What distinguishes an extraordinary pathology department from a good one? Faculty members who are nationally and internationally regarded in their fields, most who have advanced subspecialty training. A commitment to patient care, with rapid delivery of diagnostic test results. Dedication to teaching and mentoring the leaders of the future. And research to advance the field as well as support other avenues of biomedical investigation with the potential to improve the practice of medicine.

These traits are precisely what set the Department of Pathology and Laboratory Medicine at NewYork-Presbyterian/Weill Cornell Medical Center apart from those at other institutions. We are fortunate to be based in Weill Cornell Medicine, a prestigious Ivy League medical school, and in NewYork-Presbyterian, one of the top ranked hospitals in the United States.

Our mission is to integrate medical science and clinical medicine in patient care, research, and education. We offer clinical and laboratory services that span the full depth and breadth of all pathology subspecialties. Our department includes highly productive well-funded basic science and clinical research faculty members whose investigations center on a variety of areas, with a strong focus on the biology of hematologic and solid tumor malignancies.

Our faculty are heavily engaged in teaching medical students, residents, and fellows. Residency training is tailored to each individual's career goals. Seventy-five percent of our residents go on to academic careers in anatomic and clinical pathology.

I invite you to visit the pages of our e-newsletter to see what we have to offer. The Department is dedicated to expanding its clinical services, research programs, and educational opportunities. We welcome your participation in this endeavor.

I hope you find this issue of interest and welcome your feedback about our e-newsletter. Please be sure to follow us on Twitter, Facebook, Instagram, and YouTube for the latest updates and information in the Department of Pathology and Laboratory Medicine.

Massimo Loda, MD
David D. Thompson Professor and Chairman of Pathology and Laboratory Medicine
Pathologist-in-Chief, NewYork-Presbyterian Hospital/Weill Cornell Medical College
Research Highlights: Anna S. Nam, MD

“Our lab seeks to understand how blood cancer causing mutations result in distinct clinical outcomes by advancing single-cell multi-omics technologies.”

**Research**

Hematopoiesis is a tightly regulated process by which stem cells produce all mature blood cells in fixed quantities. Somatic driver mutations in hematopoietic stem cells skew these differentiation trajectories and lead to abnormal accumulations of different cell types. Abnormal blood counts clinically manifest as myeloproliferative neoplasms (MPN) – with an increase in cell output – or myelodysplastic syndrome (MDS) – with a decrease in mature blood cell counts. Recurrent mutations in genes such as JAK2 or CALR result in a spectrum of clinical disease phenotypes. In vitro systems and murine models have been critical for elucidating the role of somatic mutations in myeloid neoplasms, such as CALR mutations in driving MPN. Nevertheless, these methods provide limited ability to capture the variations in human disease. Thus, how these driver mutations alter the molecular states of hematopoietic stem progenitor cells to result in distinct clinical presentations remains poorly understood. Dr. Nam’s laboratory seeks to address this overarching question.

As a clinical molecular pathologist, Dr. Nam interprets sequencing data for hematopoietic neoplasms to identify cancer-driving mutations in DNA extracted from bulk tumor samples. However, bone marrow neoplasms consist of many different types of hematopoietic progenitor cells with distinct cell identities, such as hematopoietic stem cells and various lymphoid and myeloid progenitor and precursor cells.

**Figure 1.**

A. Genotyping of Transcriptomes (GoT) captures somatic genotyping information and whole transcriptomic data in thousands of single cells. B. Bone marrow CD34+ hematopoietic stem and progenitor cells from patients with CALR-mutated myeloproliferative neoplasms clustered based on cell identity. C. Mutational status detected by GoT projected onto the map of hematopoietic differentiation (WT, wildtype; MUT, mutant; NA, not available).

**Read More**
Dr. Ben Kleaveland joined the Department of Pathology and Laboratory Medicine, Division of Experimental Pathology, as an Assistant Professor in August 2020. Ben also serves as an Assistant Director of the Central Labs in the Division of Clinical Pathology and has an appointment in the BCMB Allied program of the WCM Graduate School. Ben received his bachelor’s degree in Biology and English from Stanford University and his MD/PhD from the Perelman School of Medicine at the University of Pennsylvania. At Stanford, Ben completed his honors thesis with Dr. Helen Blau, characterizing a new method for monitoring protein-protein interactions (Wehrman et al., PNAS 2002). At Penn, Ben conducted his graduate work with Dr. Mark Kahn, investigating the influence of genes linked to human cerebral cavernous malformations on heart and blood vessel development (Kleaveland et al., Nature Medicine 2008; Zheng X, JCI 2010; Zheng X, Dev Cell 2012; Zheng X, Stroke 2014). Seeking a career that married a clinical interest in diagnosing genetic disease with a research interest in gene regulation, Ben completed clinical pathology residency at Massachusetts General Hospital followed by postdoctoral training with Dr. David Bartel at the Whitehead Institute. There, Ben studied the functions of long noncoding RNAs (lncRNAs), enigmatic genes which are transcribed and processed like messenger RNAs (mRNAs), but do not code for proteins. His investigation of the Cyrano lncRNA led to the discovery of a complex network of noncoding RNAs in mammalian neurons (Kleaveland et al., Cell 2018) and subsequent mechanistic insights into the degradation of microRNAs (miRNAs), another type of noncoding RNAs (Shi et al., Science 2020). Building on these discoveries, the Kleaveland lab is now investigating what this network does and how it in the brain and elsewhere. Leveraging tools and methods developed to study a few noncoding RNAs, the Kleaveland lab aspires to de-orphan the functions of many noncoding RNAs.

