

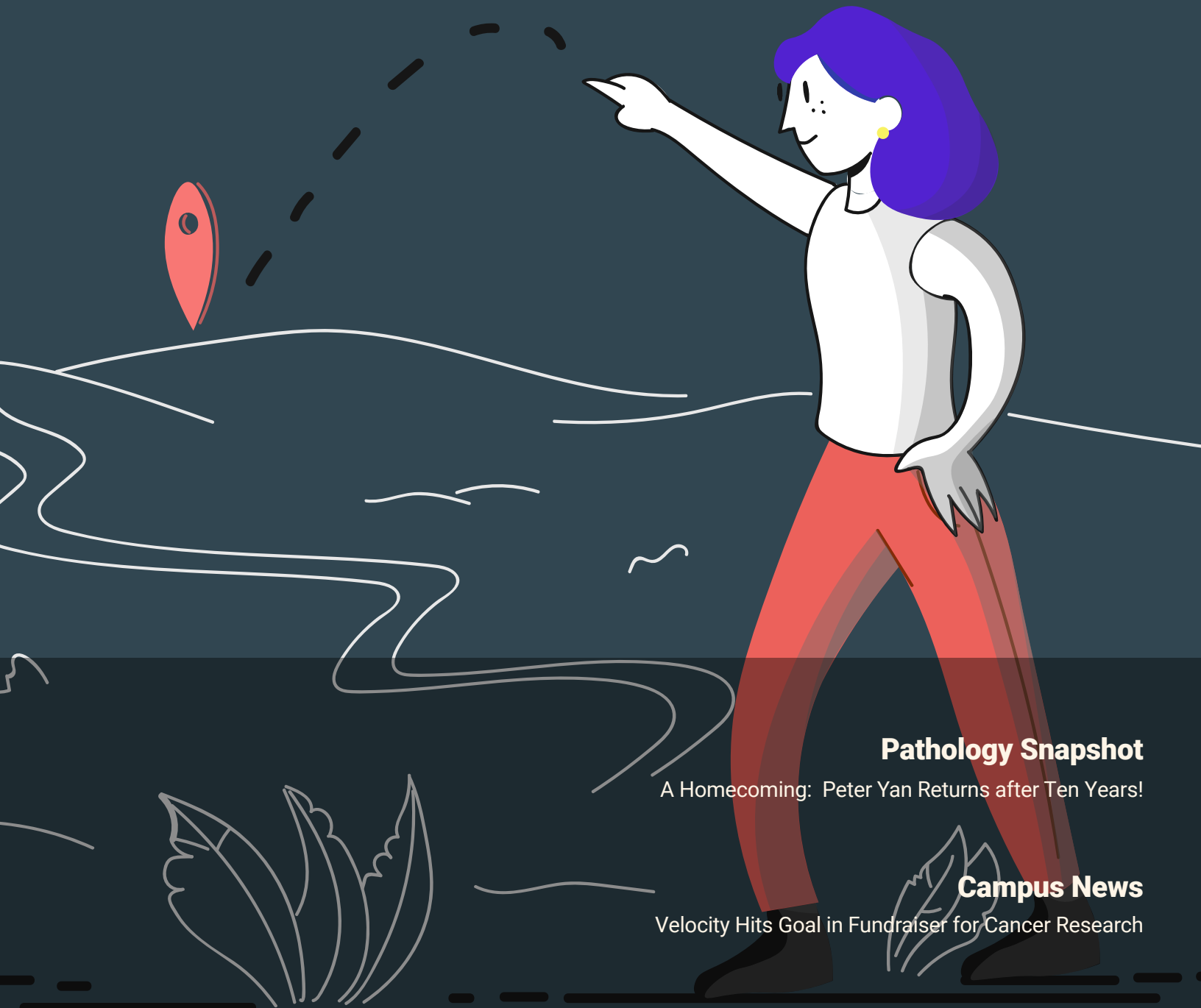
Fall
2022

COLUMBIA PATHOLOGY AND CELL BIOLOGY **REPORT**

Future Discovery

Featured Article

Study: Are we harming blood donors by taking blood from them?



Pathology Snapshot

A Homecoming: Peter Yan Returns after Ten Years!

Campus News

Velocity Hits Goal in Fundraiser for Cancer Research



IN THIS ISSUE

- 3 From the Chair
- 4 Education: New Graduate Students
- 6 Faculty Honors and Awards
- 8 New Research Awards and Honors
- 10 Featured Article: Is blood donation safe for donors?
- 13 Pathology Snapshot: A Homecoming
- 14 New Faculty: Dr. Hasini Reddy
- 15 Campus News: Velocity Team Hits Goals!
- 17 Retirements: Jay Lefkowitz, MD

Columbia Pathology and Cell Biology Report

Chair

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ON THE COVER:

Illustration by Pixeltrue from Ouch!

