



Featured Article

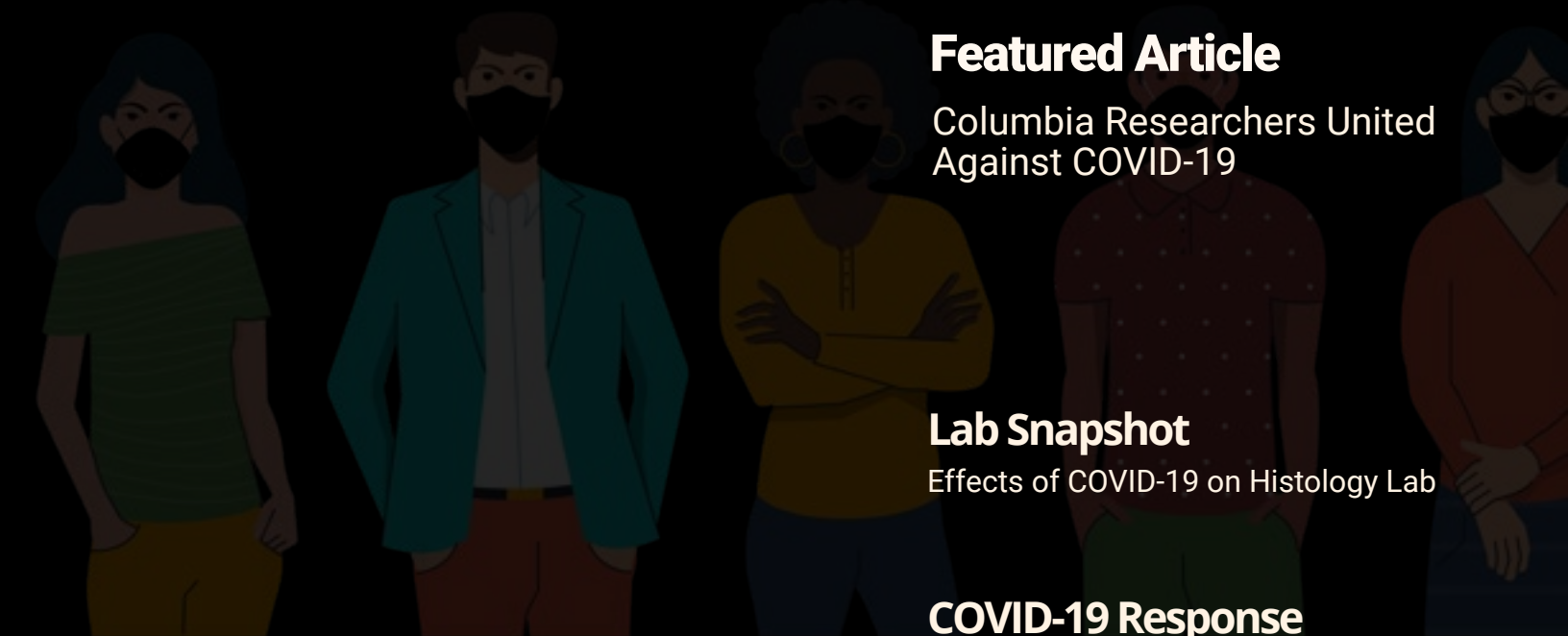
Columbia Researchers United
Against COVID-19

Lab Snapshot

Effects of COVID-19 on Histology Lab

COVID-19 Response

Departmental collection of the clinical
response to the pandemic





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Columbia Pathology and Cell Biology Report

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ON THE COVER:

Illustration, men and women wearing masks
(Source: graphics4u on envato elements)

A Changing Landscape



Kevin A. Roth, M.D., Ph.D., Chair
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SARS-CoV-2 had, and continues to have, a devastating effect on our community. At its peak in mid-April, we had over 600 SARS-CoV-2 patients admitted to NYP-CUIMC with over 200 patients on ventilators. To date, SARS-CoV-2 has resulted in over 3000 patient admissions and more than 500 deaths at NYP-CUIMC. Tragically, the pandemic outbreak of SARS-CoV-2 has disproportionately affected vulnerable populations including elderly and patients with co-morbidities such as cancer and other immune deficiencies.

Recently released Federal data indicate that Blacks and Hispanics are three-times as likely as whites to be infected and twice as likely to die from Covid-19. Thankfully, the number of new cases has decreased significantly over the last few months and some aspects of pre-Covid-19 life have begun to re-emerge. Although these are good indicators, we must be prepared for a rise in cases over the upcoming months as social distancing and other precautions become less rigorously followed.

The Department of Pathology and Cell Biology has been integral to the clinical response to the pandemic and has partnered with numerous colleagues and collaborators throughout the

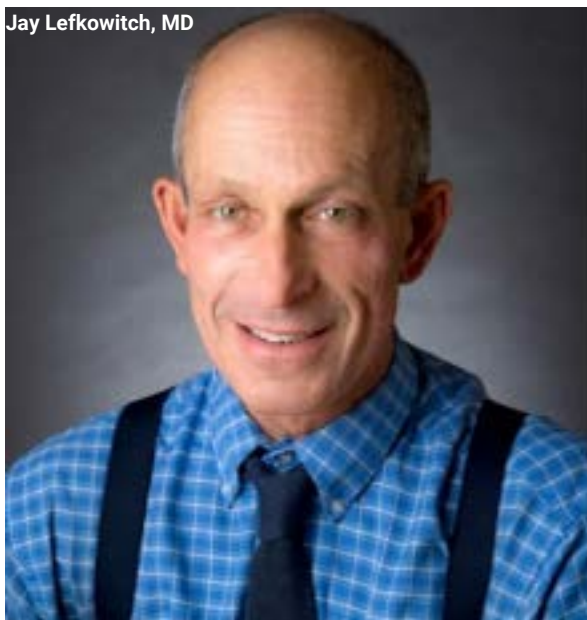
world to advance studies of the virus and to develop novel SARS-CoV-2 assays and therapies (<https://www.pathology.columbia.edu/departamental-covid-19-article-collection>).

Many of these efforts are highlighted in this newsletter and detailed further on our departmental website (<https://www.pathology.columbia.edu/>). I encourage everyone in the department, particularly those returning to onsite work duties, to continue to be vigilant and to follow all Columbia University and NYP-CUIMC guidelines for keeping yourself and your colleagues safe.

Finally, I want to thank each of you, whether you are working from home or at CUIMC, for everything you have contributed to our clinical, research and educational missions during this pandemic. I am hopeful that a second wave of cases doesn't occur in the coming months but I am confident that if it does, we will once again face the challenge with professionalism and compassion. ♦

Best wishes,

Honors and Awards



Jay Lefkowitz, MD



Brie Stotler, MD

Dr. Jay Lefkowitz and Dr. Brie Stotler Accepted into ACE

Congratulations to [Jay Lefkowitz, MD](#), professor of pathology and cell biology at CUMC, and [Brie Stotler, MD](#), assistant professor of pathology and cell biology at CUMC, who have been recently accepted into the 2020 class of the Academy of Clinical Excellence (ACE).

The Columbia University Vagelos College of Physicians and Surgeons Academy of Clinical Excellence (ACE) was established in 2016 to define, recognize, and perpetuate excellence in clinical care by faculty, trainees, and students. It honors the clinical faculty who contribute to the Vagelos College of Physicians and Surgeons through patient care marked by evidence-based clinical science coupled with deeply compassionate humanism. Each member of ACE exhibits excellence in the following characteristics: reputation, communication and interpersonal skills, professionalism and humanism, diagnostic acumen, skillful negotiation of the health care system, knowledge, scholarly approach to clinical care, commitment to mentoring trainees and junior colleagues, and passion for clinical medicine.

“Well deserved honor for both of you and the department”, said Dr. Kevin Roth, the department chair, congratulating Dr. Lefkowitz and Dr. Stotler for achieving this remarkable honor.

ACE also includes the following faculty members from the Department of Pathology and Cell Biology, inducted since the launch of ACE:

Govind Bhagat, MBBS - Professor of Pathology and Cell Biology at CUMC

Vivette D. D'Agati, MD - Professor of Pathology and Cell Biology at CUMC

Hanina Hibshoosh, MD - Professor of Pathology and Cell Biology at CUMC

Charles C. Marboe, MD - Professor of Pathology and Cell Biology at CUMC

Glen S. Markowitz, MD - Professor of Pathology and Cell Biology at CUMC

Kathleen M. O'Toole, MD - Professor of Pathology and Cell Biology at CUMC

Anjali Saqi, MD, MBA - Professor of Pathology and Cell Biology at CUMC

Joseph Schwartz, MD, MPH - Professor of Pathology and Cell Biology at CUMC

David N. Silvers, MD - Professor of Dermatology and Pathology and Cell Biology at CUMC

Steven L. Spitalnik, MD - Professor of Pathology and Cell Biology

Matthias J. Szabolcs, MD - Professor of Pathology and Cell Biology at CUMC

Honors and Awards

Dr. Eldad Hod Elected to the NBF Hall of Fame



The National Blood Foundation has just announced [Eldad Hod, MD](#) as one of its two newest members of the NBF Hall of Fame. We warmly congratulate Dr. Hod for achieving this remarkable recognition!

Dr. Eldad Hod is an associate professor of pathology and cell biology, as well as a researcher and expert in transfusion medicine. His research investigates important problems related to red blood cell transfusion and iron biology. He has received several awards including the Jean Julliard Prize and the Jack Latham Memorial Award for Innovative Research from the National Blood Foundation in 2014 and was named an NBF scholar in the same year.