Research Focus:
Noncoding RNAs play increasingly appreciated gene-regulatory roles. Arguably the best studied of these noncoding RNAs are miRNAs, tiny RNAs that bind and repress target mRNAs. There are hundreds of conserved miRNAs, each with tens to hundreds of conserved targets; consequently, miRNAs influence virtually all aspects of health and disease. Less is known about lncRNAs and circular RNAs (circRNAs), two other types of noncoding RNA. Humans express over 70,000 distinct lncRNAs and over 90,000 distinct circRNAs, however, to date, only a small fraction of these have defined functions. The Kleaveland lab is interested in defining the contributions of lncRNAs and circRNAs to human health and disease.

"We're going after the untapped potential of noncoding RNAs, from basic biology to medicine.”
Covid-19

Pathology and Laboratory Medicine Department Response to the Covid-19 Pandemic

Learn how the Weill Cornell Medicine Pathology and Laboratory Medicine Department in New York City responded to the COVID-19 pandemic, diverting staff and resources to manage the crisis, develop new tests and safety protocols, and care for patients, conducted by Melissa Cushing, MD, Professor of Pathology and Laboratory Medicine, Director of the Clinical Laboratories and Vice Chair for Clinical Pathology.

Covid-19: A 21st Century Pandemic

We invite you to watch a lecture for the general public on the Covid-19 pandemic by Cynthia Magro, MD, Faculty Distinguished Professor in Pathology and Laboratory Medicine, Professor of Pathology and Laboratory Medicine, Professor of Dermatopathology in Dermatology, and Director of Dermatopathology.

The severe acute respiratory distress syndrome-associated coronavirus-2 (SARS-CoV-2), etiologic agent of Coronavirus disease 2019 (Covid-19), was initially identified in Wuhan, Hubei, China in December 2019. Organ dysfunction, particularly progressive respiratory failure and a general are associated with the highest mortality. With the advent of the vaccine and its efficacy in preventing severe disease the pandemic is hopefully coming to an end although not necessarily to the end of SARS CoV-2 as a human pathogen.

The learning objectives in this one hour talk include:
1. Defining Covid-19
2. Explaining the subclassification of COVID-19 (i.e mild, moderate, severe and critical Covid-19)
3. Understanding the virus (SARS CoV-2) causing Covid-19 including its molecular structure, the mechanism of gaining access into the host cell, and mode of transmission
4. The relationship of SARS CoV-2, the causative agent of Covid-19, with other coronaviruses
5. How the virus causes lung injury and distant vascular injury and thrombosis in the minor subset of patients with severe, critical and fatal Covid-19
6. Understanding the distribution of SARS CoV-2 viral replication in various organ systems
7. Reviewing the mechanisms of complement mediated vascular injury associated with SARS CoV-2 infection, the procoagulant state in Covid-19 and hypercytokinemia
8. The importance of the interferon driven immune response as a determinant in explaining the disparate clinical faces of mild versus sever/critical Covid-19
9. The basic principles behind the vaccine against the novel coronavirus
Covid-19 Research

The Department awarded intra-departmental pilot funding of $50,000 per award for COVID-related research projects to three Principal Investigators:

Giorgio Inghirami, MD
"Molecular and functional characterization of the B-cell repertoire of SARS-CoV-2 positive patients."

Pengbo Zhou, PhD
"Small Molecular Inhibitor Rewires Cellular Protein to Augment its Anti-viral Activity against SARS-CoV-2."

Stephen Josefowicz, PhD
"Epigenetic Poising of Inflammation: Implications for COVID-19 Severity and Long-Term Sequelae."

Jenny Yang, MD, PhD was awarded a $100,000 WCM COVID-19 Research Grant for her proposal, "Virologic and Immunologic Factors that affect COVID-19 Prevalence and Infection in Pregnant Women and their Neonates." Her work to study the viral, immunological, and placental factors that influence clinical severity in pregnant women and their neonates will be extremely important in expanding our understanding of SARS-CoV-2 and developing therapies for COVID-19.

The Dean's Office awarded Melissa Cushing, MD $250,000 for a Laboratory Medicine COVID-19 Research Grant. This grant establishes a research program for the Division of Laboratory Medicine to investigate and develop diagnostic tests for COVID-19. There are multiple ongoing projects supported by this grant, including the development of SARS-CoV-2 sequencing platforms, improvements in diagnostic assays for COVID-19 and assays to assess and further understand the immune response to SARS-CoV-2. The faculty in Laboratory Medicine collaborate on these projects with co-investigators within Weill Cornell Medicine, as well as from Cornell Ithaca, Columbia University, and around the country.