Past Charted, Future Undiscovered



Kevin A. Roth, M.D., Ph.D., Chair
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I compose this message with mixed emotions. As most of you know, I recently announced that this will be my last year as Chair of the Columbia University Department of Pathology and Cell Biology. I started my tenure here on September 1, 2015, and intend to turn the reins over to new leadership in August 2023. I was drawn to Columbia from my previous position as Chair of the Department of Pathology at the University of Alabama at Birmingham by the allure of an internationally recognized pathology department at a renowned university and by the excitement of a new adventure in an unfamiliar bustling city. As you have probably heard me say, I came to Columbia for a new challenge, and I've never gone home at night disappointed. This comment encapsulates my great admiration for Columbia University and the Department of Pathology and Cell Biology, as well as the unique environment and culture one experiences here. My eight-year reign as Chair and Donald W. King, MD and Mary Elizabeth King, MD Endowed Professor pales in comparison to Mike Shelanski's 28-plus years at the helm of this remarkable department but represents a fairly long run for an academic department chair.

In collaboration with a remarkable group of faculty, students, and staff, my time as Chair has been marked by numerous departmental accomplishments and advances. Together, we recruited over 40 new faculty members, including numerous physician-scientists, more than ten basic science investigators, and a cadre of subspecialty-trained anatomic and clinical pathologists. Faculty diversity was significantly increased, and our primary departmental faculty members are now approximately 45% female and 60% non-White compared to the AAMC national average of 38% female and 41% non-White. The number of NIH-funded female investigators increased significantly, and approximately half of newly appointed tenure track faculty members are female. Individuals self-identifying as belonging to an under-represented group in medicine represent approximately 10% of our total faculty and 15% of recent tenure track faculty promotions and appointments.

The last seven years have witnessed remarkable growth in our departmental research portfolio. Although NIH grant funding is not a perfect metric of scientific success, it is a quantifiable measure and permits comparisons across time and between pathology departments nationally. Based on NIH FY2022 data, our department ranks first nationally for the number of NIH grants and Principal Investigators and fourth for total NIH funding. In addition, our annual NIH funding increased from approximately \$25 Million to \$40 Million per year, representing about 8% of the total NIH funding to the Vagelos College of Physicians and Surgeons. This is twice the national average for the contribution of pathology departments to the NIH funding of their respective medical schools. In summary, the strategic investments we have made over the last seven years to support our departmental research programs have been very successful.

In previous newsletters, I have outlined the departmental contributions to COVID-19-related clinical care, research, and education. Nothing I have done over the last seven years has been more meaningful to me professionally than to be part of this departmental effort. We didn't ask for a pandemic, and we may have been unprepared for its impact, but I can unequivocally state that there has not been a finer hour (or three years) in the department's history. The pandemic has been a physical, emotional, and financial challenge, but what you did to maintain departmental operations while advancing patient care and our knowledge of COVID-19 pathogenesis can only be described as inspirational.

The above is an incomplete list of the many departmental advances achieved over the last seven years. Still, there will be time and opportunity in the future to describe the department's accomplishments and challenges it faces going forward. For me, in the upcoming year, I will continue to support the departmental clinical, research, and educational missions and assist Dean Armstrong in her recruitment of my successor. After stepping down as Chair, I plan to move to California to be closer to my family, but beyond that, I have not decided "what next." The last seven years have been filled with incredible highs and occasional lows, and I feel privileged to have worked closely with you under sometimes challenging circumstances. One thing I know for certain about my future is that Columbia has left an indelible mark on me personally and professionally, and I will forever be grateful for the experience. ♦

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

EDUCATION

New Graduate Students



Sarah Cardoso

Sarah Cardoso studied at AgroParisTech, the leading French engineering school in Biology and Life sciences, where she majored in Bioengineering and Human health. In addition, she spent one semester as an intern at the Taub Institute at Columbia, working on a zebrafish model to study genetic aspects of aging in the brain. Sarah is broadly interested in the molecular mechanisms of human disease and is doing her first rotation with Dr. Rebecca Haeusler, studying diabetes.



Alicia Chime

Alicia Chime received her B.S. degree in Neural Science from New York University. During her undergraduate years, she was an undergraduate research assistant at NYU, where she studied behavior in a mouse model of tuberous sclerosis. After graduating from NYU, she spent two years at the University of Michigan as a laboratory technician, studying an animal model of cerebral palsy. Alicia is interested in research in neurodegenerative diseases and is doing her first rotation with Dr. Clarissa Waites.



