Winter
2023

COLUMBIA PATHOLOGY AND CELL BIOLOGY REPORT

Resilient Inspiration

Featured Article

Clinical Care Research: Implementation of Whole-Genome and Transcriptome Sequencing

Retirement

Celebrating Dr. Jay Lefkowitch

Residency Program

Two Residents Present at International Conference

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Columbia Pathology and Cell Biology Report

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Resilient Inspiration

Kevin A. Roth, M.D., Ph.D., Chair
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As I reflect on my tenure as Chair of the Department of Pathology and Cell Biology and the departmental attributes that have inspired me over the last seven years, one word repeatedly comes to mind: "resilience."

Over the recent holidays, we responded to and recovered from a severe winter storm that resulted in multiple burst pipes and significant flooding that affected anatomic pathology and laboratory medicine operations in multiple CUIMC locations. For many of us, Christmas Day was spent on the 14th and 15th floors of Vanderbilt Clinic, covering work areas in plastic tarps, mopping up wet floors, removing ceiling tiles, protecting clinical materials from water damage, and working closely with the Dean's office and facilities to mitigate the damage.

Despite the flooding and the need to relocate multiple faculty members and staff, we maintained clinical services so that patient care went uninterrupted and no patient was left waiting for diagnostic results. Similarly, the Herbert Irving Pavilion (HIP) suffered substantial water damage that dramatically affected normal operations throughout the building. The specialty laboratory on HIP 8th floor was inaccessible, and in collaboration with NYP leadership, we rapidly relocated laboratory testing to other CUIMC sites and temporarily diverted some testing to our colleagues at Weill-Cornell and outside commercial laboratories so that patient care could proceed smoothly. All of this was accomplished professionally, quickly, and with a sense of shared clinical mission.

More recently, we experienced the tragic loss of a wonderful and critical leader in our Cytology Laboratory. Teresa (Teri) Wood's passing shocked us all, and we are feeling the emotional aftereffects of losing a departmental friend and colleague so unexpectedly (see the separate announcement in this newsletter). The response of departmental and NYP staff to the situation was to come together to support Teri's family and each other. Words cannot adequately convey my admiration for those responding to the immediate situation and for the kind and compassionate care provided by NYP and CUIMC support services. Despite the personal toll, the cytology faculty and staff continued to perform their clinical duties so that patient care was maintained and diagnoses delivered.

Whether it be pandemics, winter storms, or emotional hardships, this Department has repeatedly proven its resilience, professionalism, and dedication to service. How we face adversity, come together as a community of healthcare professionals and rise above our individual needs to ensure the success of our clinical, research, and educational missions is inspirational and a testament to the values of everyone in this department.◆

Best wishes,
Kevin A. Roth, M.D., Ph.D.

Donald W. King, M.D. and Mary Elizabeth King, M.D. Professor of Pathology and Cell Biology
Chair, Department of Pathology and Cell Biology
Pathologist-in-Chief, Columbia University Medical Center

FACULTY

Honors and Awards

Rebecca Haeusler Receives 2022 ATVB Special Recognition Award

Rebecca Haeusler, Ph.D., associate professor of Pathology and Cell Biology, was recently selected to receive the ATVB Special Recognition Award in Vascular Biology by the American Heart Association's Council on Arteriosclerosis, Thrombosis and Vascular Biology (ATVB). Dr. Haeusler received the award at the organization's 2022 Scientific Sessions.

The Council on Arteriosclerosis, Thrombosis and Vascular Biology (ATVB) established the Special Recognition Award in 1981 to recognize council members who have made significant contributions to the council as well as the fields of Arteriosclerosis, Thrombosis, and Vascular Biology.

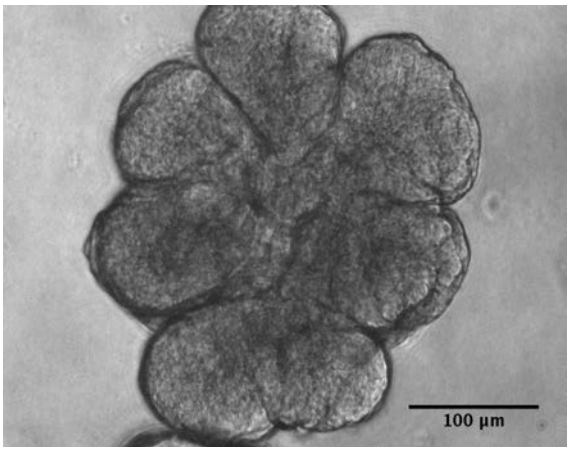
The Council's Nominated Committee selects one person from each field (Arteriosclerosis, Thrombosis and Vascular Biology) to receive the ATVB Special Recognition Award. The award is presented annually during the ATVB Business Meeting and Awards Reception at the American Heart Association's Scientific Sessions.

Dr. Haeusler received this award in recognition of her outstanding research on lipoprotein and cholesterol metabolism. Her laboratory's contributions to the field have included important findings published in leading journals on how insulin signaling and insulin resistance regulate these processes. Congratulations to Dr. Haeusler!

2022 Seed Fund Award - Stem Cell Biology (P.I.: Piero Dalerba)

Columbia Stem Cell Initiative (CSCI)

Project title: **Identification of epithelial stem cell populations of the salivary gland**. The aim of this research project is to formally test the stem cell properties (i.e., self-renewal and differentiation) of 8 distinct sub-types of salivary gland (S.G.) epithelial cells that have been discovered by our laboratory. The Dalerba laboratory recently identified surface markers for their differential purification by fluorescence-activated cell sorting (FACS) and observed that, of these 8 populations, only one is capable to form three-dimensional (3D) organoids in vitro (see the figure below). The laboratory will now proceed to test whether they are capable of regenerating full S.G.s in vivo.