Arryn Craney, PhD was awarded a $2,950 grant called "Evaluate the current MatMa Corp COVID-19 C-SAND II assay kits" from MatMa Corp. Dr. Craney worked with the biotechnology startup MatMaCorp to evaluate a molecular test for SARS-CoV-2 as part of the NIH RadX program whose purpose is to fast track the commercialization and implementation of additional testing for the detection of SARS-CoV-2. The MatMaCorp COVID-19 2SF assay received Emergency Use Authorization by the FDA in Dec 2020.
Covid-19 Highlighted Publications


Vision Statement
The Center for Translational Pathology (CTP) provides investigators with high quality, state of the art, and cost-effective tissue-based and clinical laboratory assays, biospecimens, consultative pathology services, multiparametric imaging, mass spectrometry, molecular pathology, mouse models and advanced cellular therapeutics for basic, translational, and clinical research. Originally established in 2007 as the Translational Research Program (TRP) within the Department of Pathology & Laboratory Medicine at Weill Cornell Medicine (WCM), the TRP has since grown and expanded to include numerous core facilities within the Department of Pathology & Laboratory Medicine. This new center will be a pillar for the Meyer Cancer Center and its designation as an NCI Comprehensive Cancer Center.

Transformation from the TRP to a Center for Translational Pathology
The former TRP, recently named the Center for Translational Pathology, has undergone a transformation over the last two years and currently offers comprehensive translational pathology services (e.g. tissue processing, special staining, nucleic acid extraction and processing, tissue microarray construction, archive and biobank specimen selection and retrieval, expert pathologist review), biomarker and experimental therapeutics testing and development (e.g. immunohistochemistry, immunofluorescence, in situ hybridization, flow cytometry, advanced cell therapy, patient-derived organoids and xenografts), and advanced visuospatial analysis and imaging techniques (e.g. multiparametric in situ imaging, digital slide scanning, automated image analysis) and large array of molecular tests for basic and translational determinations. The CTP is supported by the Department of Pathology & Laboratory Medicine that has made significant investments in new technologies, including the purchase of a Vectra® Polaris™ Automated Quantitative Pathology Imaging System, a CO-Detection by indEXing (CODEX) system, and a GeoMx® Digital Spatial Profiler from NanoString Technologies. In addition, the CTP’s Laboratory for Advanced Cellular Engineering (LACE) offers researchers cutting edge cGMP support to generate experimental cell-based therapeutic products. The department investment in patient-derived organoids, patient-derived-tumor-xenografts (PDTX), and ex vivo culture of tissues is also critical for advancement of personalized medicine and drug discovery. All of these services are provided on site and at similar cost to other New York City cancer centers.

In 2019, more than 120 WCM investigators utilized the CTP (then the ‘TRP’) services. In summary, the CTP advances and supports the research of faculty and basic scientists through high quality tissue resources and cutting edge imaging and therapeutic technologies by providing an avenue for tissue research.

Aim 1: Provide expert pathology consultation and high quality tissue-based resources for researchers

Aim 2: Provide cutting edge experimental pathology techniques to enhance basic science research and collaborations with industry

Aim 3: Educate the WCM community on the role of pathology in translational research and the best practices as they pertain to the use of human tissues and experimental pathology techniques in research

Aim 4: Provide access to experimental laboratory tests, including mass spectrometry

Led by Jorge Moscat, PhD, the CTP is a critical component and facilitator of the high-quality research performed in the department. CTP staff log projects into a database, track requests, monitor research integrity, and list resulting publications. We work closely with the Clinical Trials Office to process tissue samples for biospecimen studies.

The CTP understands how to catalyze clinical solutions quickly, with the highest quality and the best value. We believe the true application of translational research can be achieved by integrating research strategy, clinical collaboration, training, and education. Through the enthusiasm and efforts of our team and our collaborators, our goal is to improve the care and quality of life of all patients.

For inquiries and questions about the CTP, please contact Bing He, Research Administrator, via e-mail or at (212) 746-6225.
**New Division Highlights: Computational and Systems Pathology**

**Luigi Marchionni, MD, PhD**

Associate Professor of Pathology and Laboratory Medicine
Vice Chair for Computational and Systems Pathology

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**Scientific Scope and Overarching Goals**

Pathology is the study of the essential processes leading to the development of human diseases, with a specific focus on the molecular, structural, morphological, and functional changes produced in cells and tissues by such processes. In this respect, the scope and scientific goals of Computational and Systems Pathology (CSP) do not differ from those of more classical Pathology disciplines.

The peculiar aspect characterizing CSP is the use of computational approaches and mathematical modeling to study the development of disease processes, often leveraging “big data” from multiple sources (e.g., digital images, molecular data, etc.). The ultimate goal is to generate diagnostic processes and clinically actionable knowledge to improve patient care and outcomes. Importantly, the scope of CSP extends beyond the mere adoption of computational methods to the study of disease pathogenesis, leveraging and building upon the core competencies of pathology to expand the ability of effectively generating clinically actionable knowledge.