Jessica Lipponen

Jessica Lipponen received her B.Sc. from the University of Pennsylvania. After graduation, she had research positions in the pharmaceutical industry. Subsequently, she worked as a technician at Thomas Jefferson University, where she studied the role of parathyroid hormone-related protein in musculoskeletal diseases. Jessica hopes to have a career where she can contribute to understanding health and disease on a mechanistic level and use that knowledge to develop treatments targeted to the cellular levels of illness. Jessica is doing her first rotation with Dr. Natura Myeku at the Taub Institute.

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.

EDUCATION

New Graduate Students



Rut Ortiz

Rut Ortiz has a B.S. in Chemistry and a B.A. in Economics from Northeastern Illinois University (NEIU). Rut had multiple research experiences during her undergraduate years, starting with a fellowship with a regional NIH initiative in Chicago and undergraduate research funded through the MARC program at NEIU. In addition, she had summer research opportunities at the University of Iowa through their Comprehensive Cancer Center. Rut's research experiences led her to a desire to learn more about studying human diseases. As a result, she is doing her first rotation in the laboratory of Dr. Carol Troy.



Elizabeth Thompson

Elizabeth Thompson received her B.S. in Neuroscience from Washington and Lee University in Virginia. She spent two summers researching alzheimer's disease at the University of Minnesota. After graduating, she did post-baccalaureate research at the National Human Genome Research Institute in the Metabolism, Infection, and Immunity Section. Elizabeth is interested in translational disease-related research and is doing her first rotation in the laboratory of Dr. Ken Olive.

Graduate Program

RECENT THESES DEFENDED

Joshua Cho, Santa Maria Perez Lab, September 8, 2022

"The role of microRNA-219 in Alzheimer's Disease-related tau proteostasis and pathology"

Tina Xiang, Mendelsohn Lab, September 19, 2022

"The Role of Pparg in Urothelial Carcinoma"

Awards and Honors

Sepideh Besharati, M.D. Selected to Receive 2022 American Association of Liver Disease (AASLD) Foundation Emerging Liver Scholar Award



The Emerging Liver Scholar Award is designed to promote the study of hepatology among residents who have potential for a career in academic medicine and who may be interested in choosing adult or pediatric gastroenterology, hepatology, hepatopathology, surgery or GI radiology as their career focus. There are only approximately 30 awardees selected. Dr. Besharati is the only pathology resident awardee this year. As part of this award, she will attend this year's AASLD Liver Meeting (Nov 4-8) and present a poster "Therapeutic Utilization of Molecular Profiling for Intrahepatic Cholangiocarcinoma".

Congratulations on this honor, Dr. Besharati.

FACULTY

Honors and Awards

Drs. Francesca Bartolini and Li Qiang Tenured in 2022

Congratulations to Francesca Bartolini, Ph.D., associate professor of pathology and cell biology, and Li Qiang, Ph.D., associate professor of pathology and cell biology, who joined Columbia's tenured faculty in 2022. Tenure is a distinction that recognizes scholarly excellence, demonstrated capacity for imaginative, original work, and great promise for continued contributions at the leading edge of the disciplines.



[Dr. Francesca Bartolini](#) joined the department as an assistant professor in 2013 following her postdoctoral training at Columbia University and was promoted to associate professor without tenure in 2021. She is a cell biologist with broad expertise in the fields of tubulin biochemistry and microtubule stabilization. Her research aims to elucidate the molecular and cellular mechanisms that underlie human disease. Her current focus is on deciphering the role of microtubule dynamics and tubulin modifications in supporting neuronal physiology and in the pathogenesis of neurodegenerative and neuropathic diseases. This work advances our understanding of Alzheimer's disease, peripheral neuropathies and regeneration, and Parkinson's Disease. She has served as a Fulbright Specialist and was a finalist for the McKnight Neurobiology of Brain Disorders Award. In addition, she received the Schaefer Research Scholar Award for Excellence in Human Physiology research in 2013.



[Dr. Li Qiang](#) completed his postdoctoral training at Columbia University and joined the department as an assistant professor in 2015. His laboratory focuses on the mechanisms of adipose remodeling in the pathophysiology of obesity and aging and their associated comorbidities. His team has identified a protein posttranslational modification mechanism of selective activation of the anti-diabetic drug target PPAR γ that circumvents the adverse side effects of this class of compounds, paving the way for the development of next-generation insulin sensitizers with improved safety. He has elucidated molecular pathways of adipose remodeling and identified novel pathogenic factors that might serve as therapeutic targets for obesity and aging. Working closely with experts from interdisciplinary backgrounds, Dr. Qiang pioneers depot-specific fat targeting by developing a browning microneedle patch for subcutaneous fat and a cationic strategy for visceral adiposity. Dr. Qiang received the Kern Lipid Conference Early Investigator Award in 2019.