The "organoid" depicted in the image reminds us of a Christmas-tree decoration!

Piero Dalerba, MD, assistant professor of Pathology and Cell Biology

FACULTY

Honors and Awards

Two Pathology Faculty Awarded Patents from the U.S. Patent and Trademark Office

On December 6, 2022, the U.S. Patent and Trademark Office issued a patent, "SYSTEM, METHOD, COMPUTER-ACCESSIBLE MEDIUM, AND APPARATUS FACILITATING OPTICAL COHERENCE TOMOGRAPHY FOR DETECTION OF DISEASES," under the patent number 11,519,713 (I.R. # CU20175, CU21101).

Dr. Hanina Hibshoosh, MD, professor of Pathology and Cell Biology at CUMC, is one of the inventors under the patent. Congratulations to Dr. Hibshoosh!

The article below, on which the patent is based, was published in September 2022 in the Journal of Biomedical Optics.

Optical coherence tomography holds promise to transform the diagnostic anatomic pathology gross evaluation process
Diana Mojahed, Matthew B. Applegate, Hua Guo, Bret Taback, Richard Ha, Hanina Hibshoosh, Christine P. Hendon. Journal of Biomedical Optics, Vol. 27, Issue 9, 096003 (September 2022). https://doi.org/10.1117/1.JBO.27.9.096003

On January 17, 2023, the U.S. Patent and Trademark Office issued a patent, "COMPOSITIONS AND METHODS FOR INHIBITING TUMOR CELLS BY INHIBITING THE TRANSCRIPTION FACTOR ATF5,", under the patent number 11,555,057 (I.R. # CU13345).

Dr. Lloyd A. Greene, PhD, professor of Pathology and Cell Biology, is one of the two inventors under the patent. The invention relates to methods for treating and/or preventing tumors and/or promoting apoptosis in a neoplastic cell comprising contacting the neoplastic cell with a cell-penetrating dominant-negative ATF5 ("CP-d/n-ATF5"), wherein the CP-d/n-ATF5 is capable of inhibiting ATF5 function and/or activity.

Congratulations to Dr. Greene!

Annual Lectureship: To recognize Dr. Marboe's long and distinguished career in the department, we have established an annual lectureship in his honor. The annual Dr. Charles Marboe Lecture will continue Dr.Marboe's history of sharing his expertise in cardiovascular pathology, cardiology, and heart transplantation. This endowed lecture will ensure quality education within the department by supporting Columbia's most important assets: its accomplished educators and faculty members who shape the future leaders in the field.

SUPPORT EDUCATION! To make a tax-deductible gift to the lectureship, please click the link **here.**

OTHER GRANTS AND AWARDS (SINCE NOVEMBER 2022)

Compiled by Renee Peele

PI	Sponsor	Title
Osama Al Dalahmah, MD, PhD	American Brain Tumor Association (ABTA)	Targeting the Microenvironment of Glioblastoma to Block Tumor Progression
Edmund Au, PhD	Columbia Stem Cell Initiative (Internally funded - CSCI)	Analysis of early synaptic defects in a human neuronal model of AD
Edmund Au, PhD	National Institute for Mental Health	Multilevel Analysis of Cortical Interneuron Dysfunction in Fragile X Syndrome
Francesca Bartolini, PhD	Sergey Brin Family Foundation	Therapeutic Potential of Tubulin Tyrosine Ligase Up-Regulation in Alzheimer's Disease
Ibrahim Batal, MD	Irving Institute's Precision Medicine Resource (PMR) and the Pilot and Collaborative Studies Resource (PCSR)	Targeting Go and Grow in Glioblastoma
Ibrahim Batal, MD	Nelson Faculty Development Award (internally funded)	Genomic and Immune Predictors of Recurrent Immune-Mediated Glomerulopathy of the Kidney Allograft
Ibrahim Batal, MD	American Society of Transplantation Career Transition	The Role of Genetics and Inflammation in Donor-Derived APOL1-Associated Kidney Diseases
Eunhee Choi, PhD	NIH National Institute of Diabetes and Digestive and Kidney Diseases	Spatiotemporal control of insulin signaling by mitotic regulators
Piero Dalerba, MD	Columbia Stem Cell Initiative (Internally funded - CSCI)	Identification of epithelial stem cell populations of the salivary gland.
Kevin Gardner, MD, PhD	National Cancer Institute/NIH/ DHHS	The Role of Kaiso as a Predictive Breast Cancer Biomarker in Africa and Across the African Diaspora
Hanina Hibshoosh, MD	National Cancer Institute	Tyrosine phosphorylation of p27Kip1 as a biomarker to identify Cdk4/6 inhibitor response
Minah Kim, PhD	American Cancer Society	Regulation of liver metastasis and anti-VEGF therapy resistance in PNETs

OTHER GRANTS AND AWARDS (SINCE NOVEMBER 2022)

Compiled by Renee Peele

PI	Sponsor	Title
Minah Kim, PhD	National Cancer Institute/NIH/DHHS	Angiopoietin-2/Tie2 signaling regulation of liver metastasis in pancreatic neuroendocrine tumors
Minah Kim, PhD	National Institute on Aging	Deciphering angiopoietin-2 regulation of BBB disruption and neuroinflammation in Alzheimer's disease
Li Qiang, PhD	NIH National Institute of Diabetes and Digestive and Kidney Diseases	Adipsin in NASH
Markus Siegelin, MD	Herbert Irving Comprehensive Cancer Center 2022 VELOCITY Cancer Research Award (internally funded)	Targeting Metabolic Liabilities Induced by AURKA Inhibition in Glioblastoma
Yu Sun, MD, PhD	The Shelanski Research Innovation Award (internally funded)	Dissecting IDH-mutant dependence and intratumor heterogeneity during astrocytoma progression
Hee W. Yang, PhD	American Cancer Society	Therapeutic RTherapeutic Resistance to BRAF/MEK inhibitors in BRAF-mutant Melanoma