**Scientific Domains and Goals**

The main scientific domains CSP is concerned with are: i) digital pathology and image analysis; ii) clinical genomics and other omics; and iii) the integration of multi-modality data with clinical information.

*Digital pathology and image analysis.* Technological advances over the past decades have enabled the development of tools, systems, and infrastructure for the massive and parallel digitization of pathology slides with the associated metadata, their storage, review, and analysis. At the same time, advances in algorithmics, statistics, mathematics, and computer science have provided the tools for the extraction and analysis of quantifiable information from these images. This has created unprecedented opportunities for the systematic and quantitative analysis of images routinely generated in pathology departments around the world. The adoption of Artificial Intelligence (AI), Machine Learning (ML) – including more data and computation intensive approaches like Deep Learning (DL) – holds the promise to project pathology in the next millennium.

*Clinical genomics and other omics.* The availability of high-throughput methods to analyze genomic sequences on a global scale has enabled the comprehensive study of the genomic contributions to complex human diseases at the system level. The analysis of whole genomes, exomes, or specific gene panels allows for the detection of mutations and structural anomalies that bear clinical implications. Similar observation can be made for other omics domains (transcriptome, proteome, metabolome, and so on), with unprecedented opportunities for a deeper understanding of disease processes. This body of knowledge, in essence part of Pathology, is growing at a fast pace and it is at the basis for precision and personalized medicine. CSP provides the necessary computational tools and methods to store, organize, analyze, and interpret such data, enabling research, discovery, and clinical use of this knowledge.

**Big data integration with clinical information.** An overarching goal for current medical care is that it can be tailored to the genomic and molecular profile of the individual. In other words, Medicine is transitioning from treating the “average patient” to seeking to care and cure each individual in a tailored way. This trend has led to precision and personalized medicine approaches like, for instance, the selection of targeted therapies in oncology based on the specific mutation profile of the tumor. Due to the complexity of analyses and the need for innovative technologies and advanced pathological expertise, this approach to care, however, can only be delivered at lead academic institutions. Hence, the opportunity to deliver better, state of the art clinical care on a large scale and in the community is still missed. By integrating big molecular data, standard clinical laboratory measurements, and digital pathology images, CSP is perfectly positioned to bridge this gap. The goal here is to develop robust, parsimonious models that can forecast patients molecular make-up (e.g., their mutational profiles) and outcome (e.g., their response to targeted treatments) solely based on the integration of digital pathology imaging with routine clinical and laboratory data. While the development of these approaches can only be achieved in leading academic institutions like Weill Cornell Medicine, the deployment and dissemination of these methods in community and rural hospitals nationwide will finally be enabled. Ultimately, through research in this domain, CSP will foster the democratization of precision and personalized medicine.

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Read More
Congratulations to Dr. Alain Borczuk, Professor of Pathology and Laboratory Medicine, who was featured in an article in CAP Today, July 2020.

Dr. Borczuk was elected to serve as the next Editor-in-Chief of the Archives of Pathology & Laboratory Medicine. He also received the M. Desmond Burke Teaching Award for the second time by our residents. The award was virtually presented during our "Pathology class of 2021 zoom event" held in June 2020.

Dr. Amy Chadburn served as ASCP Annual Meeting Education Committee Co-Chair and served on the Executive Medical Education Council Weill Cornell Medicine. She participated in the AIDS Cancer Specimen Resource (ASCR) Scientific Advisory Board Meeting in October 2020. Her notable talks include the "UCSF AP and CP Unknown Slide Session: Unknown Hematopathology Cases" in April 2020 the United States & Canadian Academy of Pathology (USCAP) Short Course: "Viral-Associated Lymphoproliferative Lesions: A Rational Approach" at the USCAP Presentation at Annual Meeting in March 2021.

Dr. Selina Chen Kiang received the David P. Hajjar Research Award in 2020. This award is given for outstanding achievement in investigative pathology. It has been named after David P. Hajjar who has a distinguished scientific career and who exhibits both excellence in mentoring and education, and outstanding research achievements in experimental and investigative pathology.


Dr. Nancy Du served on the American Association for Cancer Research (AACR) Annual Meeting 2021 Scientific Program Subcommittee.

Dr. Domenick Falcone became the inaugural Assistant Dean for Foundation Curriculum. He is also the recipient of the prestigious Meikle Professorship, a five-year award for a tenured professor who has demonstrated consistent excellence in medical education.

Dr. Paula Ginter received the 2021 New York Rising Stars Awards from Super Doctors.

Dr. Matthew Greenblatt was elected member of the American Society of Clinical Investigation.

Dr. Syed Hoda: The 5th edition of Rosen’s Breast Pathology was released in January 2021, covering the latest advances in Immunohistochemical, pathobiological, and molecular aspects of benign and malignant breast diseases.