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 in Dr. Marboe's honor, please click the link [here](#).

FACULTY

Honors and Awards

Dr. Alan Detton Awarded the 2022-23 Office of the Provost's Teaching and Learning

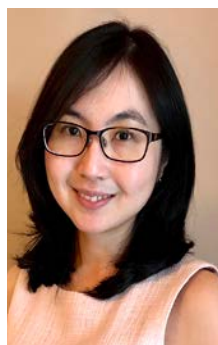


On August 11, 2022, the Columbia University Office of the Provost announced the awardees of the 2022-23 Office of the Provost's Teaching and Learning Grants. [Dr. Alan J. Detton, PhD](#), assistant professor of pathology and cell biology at CUMC, won the grant in the category of Innovative Course Design for his "Proposal for a Novel Elective Bridging 3D Printing and Medical Educator Skill Development."

Dr. Detton teaches Gross Anatomy at the VP&S medical school. He is the author of the highly regarded Grant's Dissector, Sixteenth Edition, which is the go-to guide for dissection in the anatomy lab. His research interests include the development of dissection-based video content as well as novel 3D interactive anatomy education resources, 3D printing, Augmented Reality (A.R.), Virtual Reality (V.R.), surgical simulation, and their evaluation through video analytic usability principles of human-computer interaction. On April 4, 2022, the VP&S Class of 2024 honored its teachers by giving Alan Detton the Fundamentals Outstanding Teacher Award, which recognizes classroom teaching.

The Office of the Provost's Teaching and Learning Grants support faculty in developing innovative and technology-rich pedagogies and learning strategies for Columbia courses and beyond. The grants will help assess the effectiveness of new educational methods and tools, and illuminate strategies to improve learning outcomes for Columbia students across disciplines. For more details, see the provost's announcement [here](#). Congratulations to Dr. Detton!

Dr. Wen-Hsuan Wendy Lin Wins Early Career Development Pilot Grant



Congratulations to Wen-Hsuan Wendy Lin, MD, PhD, one of the two recipients of the 2022 Early Career Development Pilot Grant, awarded by the Herbert Irving Comprehensive Cancer Center (HICCC)!

Dr. Lin is a postdoctoral residency fellow and instructor in the Department of Pathology and Cell Biology. Her winning project "Targeting the tumor microenvironment by duvelisib in peripheral T-cell lymphomas" (Mentor: Teresa Palomero, PhD) focuses on analyzing the tumor microenvironment of T-cell lymphomas to find new therapeutic targets and biomarkers. Dr. Lin will receive a one-year grant of \$100,000 in support of the project. The HICCC's Early Career Development Pilot Grants support senior fellows, instructors, and young investigators who are transitioning to a faculty position and who are in the early stages of cancer research projects.

Dr. Swikrity Upadhyay Baskota Named to The Pathologist's Power List for 2022



The Pathologist has just announced its 2022 Power List, which honors 75 of the most outstanding and inspirational pathology and laboratory medicine professionals in five categories: Ready for Take Off, Ground Control, Voyage of Discovery, First Contact, and Strange New Worlds.

[Dr. Swikrity Upadhyay Baskota, MD](#), assistant professor of pathology and cell biology at CUMC, is honored under the category First Contact. Her profile, as presented by [The Pathologist](#), is as follows. "Over the past few years, Swikrity has become well-known on social media for her passion for medical education and proactive advocacy for pathology trainees and candidates. She is Assistant Professor, Cytopathologist, and Surgical Pathologist in the Department of Pathology and Cell Biology at Columbia University Irving Medical Center. What sparked Swikrity's interest in lab medicine? "A pathologist's ability to make a diagnosis and guide clinical management and therapeutic decisions," she says. "It gave me a feeling of pathologists as a 'cornerstone of clinical medicine' during my intern year. Then and there, I knew I was going to be a pathologist."

Congratulations to Dr. Baskota for achieving this remarkable recognition!