Currently, Dr. Hod is conducting research to determine whether plasma from those who have recovered from COVID-19 could be used to treat those who are infected. NBF introduced its Hall of Fame in 2007 recognizing a prestigious and select group of NBF grant recipients who leveraged their early-career grant funding into successful careers in transfusion medicine, cellular therapies, or patient blood management and who demonstrated exemplary leadership within the field. This important recognition was reinstated annually in 2015 inducting one to three new members each year.

The NBF Research and Recognition Awards are scheduled to be presented at the AABB Annual Meeting in October 2020 in Baltimore, MD.



Dr. Minah Kim Wins VELOCITY Cancer Research Award

Herbert Irving Comprehensive Cancer Center Leadership just announced that [Mina Kim, PhD](#), assistant professor of pathology and cell biology at Columbia University Irving Medical Center, has been selected as one of this year's Velocity Fellows for her research project entitled "Targeting Vascular Abnormalities to Overcome Immune Checkpoint Inhibitor Resistance in Metastatic Melanoma".

Dr. Kim is studying mechanisms by which vascular abnormalities lead to therapeutic resistance to immune checkpoint inhibitor in patients with melanoma and drug combinations that could reverse resistance. This information will also help find potential vascular biomarker to predict patient responses to therapy.

To learn more about the award, read the full announcement at [HICCC News](#).

OTHER HONORS AND AWARDS

Dritan Agalliu, PhD

The Harold and Golden Lampert Award for Excellence in Basic Science Research

Osama Al Dalahmah, MD, PhD

Translational Therapeutics Accelerator Pilot Award

Francesca Bartolini, PhD

Fulbright specialist in 2019

Ibrahim Batal, MD

2020-2021 Mendez National Institute of Transplantation Foundation Research Grant

Eunhee Choi, PhD

Winner, Alice Bohmfalk Charitable Trust Award

Catherine Clelland, PhD

Winner, Translational Therapeutics Accelerator Pilot Award

Erin Heinzen Cox, PharmD, PhD

Named [2019 Irving Scholars](#)

Serge Cremers, PhD, PharmD

Named Editor-in-Chief of the British Journal of Clinical Pharmacology (BJCP)

Piero Dalerba, MD

2019 Velocity Fellow

Vivette D'Agati, MD

Castle Connolly Top Doctors for 2020

Honors and Awards



Dr. Stuart Weisberg Named 2020 Louis V. Gerstner Jr. Scholar

[Stuart Weisberg, MD, PhD](#), assistant professor of pathology and cell biology, has been appointed to a three year term as a Louis V. Gerstner Jr. scholar effective July 1, 2020 through June 30, 2023.

Each year since 2008, the Louis V. Gerstner Jr. Scholars Program has supported tenure-track physicians who conduct research that has the promise to bring new treatments to patients. The fund provides a stipend of \$75,000 per year, for up to three years, to support the awardees' research projects. Scholars are nominated by a committee of distinguished research faculty and selected by the VP&S dean.

Dr. Weisberg studies how anatomy and organ microenvironment specify immune cell phenotype and function in health and disease. Prompted by his experience with pancreatic disease cases as a pathology resident, Stuart began working to define the unique immune microenvironment within the human pancreas and elucidate how it mediates normal pancreatic immunosurveillance as well as immunopathology.

Stuart and his team set up a system for the viable extraction of pancreatic immune cells from human organ donors and patients with pancreatic disease for

high-resolution immunophenotypic, transcriptomic and functional analysis. In parallel, he performs multispectral staining of pancreas tissue sections to examine the spatial interrelationships between these pancreatic immune cells and their position within the tissue microenvironment. His studies now are focusing on mechanisms of pancreatic inflammation and how obesity and type 2 diabetes alter the pancreatic immune landscape to increase risk for pancreatitis and pancreatic cancer.

As an MD/PhD student, Stuart's doctoral work in the lab of Drs. Anthony Ferrante and Rudolph Leibel revealed that obesity is associated with accumulation of adipose tissue macrophages. His doctoral studies were among the first to provide detailed phenotypic and functional analysis of adipose tissue macrophages and establish a role for macrophages in mediating inflammation and insulin resistance in obese individuals. He then completed both post-doctoral and clinical training in Pathology at Columbia.

Congratulations to Dr. Weisberg on this outstanding achievement.

Honors and Awards

Marie Smithgall Selected As Scholar of Society of '67

Congratulations to **Marie Smithgall, MD**, a resident in the department of pathology and cell biology, who has selected as a scholar of the Society of '67's 2020 Scholars Program.

The [Society of '67](#) was established by the Association of Pathology Chairs (APC) to support programs aligned with the Association's mission and vision. The Society's name honors the founding of the APC, which occurred in 1967.



The Scholars Program of the Society of '67 provides an opportunity for medical students and residents to familiarize themselves with career opportunities in pathology and the critical role of pathology in healthcare delivery, research, and education through access to national leaders in academic pathology attending the APC Annual Meeting.

Dr. Michael Miller, another resident in the department, was last year's Society of 67 Scholar from Columbia.



Sarah Vossoughi Awarded the Air Force Outstanding Unit Award

The Air Force Outstanding Unit Award has been awarded by the Secretary of the United States Air Force to the 43rd Aeromedical Evacuation Squadron, where Captain **Sarah Vossoughi, MD**, assistant professor of pathology and cell biology at CUMC, served as Medical Crew Director for service during Operation Enduring Freedom in Afghanistan and Operation Iraqi Freedom in Iraq 2008-2009 providing medical evacuation for over 900 soldiers in under a year.

The Air Force Outstanding Unit Award is awarded for achievements of international significance involving combat operations against an armed enemy of the United States and exposure to hostile actions by an opposing foreign force to recognize units that have distinguished themselves by exceptionally meritorious service.

OTHER HONORS AND AWARDS

Riccardo Dalla-Favera, MD
Web of Science Group's Highly Cited Researchers

Mark Erlich, MD
Outstanding Teaching Award of Albert Einstein College of Medicine

Krystalyn Hudson, PhD
Winner, National Blood Foundation Award

Inbal Israely, PhD
VP&S Diversity Grant Program for Junior Faculty

Brynn Levy, MSc. (Med), PhD, FACMG
Elected to the Board of Directors of the ACMG Foundation for Genetic and Genomic Medicine (2019 – 2021) and the Board of the International Society for Prenatal Diagnosis (ISPD) (2020 - 2022)

W. Ian Lipkin, MD
Web of Science Group's Highly Cited Researchers

Minah Kim, PhD
Winner, NETRF (The Neuroendocrine Tumor Research Foundation) Pilot Award

Mahesh Mansukhani, MD
Inducted into the VP&G Academy of Clinical Excellence

Michael Pesce, PhD
Inducted into the VP&G Academy of Clinical Excellence

Honors and Awards



Osama Al-Dalahmah Becomes the First Recipient of the Nancy S. Wexler Young Investigator Prize

The [Hereditary Disease Foundation](#) has just announced the official launch of the Nancy S. Wexler Discovery Fund and named Osama Al-Dalahmah, MD, PhD, a neuropathology instructor in the department of pathology and cell biology at Columbia University Irving Medical Center, as the first recipient of the Young Investigator Prize for his project entitled “Studying Huntington’s disease astrocytes in different parts of the brain: A regional study of the landscape of gene expression at the single cell level”.

The [Nancy S. Wexler Discovery Fund](#) was established to honor the pioneering spirit, relentless dedication and enduring optimism of Nancy Wexler, President of the Hereditary Disease Foundation (HDF), as she celebrates her 75th birthday this year. The Fund will encourage research collaborations and the recruitment of young scientists, echoing the hallmarks of Nancy’s career. Each year the Fund will award the Nancy S. Wexler Young Investigator Prize to a researcher whose work reflects the highest caliber of excellence, diligence and creative thinking. The Fund will also support educational workshops and conferences.

Dr. Al-Dalahmah aims to discover ways to increase the brain’s ability to protect itself from damage in Huntington’s disease by studying the differences in

gene expression between vulnerable brain areas that are severely affected in HD and more resilient regions. His emphasis is on astrocytes – the major support cells in the brain that nurture neurons and ensure their functioning. HD changes astrocytes in several ways - some may be beneficial and some deleterious. By looking at gene expression from thousands of cells in both vulnerable and resilient brain regions in adult onset and juvenile onset HD, Dr. Al-Dalahmah seeks to determine how astrocytes respond to damage caused by HD. This knowledge will provide insight into the earliest gene expression changes in HD. Knowing how to adapt the brain’s capacity to protect itself from the damage dealt to it by HD is critical for the development of new therapies.

“Osama’s brilliant work is bringing us closer to new therapies and potential cures for Huntington’s disease,” said Dr. Anne B. Young, Chair of the Hereditary Disease Foundation Scientific Advisory Board and Vice Chair of the HDF Board of Directors. “This Prize honors Nancy’s extraordinary ability to recruit young, talented scientists to the field and build research collaborations.”

Congratulations to Dr. Al-Dalahmah!

Honors and Awards

Two Pathology Employees Inducted into Columbia 25 Year Club



We are pleased to announce that **Liqun Chen**, in renal pathology laboratory, and **Moises Olivares**, coordinator of pathology facilities, are among the newest members of the Columbia University Twenty-Five Year Club.

Established in 1954, the Twenty-Five Year Club honors those who have served Columbia University for at least 25 years and, in the words of Lee C. Bollinger, president of Columbia University, “represents a group of individuals responsible for nurturing generations of students, pursuing groundbreaking research and academic scholarship, and building and sustaining our campus community.”

The department congratulates Mr. Chen and Mr. Olivares on reaching this remarkable milestone and is grateful for their many years of exceptional service to the department.