New Publications

- **Maxwell D. Weidmann, MD, Ph.D., Gregory J. Berry, Ph.D., Daniel A. Green, MD, Fann Wu, MD, Ph.D.** Prevalence and Clinical Disease Severity of Respiratory Coinfections During the Coronavirus Disease 2019 Pandemic. Advances in Molecular Pathology 5 (2022) 73–84. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9364747/

- Zhenqin Wu, Alexandro E. Trevino, Eric Wu, Kyle Swanson, Honesty J. Kim, H. Blaize D'Angio, Ryan Preska, Gregory W. Charville, **Piero D. Dalerba**, Ann Marie Egloff, Ravindra Uppaluri, Umamaheswar Duvvuri, Aaron T. Mayer & James Zou. Graph deep learning for the characterization of tumor microenvironments from spatial protein profiles in tissue specimens. Nature Biomedical Engineering volume 6, pages1435–1448 (2022) https://pubmed.ncbi.nlm.nih.gov/36357512/

- Tianyu Li, Tolulope Akinade, Jie Zhou, Hongxia Wang, Qisong Tong, Siyu He, Emily Rinebold, Luis E. Valencia Salazar, Divya Bhansali, Yiling Zhong, Jing Ruan, Jinzhi Du, **Piero Dalerba**, Kam W. Leong. Therapeutic Nanocarriers Inhibit Chemotherapy-Induced Breast Cancer Metastasis. Advanced Science, 9:e2203949 (2022) https://pubmed.ncbi.nlm.nih.gov/36220339

- Jie Li, Jiayi Wu, Catherine Hall, Xiao-chen Bai*, **Eunhee Choi*** (2022) Molecular basis for the role of disulfide-linked αCTs in the activation of insulin-like growth factor 1 receptor and insulin receptor. eLife 11:e81286 (*Co-corresponding author) https://doi.org/10.7554/eLife.81286

- Nunnelly, L.F., Campbell, M., Lee, D.I., Gu, G., Menon, V., and **Au, E**. St18 specifies globus pallidus projection neuron identity in MGE lineage. Nat Commun 13, 7735 (2022). https://www.nature.com/articles/s41467-022-35518-5

- Jagannathan G, Weins A, Daniel E, Crew RJ, Swanson SJ, **Markowitz GS, D'Agati VD**, Andeen NK, Rennke HG, **Batal I.** The pathologic spectrum of adenovirus nephritis in the kidney allograft. Kidney Int. 2022 Nov 24:S0085-2538(22)00968-1. doi: 10.1016/j.kint.2022.10.025. Online ahead of print. https://pubmed.ncbi.nlm.nih.gov/36436678/

Meet Our New Staff

Annie Ruhl, *Manager of Operations and Shared Services*

Welcome Annie Ruhl, the new Manager of Operations and Shared Services in the Department of Pathology and Cell Biology. Annie officially joined our department on January 4, 2023. She will be responsible for the oversight of pathology physical space, facilities management, and shared resources. Annie will also oversee and coordinate Pathology emergency management operations.

Annie holds a bachelor's degree in Political Science and International Relations from The Ohio State University. She has spent the last six years working at New York University in Capital Projects and Facilities, where she successfully managed many challenging and unique problems. She is glad to join us at Columbia and is eager to contribute to and support the team in any way possible!

Martir Ventura, *Financial Clearance & Pre-Registration Assistant*

With more than 25 years of experience in the medical field, Martir has a proven track record of executive-level support and management. She has a strong ability to streamline processes, maximize efficiency, and foster professional relationships within organizations. Martir finds enjoyment in helping people and organizations become more successful. Martir is very eager and excited to expand her knowledge and gain new experiences in her healthcare career. We are excited to welcome her to the Finance team!

Shane Kirk, *User Services Consultant*

We are pleased to introduce our newest PathIT Team member, Shane Kirk. Shane will assume the role of User Services Consultant, providing on-site and telephone support to our community.

Shane's interest in computers began while playing Minecraft, but when his laptop stopped working, he made it his mission to get it back up and running again. His passion for technology continued into high school, which led him to pursue a degree in Computer Science from the New York Institute of Technology. He is a true believer in the phrase, "If you like what you do for work, you'll never work a day in your life," and why he's excited to become part of the Columbia family and the Pathology IT Team.

So, if you see him in the hallways, if he stops by your work area to address a problem, or if you talk to him on the phone, please give him a hearty Pathology greeting!

New Staff Hires

November 2022

Rikki Harrison - Cytogenetic/FISH Technologist - Cytogenetics
Kelly Jakubiak - Technician B - Dr Gunderson/Dr. Al Dalahmah
Sandy Selvakumar - Technician A - Anatomic Pathology
Angelica Trinidad - Technician A - Anatomic Pathology

December 2022

Menachem Konikov - Technician A - Anatomic Pathology
Michell Matos - Technician A - Anatomic Pathology

January 2023

Saranya Balachandran - Cytogenetic/FISH Technologist - Cytogenetics
Arleen Lee - Grants Manager - Finance
Lauren Ruddy - Pathologists' Assistant - Anatomic Pathology
Joy Winfield - Lab Assistant - Gardner Lab

Staff Updates

Administrative Promotions

Eugene Mainiero, IT Security Analyst

Geno Mainiero has assumed the role of IT Security Analyst for Pathology and Pathology IT, taking over from John Gustafson, who left for greener pastures this past June. In Geno's new role he'll ensure our compliance with all CU and CUIMC security policies and procedures, perform periodic risk assessments and system audits, maintain our disaster recovery plan, manage our change control process, recommend how we can harden our IT security posture, liaise with the CUIMC Information Security Office and coordinate activities between the PathIT desktop and PathIT server areas. Geno will still be involved in some higher-level desktop support, but that function will remain almost entirely with Hegel and Shane. Congratulations to Geno in his new role.