FACULTY

Research Honors & Awards

GRANTS AWARDED (SINCE JULY 2022)

PI	Sponsor	Title
Ibrahim Batal, MD	American Society of Transplantation Career Transition Grants	The role of genetics and inflammation in donor-derived APOL1-associated kidney diseases
Peter Canoll, MD, PhD	National Cancer Institute	Image-based models of tumor-immune dynamics in glioblastoma
Peter Canoll, MD, PhD	National Cancer Institute	Lentiviral-Induced Swine Model of Spinal Cord Glioma
Eunhee Choi, PhD	National Institutes of Health	Spatiotemporal control of insulin signaling by mitotic regulators
Sheng-Han Kuo, MD, and Phyllis Faust , MD, PhD	National Institute of Neurological Disorders and Stroke	Targeting Cerebellar Endoplasmic Reticulum Calcium Handling in Essential Tremor
Hynek Wichterle , PhD and Tulsi Patel, PhD	National Institute of Neurological Disorders and Stroke	Defining motor neuron diversity from embryo to adulthood and generating tools for in vivo and in vitro access

Innovative Research at the Core of Irving Multi-PI Planning Grant 2022-2023 Awardees

“Convection-enhanced delivery for brain tumors”

Lead Investigator: Jeffrey Bruce, MD, professor of neurosurgery

Co-Principal Investigator: [Peter Canoll, MD, PhD](#), professor of pathology and cell biology

Co-Investigators: Andrea Califano, Dr, professor and Chair of systems biology, professor of biochemistry and of molecular biophysics, and professor of bioinformatics; Andrew Lassman, MD, professor of neurology; Raul Rabadan, PhD, professor of systems biology and of bioinformatics; Peter Sims, PhD, associate professor of systems biology and of biochemistry and molecular biophysics.

Glioblastoma, or brain cancer, is invariably fatal, with an average survival of 15 months despite aggressive treatment. A crucial need exists for more effective treatments. Promising chemotherapy for glioblastoma has failed because of tumor heterogeneity, where some tumor cells are not sensitive to a given drug. Another challenge is that most chemotherapy drugs cannot pass into the brain tumor because of problems with drug delivery through the blood-brain barrier. The team’s solution is to use convection-enhanced delivery (CED), a novel method of drug delivery that allows drugs to target the tumor and surrounding brain through a surgically placed thin tube connected to a micro-infusion pump. The investigators have already seen success with this method in three clinical trials and propose a CED-centered P01 program project grant to work on optimizing drug delivery and incorporating testing of new anti-tumor compounds.

FACULTY

Research Honors & Awards

Innovators in the Lab and the Clinic: Recipients of Columbia's Precision Medicine Pilot Grant "The Immunopathology of Donor-Derived APOL1 Nephropathy"

Lead Investigator: [Ibrahim Batal, MD](#)

Co-Investigators: [Kevin Gardner, MD, PhD](#), professor of pathology and cell biology; Barry Freedman, MD, professor of medicine and chief of nephrology at Wake Forest School of Medicine; Iuliana Ionita-Laza, PhD, professor of biostatistics

Kidneys transplanted from Black donors have a shortened survival compared to white donors, which has been attributed to variants of the apolipoprotein L1 (APOL1) gene that is enriched in the Black population. Black patients with kidney failure often receive kidneys from Black donors and therefore are more likely to receive kidneys with APOL1 variants that predispose them to early transplant failure. Donor-transmitted APOL1-transmitted kidney diseases are still poorly understood. The team will incorporate precision donor-screening technologies, innovative immunologic studies, and state-of-the-art digital microscopy techniques to better understand the mechanisms of donor-transmitted APOL1-associated kidney diseases, an area ripe for research. This project could improve the distribution of donated kidneys in a subset of donors with APOL1 variants, facilitate the discovery of more precise treatment, and expand the overall understanding of the role of APOL1 in chronic kidney disease at large.

New Research

"Targeting Metabolic Liabilities Induced by AURKA Inhibition in Glioblastoma"

Lead Investigator: [Markus D. Siegelin, MD](#)

Co-Investigators: Guoan Zhang, PhD

Glioblastoma, the most common primary brain tumor in adults, has a poor prognosis. Due to the inherent heterogeneity of glioblastoma, a single treatment is unlikely to elicit a durable therapeutic effect on this disease. Recent research has demonstrated that a fundamental understanding of tumor cell metabolism and how treatments affect it might lead to new therapeutic approaches. Dr. Siegelin aims to investigate whether the anabolic tumor cell metabolism of glioblastomas is regulated through Aurora kinase A (AURKA), an enzyme that shows significantly higher expression in cancer tissues than in normal control tissues for multiple tumor types. The results will provide further biological insight of the underlying molecular pathways involved in glioblastoma, which may facilitate combination treatment strategies involving AURKA inhibition.