OTHER HONORS AND AWARDS	FACULTY PROMOTIONS
Alex Rai, PhD Winner, Roy and Diana Vagelos Precision Medicine Pilot Awards Anjali Saqi, MD, MBA Castle Connolly Top Doctors for 2020 Joseph Schwartz, MD, MPH 2019 Hemphill-Jordan Leadership Award; President-elect, World Apheresis Association (term starts October 2020); Chair, Communications committee for the CUIMC Academy of Clinical excellence Brynn Levy, MSc. (Med), PhD, FACMG Elected to the Board of Directors of the ACMG Foundation for Genetic and Genomic Medicine (2019 – 2021) and the Board of the International Society for Prenatal Diagnosis (ISPD) (2020 - 2022) Markus Siegelin, MD Recipient, Schaefer Research Scholars Steven Spitalnik, MD Recipient of the 2020 Mentor of the Year award Renu Virk, MD 2020 Early Career Women Faculty Leadership Development Seminar Hee Won Yang, PhD SARS-CoV-2 (COVID-19) Research Pilot Grants Funding	To Associate Professor: Dritan Agalliu, PhD (with tenure) Ibrahim Batal, MD Xiaowei Chen, MD Richard O. Francis, MD, PhD Amin S. Ghabrial, PhD Brie Stotler, MD Harris Wang, PhD (with tenure) To Professor: Lorraine Clark, PhD Helen Fernandes, PhD Umrao Monani, PhD Ali Naini, PhD Murty Vundavalli, PhD Susan Whittier, MD Darrell Yamashiro, MD, PhD To Endowed Chairs: Cathy Mendelsohn, PhD Shan Zha, MD, PhD

GRANTS AWARDED (SINCE JULY 2019)

PI	Sponsor	Title
Swarnali Acharyya, PhD	Pershing Square Sohn Cancer Research Alliance	Prolonging Cancer Patient Survival by Targeting Both Metastasis and Cachexia
Dritan Agalliu, PhD	National Multiple Sclerosis Society	Endothelial Wnt Signaling in CNS Neo-Angiogenesis and Blood-Brain Barrier in EAE/MS
Dritan Agalli, PhD Ai Yamamoto, PhD	NIH/NINDS (R21)	The role of autophagy in the neurovascular unit for the physiological response to stress
Ibrahim Batal, MD	Mendez National Institute of Transplantation Foundation	Genetic and Immune Predictors of Recurrent Glomerulonephritis
Julie Canman, PhD	National Institute of General Medical Sciences/NIH/DHHS (Supplement)	Cell type-variation of cytokinesis
Julie Canman, PhD	National Institute of General Medical Sciences	Probing the Spatiotemporal Regulation of Cell Division
Alex Chavez, MD, PhD	Project A.L.S.	Identifying ALS Therapeutics Through Multiplexed Drug Discovery Technologies
Alex Chavez, MD, PhD	Jack Ma Foundation	Columbia University's Proposed Response to the New Coronavirus Outbreak
Lorraine N. Clark, PhD	National Institute on Aging/NIH/DHHS	Development of a GBA p.E326K associated Parkinsons disease and Dementia with Lewy body mouse model
Catherine Clelland, PhD	National Institute on Alcohol Abuse and Alcoholism	A Novel Personalized Approach Towards Treating Negative Symptoms and Reducing Alcohol Abuse in Patients with Comorbid AUD and Schizophrenia
Piero Dalerba, MD	New York State Department of Health	A Novel Biomarker to Improve Risk-Prediction in Familial Breast Cancer Patients
Piero Dalerba, MD	Department of the Army, Army Medical Research and Materiel Command	Biodegradable cationic nanoparticles as a push chemo-drug carrier and a pull cfDNA scavenger against breast cancer metastasis
James Goldman, MD, PhD	Fox (Michael J.) Foundation for Parkinson's Research	Astrocyte Gene Expression in PD Interrogated using Single Cell Nuclear RNASeq
James Goldman, MD, PhD	Hereditary Disease Foundation	The regional heterogeneity of Huntington's disease pathology: Clues from diverse astrocytic responses

PI	Sponsor	Title
James Goldman, MD, PhD	Huntington's Disease Society of America, Inc.	The Transcriptional Landscape of Huntington Disease; Exploring the Neuroprotective Potential of Astrocytes at The Single Cell Level
James Goldman, MD, PhD	William Rhodes and Louise Tilzer-Rhodes Center for Glioblastoma at NYPH	Defining the astrocytic niche at the infiltrative margins of Glioblastoma using single Nuclei RNA sequencing
Gregg Gundersen, PhD	National Institute of General Medical Sciences/NIH/DHHS	Cytoskeleton, Nucleus and Integrin Recycling in Cell Migration
Rebecca Haeusler, PhD	American Diabetes Association	Bile Acids and Intestinal Lipid Sensing
Syed Hussaini, PhD	National Institute on Aging	Decoding Early Signs of Alzheimer's Disease in the Lateral Entorhinal Cortex Using Machine Learning
Syed Hussaini, PhD	National Institute of Aging/R01	Electrophysiological Evaluation of Brain Regions Vulnerable to Alzheimer's Disease
Syed Hussaini, PhD	Alzheimer's Association Grant	A computational approach to predict early symptoms of AD
Inbal Israely, PhD	National Institute of Neurological Disorders and Stroke	Understanding How Activity Drives Diverse Spine Structural Interactions
Minah Kim, PhD	National Eye Institute	Translational Gene Therapy for CNGB1 Retinitis Pigmentosa
Minah Kim, PhD	Velocity Fellows	Targeting vascular abnormalities to overcome immune checkpoint inhibitor resistance in metastatic melanoma
Tae-Wan Kim, PhD	National Institute of Aging	Microglial TREM2 Interactome in Alzheimer's Disease
Laura Beth McIntire, PhD	Translational Therapeutics (TRx)/Accelerating Cancer Therapeutics (ACT) Pilot Award	Targeting Rare Pediatric Disease Niemann-Pick type C and Alzheimer's Disease with Activators of Lecithin
Laura Beth McIntire, PhD	Army Medical Research and Materiel Command	Optogenetic Regulation of Phosphoinositide Metabolism in Susceptibility, Resistance and Resiliency to Alzheimer's Disease-Associated Deficits and Pathology
Laura Beth McIntire, PhD	National Institute on Aging	Contribution of BIN1 and Synj1 to Endosomal Pathogenesis Alzheimer's Disease and Down Syndrome
Livio Pellizzoni, PhD	National Institute of Neurological Disorders and Stroke	Mechanisms and Therapeutic Targeting of Motor Neuron Death in SMA

GRANTS AWARDED (SINCE JULY 2019)

PI	Sponsor	Title
Livio Pellizzoni, PhD	National Institute of Neurological Disorders and Stroke	Essential Role of Stasimon in Motor Circuit Development and Disease
Serge Przedborski, MD, PhD	National Institute of Neurological Disorders	Defining immune cell heterogeneity in human ALS and mouse model of the disease
Serge Przedborski, MD, PhD	National Institute on Aging	A Transcriptomic Atlas of Immune Cells in a Model of Synucleinopathy
Kevin Roth, MD, PhD and Markus Siegelin, MD	William Rhodes and Louise Tilzer-Rhodes Center for Glioblastoma at NYPH	Rab38 Regulation of Glioblastoma Cell Survival
Markus Siegelin, MD	American Brain Tumor Association	LXR Agonists combined with BH3-mimetics as a Novel Treatment for Glioblastoma
Steven Spitalnik, MD	National Heart, Lung, and Blood Institute	The Impact of Oxidative Stress on Erythrocyte Biology
Alison Taylor, PhD	National Cancer Institute	Functional Approaches to Understanding Cancer Aneuploidy: Interrogating the Effects of Chromosome 3p Deletion
Richard Vallee, PhD	National Institute of General Medical Sciences	Role of RILP in Autophagy
Richard Vallee, PhD Wendy Chung, MD, PhD	National Institute of Neurological Disorders and Stroke	Role of the Kinesin KIF1A in Neurological Disease
Stuart Weisberg, MD, PhD	National Institute of Diabetes and Digestive and Kidney Diseases	1/4 Leveraging EHR-Linked Biobanks for Deep Phenotyping, Polygenic Risk Score Modeling, and Outcomes Analysis in Psychiatric Disorders
Hynek Wichterle, PhD	National Institute of Neurological Disorders and Stroke/NIH/DHHS (Supplement)	Multiplex modeling of ALS with barcoded human pluripotent stem cell lines
Hynek Wichterle, PhD	National Institute of Neurological Disorders and Stroke	Transcriptional Control of Motor Neuron Maturation
Ai Yamamoto, PhD	Hereditary Disease Foundation	Generation of striatal neurons from HD patient-derived fibroblasts: a feasibility study with direct correlation to human neuropathology
Hee Won Yang, PhD	Research Pilot Grants Funding through HICCC	Novel technologies to identify SARS-CoV-2 therapeutics
Andrew Yates, PhD Donna L. Farber, PhD	National Institute of Allergy and Infection	Modeling the ecology of tissue-resident T cells

In Memoriam



Dr. Philip Brandt Dies at Age 90

We are saddened to announce the death of Dr. Philip Brandt, Professor Emeritus and long-time member of the Department of Pathology and Cell Biology.