Dr. Marcin Imielinski received a prestigious 2021 Pershing Square Sohn Cancer Research Prize for his project titled: "Evolution and antigenicity of complex ampiclons."

Dr. Giorgio Inghirami attended the 12th Annual T-cell Lymphoma Forum, which discussed the development and implementation of new pre-clinical models for the implementation of novel therapeutic approaches in PTCL patients. He also attended the AACR meeting on Advances in Malignant Lymphomas which discussed new pre-clinical modality to study T-cell lymphomas and was a member of the LLMPP steering committee in 2020.

Dr. Steven Josefowicz was an invited speaker when at UPenn Epigenetics Seminar Series, the NIH/NIAID workshop on COVID-19/MIS-C and at the CSHL, Gene Expression and Signaling in the Immune System.

Dr. Massimo Loda is the recipient of the Society for Basic Urologic Research (SBUR) Meritorious Achievement Award, presented on November 13th, 2020. This award recognizes a researcher who has made significant contributions in the field of urological research. Dr. Loda was awarded the Prostate Cancer Foundation Special Challenge Award. This award funds cross-disciplinary teams of investigators to help support transformational prostate cancer research. He also obtained the Newton Abraham Visiting Professorship at the University of Oxford-Lincoln College, became the Chair of the AACR Pathology Task Force, and the Deputy Editor of Molecular Cancer Research.

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Scholarly Productivity Highlights

Highlights on Scholarly Activities continued


Dr. Momin Siddiqui was the moderator and organizer of “The One That Got Away, Reflections and Lessons Learned” at the United States and Canadian Academy of Pathology (USCAP), Los Angeles, CA, American Society of Cytopathology Companion Meeting on March 1, 2020 and served as faculty on the International Academy of Cytology and Mexican Society of Cytology Virtual Tutorial on December 06, 2020. Dr. Siddiqui became the Chapter Lead for the Paris System for Reporting Urinary Cytology 2.0, part of the International Academy of Cytology and American Society of Cytopathology and joined the Pancreaticobiliary Cytology Expert Editorial Board: Standardized Cytology Reporting Systems for the WHO Blue Book Series. Dr. Momin Siddiqui was recognized as the 2020 Outstanding Peer Reviewer for Cancer Cytopathology by Cancer Cytopathology, a journal of the American Cancer Society.

Dr. Juan Miguel Mosquera was awarded the Dean’s Diversity and Healthcare Disparity Research Award Project titled: “Detection of Homologous Recombination Deficiency in Cancers of African American Patients through a Whole-Genome Sequencing-based Cell Free DNA Assay.”

Dr. Anna Nam gave a platform presentation at the American Society of Hematology (ASH) Annual Meeting & Exposition in December 2020, highlighted in ‘Best of ASH.’

Dr. David Rickman was an invited speaker at the international seminar: “N-Myc as a driver of lineage plasticity in advanced prostate cancer,” at the Prostate Cancer Foundation Annual Scientific Retreat, 2020 and was an invited speaker at the national seminars: “RB1 loss with N-Myc induction modulates cellular heterogeneity to drive advanced, AR-negative prostate cancer evolution” at the Brady Urological Institute Summer Seminar Series, Johns Hopkins University in July 2020 and the “Single Cell Resolution of the Progression of Advanced Castration-Resistant Prostate Cancer” at Cornell University in February 2020.

Dr. Brian Robinson received the Paul Peter Rosen Achievement Award in 2020. This award is given for outstanding achievement in either Anatomic or Clinical Pathology. It has been named after Dr. Peter Rosen, who rendered distinguished and meritorious service to Weill Cornell Medicine.

Dr. Rhonda Yantiss was elected President of the Arthur Purdy Stout Society and she also serves as Chair of the Education Committee for USCAP, where she oversees the planning of all educational activities for the organization.

Dr. Sarina Yang is a 2021 ASCP 40 Under Forty Honoree. The ASCP 40 Under Forty celebrates the brightest emerging leaders and innovators of pathology, laboratory medicine and ASCP. Applications were received from Pathologists, Pathology Residents and Laboratory Professionals, who demonstrate stellar achievements in the early stages of their careers.

Dr. Zhen Zhao presented Grand Rounds: “Quantity and Quality of Antibody Responses to SARS-CoV-2: The Importance of Timing and Age” for the University of Saskatchewan, Canada in May 2021. Dr. Zhao received the Outstanding Research Award from the North American Chinese Clinical Chemists Association. In 2020, Dr. Zhao was awarded Chair-Elect for the New York Metro Local Division, American Association for Clinical Chemistry and Chair-Elect for the Tumor Markers and Cancer Diagnostics Division, American Association for Clinical Chemistry and in 2021 became the Associate Editor of Annals of Medicine.

Congratulations to our 2021 Departmental Award Recipients!