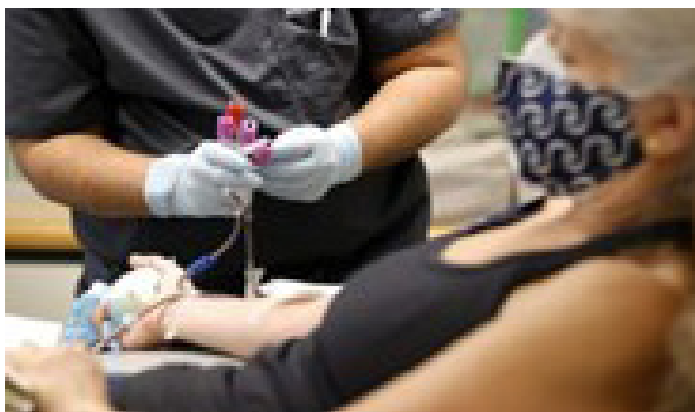
New Publications/Presentations

- Jennifer Hammelman, **Tulsi Patel**, Michael Closser, **Hynek Wichterle** & David Gifford. [Ranking reprogramming factors for cell differentiation](#). *Nature Methods* volume 19, pages 812–822 (2022). PMID: 35710610.
- Park J.#, Li J.#, Mayer J., Ball K., Wu J., Hall C., Accili D., Stowell M.*, Bai XC.*, **Choi E.*** (2022) [Activation of the insulin receptor by an insulin mimetic peptide](#). *Nature Communications*. 13, 5594. (#Co-first author, *Co-corresponding author)
- From October 3-6, **Dr. Alan Detton** was invited to speak at the **XXIX Congreso Nacional de Anatomía** in Puebla México. He gave a workshop entitled "Designing Anatomical Education Materials With Principles of Backward Design" and a keynote speech entitled "**Technology in Anatomical Education Today and Tomorrow**."

Featured Article

A new study asks: Are we harming blood donors by taking blood from them?

STAT News



One question has plagued the field of blood donation for as long as there have been transfusions: Are we harming blood donors by taking blood from them?

Our iron stores are largely self-conserved: Our bodies recycle iron from old red blood cells to make new red blood cells. Iron that's in use doesn't tend to exit the body unless a person loses blood, whether through menstruation, bleeding from trauma, illness — or through donation.

While a donor's body will replace the donated blood volume within 24 hours, the process of replacing the red blood cells could take months. For donors who are low in iron, the process of replacing the lost iron could take over four months, even though donors are eligible for blood donation every 56 days.

[Eldad Hod](#), associate professor of pathology and cell biology and vice chair of laboratory medicine at Columbia University Irving Medical Center, led a study investigating whether the blood from iron-deficient repeat blood donors continued to meet Food and Drug Administration standards, and whether low-iron status affected the donors' quality of life or cognitive ability.

In an interview, Hod explained that many regular blood donors know they will be too low in iron to make the cutoff level for donation, so they'll supplement with iron to build up their red blood cells and cross the threshold just in time to donate again.

"They live on the edge of anemia so that they can donate blood," said Hod.

The [study](#), published earlier this month in the journal *Blood*, focused on frequent blood donors who were low in iron but not anemic. While the terms "anemic" and "low iron" are often used interchangeably, the two

are not synonymous; anemia is a condition in which a person does not have enough red blood cells, which can be caused by either iron deficiency or a variety of other reasons.

Additionally, contrary to popular belief, most blood donation centers do not test potential donors for their iron levels prior to donating, as the test needed to evaluate iron levels is too expensive and logistically complicated to carry out at donation sites. Instead, blood donation staff commonly measure hemoglobin levels, which determine whether a person is anemic or not.

"We know that iron is necessary to make red blood cells," said Nathan Connell, a hematologist at Brigham and Women's Hospital and associate professor of medicine at Harvard Medical School, who was not involved in the study. "The iron starts to drop. It's the gas in the gas tank. And before the car runs out, it stops. You have a close-to-empty gas tank. Well, that's the situation here. Low iron, but the engine hasn't quite stopped yet," which would be iron-deficiency anemia.

After the participants in the study donated blood, their blood was screened for its transfusion quality and whether the donors had low iron. Seventy-nine of the study participants who had low iron were then randomized. In a double-blind administration, half were given intravenous iron to correct their iron deficiency, while the other half were given a saline placebo. Four to six months later, the participants were asked to donate again, as well as complete quality of life surveys and cognitive function assessments.

Hod and his team of researchers were surprised to find that there was not a measurable effect on either the blood's transfusion quality, the iron-deficient donors' cognitive performance, or their quality of life compared to the iron-replete donors.

"The answer doesn't fit our preconception, but is actually better for public health because it suggests that what we're doing is not harming our donors," said Steven Spitalnik, executive vice chairman for laboratory medicine at Columbia's department of pathology and cell biology and a co-author on the paper. Further, the results suggest that additional iron level requirements do not have to be added to donor screenings.