Dr. Brandt, 89, passed away on February 17th, 2020 in Riverdale, New York. He was born on September 23, 1930 in Cleveland, Ohio. Dr. Brandt earned a Ph.D. in Anatomy and Biophysics from Columbia University's College of Physicians & Surgeons in 1960 and remained at Columbia for his entire 50-year long career. He was an internationally known scientist in muscle biophysics, mentored graduate students and published over 80 papers in distinguished journals. In addition to research, Dr. Brandt was a valued teacher in the Clinical Gross Anatomy course, continuing to teach long after his retirement. Dr. Brandt was devoted to research and teaching and won numerous fellowships and awards. He was loved by all for his altruism, humor, warmth and kindness as a human being. He will be greatly missed by all of us.

Dr. Brandt's wife of 59 years, renowned artist Helene Brandt, died suddenly in 2013. They have two children, David and Daniel, as well as two grandsons, to whom we offer our deep condolences.



Jafari Tomlinson Passes Away

With heavy hearts, we announce the death of Jafari Tomlinson on April 23, 2020.

Jafari was a dedicated Pathology IT employee who worked for most of his career in healthcare IT. He joined the Department of Pathology and Cell Biology in 2015. He provided desktop support to both our clinical and research faculty and staff. Jafari had a unique ability to explain computer problems and solutions with simplicity and humor that made everyone feel at ease and with a sense that no matter the problem, he'd find that solution. During the COVID-19 pandemic, Jafari was on site, often at a moment's notice. He was instrumental in helping to rapidly configure and deploy ten workstations in the new serology COVID-19 antibody testing and biorepository labs. He took pride in contributing to this effort. Jafari will be fondly remembered in the department for his ability to tie bowties for faculty before they headed to fundraisers, for winning the ugliest holiday sweater and best Halloween costume contests.

Jafari was a loving and doting father to his eight year-old daughter, Eva, of whom he spoke every day. He approached every work day with joy and laughter and will be deeply missed.

Global Health



Globally, Only Half of Women Get Treatment for Rh Disease

A treatment developed over 50 years ago to prevent Rh disease—an often-fatal condition in fetuses and newborns—only reaches half of the women in the world who need it, according to a study led by researchers at Vagelos College of Physicians and Surgeons (VP&S) at Columbia University Irving Medical Center.

A previous study estimated that

complications of the disease may be linked to the deaths of at least 50,000 fetuses and 114,000 newborns worldwide annually. Results of the study were published online in [PLOS One](#).

“These findings are tragically surprising and disappointing,” says [Steven L. Spitalnik, MD](#), professor of pathology & cell biology at VP&S and senior author of the

study. “This is a global crisis in which hundreds of thousands of fetuses and newborns are at risk for complications and death due to Rh disease because of a lack of awareness about, access to, and availability of effective measures to prevent this disease.”

Continue reading the full article at the [CUIMC Newsroom](#).

Useful Information

Updating online faculty profiles – Faculty members can update their online profiles at <http://columbiaprofiles.org/>. Regularly updating your profile is strongly encouraged. If you have any questions, please contact PathWebMaster@columbia.edu.

How to update website content – If you find any outdated, incorrect, or missing content on our department website (www.pathology.columbia.edu), and would like to have it updated, please contact PathWebMaster@columbia.edu.

How to post images on touchscreen directories – Have interesting images (research, events, people, celebrations, etc.) that you wish to post on our three touch-screen directories located near the main elevators of the P&S and PH buildings, please contact PathNews@cumc.columbia.edu.

New Administrative Staff



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Mr. Francisco Hungria has joined the Department of Pathology and Cell Biology as Director of Human Resources (HR) and Academic Affairs, effective August 2020. He will provide administrative leadership and oversight of departmental human resource functions and academic affairs. In his role, he will provide leadership and administrative management, organizational development, and strategic direction of all human resources initiatives and academic affairs functions.

Francisco has both academic and hospital human resource experience, returning to CUIMC after having previously worked at both Columbia University and NewYork-Presbyterian in prior years. Most recently, Francisco worked in the private sector where he continued his work as an HR champion focused on employee engagement, diversity and inclusion, labor relations, as well as training and professional development.

Francisco holds a master's degree in industrial and labor relations from the Zicklin School of Business at Baruch College and a bachelor's degree in sociology from Queens College.

Ms. Renee Peele Peele has joined the department of pathology and cell biology as Senior Grants Manager. Renee will be responsible for research administration in the department and will manage the Pathology Grants team.

Renee earned her BA at the College of Mount Saint Vincent and graduate degree in Public Administration from Pace University. She joins us from Mount Sinai, where she was most recently a Senior Grants Manager in the Grants and Contracts Office, and has previously worked at here at CUIMC and Albert Einstein as well.

Renee has more than 15 years of experience managing government, industry and foundation grants and contracts, and we are excited to have her aboard!



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Noopur Vilas Khobreakar

Graduate student wins John S. Newberry Prize

Graduate student Noopur Vilas Khobreakar of Vallee lab has recently won John S. Newberry Prize, which is awarded to the graduate student in the Department who, in the opinion of the faculty, is the "most promising student of the year in the field of vertebrate zoology."

New Faculty



Lama Farchoukh Farhat, MD

Assistant Professor of Pathology and Cell Biology at CUMC

Lama Farchoukh Farhat is APCP and cytopathology board certified. She received her medical degree at the American University of Beirut, trained in APCP at the University of Pittsburgh Medical Center then completed a cytopathology fellowship followed by a GI clinical instructorship. She was appointed as a project manager at the University of Pittsburgh Tissue Bank. She collaborated and published in various subspecialties in surgical pathology: she is the recipient of the ASC Cell talk award on FNA technique and the recipient of the Best Resident Poster Award (ASCP) for her work on Multifocal Extraprostatic Extension of Prostate Cancer. Her research interests include cervical neoplasia, colorectal and pancreaticobiliary neoplasia. As a chief resident and then chief fellow, she contributed to the residents, medical students, and cytotechnologists' teaching and she would like to continue along this path during her career in academia.



Alexander Lyashchenko, MD, PhD

Assistant Professor of Pathology and Cell Biology at CUMC

Having completed all of his post-secondary education (and the majority of his life) at Columbia University, Alex Lyashchenko is what many would call a Columbia "Lifer". Although his PhD thesis in Neurobiology focused on studying ALS, during his Clinical Pathology Residency he discovered and embraced his true passion – Laboratory Medicine. Currently, Alex is working at the Clinical Pharmacology and Toxicology Laboratory on developing a number of quantitative LC-MS/MS assays, both for routine clinical use and for clinical studies in precision oncology. Alex's future work will focus on developing and implementing novel technologies aimed at enabling or improving the quantitation of clinically relevant analytes and thus help drive the field of Laboratory Medicine forward.



Miroslav Sekulic, MD

Assistant Professor of Pathology and Cell Biology at CUMC

Miroslav Sekulic completed his undergraduate studies at the University of Connecticut with a BS in Physiology and Neurobiology, graduate studies at the Boston University School of Medicine with research performed in the Renal Section, and medical school training at the University of Belgrade School of Medicine. After which he held dual appointments as a Research Fellow in Medicine at Harvard Medical School and a Postdoctoral Research Fellow at Massachusetts General Hospital, Division of Nephrology and Program in Glomerular Disease. This was followed by clinical residency training in Anatomic and Clinical Pathology at the University of Minnesota, during which time he spent a number of months at the University of Bergen as a Fulbright Scholar studying differential gene expression in Fabry disease and membranous glomerulonephritis. After residency, Dr. Sekulic completed a clinical fellowship in Renal Pathology at the Brigham and Women's Hospital, Harvard Medical School before becoming a faculty member at the Case Western Reserve University (CWRU) School of Medicine. During his approximate two years at CWRU before joining the team here at Columbia University Medical Center, he served as Director of the Autopsy Service and was the Surgical Pathology Subspecialty Leader of the Medical Renal and Cardiac Pathology services. He joined the department in July 2020 as assistant professor of pathology and cell biology.



Image: Science magazine highlighted research in the Zeltser lab in their perspective piece on anorexia nervosa.

Rethinking Anorexia

Source: [Science 10 Apr 2020: Vol 368, Issue 6487](#)

Anorexia nervosa is thought to affect just under 1% of the U.S. population, and manifests with self-starvation and extreme weight loss. About 10% of those affected die, the highest mortality rate of any psychiatric condition after substance abuse. With current treatments, about half of adolescents recover, and another 20% to 30% are helped. Although environmental factors certainly play a role, too, scientists are now finding that the disease's biological roots run deep.

Genetic studies indicate that it's highly heritable, and the brain's reward system behaves differently in unaffected volunteers than in people with anorexia and those who've recovered. Scientists pursuing these ideas face a challenge, in part because of money. Many researchers say the funding anorexia receives is shockingly low given its burdens. Scientists worry that anorexia is underfunded in part because of an enduring view that its roots are cultural. But evidence is mounting that biology is at its core. [View Full Text](#)

New Eye Drops May Prevent a Common Cause of Blindness

Source: [CUIMC Newsroom/June 29, 2020](#)

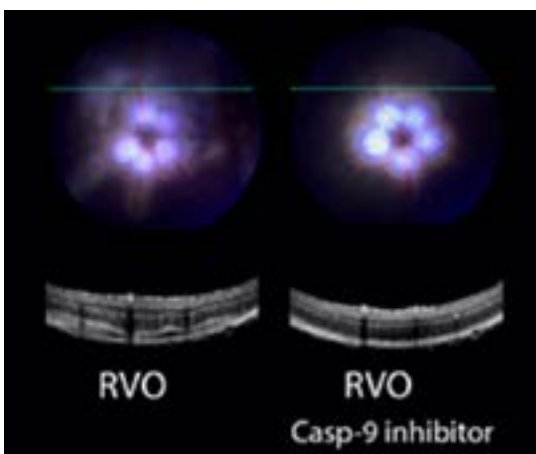


Image: Eye drops with a caspase-9 inhibitor prevent retinal injury from retinal vein occlusion. In the left image, RVO causes swelling in the retina and the retinal layers are less distinct. In the right image, the eye drops have restored the distinct layers of the retina. (Troy lab)

The Troy lab found that a highly selective caspase-9 inhibitor, delivered in the form of eye drops, improved a variety of clinical measures of retinal function in a mouse model of the condition. Most importantly, the treatment reduced swelling, improved blood flow, and decreased neuronal damage in the retina.