- Dr. Matthew Greenblatt – M. Desmond Burke Teaching Award
- Dr. Jorge Moscat – David P. Hajjar Distinguished Research Award
- Dr. Rhonda Yantiss – Peter Paul Rosen Clinical Service Award

Best of luck to our retirees:

- Dr. June Koizumi – 40 years of service
- Dr. Grace Yang – 24 years of service
- Dr. Debra Beneck – 17 years of service

Alain Borczuk, MD
Amy Chadburn, MD
Syed Hoda, MD
Jose Jessurun, MD
Cynthia Magro, MD
Newly Awarded Grants

Sponsored Research Grants Highlights

**National Institutes of Health (R01)**
Title: Establishing pathways for Endothelial support of bone formation with SLIT3
Principal Investigator: Matthew Greenblatt, MD
Period of Support: 04/01/2020-02/28/2025
Total Direct Costs: $1,100,000

**National Institutes of Health (R01)**
Title: Novel pathways in the control of lineage plasticity in neuroendocrine prostate cancer
Principal Investigator: Maria Teresa Diaz Meco Conde, PhD
Period of Support: 05/01/2020-04/30/2025
Total Direct Costs: $1,427,000

**National Institutes of Health (R01)**
Title: Sphingolipid biology of macrophage in coronary Atherosclerosis development and progression
Principal Investigator: Annarita DiLorenzo, PhD
Period of Support: 01/01/2021-12/31/2024
Total Direct Costs: $1,351,188

**National Institutes of Health (R35)**
Title: Novel pathways that regulate DNA double-strand break repair events in mammalian cells
Principal Investigator: Jessica Tyler, PhD
Period of Support: 03/01/2021-01/31/2026
Total Direct Costs: $1,250,000

**National Institutes of Health (R01)**
Title: Molecular mechanisms driving mesenchymal colorectal cancer
Principal Investigator: Jorge Moscat, PhD
Period of Support: 03/17/2021-02/28/2026
Total Direct Costs: $1,348,750

**National Institutes of Health (R01)**
Title: Regulatory crosstalk between human endogenous retroviruses, HIV, and EBV, in lymphoma
Principal Investigator: Ethel Cesarman, MD PhD (Co-PI)
Period of Support: 05/01/2021-04/30/2026
Total Direct Costs: $820,610

For full list of grants
Newly Awarded Grants

New York Genome Center Grants

We are pleased to announce that four members of our faculty have received grants from the New York Genome Center to address the role of ethnicity in major cancer types.

The award-winning cancer research projects include:

“Ethnic-based Differences Between East Asian and Caucasian Patients in Genomic, Transcriptomic and Immune Profiles of Pre-invasive and Invasive Adenocarcinoma of the Lung.”

A study that aims to identify the somatic alterations in non-solid lung nodules in East Asian and Caucasian patients that explain the significant demographic, clinical and biological differences between these two groups. The multi-disciplinary research team includes Drs. Nasser Altorki, Alain Borczuk, Timothy McGraw, Giuseppe Giacconi, Olivier Elemento, Weill Cornell Medicine.

“Molecular Links between Ancestry and Outcome Disparity in Breast and Prostate Cancer Patients Across the African Diaspora in New York City.”

A study to identify molecular links between African ancestry and aggressive forms of breast and prostate cancer and investigate these as a source of racial disparities in cancer outcomes. Co-PIs include: Drs. Olivier Elemento, Cora Sternberg, Juan Miguel Mosquera, Melissa Davis, Weill Cornell Medicine; Dr. Marcin Imielinski, New York Genome Center; Dr. Paz Polak, Icahn School of Medicine at Mount Sinai; Dr. Lisa Newman, NewYork-Presbyterian Hospital.

“Mechanisms of Endometrial Cancer Disparities in African Americans.”

A collaborative study by Cold Spring Harbor Laboratory, Weill Cornell Medicine, NewYork-Presbyterian Brooklyn Methodist Hospital, and Northwell Health. The aim is to establish an annotated biobank and create the necessary clinical and experimental frameworks to gain new insights about the endometrial cancer disparities in African Americans. Lead investigators include: Drs. Semir Beyaz, Hannah Meyer, Richard McCombie, Cold Spring Harbor Laboratory; Drs. Onyinye Balogun, Hani Ashamalia, Tan Ince, Margaux Kanis, Constantine Gorelick, NewYork Presbyterian/Brooklyn Methodist Hospital; Dr. Wen Shen, Weill Cornell Medicine; Drs. Gary Goldberg, Marina Frimer, Aaron Nizam, Northwell Health.
Faculty Publication Highlights


For full list of publications www.cornellpathology.com
Residents

**welcome to the**

**Incoming Class 2021-2025**

**Hnin Ingyin, MD**
Hnin received her MD from American University of Antigua College of Medicine with an undergraduate degree in Health Science from San Jose State University. She has also been involved in clinical research at Wyckoff Heights, medical scribing at a clinic in Queens, USMLE board prep, spent time as an autopsy technician intern, and volunteered in COVID education with the Myanmar American community in New York. Hnin is an incoming AP/CP resident.