Courtney Tulli, HR Generalist

Congratulations to Courtney Tulli in her new role as of HR Generalist for Pathology HR. She will support recruitment and onboarding, payroll, employee relations, leave management, and special projects in her new role.

Erin Poptanich, Clinical Research Manager, CALM Lab

Congratulations to Erin Poptanich who has assumed the role of Clinical Research Manager in CALM.

Featured Article

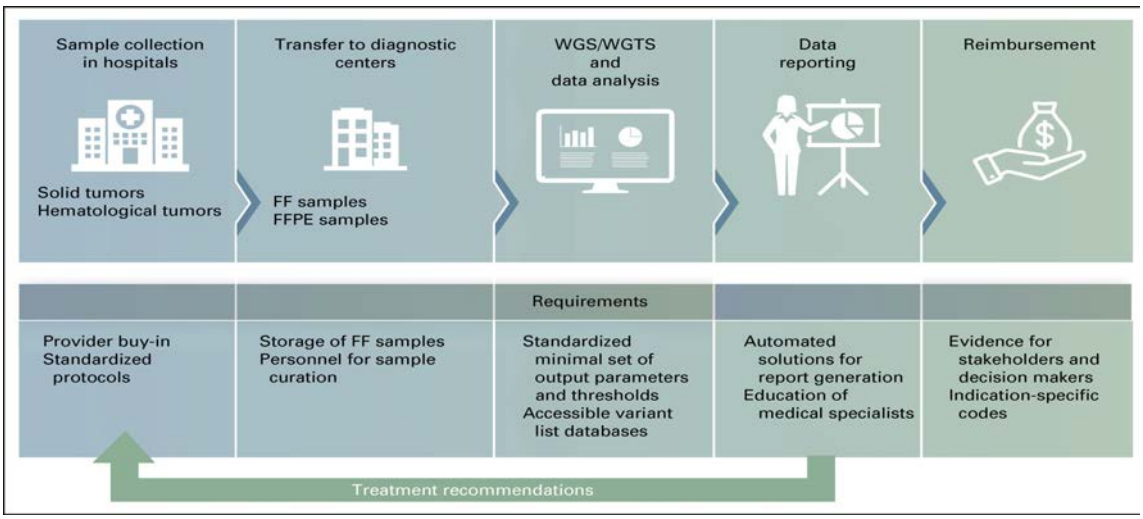
RESEARCH

Implementation of Whole-Genome and Transcriptome Sequencing into Clinical Cancer Care

Cuppen E, Elemento O, Rosenquist R, …… Jobanputra V.
JCO Precis Oncol. 2022 Dec;6:e2200245. doi: 10.1200/PO.22.00245. PMID: 36480778

This article, published in JCO Precision Oncology on December 6, 2022, addresses barriers in integrating comprehensive Whole Genome and Transcriptome Sequencing (WGTS) tests for cancer diagnostics and treatment selection and answers questions regarding the utility of this test in different cancer types, cost-effectiveness, affordability, and other practical considerations for the implementation.

Vaidehi Jobanputra, Ph.D., associate professor of Pathology & Cell Biology at CUMC, is the senior author of this paper written by a panel of 24 global experts in oncology, pathology, genetics, translational research, and health technology assessment. It discusses the key topics for the implementation of WGTS in routine cancer diagnostics and care: technology, health economics and reimbursement, clinical evidence needs, and data analysis and interpretation. Despite differences in national regulations, all countries share common challenges in integrating WGTS into their systems. Here, the authors address the real-world barriers that are likely to be issues in any system looking to adopt WGTS in routine cancer diagnostics.



Centralized approach enabling effective WGTS-based precision medicine. F.F., fresh frozen; FFPE, formalin-fixed paraffin-embedded; WGS, whole-genome sequencing; WGTS, whole-genome transcriptome sequencing.

This paper reviews the current implementation of WGTS in healthcare systems and provides a synopsis of the clinical evidence and insights into practical considerations for WGTS implementation. The authors reflect on regulatory, costs, reimbursement, and incidental findings aspects of this test. This article shows that WGTS is an appropriate comprehensive clinical test for many tumor types and can replace multiple cascade standard-of-care testing approaches currently performed. Decreasing sequencing costs, increasing the number of clinically relevant aberrations, and discovering more complex biomarkers of treatment response, should pave the way for healthcare systems and laboratories to implement WGTS into clinical practice, transforming diagnosis and treatment for patients with cancer.

As per Dr. Jobanputra, the implementation of WGTS has the potential to transform diagnosis and treatment for patients with cancer and identify new biomarkers for improve risk stratification and reduction of overtreatment. This is important because newly developed, targeted therapies can be life-saving game-changers in some patients.

Going forward, WGTS can also be the foundation for a learning system for oncology diagnostics, wherein cumulative WGTS data plus clinical and outcome data could, supported by machine learning and artificial intelligence (AI) approaches, guide clinicians in a “patients like mine” assessment. The assessment would identify pathogenic markers to guide treatment, allow patient-group stratifications to enable targeted

CONTINUE ON NEXT PAGE

rather than conventional treatment, expand access to treatment options, accelerate the development of new drugs, and identify new biomarkers for improved stratification and reduction of overtreatment. A refined diagnosis of future patients could increase life expectancy and save the patient from exposure to ineffective therapy. Finally, (inter)national standardization amongst clinical laboratories will be necessary to allow wider adoption and access to WGTS as a routine method for patients with cancer.