"We believe these eye drops may offer several advantages over existing therapies," says Troy. "Patients could administer the drug themselves and wouldn't have to get a series of injections. Also, our eye drops target a different pathway of retinal injury and thus may help patients who do not respond to the current therapy."

Read the full story in the [CUIMC Newsroom](#).

COVID-19 Related Publications

NEWEST ARTICLES ARE LISTED FIRST

[Hepatic pathology in patients dying of COVID-19: a series of 40 cases including clinical, histologic, and virologic data](#)

Stephen M. Lagana, Satoru Kudose, Alina C. Iuga, Michael J. Lee, Ladan Fazlollahi, Helen E. Remotti, Armando Del Portillo, Simona De Michele, Anne Koehne de Gonzalez, Anjali Saqi, Pascale Khairallah, Alexander M. Chong, Heekuk Park, Anne-Catrin Uhlemann, Jay H. Lefkowitz & Elizabeth C. Verna

Modern Pathology

[Serum proteomics in COVID-19 patients: Altered coagulation and complement status as a function of IL-6 level](#)

Angelo D'Alessandro, **Tiffany Thomas**, Monika Dzieciatkowska, Ryan C Hill, **Richard O. Francis, Krystalyn E. Hudson**, James C. Zimring, **Eldad A. Hod, Steven L. Spitalnik**, and Kirk C. Hansen

Journal of Proteome Research

[Characteristics and outcomes of lung cancer in solid organ transplant recipients](#)

Lanyi Nora Chen, John Spivack, Thu Cao, **Anjali Saqi**, Luke J Benvenuto, William A Bulman, Matthen Mathew, Mark B Stoopler, Selim M Arcasoy, Bryan P Stanifer, Naiyer A Rizvi, Catherine A Shu

Lung Cancer Journal

[Types of Assays for SARS-CoV-2 Testing: A Review](#)

Marie C. Smithgall, Mitra Dowlathshahi, **Steven L. Spitalnik, Eldad A. Hod, Alex J. Rai***

Laboratory Medicine

[Kidney Biopsy Findings in Patients with COVID-19](#)

Satoru Kudose, Ibrahim Batal, Dominick Santoriello, Katherine Xu, **Jonathan Barasch**, Yonatan Peleg, Pietro Canetta, Lloyd E. Ratner, Maddalena Marasa, Ali G. Gharavi, **M. Barry Stokes, Glen S. Markowitz and Vivette D. D'Agati**

Journal of the American Society of Nephrology

[Distinct stem/progenitor cells proliferate to regenerate the trachea, intrapulmonary airways and alveoli in COVID-19 patients](#)

Yinshan Fang, Helu Liu, Huachao Huang, Haiyan Li, **Anjali Saqi, Li Qiang** & Jianwen Que

Cell Research

[The ABC's of disaster management: managing apheresis operations during the SARS-CoV-2 pandemic](#)

Vossoughi S, Winters JL, Burgstaler EA, **Schwartz J**

Journal of Clinical Apheresis

[Adrenal Vascular Changes in COVID-19 Autopsies](#)

Alina C Iuga, Charles C Marboe, Mine M Yilmaz, **Jay H Lefkowitz**, Cosmin Gauran, **Stephen M Lagana**
Archives of Pathology and Laboratory Medicine

[How the COVID-19 Pandemic Changed Cellular Therapy at Columbia University Irving Medical Center/NewYork-Presbyterian Hospital](#)

Tanhehco YC and Schwartz J.
Transfusion

[A Case of an Infant With SARS-CoV-2 Hepatitis Early After Liver Transplantation](#)

Nicole Heinz, Adam Griesemer, Joanna Kinney, Jennifer Vittorio, **Stephen M Lagana**, Dana Goldner, Monica Velasco, Tomoaki Kato, Steven Lobritto, Mercedes Martinez
Pediatric Transplant

[COVID-19 Associated Hepatitis Complicating Recent Living Donor Liver Transplantation](#)

Stephen M. Lagana, Simona De Michele, **Michael J. Lee**, Jean C. Emond, Adam D. Griesemer, Sheryl A. Tulin-Silver, Elizabeth C. Verna, Mercedes Martinez, and **Jay H. Lefkowitz**

ARCHIVES of Pathology and Laboratory Medicine

[Internationalisation of medical education is now vital](#)

Anette Wu, Geoffroy PJC Noel, Betty Leask, Lisa Unangst, Edward Choi and Hans de Wit
University World News

[COVID-19 infection alters kynurenine and fatty acid metabolism, correlating with IL-6 levels and renal status](#)

Tiffany Thomas, Davide Stefanoni, Julie A. Reisz, Travis Nemkov, Lorenzo Bertolone, **Richard O. Francis, Krystalyn E. Hudson**, James C. Zimring, Kirk C. Hansen, **Eldad A. Hod, Steven L. Spitalnik**, and Angelo D'Alessandro

JCI Insight

[Field-deployable, rapid diagnostic testing of saliva samples for SARS-CoV-2](#)

Shan Wei, Esther Kohl, Alexandre Djandji, Stephanie Morgan, **Susan Whittier, Mahesh Mansukhani**, Raymond Yeh, Juan Carlos Alejandre, Elaine Fleck, Mary D'Alton, Yousin Suh, Zev Williams

MedRxiv

[Clinical Use of Convalescent Plasma in the COVID-19 Pandemic; A Transfusion-Focused Gap Analysis with Recommendations for Future Research Priorities](#)

Arwa Z. Al-Riyami, Richard Schäfer, Karin van der Berg, Evan M Bloch, Lise J. Escourt, Ruchika Goel, Salwa Hindawi, Cassandra D. Josephson, Kevin Land, Zoe K. McQuilten, **Steven L. Spitalnik**, Erica M. Wood, Dana V. Devine, Cynthia So-Osman, The ISBT Convalescent Plasma Working Group
Vox Sanguinis

[Guidance for the Procurement of COVID-19 Convalescent Plasma: Differences between High and Low-Middle Income Countries](#)

Evan M. Bloch, Ruchika Goel, Silvano Wendel, Thierry Burnouf, Arwa Z. Al-Riyami, Ai Leen Ang, Vincenzo DeAngelis, Larry J. Dumont, Kevin Land, Cheuk Kwong Lee, Adaeze Oreh, Gopal Patidar, **Steven L. Spitalnik**, Marion Vermeulen, Salwa Hindawi, Karin Van den Berg, Pierre Tiberghien, Hans Vrielink, Pampee Young, Dana Devine, Cynthia So-Osman, The ISBT Convalescent Plasma Working Group
Vox Sanguinis

[Evaluating the Efficacy and Safety of Human anti-SARS-CoV-2 Convalescent Plasma in Severely Ill Adults With COVID-19: A Structured Summary of a Study Protocol for a Randomized Controlled Trial](#)

Christina M. Eckhardt, Matthew J. Cummings, Kartik N. Rajagopalan, Sarah Borden, Zachary C. Bitan, Allison Wolf, Alex Kantor, Thomas Briesse, Benjamin J. Meyer, Samuel D. Jacobson, Dawn Scotto, Nischay Mishra, Neena M. Philip, **Brie A. Stotler**, Joseph Schwartz, **Beth Shaz**, **Steven L. Spitalnik**, Andrew Eisenberger, **Eldad A. Hod**, Jessica Justman, Ken Cheung, W Ian Lipkin, Max R. O'Donnell
Trials

[Clinical Performance of SARS-CoV-2 Molecular Testing](#)

Daniel A. Green, Jason Zucker, Lars F. Westblade, **Susan Whittier**, Hanna Rennert, Priya Velu, Arryn Craney, Melissa Cushing, Dakai Liu, Magdalena E. Sobieszczyk, Amelia K. Boehme, **Jorge L. Sepulveda**
Journal of Clinical Microbiology

[A Trial of Lopinavir-Ritonavir in Covid-19](#)

Piero Dalerba, Bruce Levin, John L. Thompson
NEJM

[Bacteremia and Blood Culture Utilization During COVID-19 Surge in New York City](#)

Jorge Sepulveda, Lars F. Westblade, **Susan Whittier**, Michael J. Satlin, William G. Greendyke, Justin G. Aaron, Jason Zucker, Donald Dietz, Magdalena Sobieszczyk, Justin J. Choi, Dakai Liu, Sarah Russell, Charles Connelly, **Daniel A. Green**
Journal of Clinical Microbiology

[Comparison of Cepheid Xpert Xpress and Abbott ID Now to Roche cobas for the Rapid Detection of SARS-CoV-2](#)

Marie C. Smithgall, Ioana Scherberkova, **Susan Whittier**, **Daniel A. Green**
Journal of Clinical Virology

[Non-evidence-based platelet transfusions for protocol eligibility](#)

Sarah Vossoughi and **Joseph Schwartz**
Cytotherapy

[Deployment of convalescent plasma for the prevention and treatment of COVID-19](#)

Evan M. Bloch, Shmuel Shoham, Arturo Casadevall, Bruce S. Sachais, Beth Shaz, Jeffrey L. Winters, Camille van Buskirk, Brenda J. Grossman, Michael Joyner, Jeffrey P. Henderson, Andrew Pekosz, Bryan Lau, Amy Wesolowski, Louis Katz, Hua Shan, Paul G. Auwaerter, David Thomas, David J. Sullivan, Nigel Paneth, Eric Gehrie, **Steven Spitalnik**, **Eldad A. Hod**, Lewis Pollack, Wayne T. Nicholson, Liise-anne Pirofski, Jeffrey A. Bailey, and Aaron A.R. Tobian
The Journal of Clinical Investigation

PATHOLOGY FACULTY IN PICTURES



Sarah Vossoughi: Due to the ongoing COVID-19 operations, our visiting transfusion medicine fellow could not come see us in person today for her Advanced Apheresis elective rotation, so we brought the hospital to her. She joined our walking rounds via encrypted video chat. My patients absolutely loved her.

