shad S, Wei J, de Croze D, Hamy AS, Laé M, Reyal F, Sonke GS, Steenbruggen TG, van Seijen M, Wesseling J, Martín M, Del Monte-Millán M, López-Tarruella S; **I-SPY 2 Trial Consortium**, Boughey JC, Goetz MP, Hoskin T, Gould R, Valero V, Edge SB, Abraham JE, Bartlett JMS, Caldas C, Dunn J, Earl H, Hayward L, Hiller L, Provenzano E, Sammut SJ, Thomas JS, Cameron D, Graham A, Hall P, Mackintosh L, Fan F, Godwin AK, Schwensen K, Sharma P, DeMichele AM, Cole K, Pusztai L, Kim MO, van 't Veer LJ, Esserman LJ, Symmans WF. Residual cancer burden after neoadjuvant chemotherapy and long-term survival outcomes in breast cancer: a multicentre pooled analysis of 5161 patients. *Lancet Oncol.* 2022 Jan;23(1):149-160. doi: 10.1016/S1470-2045(21)00589-1. Epub 2021 Dec 11. PMID: 34902335.
39. Marczyk M, Mrukwa A, Yau C, Wolf D, Chen YY, **Balassanian R**, Nanda R, Parker BA, Krings G, Sattar H, Zeck JC, Albain KS, Boughey JC, Liu MC, Elias AD, Clark AS, Venters SJ, Shad S, Basu A, Asare SM, Buxton M, Asare AL, Rugo HS, Perlmutter J, DeMichele AM, Yee D, Berry DA, Veer LV, Symmans WF, Esserman L, Pusztai L, I-SPY Consortium. Treatment Efficacy Score-continuous residual cancer burden-based metric to compare neoadjuvant chemotherapy efficacy between randomized trial arms in breast cancer trials. *Ann Oncol.* 2022 08; 33(8):814-823. PMID: 35513244
40. Zadeh SL, **Balassanian R**, Cheung MC, Falchi L, Hasserjian R, Lin O, Long SR, Ly A, Menke JR, Mou E, Natkunam Y, Ruiz-Cordero R, Volaric AK, Wang L, Wen KW, Gratzinger D. Corrigendum to: Global Cytopathology-Hematopathology Practice Trends. *Am J Clin Pathol.* 2021 Oct 01. PMID: 34595513
41. **Balassanian R**, Vohra P. Limitations and opportunities for tumor infiltrating lymphocytes in breast FNA. *Cancer Cytopathol.* 2022 Feb 07. PMID: 35129871
42. Sahoo, S., Krings, G., Chen, Y-Y., Carter, J., Chen, B., Guo, H., Hibshoosh, H., Reisenbichler, E., Fan, F., Wei, S., Khazai, L., **Balassanian, R.**, Klein, M.E., Shad, S., Venters, S., Borowsky, A., Symmans, W.F., and Ocal, I.T. Standardizing Pathologic Evaluation of Breast Carcinoma After Neoadjuvant Chemotherapy. Recommendations From the I-SPY Pathology Working Group. *Arch Pathol Lab Med.* 2022 Aug 17. doi: 10.5858/arpa.2022-0021-EP.

BOOKS AND CHAPTERS

1. Book Chapter:
Saqi A, Balassanian R. Cell Blocks: Evolution, Modernization & Assimilation into Emerging Technologies in Modern Techniques in Cytopathology. Edited by M.M. Bui and L. Pantanowitz. Karger, 2020. Basel Switzerland.

OTHER PUBLICATIONS

1. **Balassanian R**, Regina A, Molinda M, Liberman H. The collodion bag cell block technique: the method of Mah.
This is a YouTube video describing a technique for making cell blocks from FNA biopsies. <https://youtu.be/nfR17d5-bol>. Access date 5 Mar. 2015.
2. **Balassanian R**. American Society for Clinical Pathology, Critical Values, News for the Entire Laboratory Team. Invited Interview. LGBTQ+ Pride Issue, June 2022.