A primary concern for the Food and Drug Administration, World Health Organization, and other agencies or

groups that manage the blood supply is having both a safe and adequate blood supply. Usually, these entities think about that in terms of infectious disease and from the viewpoint of the recipient, said Connell, but they have an obligation to the donors as well.

"What happens when you get a donor who comes in to donate a unit of blood and then they are turned away because they're anemic or they're iron-deficient? What is the mechanism that exists to make sure that that person has that anemia or that iron deficiency addressed?" said Connell. "Because, one, it's related to their own health, but then allows them to donate again in the future in a safe way. You don't want to defer people unnecessarily."

In particular, though there wasn't an overall difference in blood quality for transfusion, the researchers did find that the quality of blood from women younger than 50 years of age improved following iron repletion, which was not observed in blood donated from women over 50 or from men. Though the researchers say it's unclear whether this statistical difference is clinically meaningful and needs more study, it's notable because this population is also the demographic most likely to get turned away from blood donation for low iron, since pre-menopausal people lose iron through menstruation.

Ariela Marshall, director of women's thrombosis and hemostasis at Penn Medicine, said that instead of just telling would-be donors they can't donate blood and recommending iron supplements, this is an opportunity to instead say, "It looks like you're anemic; we suggest that you talk to your doctor about this,"

and encourage them to figure out how to address the underlying issue.

Marshall used the illustration of water in a bucket, where the body is the bucket and the water is a person's blood. "Yes, I can pour in iron; I can refill the bucket," she said. "But if the bucket has a hole and you're losing water every single month, then it doesn't make sense to just keep putting more water in. You've got to plug the hole and stop the ongoing process of blood loss."

"I have many poor patients who've struggled with iron-deficiency anemia their whole lives because of heavy periods," she continued, "and they just keep getting told, 'Hey, take iron, take iron, take iron.' Well, that's great, but that's not solving the problem."

Besides the need for more research about iron repletion in blood from younger women, Hod and the other study authors said more research needs to be done about whether the results of this study extend to teenagers. Teenagers, especially high schoolers, make up 10-20% of blood donors, but adolescents need higher amounts of iron for development and it's currently unclear whether iron depletion in repeat or first-time blood donors from this population is detrimental to them.

Overall, the study's authors are pleased that their study proved their hypothesis wrong. "We do no harm for people who give blood," said Gary Brittenham, professor of medicine at Columbia and another co-author on the study, "but we're doing a great benefit to the people who need it." ♦

EDUCATION

New Research

"Targeting the Tumor Microenvironment by Duvelisib in Peripheral T-cell lymphomas"

Wen-Hsuan Wendy Lin, MD, PhD, research pathway resident in pathology and cell biology

Mentor: [Teresa Palomero](#), PhD

Glioblastoma, the most common primary brain tumor in adults, has a poor prognosis. Due to the inherent heterogeneity of glioblastoma, a single treatment is unlikely to elicit a durable therapeutic effect on this disease. Recent research has demonstrated that a fundamental understanding of tumor cell metabolism and how treatments affect it might lead to new therapeutic approaches. Dr. Siegelin aims to investigate whether the anabolic tumor cell metabolism of glioblastomas is regulated through Aurora kinase A (AURKA), an enzyme that shows significantly higher expression in cancer tissues than in normal control tissues for multiple tumor types. The results will provide further biological insight of the underlying molecular pathways involved in glioblastoma, which may facilitate combination treatment strategies involving AURKA inhibition.

RESEARCH

New Research Shows Iron Deficiency May Not Significantly Affect Donor Health, Blood Quality

Source: AABB News



Donor iron deficiency was associated with no harmful effects on either the quality of donated blood or the wellbeing of frequent blood donors, according to new findings published recently in [Blood](#). Previous studies have suggested that 35% of regular blood donors may become iron deficient after repeated blood donations, but few studies have evaluated the effects on donor health or on the quality of donated blood.

In the Donor Iron Deficiency Study, investigators screened 983 frequent blood donors aged 18 to 75 to identify iron deficient but non-anemic donors. A total of 79 eligible participants completed a standard blood donation and questionnaires about their physical and mental health and quality of life, followed by a 51-chromium post-transfusion red cell recovery study.

Investigators randomized participants to receive intravenous iron repletion (one-gram low molecular weight iron dextran, 39 participants) or placebo (saline solution, 40 participants). After 4-6 months,

participants completed a second standard blood donation, questionnaire, and red cell recovery study. The primary outcome was within-subject change in post-transfusion recovery.