This paper is one attempt by international experts to come together and discuss the vital work that healthcare systems across the world must do to prepare for the WGTS transformation and bring the benefits of these new developments to patients with cancer. ◆

NEUROSCIENCE

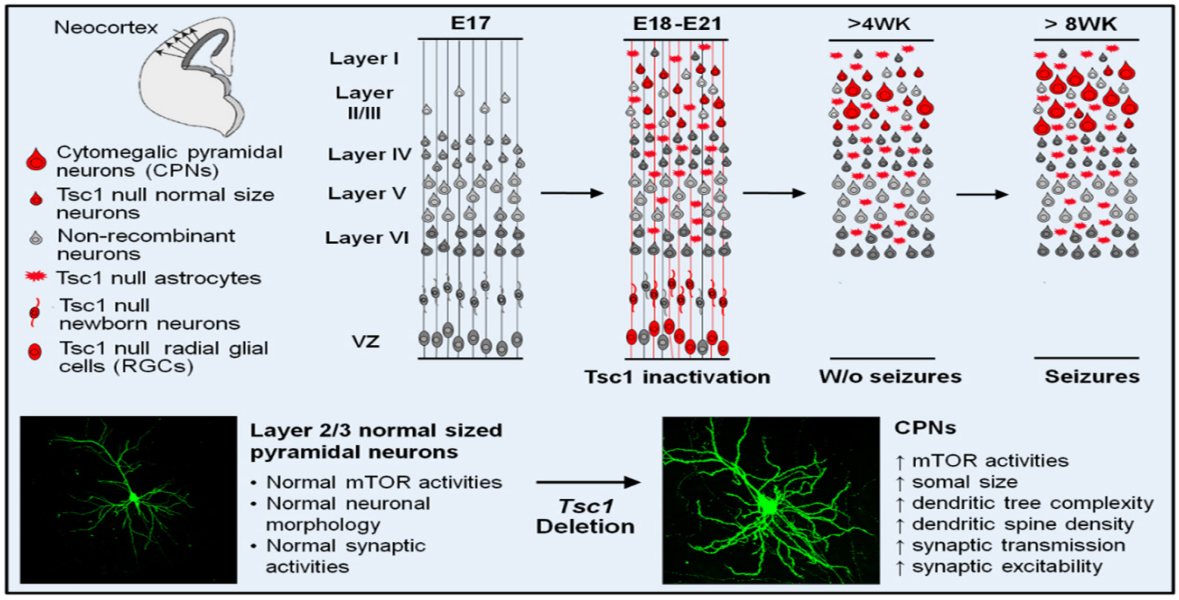
A New Mouse Model Sheds Light on the Origin of Epilepsy in Tuberous Sclerosis Complex

Note: Below is taken from an article published by the Department of Defense highlighting basic research that it has funded.

Synaptic Hyperexcitability of Cytomegalic Pyramidal Neurons Triggers Neurological Symptoms of Tuberous Sclerosis Complex

Xiaoping Wu; Alexander A. Sosunov; Wudu Lado; Jia Jie Teoh; Ahrom Ham; Hongyu Li; **Osama Al Dalahmah**; Brian J.A. Gill; **Ottavio Arancio**; Catherine Schevon; Wayne Frankel; Guy M. McKhann II; David Sulzer; **James E. Goldman**; Guomei Tang.
Cell Rep. 2022 Jul 19;40(3):11108.

Tuberous Sclerosis Complex (TSC) is a genetic disorder caused by mutations in the TSC1 or TSC2 genes. This developmental disorder affects many systems of the body and is usually characterized by epilepsy, autism, and cognitive impairments, including long-term and working memory deficits. A key, unresolved issue is the cause of neurological symptoms in TSC patients. A group of investigators at Columbia University have recently published an article in Cell Reports on a new mouse model of TSC that sheds light on the cause of epilepsy in TSC patients. Drs. Tang, Sulzer, and Goldman have received funding from the TSC Research Program (TSCRP) of the Congressionally Directed Medical Research Programs under the Department of Defense (DOD). The team developed a new Tsc1 conditional knockout (Tsc1CKO) mouse model. In this model, Cre-mediated gene deletion begins in cortical and hippocampal radial glial cells (RGCs) at embryonic day 18 (E18), leading to Tsc1 inactivation in the majority of astrocytes and a small number of layer 2/3 upper cortical pyramidal neurons. The mice develop enlarged "cytomegalic pyramidal neurons (CPNs)" that mimic dysplastic neurons in TSC human brains. These CPNs show elevated excitatory synaptic transmission, leading to cortical hyperexcitability and spontaneous seizures. The team is working on follow-up studies to investigate whether the dysfunction of a neuronal-specific chloride transporter enhances the synaptic excitability of cytomegalic neurons in TSC and to compare the pathological characteristics of the enlarged mouse neurons to the dysplastic neurons found in human tubers to identify common cellular and molecular changes that are involved in epileptogenesis. "Our studies have given us new insights into the pathological and clinical features of TSC and opened up future studies to go deeper into molecular mechanisms," Dr. Goldman said.