3. **Balassanian R**, Carol Simmons, Anna Northrop. Understanding a Breast Pathology Report. Access date Oct 2022.
A series of five YouTube videos explaining pathology reports for patients, produced with support from Genentech Corporation.
https://www.youtube.com/channel/UC6VYKQIVo8DS5TzuvS8C_FA/featured
4. Williams M, **Balassanian R**. Diversify in Path, Episode with Ron Balassanian MD. Access date Jan 2023.
A Podcast interview for a series highlighting diversity in Pathology
<https://diversifyinpath.buzzsprout.com/1816910/12056411-episode-with-ron-balassanian-md>

SIGNIFICANT PUBLICATIONS

1. Baehner R, Magrane G, **Balassanian R**, Chang C, Millward C, Wakil AE, Osorio RW, Waldman FM. Donor origin of neuroendocrine carcinoma in 2 transplant patients determined by molecular cytogenetics. *Hum Pathol*. 2000 Nov; 31(11):1425-9. PMID: 11112220

Working in Fred Waldman's laboratory at UCSF, we performed fluorescence in-situ hybridization (FISH), polymerase chain reaction (PCR) and comparative genomic hybridization (CGH) to identify donor-derived tumors in FNA biopsies of transplant patients. My role included performing the molecular diagnostic assays and writing and editing the final paper.
2. Gendler LS, Feldman SM, **Balassanian R**, Riker MA, Frencher SK, Whelan DB, Anne S, Gross JD, Cohen JM, Boolbol SK. Association of breast cancer with papillary lesions identified at percutaneous image-guided breast biopsy. *Am J Surg*. 2004 Oct; 188(4):365-70. PMID: 15474427

I assisted with an institutional review of 9310 papillary lesions of the breast, diagnosed by FNA or core needle biopsy, and correlated the results with surgical outcome. My role included reviewing the pathology and writing and editing the final paper. This study was completed at Beth Israel Medical Center, New York, NY.
3. Nodit L, **Balassanian R**, Sudilovsky D, Raab SS. Improving the quality of cytology diagnosis: root cause analysis for errors in bronchial washing and brushing specimens. *Am J Clin Pathol*. 2005 Dec; 124(6):883-92. PMID: 16416738

See #5 below.
4. Raab SS, Vrbin CM, Grzybicki DM, Sudilovsky D, **Balassanian R**, Zarbo RJ, Meier FA. Errors in thyroid gland fine-needle aspiration. *Am J Clin Pathol*. 2006 Jun; 125(6):873-82. PMID: 16690487

See #5 below.

5. Raab SS, Grzybicki DM, Sudilovsky D, **Balassanian R**, Janosky JE, Vrbin CM. Effectiveness of Toyota process redesign in reducing thyroid gland fine-needle aspiration error. *Am J Clin Pathol*. 2006 Oct;126(4):585-92.

These 3 papers were a result of working with Dr. Stephen Raab, the principle investigator for a grant titled Improving Patient Safety by Examining Pathology Errors (R01 HS13321). We studied ways to reduce medical errors through immediate cytologic diagnosis with direct communication to the clinician and patient. We developed an intervention for thyroid FNA biopsies, with immediate diagnosis and standardization of criteria, which resulted in a significant reduction in false negative and non-diagnostic biopsies. My role included developing new protocols for improving the quality of FNA samples, reviewing the pathology, as well as writing and editing the final papers. This work was completed at UPMC, Pittsburgh PA.

6. Engelberg JA, Retallack H, **Balassanian R**, Dowsett M, Zabaglo L, Ram AA, Apple SK, Bishop JW, Borowsky AD, Carpenter PM, Chen YY, Datnow B, Elson S, Hasteh F, Lin F, Moatamed NA, Zhang Y, Cardiff RD. "Score the Core" Web-based pathologist training tool improves the accuracy of breast cancer IHC4 scoring. *Hum Pathol*. 2015 Nov;46(11):1694-704. doi: 10.1016/j.humpath.2015.07.008. Epub 2015 Jul 29. PMID: 26410019.

This paper is the first in a series of papers we are publishing from the Athena project, a collaboration between 5 UC hospitals. We developed an on-line training tool for pathologists for pathologists to improve the accuracy of IHC-4 stain interpretation. My role in this project included designing the study, collecting data, writing the manuscript and editing the drafts following reviews at the journal.