**Georgi Lukose, MD**
Georgi received his MD from Albany Medical College with an undergraduate degree in Clinical Laboratory Sciences from Stony Brook University. In medical school he was awarded the Henry Schaffer Prize in Pathology (an award that goes to a medical student demonstrating greatest proficiency in pathology at the conclusion of the second year). He has also worked at MSK as a molecular diagnostics technologist for 2 years prior to medical school. Georgi is an incoming AP/CP resident.

**Taylor Kalomeris, DO**
Taylor received her DO from University of New England College of Osteopathic Medicine with an undergraduate degree in Chemical Engineering from Northeastern University in Boston. She has also spent time working in labs at Pfizer, Genzyme, and MGH. Taylor is an incoming AP/CP resident.

**Carlos Munoz-Zuluaga, MD**
Carlos received his MD from Universidad del Valle Escuela de Medicina, Cali, Colombia in the top 10 of his class. Carlos has a developed research background and was working at Weill Cornell as a postdoc in Genetic Medicine with Dr. Ronald Crystal. Carlos is an incoming AP/CP resident.

**Ivo Sah Bandar, MD, PhD**
Ivo received her MD from Universitas Indonesia Fakultas Kedokteran. Her PhD in Virology is from Iwate Medical University, Morioka, Iwate, Japan. Ivo has also completed and internal medicine residency in Indonesia prior to pursuing a career in pathology. She has an extensive research background in microbiology/virology in Japan, Hawaii, and in New York with the Weill Cornell Dept. of Medicine. Ivo is an incoming AP/CP resident.

**Chandler Sy, MD, PhD**
Chandler received his MD/PhD from Rutgers New Jersey Medical School with a PhD in Immunology. He had previously completed an undergraduate degree in Biology from The College of New Jersey. He was awarded an integrated T32 Training Program in Infection, Immunity and Inflammation (2018-2019). He is a member of AOA. Chandler is an incoming AP/CP resident.

**Joshua Zeitlin, MD**
Josh received his MD from Weill Cornell Medicine and has an undergraduate degree in Art and Archaeology from Princeton University. He also has a master’s in Bioethics from Columbia University. Josh did a general pathology rotation in the department this year and separately in neuropathology. He has participated in research in the lab of Dr. Richard Granstein in dermatology. He was also a singer in the Weill Cornell Aneurymhs acapella group. Josh is an incoming AP/CP resident.
Incoming Fellows 2021-2022

**Breast**
William (Sam) Towne, MD
Sam Towne is originally from Kempton, PA. He received a Bachelor of Arts degree in Biochemistry from Oberlin College in 2012 and received his MD from the Lewis Katz School of Medicine at Temple University in 2017. He completed his AP/CP residency here at NewYork-Presbyterian/Weill Cornell Medicine prior to continuing his training here in breast fellowship.

**Cytopathology**
David Kim, MD
David Kim is a graduate of Drexel University College of Medicine Class of 2017. He did his undergraduate education in philosophy at New York University. He completed an AP/CP residency here at NewYork-Presbyterian/Weill Cornell Medicine where he also served as CP Chief Resident. David will be continuing his training here in our Cytopathology fellowship.

**Molecular Genetic Pathology**
Elaine Zhong, MD
Elaine Zhong graduated in June 2016 from Columbia University. She received her BS (Biological Sciences, Biometry and Statistics) in 2012 from Cornell University. She completed an AP/CP residency here at NewYork-Presbyterian/Weill Cornell Medicine in 2019 followed by a Breast Pathology fellowship at Memorial Sloan Kettering before returning for her 2nd fellowship in MGP here.

**Gastrointestinal Pathology**
Kshitij Arora, MBBS
Kshitij completed a Pathology residency at C.U. Shah Medical College and Hospital in Surrendra Nagar India in 2011 before coming to the US. He was a research fellow with Dr. Deshpande at Massachusetts General Hospital and Harvard Medical Center in Boston and completed AP/CP residency at Jackson Memorial Hospital/University of Miami Hospital.

**Genitourinary Pathology**
Natalia Sheuika, MD, PhD
Natalia received her MD/PhD from Gomel State Medical University in Belarus. She completed her AP/CP residency in 2019 at Albany Medical Center and completed a selective GYN Pathology fellowship at Mount Sinai Hospital.

**Gynecologic Pathology**
Marie Smithgall, MD
Dr. Marie Smithgall will be our gynecological and perinatal pathology fellow. She completed her MD from Columbia University in 2017 where she went on to complete her AP/CP Residency. During her residency she was a Young Investigator Award Recipient for an Oral Presentation at Academy of Clinical Laboratory Physicians and Scientists (ACLPS) in May 2019.

**Hematopathology**
Kran Sukhuntha, MD, PhD
Kran received his MD from Ramathobodi Hospital in Bangkok Thailand and then received his PhD in 2013 in Cellular and Molecular Pathology from the University of Wisconsin where he completed his AP residency training. Kran will be joining our Hematopathology fellowship program.

**Hematopathology**
Tayler Van Den Akker, MD
Tayler received her MD from St. George’s University in Grenada. She completed her AP/CP residency at Mount Sinai St. Luke’s- Roosevelt and will be joining our Hematopathology fellowship program.