Pictured: Dr. Sarah Vossoughi, Apheresis Medical Director

COLUMBIA RESEARCHERS UNITED BUILD A COVID-19 **PATIENT BIOBANK**



BY **ÁLVARO CUESTA-DOMÍNGUEZ, PHD**

Associate Research Scientist in the Department of Physiology and Cellular Biophysics



Photos provided by Álvaro Cuesta-Domínguez, PhD

Members of the CRAC Volunteer Team



Non-CRAC Biobank staff

Over the past weeks, I have had the honor of leading the Columbia Researchers Against COVID-19 (CRAC) team assisting Dr. Eldad Hod's lab to build a COVID-19 biobank.

Fortunately the prevalence of the disease in our community is subsiding, and as our participation in this effort has come to an end, it is time to look back and take pride in what we accomplished:

- Our [18-member CRAC volunteer team](#) have collected and safely stored samples for 10 weeks in a row
- We have donated a total of 423.5 hours to build this critical resource
- We have helped generate 35,000 samples from thousands of unique COVID19 patients
- As of the date of completion, none of the volunteers reported being sick, nor developed COVID19 symptoms or were confirmed to be positive for SARS-CoV-2 with diagnostic tests

This was an extremely challenging project in terms of logistics, biosafety, and administrative regulations. The team began its work on March 31st, a few days after the Pathology and Cell Biology Department announced its plan to build a university-wide resource that would harbor COVID-19 patient biospecimens. I immediately understood the need and urgency for a resource like this at Columbia because of my own experience building a small bone marrow biobank from leukemia patients (my lab studies interactions between osteoblasts and hematopoietic cells).

These COVID-19 samples have immeasurable value to scientists working to understand this novel coronavirus' biology and to shed light on the different patient outcomes upon infection. Our CRAC volunteer team started off with 8 volunteers working in 4-hour shifts every week, in order to minimize potential exposure to the virus and also to prevent burnout from performing a task (non-stop pipetting of hundreds of samples) that can be very tedious. Eventually, the team expanded to 18 members, working morning and afternoon shifts, to face the surge of patient samples during the peak of the pandemic around mid-April.

I am beyond proud and grateful for each and every single scientist that has participated in this effort. CRAC's highly skilled volunteers stepped up during these difficult times, leaving the comfort and safety of their apartments to altruistically take part in this endeavor. Moreover, several members of the team also signed up for other CRAC volunteering projects, such as the serological assays and the NYP hospital assistance. They showed up to the COVID-19 lab every day with their best smiles and performed their duties with rigor and professionalism thereby showing how much they care about the CUIMC mission to improve health outcomes through application of knowledge.

I also want to acknowledge the non-CRAC Biobank staff for their hard work behind-the-scenes so that CRAC volunteers could focus on pipetting. This includes the CALM lab (**Erin Poptanich, Inna Gerz-Zubkov, Jane Netterwald, Arianna Tausing-Edwards**); the Personalized Genomic Medicine (PGM) technicians supervised by **Chris Freeman (Emily Clancy, Devon Hemnauth, Laura García and Kelly Zhao)**; the Cytogenetics Laboratory technicians supervised by **Caitlin Walsh (Lara Plim and Justin Huong Ong)**, the Anatomic Pathology personnel led by **Anita Sandeva**; personnel from **Dr. Anne-Cathrin Uhlemann's lab (Dr. Medini Annavajhala, Alex Chong and Heekuk Park)** who processed the nasopharyngeal swab samples; **Nelsa Matienzo** (from the Cardiology department) and **Flavia dei Zotti** (Dr. Krystal Hudson's lab). Also, a big shout out goes to the Pathology administrative and data management team – **Joann Li** and **Sylvia Parker-Jones** – who graciously interfaced with CRAC and made our interactions with the administration smooth and easy.

Finally, I would like to express my deepest respect for Dr. Francesca La Carpia and Sebastian Fernando, who left aside their own projects and fueled the Biobank with unparalleled passion and commitment. Without their engagement and countless hours this resource would be inconceivable. I can confidently speak on behalf of the volunteer team and say that this project made us all proud to be part of the Columbia researcher community, providing a compelling example of the power of a well-trained and organized collective of scientists geared towards the common good. ♦

CRAC Biobank Volunteer team

Alberto Bartolomé-Herranz, PhD
 Florence Borot, PhD
 Meghan Bucher, PhD
 Francesco Cambuli, PhD
 Chiara Camillo, PhD
 Sophie Colombo, PhD
 Álvaro Cuesta-Domínguez, PhD
 Marta Galán-Díez, PhD
 Cláudio Gouveia Roque, PhD

Simon Guillot, MSc
 Jiani Z. Liang, MSc
 Kalle Liimatta, MSc
 Gwennaëlle Monnot, PhD
 Panos Oikonomou, PhD
 Ilenia Pellicciotta, PhD
 Jaya S. Pradhan, MD, DMD
 Sarah See, PhD
 Eddy Wang, PhD



Pathologists fighting COVID-19 – Columbia

Source: [ASIP Pathways/May 15, 2020](#)

The Columbia University Department of Pathology and Cell Biology under the leadership of Dr. Kevin A. Roth, former Editor-in-Chief of both the Journal of Histochemistry and Cytochemistry and the American Journal of Pathology, Past President of the ASIP, as well as HCS Secretary-Treasurer and Council member, has been defining both the pathogenesis of COVID-19 and providing critical insights into its clinical management. Over the last two months, the department validated

several new laboratory tests, established a COVID-19 biorepository, launched a convalescent plasma donor program, performed over fifty COVID-19 autopsies, and obtained FDA approval for a COVID-19 plasma therapy study. Members of the Columbia University Department of Pathology and Cell Biology are leading local and state-wide efforts for a safe and staged approach to operations recovery at Columbia University, New York City and New York State. ♦

Kedrion Biopharma forms research partnership with Columbia University Irving Medical Center to support development of new IgG therapy for COVID-19



KEDRION
BIOPHARMA

PR Newswire reported on July 20, 2020 that Kedrion Biopharma, an Italian biopharmaceutical company and world player in the field of plasma-derived therapies, has

formed a research partnership with Columbia University Irving Medical Center to develop and test a new IgG therapy for COVID-19 which is being developed by Kedrion and Kamada Ltd, a

leading Israeli bio-pharmaceutical company that specializes in plasma derived products.

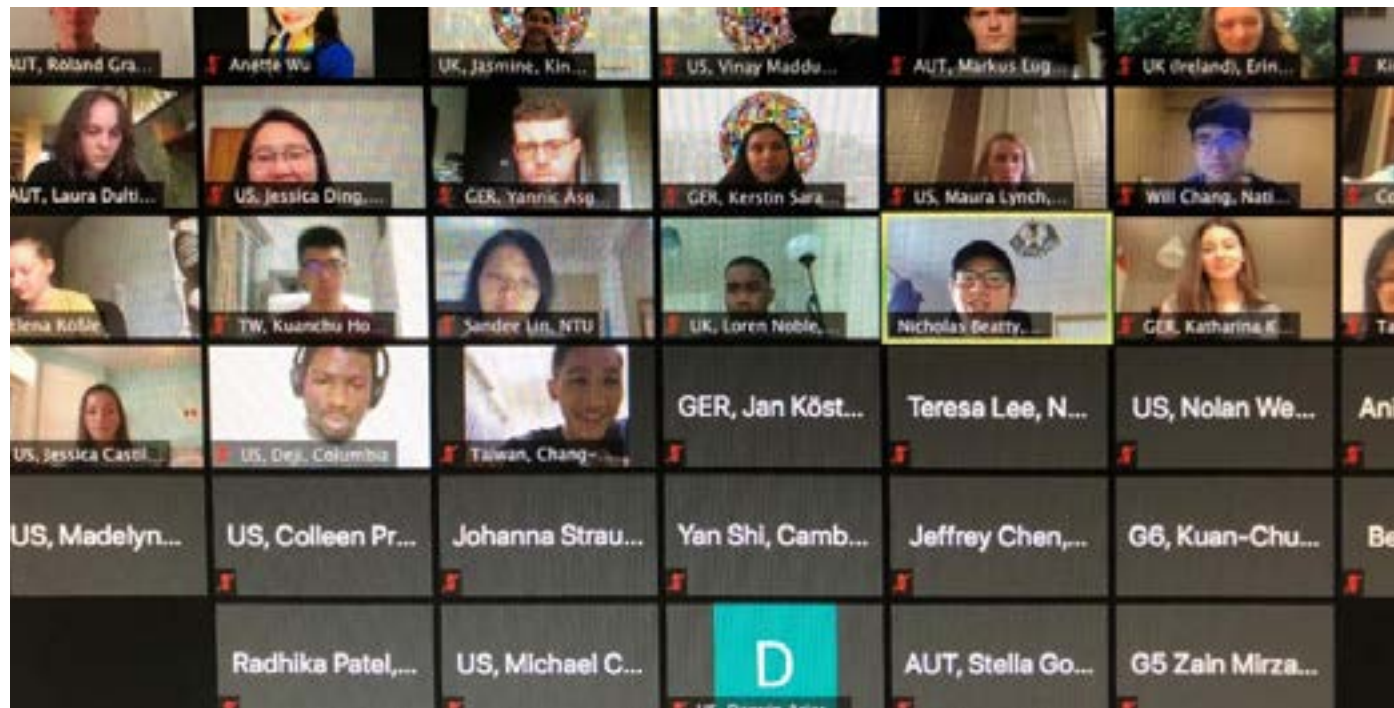
Under the terms of the agreement, Kedrion will supply Columbia with convalescent plasma from patients who have recovered from COVID-19 to be used for the manufacturing of IgG therapy. Columbia University will test the convalescent plasma against viral proteins to check the neutralizing power of the hyperimmune Immunoglobins.