7. Ly A, Ono JC, Hughes KS, Pitman MB, **Balassanian R**, Fine Needle Aspiration Biopsy of Palpable Breast Masses: Patterns of Clinical Utilization and Patient Experience. *JNCCN* 2016; *JNCCN* 2016; 14(5):527-536. PMID: 27160231

This project involved a comparative review of breast biopsy performed by FNA versus core biopsy at two academic medical centers with comparable patient populations. We found patients who were offered FNA biopsy had a shorter wait time for diagnosis, had smaller tumors at initial presentation and following treatment, and had a higher rate of benign lesions that did not need follow up imaging. As principle investigator my role was to design the study, obtain IRB approval, review data collection and analysis, and write the final paper. We presented our findings as a poster at the USCAP meeting in 2012. The paper was published in *Journal of the National Comprehensive Cancer Network* and with an invited commentary.

8. **Balassanian R**, Wool GD, Ono JC, Olejnik-Nave J, Mah MM, Sweeney BJ, Ljung B-M, Pitman MB. A Superior Method for Cell Block Preparation for Fine Needle Aspiration Biopsies. *Cancer Cyto* 2016. Apr 124(15). PMID:27105161

This project was a statistically validated comparative review of 3 different techniques for preparing cell block samples from FNA biopsies. This is the first controlled study of its kind in the cytology literature to address the differences between cell block procedures at different cytology laboratories. As the principle investigator, I oversaw all aspects of this project, including designing the project, securing funding and IRB approval, overseeing data collection and analysis, statistical interpretation and writing all sections of the manuscript. The findings were presented as a platform presentation at the USCAP 2014 annual meeting. We also produced a YouTube video demonstrating our findings which has been viewed greater than 2400 times (<https://youtu.be/nfR17d5-bol>). In 2018, we were notified that our paper was among the top 20 most downloaded articles in *Cancer Cytopathology*.

9. Chan, E, **Balassanian R**, Tabatabai L, Lou H, Vohra P. Improved diagnostic precision of urine cytology by the Paris system and the use of cell blocks. *Cancer Cyto* 2018. Sept. Vol 127 [In Press]

This project was an application of the new Paris classification system and our published cell block techniques to urine cytology. My role was reviewing the urine samples and collecting data for statistical analysis. Our paper is featured on the cover of the September 2018 issue of *Cancer Cytopathology*.

10. Maglione, KD, Lee AY, Ray, KM, Joe, BN, **Balassanian, R**. Radiologic-Pathologic Correlation for Benign Results after MRI-guided Breast Biopsy. *Am J Roent* 2016 [In Press]

This project involved direct comparison of benign breast pathology with corresponding lesions identified using breast MRI. My role was to help develop the project and perform the pathology review as well as the radiology-pathology correlation. I also helped write and edit the manuscript. Our findings were presented at the American Roentgen Ray Society in 2016. A manuscript of our findings was accepted for publication by the American Journal of Roentgenology in 2016 and the paper is in press.

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ADDITIONAL RELEVANT INFORMATION

In 2012 I underwent training in fundraising through a workshop titled "Medical Philanthropy 20/20: Vision and Practice for Funding the Future", conducted by Advancement Resources and UCSF. I was invited to participate in this workshop through the UCSF Breast Oncology Program.

In 2014 following a presentation on breast pathology at the BOP Retreat, I received a donation from a UCSF donor, as an unrestricted donation of \$20,000 to support my work through the department of Pathology. This generous gift has supported my project "Ask Your Pathologist" as well as some travel expenses for work in Peru and Tanzania.

In 2015, I helped secure an unrestricted \$15,000 grant from Genetech/Roche to support the National Cancer Institute Symposium on Global Cancer Research which was hosted at UCSF by the Global Cancer Program.

In 2018, I hosted a fundraiser at my home for the UCSF Global Cancer Program highlighting the work we have done in Tanzania, Peru and other low and middle income countries. We hosted Dr. Russell White, Chief of Surgery at Tenwek Hospital in Kenya, as well as a number of local and international industry leaders, including United Nations representatives and development staff from UCSF.

In 2019, I organized and coordinated a large donation of surplus computer equipment including 28 laptop computers, 12 desktop computers and 19 high definition monitors from DSIQ corporation in Seattle Washington to Muhimbili University in Dar es Salaam, Tanzania.

The UCSF Foundation has received donations made in my honor by several FNA Clinic patients to "The Fund for UCSF", a major fundraising effort initiated in 2017.

I plan to continue my work in philanthropy development with UCSF and the Global Cancer Program, as well as national and international organizations such as the American Society of Cytopathology Foundation and the United States and Canadian Academy of Pathology Foundation. I will draw on my experience and training to seek out industry, private donors and non-governmental organizations who wish to support our work.