Anniversaries

As of January 2023

40 Years
Wanda Setlik

30 Years
Wei Liu

25 Years
Richard Strong
Geping Zhang

20 Years
Melissa Carter
Lina Siu

15 Years
Helen Causton

10 Years
Michael Closser
Qian Xie

5 Years
Katherine Diaz
Erin Poptanich
Colleen Rexti

1 Year
Heather Buchanan
Yasmin Buddha
Mia Renee Burke
Tanner Cole-Wintringham Dalton
Chengappa, Pragati
Hegel Gonzalez
Zakaria Mehemed Grada
Nkechime Ebele Ifediora
Henry Perdomo

Staff Highlights

Recognition for Service Awarded to Path HR Members

Angelic Pla (far left) and Courtney Sinn (right) with Ashley Boyce (Manager, DEIB Staff Engagement) accepting their awards.

Congratulations to Angelic Pla (Director, HR and Academic Affairs) and Courtney Sinn (Manager, HR and Academic Affairs), who were recently recognized for their outstanding commitment as leaders in the following CUIMC Employee Resource Groups (ERG):

- Asian Pacific Islander Employee Resource Group
- CUIMC Women Employee Resource Group
- LGBTQ+ Employee Resource Group

Employee Resource Groups (ERGs) are voluntary groups of employees who join together in their workplace based on shared characteristics or life experiences and serve as a resource for members and the organization by fostering a diverse and inclusive workplace aligned with organizational goals.

To learn more about CUIMC ERGs and how to join, visit the CUIMC Employee Resource Groups website.

Retirements

Dr. Jay Lefkowitch and others at his retirement celebration

On November 15th, the Department of Pathology hosted a retirement party for Dr. Jay Lefkowitch, celebrating his profound contributions to our department, medical center, and the medical school. Jay is a true “Columbia lifer” - spending over 50 years at Columbia University as a medical student, resident, and attending pathologist.

It was wonderful to have the opportunity to celebrate Jay’s lifetime achievements at the Columbia University Medical School, his selfless dedication to teaching medical students, residents, attending pathologists, hepatologists, and his outstanding academic contributions to many diverse areas of liver pathology. Jay’s passion for art, music, and theater, and his merging of this interest within his teaching and daily pathology sign-outs, is sorely missed.

At the celebration, Jay commented: “this all makes me want to come back to Columbia.” With gentle prodding, Jay has agreed to join us, when possible, at our weekly afternoon liver sign-out on Wednesday afternoons at the multi-headed scope on VC15.

Text by Helen Remotti, photos by Eric Steinhardt

Useful Information

There are many tax advantages to giving appreciated stock to the Department of Pathology and Cell Biology. In donating appreciated securities, you avoid capital gains tax and qualify for a charitable income tax deduction for the full value of the securities.

Please visit **www.giving.cuimc.columbia.edu/ways-give/gifts-securities** for more information.

PUBLIC HEALTH

January is National Blood Donor Month. In a recent interview published on January 4th in CUIMC Newsroom, Dr. Eldad Hod, vice chair for laboratory medicine, talked about the importance, safety, and benefits of donating blood. Below is the full text of the interview.

Source: CUIMC Newsroom

Throughout the holiday season, blood donation was likely the last thing on your mind. You're not alone. Distracted by festivities, colds, flu, and travel, even regular blood donors—people who generously donate up to six times a year—stay away. The result: shortages in January.

That's why the first month of the year is National Blood Donor Month.

We spoke to Eldad Hod, MD, to find out more about the importance, safety, and benefits of donating blood. He oversees all of Columbia's clinical laboratories, including the blood bank, and recently determined that iron deficiency caused by donation does not impair donor cognition or quality of life.

Who can donate blood?
In general, to donate blood, you must:

- feel well—after having a cold, flu, or COVID, you should wait 14 days after symptoms have resolved
- be at least 16 years old
- weigh at least 110 pounds
- not have donated within the past 56 days

Right now, men who have sex with men can donate if they've abstained from sexual contact with other men in the past three months. This restriction may be relaxed soon.

When you donate blood, you answer a short questionnaire with questions about travel (the parasite that causes malaria, for example, can be transmitted through blood and is common in parts of Africa, Asia, and South America), certain behaviors, medical conditions, and medications (some can harm a fetus if transfused into a pregnant woman).

Then your temperature, blood pressure, heart rate, and hemoglobin are checked. Levels of hemoglobin in the blood are determined by a finger prick; this test makes sure you have enough blood cells to donate safely. Sometimes people think this test measures iron levels, but it is not the same thing.

Before your study, had blood donor well-being ever been examined?
It has been known for decades that blood donation makes donors iron-deficient for months following donation.

Studies—especially in children and premenopausal women—suggest that iron deficiency resulting from diet impairs memory and thinking processes and causes fatigue. Iron deficiency at birth has even been associated with lower I.Q. later in life.

Nonetheless, no one had ever performed a definitive, double-blind, randomized study examining the effects of iron deficiency caused by blood donation on these domains.

We partnered with Yaakov Stern, Ph.D., Christian Habeck, Ph.D., and Elise Caccappolo, Ph.D., all at Columbia University Vagelos College of Physicians and Surgeons, to design a battery of state-of-the-art cognitive tests and well-being surveys to assess the impact of blood donor iron deficiency and iron repletion on a broad range of cognitive outcomes and measures of well-being.

What was your primary concern about blood donation?
We were concerned about the donor and the future recipient of the blood.

We were concerned that a donor's iron deficiency would impair the donor's performance on tests of memory and cognitive processing speed (how quickly the brain reacts and makes decisions) and on their well-being. Namely: fatigue. We also examined general health, physical functioning, depression, and anxiety.

Very old data suggest that red cells from iron-deficient people may be of poorer quality. Our study was designed to determine if that is true and whether quality could be improved by restoring iron levels in the donors.

What did you find?
Our results show that iron deficiency caused by blood donation does not significantly harm either the donor or the patient getting that blood.

We found that blood from iron-deficient donors met FDA standards. There are no measurable effects of blood donation-induced iron deficiency on cognitive performance and well-being in adult donors.