Read more on the [PRNEWswire](#) website

Pathology Faculty Members Support the International Collaboration and Exchange Program Amid Covid-19 Pandemic

BY ANETTE WU, MD, PHD, MPH

Assistant Professor of Medical Sciences (in Medicine) and Pathology and Cell Biology at CUMC



70 students from 12 universities across the world—including 16 medical, dental, and premedical students from Columbia University—shared their COVID-19 experiences virtually via the [“International Collaboration and Exchange Program – Preparing Global Leaders for Healthcare”](#).

The exchange program launched in 2014 in the Columbia University Department of Pathology & Cell Biology to offer medical, dental, and premedical students early international experiences throughout the school year. During the fall, Columbia students meet with their counterparts at universities in Austria, Canada, Japan, Taiwan, and other countries, for online small group discussions and presentations, followed by summer travel for international networking and basic science research experiences.

This summer, an online program served as a substitute for in person student exchange, given the current

travel restrictions for students. The eight-week online summer exchange program aims to enhance intercultural competency and leadership skills in students. Content focused on COVID-19, especially as it relates to research. In addition, small and large international student group discussions covered themes involving international health systems, ethics, and law, and included an interchange about the students’ personal experiences during the pandemic.

Scientific lectures covering COVID-19 and non-COVID-19 basic science and clinical research topics were given by expert faculty members from Columbia University, New York, USA, University of Cambridge, UK, and the National Taiwan University, Taipei, Taiwan. [Gunnar Hargus, MD, PhD](#), assistant professor of pathology & cell biology at CUMC, and [Mahesh Mansukhani, MD](#), associate professor of pathology & cell biology at CUMC and director of Columbia University Laboratory of Personalized

Genomic Medicine, were among the faculty members who have given or will give presentations regarding their most current research. These weekend faculty lectures, including Q&A’s led by student moderators, brought together a vibrant and diverse community of students from 12 different medical schools and provided them with information on cutting edge research.

“The program provides students with a framework for international peer and faculty networking, and with a rare opportunity to have an international exchange about a global pandemic of historic dimensions,” says [Anette Wu, MD, PhD, MPH](#), director of the exchange program and assistant professor in the Clinical Gross Anatomy course in the Department of Pathology and Cell Biology.

The students’ experiences were also covered in a recent article in the [CUIMC Newsroom](#). ♦

Chavez Lab's COVID-19 Research Highlighted in *The New Yorker* Article



IN HIS ARTICLE [*The Quest for a Pandemic Pill*](#) in **The New Yorker** magazine published on April 13, 2020, journalist Matthew Hutson reported on Dr. Alex Chavez's COVID-19 research. Below is that part of the article:

One afternoon in March, I was set to visit the lab of Alejandro Chavez, a frank and fast-talking pathologist and cell biologist at Columbia who is collaborating with Ho. (Their lab buildings are kitty-corner.) A few hours before our appointment, though, I got a message: the university had barred visitors. All nonessential employees had been sent home. Ho and Chavez could carry on with their work, since they were researching SARS-CoV-2, the virus that causes COVID-19, but I wouldn't be allowed in. When I asked if Chavez would give me a virtual tour of the lab by FaceTime, he was skeptical. "It's not gonna be that exciting, man," he warned me. "You know what biology looks like. It's like moving clear fluids from one thing to another. It's not gonna blow

your mind." The lab, sparsely peopled, contained a dozen PCR machines—DNA-amplifiers, each about the size of a toaster oven—and shelves cluttered with supplies and glassware. Debbie Hong, a graduate student, was hunched over a lab bench, holding a pipette.

"It's not like the movies, with lasers and lights and, like, crazy cells in green," Chavez said as he panned his iPhone around his lab. "It's all pretty benign-looking."

Chavez's antiviral research focusses on a particular type of protein involved in viral reproduction—a scissoring enzyme known as a protease. In normal cells, ribosomes read instructions encoded in RNA and make a batch of some specified protein. When a virus

like SARS-CoV-2 presents itself to a ribosome, the intruder's instructions are followed—making the particular proteins that the virus requires in order to replicate. But the ribosome delivers the batch of proteins all linked together in a long chain, a "polyprotein." So, both cells and viruses then slice up these polyproteins into the smaller pieces they need. It's a little like what happens at a newspaper-printing plant, when a huge roll of paper spins through the press and then gets sliced up into individual broadsheets.

Cells and viruses both use proteases to do the slicing; for Chavez's team, the challenge is to identify new compounds that will inhibit viral proteases without interfering with a human cell's (*con't*)

Above: Dr. Chavez (left) laughing with lab members.

proteases. He's planning to test about sixteen thousand drugs, taken mainly from three "libraries" of compounds, many of which have already been tested for safety in humans. "If you have some information on toxicity, it's very helpful to advance the compound faster," Chavez said, referring to the process of pharmaceutical development. Each library—a case filled with thousands of chemicals—is packed in dry ice and shipped from facilities elsewhere straight to the laboratory door.

In standard "high-throughput screening," you might take a plate with three hundred and eighty-four wells, each three millimeters wide, and introduce into each well a tiny sample of the same viral protein—in this case, a particular protease—but a different drug candidate. It's as if you were testing three hundred-odd

insecticides against one kind of pest. But Chavez has devised a method that lets him study more than one viral protein at a time. In each well, he will place about twenty coronavirus proteases, plus about forty proteases from H.I.V., West Nile, dengue, Zika, and so on. "I can do as many as I want," he said. "Why would I stop at coronavirus?" In effect, he's testing an array of insecticides against a menagerie of pests—aphids, weevils, Japanese beetles—at once.

The innovation came naturally to Chavez. "My background was in building new technologies," he said. "And so I was, like, 'Oh, I think I have a clever trick. Let's play around with it.'" He and Debbie Hong tried it. "We were, like, 'Holy crap, there might be something here.' And this is the opportune time to really apply it full scale." The approach could speed

the identification of chemicals with broad effects—ones that work against an array of viral proteases, not just one. (The main protease used by the new coronavirus, researchers say, is similar to one used in picornaviruses, a family that includes poliovirus, the hepatitis-A virus, and the human rhinovirus.)

Chavez estimates that his multiplex project could take one or more years. "But if, at the end of that process, I could have a compound that I know works not only against the current strains but also on a lot of the future ones, that would be very useful to prevent this sort of event down the road," he said. "Because it's not a matter of *if* it's gonna happen again—it's simply a matter of *when* it's gonna happen again." ♦

Below: Diana Berrent (front), COVID-19 antibody donor and Dr. Eldad Hod, MD (back right)

Columbia Starts Screening COVID-19 Survivors for Antibodies That May Save Others

Source: [CUIMC Newsroom/March 30, 2020](#)

Columbia University Irving Medical Center has started screening COVID-19 survivors for antibodies that could be used to treat others.

On March 30, CUIMC's pathology laboratory screened New York state's first potential donor—Diana Berrent, a resident from Long Island who recently recovered from COVID-19. The lab will determine if the patient has enough antibodies—proteins made by the immune system that can neutralize viruses—to serve as a treatment or vaccine against COVID-19.

"Antibody-rich plasma from convalescent patients has been used for decades to treat diseases like influenza and even Ebola," says [Eldad Hod, MD](#),



associate professor of pathology & cell biology at Columbia University Vagelos College of Physicians and Surgeons and lead investigator of the research.

Read the [full story](#) in CUIMC Newsroom.



Getting A Coronavirus Test To Make Visiting Family Safe? Not So Fast

Source: [Shots Health News from NPR/Rebecca Davis/August 13, 2020](#)

Let's face it, if you've been staying home a lot, you're probably pretty tired of looking at the same faces. Love them as we do, it feels like well past time to start seeing other people, to visit or host relatives and dear friends. So how can you do this without unknowingly spreading the virus or getting exposed?

Recently my husband and I debated this when our son, who lives in another state, said he'd like to come home for a visit. He lives with roommates in a city with a high rate of infection,

and he works in a restaurant. We thought of having him get a diagnostic test to find out if he is infected. That way, if he got back a negative test, our problems would be solved, right?

Well, when I called up a few infectious disease specialists to ask if this all made sense, I discovered that using a diagnostic test for the coronavirus this way can be problematic. Here's what I learned.