**Transfusion Medicine**
Michael Karasick, MD
Dr. Michael Karasick, MD is a graduate of the Sidney Kimmel Medical College of Thomas Jefferson University and was a Clinical Pathology resident at Rochester University, Strong Memorial Hospital, where he served as chief resident. He will be completing the joint New York Blood Center–Weill Cornell Transfusion Medicine and Cellular Therapy fellowship and will be rotating at Weill Cornell for the first half of the academic year.
Graduating Housestaff next steps...

Lucy Ma, MD - Lucy Ma was our AP Chief resident from 2020-2021 she is completing here AP/CP training and will be moving on to Clinical Instructor, Gynecologic Pathology fellow at University of Michigan.

David Kim, MD - David was out CP Chief resident from 2020-2021 and is completing his AP/CP training. David Kim will be staying at NewYork-Presbyterian Hospital/Weill Cornell Medicine as a fellow in Cytopathology.

Amelia Baxter-Stoltzfus, MD - Amelia is an AP only graduating resident. She will be moving onto a Forensic fellowship at the New York Medical Examiner’s Office.

Victoria Costa, MD - She is completing her AP/CP training and will be moving on to be a fellow in the Transfusion Medicine Division of The Johns Hopkins Hospital Department of Pathology.

Sarah Elsoukary, MD - Sarah is completing her AP/CP residency training. She has accepted a fellowship in Bone and Soft Tissue at John Hopkins University.

William (Sam) Towne, MD - Sam is completing his AP/CP residency training. Dr. Towne will be staying at NewYork-Presbyterian Hospital/Weill Cornell Medicine as a fellow in Breast Pathology.

Yahya Al-Ghamd, MDi - Yahya is completing his 2nd fellowship in Molecular Genetics Pathology and will be transitioning to an Assistant Professor Position here at Weill Cornell Medicine in Hematopathology.

Miguel Cantu, MD - Miguel is completing his fellowship in Hematopathology and will be continuing his training in another fellowship; Molecular Pathology at UT Southwestern in Texas. Miguel is a 2021 ASCP 40 Under Forty Honoree.

Layla Hatem, MD - Layla is completing her fellowship in GYN Pathology. She will be moving on to be an Attending Pathologist at Unity Hospital, an affiliate of Rochester Regional Health in Rochester, NY.

Shajo Kunnath Velayudhan, MBBS, MMST - Shajo is completing his Hematopathology fellowship and will be transitioning to an advanced fellowship at Memorial Sloan Kettering.

Alumni Residency Training Leadership Roles

Jordan Baum, MD (AC/CP resident class of 2017; MGP fellow, 2018; Breast Pathology fellow 2019) is an Associate Residency Program Director New York University-Winthrop Hospital.

Carlos Pagan, MD (AC/CP resident class of 2015) who is also a new Associate Residency Program Director at Columbia University/New York-Presbyterian.

Joanna Chan, MD (AC/CP resident class of 2011; GYN fellow 2012) is the Residency Program Director and Vice Chair of Education at Thomas Jefferson University.

Kristina Loukeris, MD (AP resident class of 2009; Cytopathology 2010; Gynecological and Perinatal Pathology 2011) is the Residency Program Director and Cytopathology Director SUNY Downstate Health Sciences University.

Suzanne Arinsburg, DO (CP resident class of 2009) is the Director Blood Bank & Transfusion Medicine, the Medical Director of Apheresis and the Associate Residency Program Director at Mount Sinai Hospital.
New Leadership Roles and Promotions

NEW LEADERSHIP

Jorge Moscat, PhD
Homer T. Hirst III Professorship of Oncology in Pathology
Vice Chair for Experimental Pathology

Brian Robinson, MD
Vice Chair for Anatomic Pathology

Luigi Marchionni, MD, PhD
Vice Chair for Computational and Systems Pathology

Wei Song, MD, PhD
Director of Molecular and Genomic Pathology

Robert DeSimone, MD
Director of Transfusion Medicine

Ethel Cesaran, MD, PhD
Diversity Champion

NEW PROFESSORSHIP

Maria Diaz-Meco, PhD
Homer T. Hirst III Professorship of Oncology in Pathology

Ahba Goyal, MD
Associate Professor of Clinical Pathology and Laboratory Medicine

Matthew Greenblatt, MD, PhD
Associate Professor of Pathology and Laboratory Medicine

Sarah Frost, MD
Assistant Professor of Clinical Pathology and Laboratory Medicine

Francesca Khani, MD
Associate Professor of Pathology and Laboratory Medicine

Congratulations to all!

Michael Kluk, MD, PhD
Associate Professor of Clinical Pathology and Laboratory Medicine

Juan Miguel Mosquera, MD
Professor of Pathology and Laboratory Medicine

Anna Nam, MD
Assistant Professor of Pathology and Laboratory Medicine

Anmi Patel, MD
Assistant Professor of Pathology and Laboratory Medicine

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