There are some caveats:

- The more iron in the blood donor, the more hemoglobin is present in the blood. We still do not know the consequences of receiving blood with a lower dose of hemoglobin.

- In women under 50 years old, presumed to be premenopausal, there was a statistically significant difference in the quality of blood, which requires further study. Iron repletion improved the quality.

- We did not study teenage blood donors. However, these donors may be particularly vulnerable to the effects of iron deficiency, so our results do not apply to this donor group, which is responsible for about 1 in 10 donations.

What's the bottom line for blood donors?
Go donate blood! Each unit donated can save lives.

Although blood donation may make you iron-deficient, there is no measurable harm to you, and there is even the potential for blood donation to be good for you: Blood donors tend to be happier, healthier, and live longer.

Where can I donate blood?
CUIMC hosts blood drives throughout the year. At other times, the New York Blood Center is the major supplier of blood in the NYC region. Anyone can schedule an appointment to donate at one of their sites. ◆

EDUCATION

Call for Mentors – A Message from Dr. Kevin Gardner
E.E. Just Program

Dr. Ernest Everest Just, (1883-1941)

Dear Colleagues,
We have a call for mentors and are asking faculty to consider becoming mentors for the 2023 Ernest E. Just Research Scholars@ Columbia summer internship. The E.E. Just program is a collaboration between CUIMC and the United Negro College Fund (UNCF) that aims to increase the number of Black researchers at top-tier biomedical research institutions and strengthen diversity in the life sciences. This ground-breaking program provides college and graduate students at historically Black colleges, universities, and medical schools (HBCUs) with research opportunities and access to mentors at Columbia University and Columbia University Irving Medical Center (CUIMC).

To facilitate matching interested mentors with mentees, we ask that all interested mentors and mentees create their online profiles through the E.E. Just professional network portal.

The program is an 11-week commitment from May 24, 2023 through August 5, 2023.

More information about the Ernest E. Just Research Scholars@Columbia can be found at the following links:

- E. E. Just Biomedical Research Scholars at Columbia University Irving Medical Center (YouTube)
- Summer of Science (CUIMC Newsroom)
- Program Between Columbia and United Negro College Fund Links HBCUs and CUIMC (CUIMC Newsroom)

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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.

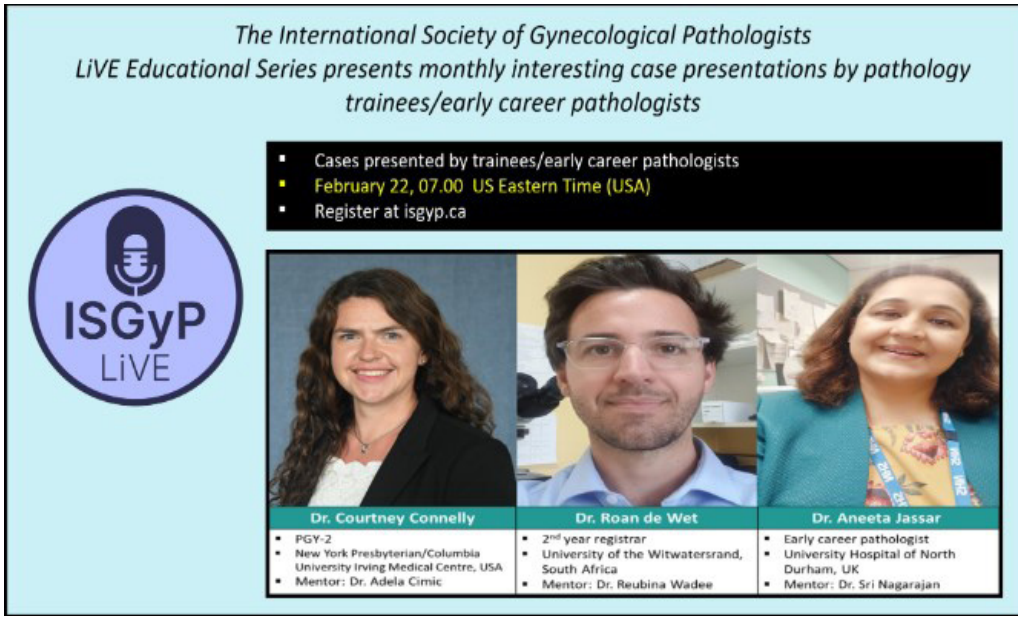
How to update website content – If you find any outdated, incorrect, or missing content on our department website (www.pathology.columbia.edu), and would like to have it updated, please contact PathWebMaster@columbia.edu.

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.

Residency Program

Two Pathology Residents Present at ISGyP

Dr. Niyati Desai, a PGY2 resident, has presented a case at the International Society of Gynecological Pathologists under the mentorship of Dr. Adela Cimic, describing a rare cervicovaginal malignant melanoma and associated major diagnostic challenges. The International Society of Gynecological Pathologists (ISGyP) is a worldwide community of pathologists with a common interest in the pathology of the female reproductive system and conducts regular webinars, journal clubs, and interesting case presentations. This case was presented in front of an international audience.



Dr. Courtney Connelly, a PGY2 resident, will be presenting at the International Society of Gynecological Pathologists LiVE Educational Series under the mentorship of Dr. Adela Cimic. She will present a case describing the diagnostic challenges of a sertoli leydig cell tumor with an exhuberant heterologous element. This case will be presented on February 22, 2023, in front of an international audience.