Continue reading the [full article](#). ♦

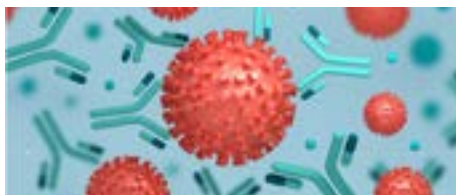
NYC Healthcare Workers Get Coronavirus Antibody Tests

Source: [MedPage Today/April 21, 2020](#)

Teams at Columbia University have pushed hard to boost the sensitivity of their in-house COVID-19 antibody testing and are now offering it to healthcare workers returning to the front lines here.

While sensitivity isn't perfect and questions remain about the clinical significance of SARS-CoV-2 antibodies, teams are moving ahead with the two-fold purpose of providing

healthcare workers some peace of mind and collecting data to ultimately improve testing.



After weeks of tweaking their own ELISA assay, Columbia

researchers say they've managed to bring its sensitivity to 85% -- higher than the 50% to 60% they achieved with a commercial assay, according to [Steven Spitalnik, MD](#), director of clinical laboratories at Columbia University Irving Medical Center and NewYork-Presbyterian.

Continue reading the [full article](#). ♦

Lab Snapshot: Impact of COVID-19 on Columbia University Irving Medical Center's Histology Lab

Source: [Lab Manager](#)/June 30, 2020



With many labs resuming operations after shutdowns, or running at a reduced capacity, maintenance is more important than ever.

Sunilda (Sunny) Valladares-Silva, histology lab manager in Columbia University Irving Medical Center's Department of Pathology & Cell Biology, has faced a similar situation with a decreased workload due to fewer patient visits and elective surgeries at the hospital. Though salaries were maintained, employees' hours were staggered to allow for proper social distancing. And, teams were created so that staff could still be kept in a group while alternating days off.

"We had to change the configuration of the workplace and expand our footprint, including relocation of staff and equipment to promote social distancing," Valladares-Silva adds. Like Glose's lab, annual preventive maintenance for equipment was put on hold, but they also avoided major equipment issues. Though one piece of

equipment malfunctioned, because they have two similar units, the lab was able "to continue to function without disrupting the turnaround," Valladares-Silva says.

A temporary shortage of personal protective equipment (PPE) was a key challenge the team faced, but the center's ColumbiaDoctors organization helped facilitate PPE donations and ensured that equipment got to clinical areas.

Communication has also been critical for Valladares-Silva's team in getting through the challenges posed by the pandemic in New York. They worked hard to stay current on the latest safety recommendations and laboratory practices and passing that information on to the team.

"More than ever, it was and is important to listen to staff, acknowledge fears and concerns, and work together to address

both personal and work-related matters," Valladares-Silva says.

Going forward, Valladares-Silva plans to continue to ensure that employees' hours are scheduled in such a way that all areas of the lab are covered while still maintaining social distancing. Some staff will work remotely, when possible.

"Regardless of the new norm, laboratories will always face challenges," Valladares-Silva says. "You need to maintain an open mind and anticipate changes. If the plan of action works, you move forward. If it doesn't work, then you have to come up with another plan of action. Always communicate with your staff. Since they are the ones acting on the changes. They may also come up with a better plan of action. Their input is very important." ♦

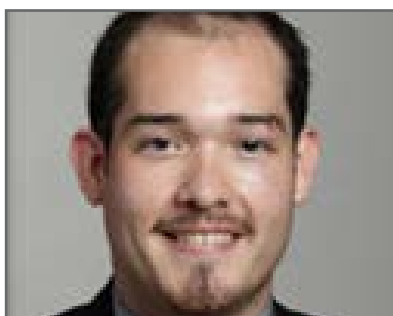
New Residents



Sepideh Besharati, MD – AP/CP

MD - Azad University Faculty of Medicine, Iran
 MPH - Shahid Beheshti University of Medical Sciences, Iran
 Postdoctoral research at Johns Hopkins, Department of Medicine, GI Division,
 2014-2017 – PDL1 immunotherapy
 Worked as a postdoc research fellow at Johns Hopkins University, Department of Pathology,
 Division of GI/Liver pathology, 2017-2020

Interested in GI/Liver cancer diagnosis and management.



Michael Daniel, MD PhD – AP/CP

BS – UCLA, Molecular, Cell and Developmental Biology, with two minors in Biomedical Research and Spanish Language (cum laude; Phi Beta Kappa)

MD/PhD – Icahn School of Medicine at Mount Sinai where he worked with Drs. Kateri Moore and Ihor Lemischka on the induction of human hemogenesis in adult dermal fibroblasts via transcription factor mediated reprogramming

He received the F31 Ruth L. Kirschstein Predoctoral Individual National Research Service Award in 2017.



Christopher Shin, MD – AP/CP

BS – University of Notre Dame, Preprofessional Studies (summa cum laude; Phi Beta Kappa)

MD – SUNY Downstate College of Medicine.

Christopher enjoys learning languages, art, and challenging himself to the spiciest foods around.



Mahavrat Shaheen Srivastava-Malik, MD – AP/CP

BA – CCNY- Hunter College – Music Performance

MS – Columbia University – Human Nutrition

MD – Columbia Vagelos College of Physicians and Surgeons

Shaheen is a cellist and founded a program during medical school to bring music to patient bedsides at NYPH-CUIMC.

New Residents



Simona Pichler Sekulic, MD – PGY2 resident in AP

MD – University of Belgrade School of Medicine

Postdoctoral research fellow – MIT, Department of Biology, with a focus on neuromuscular disease.

PGY 1 - Resident in Anatomic and Clinical Pathology, Case Western Reserve University School of Medicine, Cleveland



Jonathan Tepp, MD – AP/CP

BA – CUNY, Queens College and Macaulay Honors College – Biology

MD – Sackler School of Medicine, Tel Aviv University, Israel.

At Sackler, Jonathan participated in a cross-sectional survey of Israeli physicians about their attitudes toward transgender people.



Jeffrey A. Thomas, Jr., DO – AP/CP

BA – Rutgers – Biology

DO – Rowan University School of Osteopathic Medicine (Sigma Sigma Phi honors fraternity)

Jeffrey is interested in hematopathology and dermatopathology.

Outside of work, he enjoys cooking, baking and playing the piano



Khanh Trinh, DMD – PG1, Oral Pathology

B.S. Biology, University of Arizona (summa cum laude)

D.M.D - Midwestern University – College of Dental Medicine, Arizona, with induction into Omicron Kappa Upsilon – the National Dental Honor Society

New Fellows



Sedef Everest, MD – Cytopathology Fellow

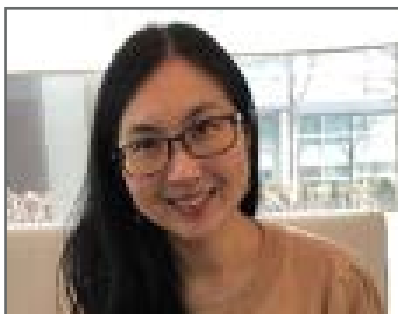
BA - Mathematics with an East Asian Studies concentration, Vanderbilt University, Nashville, TN

MD - St. Matthew's University, Grand Cayman

AP/CP Residency, Mount Sinai West, Department of Pathology and Laboratory Medicine, 2013-2017

Gynecologic Pathology Fellow at Mount Sinai Hospital, 2017-2018

Head and Neck Pathology Fellow at Mount Sinai West, 2018-2019



Wendy Lin, MD, PhD – Hematopathology Fellow

MD – National Cheng Kung University College of Medicine, Taiwan, Dean's award and Presidential award

PhD – Molecular Microbiology and Immunology, viral pathogenesis and immunity to vaccines, Johns Hopkins University

Postdoctoral research – immune memory, Steven Reiner lab, Columbia University Irving Medical Center

AP - Department of Pathology and Cell Biology, Columbia University Irving Medical Center



Jirong (Betty) Mass, MD, PhD – Hematopathology Fellow

MB - Xi'an Jiaotong University College of Medicine

General Surgery Residency and MMS (Surgery) – Xi'an Jiaotong University College of Medicine, Shaanxi, China

PhD – Molecular Mechanism of BCL2 to IGH Translocation in Follicular Lymphoma. University, Department of Pathology, University of Nebraska Medical Center

AP/CP – PGY1-2 – University of Nebraska Medical Center

AP/CP – PGY3-4 Stony Brook University Medical Center, New York



Nicholas Barasch, MD – Molecular Genetic Pathology Fellow

BA - Biology, General Sciences and Philosophy, Brandeis University

MS - Physiology, Georgetown University.

MD - Stony Brook University, during which time he also completed a post-sophomore fellowship in pathology at Stanford University.

AP/CP residency at University of Pittsburgh Medical Center

Hematopathology Fellowship also at UPMC

His research interests focus on the molecular pathogenesis of lymphoma.

New Fellows



Justin Kurtz, MD – Molecular Genetic Pathology Fellow

BS - Biological Sciences and Mechanical Engineering, University of Pittsburgh

MD - Temple University.

AP/CP training at Harbor-UCLA Medical Center

Pediatric pathology fellowship at Stanford University



June-December 2020

Maha Al-Ghafry, MD – Transfusion Medicine Fellow

MD - Weill Cornell Medicine in Qatar

Pediatric Residency - University of South Alabama. She continued there as pediatric chief resident, honing her leadership skills and medical education repertoire.

Pediatric hematology and oncology - Cohen Children's Medical Center in New York, where she was ensnared by the mysteries of hemostasis, thrombosis and transfusion medicine.

As a transfusion medicine specialist with a pediatric hematology background and focus on viscoelastic testing, she hopes to further research in pediatric transfusion medicine, and that her career will shed further light on evidence-based practices of blood product replacement in children.

When not thinking about blood, she enjoys tracking down the best dessert in NYC, and taking walks along the Hudson or East rivers.

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