HONORS AND AWARDS

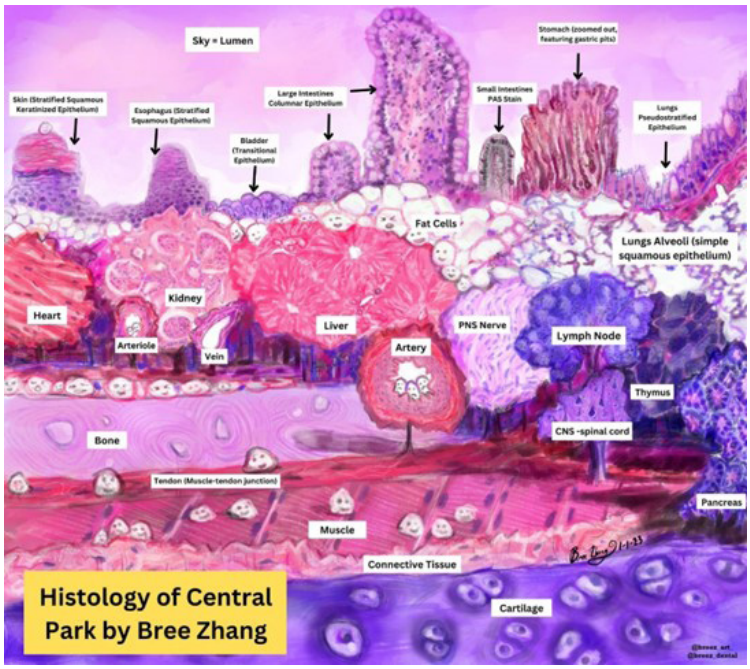
Faculty Promotions

Xiaolin Liu-Jarin, MD, promoted to associate professor of Pathology and Cell Biology at CUMC.

Andrew Teich, MD, PhD, promoted to associate professor of Pathology and Cell Biology (in Neurology).

EDUCATION

Histology in Art



Bree Zhang, a dental student, turned Central Park in New York City into a histology landscape and dedicated the artwork to our Pathology teaching faculty

As a thank you to the excellent teaching of the Pathology faculty, dental student Bree Zhang of class '26 decided to make an artwork dedicated to all of them. During the Winter Break, she used the Central Park photo that Dr. Patrice Spitalnik showed on her first day of lecture and made it into an art video. The video, titled **"Histology of Central Park"**, from which the picture is extracted, talks about the importance of **protecting our environment** through a medical lens by **drawing a comparison of the Central Park environment (trees, water, ground, etc.) to the human body.**

The link to the video can be found here.

In Memoriam

Teresa (Teri) Wood

On January 12, 2023, our Department, our Hospital, and our colleagues experienced a grave loss. Our dear colleague, Teresa (Teri) Wood, passed away unexpectedly. We understand the shock and tragedy of Teri's sudden death, and our thoughts are with her family and friends during this difficult time.

Teri was a true professional and a highly respected colleague who led our Cytopathology service for nearly 20 years. Under Teri's watchful eye, the Cytopathology Laboratory at NewYork-Presbyterian/Columbia University (NYPH/CUIMC) functioned as a state-of-the-art clinical laboratory that provided superior diagnostic testing services and made personalized medicine a reality at CUIMC. Teri also ensured that the Cytopathology Laboratory interacted smoothly, professionally, knowledgeably, and synergistically with other Sections in our Department, including Surgical Pathology (e.g., regarding cervical biopsies) and the Automated Laboratory (e.g., regarding cerebrospinal fluid analysis). Her knowledge, perspective, and wisdom were critical to enable us to provide the best possible clinical care.

As a leader, Teri mentored countless employees, helped develop a career pipeline for cytopathology professionals, and helped train generations of pathologists. In addition, she served as an internal and external expert for regulatory standards, functioning as an outstanding professional surveyor and advisor during regulatory inspections.

Teri is also known for showing tremendous compassion towards her staff during professional and personal times of trouble. This includes saving the life of an unwell employee, ensuring that they sought appropriate care, and supporting that individual throughout their recovery and return to work.

COVID-19 extraordinarily impacted every facet of our healthcare facilities' operations. Teri, in partnership with her faculty colleagues, Drs. Renu Virk and Patricia Wasserman ensured that cytopathology services were uninterrupted during this time. In fact, she was second author on a research publication documenting this experience in the journal Cytopathology, January 2021, entitled "Impact of COVID-19 pandemic on the functioning of cytopathology laboratory: Experience and perspective from an academic centre in New York."

A Connecticut native, Teri's classmates, friends, neighbors, colleagues, and admirers joined her family on Thursday, January 19, 2023, at the final interment at Rockland Cemetery in Sparkhill, NY. In addition, our Department is planning to host a memorial service on campus to honor her. Details will be provided soon.

She is survived by her husband, Max, and two children, Constance and Sean. You may extend your condolences directly to the family by requesting their contact information from Joann Li at Joann.Li@columbia.edu.

During this difficult time, we encourage you to rely on one another and on NewYork-Presbyterian and Columbia University resources. Available resources at both institutions are listed below:

- NYP Employee Resources are available by calling (646) 962-2710 or emailing CopeNYP@med.cornell.edu to request counseling.

- CU Resources are available by calling (646) 774-6311 or emailing CopeColumbia@cumc.columbia.edu to request counseling. In addition, the Employee Assistance Program (EAP) offers counseling services and other assistance. You can call them toll-free at (844) 636-1260.

Dr. Artemis Nash, a trailblazer in the field of Surgical Pathology and former Associate Chief of Pathology at St. Luke's Hospital and Director of Laboratories at Lawrence Hospital, died on December 6, 2022. View Dr. Nash's Obituary here.

Carol Miller, a former medical transcriptionist for Columbia Presbyterian Medical Center and The Allen Presbyterian Hospital, passed away on December 24, 2022. Carole Miller's obituary can be found here.

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