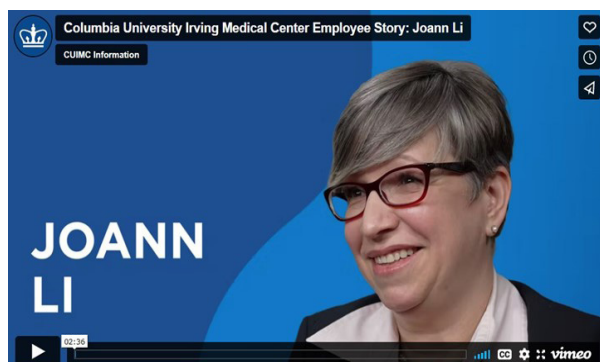
Findings indicated that red cell storage quality was unchanged by iron repletion. The mean change in post-transfusion recovery was 1.6% and -0.4% with and without iron, respectively. Additionally, iron repletion did not affect any cognition or wellbeing measures; the placebo group's scores on both cognitive function tests and quality-of-life measures showed no significant differences at any time point from donors in the iron repletion group.

According to [Eldad A. Hod, MD](#), an associate professor of pathology and cell biology at Columbia University's Irving Medical Center, a [National Blood Foundation Hall of Fame member](#), and the study's first author, the findings demonstrate that existing criteria for blood donation both preserve the quality of the blood supply and protect the wellbeing of adults who are frequent blood donors.

"This finding is good news because it not only shows that blood donated by frequent donors remains of high quality, but also that those who donate blood regularly are not being significantly harmed by doing so," [Hod said](#).

One limitation of the study's findings is that people younger than age 18 were excluded from participation. Adolescents need iron for brain development, a process that isn't complete until they reach their mid-20s, Hod said. "We don't know to what extent our results can be generalized to the under-18 population," he said. "We hope to look at this age group in our next study." ♦

Staff Highlights



Our DA, Joann Li, Featured in the CUIMC DEI Staff Stories Video Series

Joann Li is the department administrator and CFO for the Department of Pathology and Cell Biology and has been at CUIMC for over 30 years. During this time, she's obtained her master's degree at Columbia and has held several roles in the department. [Watch](#) Joann discuss how her participation in the LBGQT+ resource group has made her a better parent, employee, and manager.

Pathology Snapshot

Homecoming: Peter Yan Returns to Pathology and Cell Biology After 10+ Years!



Xiaohong (Peter) Yan is a foreign medical graduate. After three years of general surgical residency training, he came to the US to pursue his research career. After earning his Ph.D. degree in Human Anatomy and Cell Biology at the University of North Dakota, he joined the lab of Dr. David Owens (Associate Professor in Dermatology, Pathology and Cell Biology, CUIMC) and had three years of postdoc training in the skin stem cell and skin cancer fields. Then, Peter joined the research lab of Dr. Richard Whelan, an internationally renowned colorectal surgeon, and worked as a research scientist for two years in the Department of Surgery. He followed Dr. Whelan to Mount Sinai West Hospital (formerly Roosevelt Hospital) and then to Lenox Hill Hospital/ Northwell Health. Over time, Peter's duties shifted more toward the clinical side, including advanced endoscopy training, clinical specimen banking, and FDA-approved clinical trials.

With a passion for research, Peter started looking for a more supportive environment and was luckily recruited by Dr. Rodica Vasilescu to CUIMC's Immunogenetics and Cellular Immunology (ICI) lab. Surprisingly, he found out that the ICI lab is located exactly where the main Dermatology Lab was originally 18 years ago at VC-15! Now Peter is working on high-resolution Human Leukocyte Antigen (HLA) typing for transplant procedures (donor-patient matching), utilizing molecular approaches including next-generation sequencing and Sequence-Specific Oligonucleotide Primed (SSOP) PCR-Luminex, as well as RT-PCR. A strong association between HLA and autoimmune disease has been established for over half a century. In the past decade, more and more evidence emerged showing that patients of various HLA genotypes respond to immune checkpoint blockade therapy differently. These studies may lead to the discovery of potential biomarkers for immunotherapy.

Peter is so glad to see his postdoc mentor, old colleagues, and friends, and is very excited about getting back to the Department of Pathology and Cell Biology. He's thrilled about the easy accessibility to CUIMC's state-of-the-art core facilities, which are within the same street block or even in the same building! Pathology HR made the hiring process smooth and pleasant. And the CUIMC system still remembers his old UNI! It was really a homecoming feeling. He hopes his vigorous training in cellular/ molecular biology and animal surgery can be applied to his clinical work and new research, and to make contributions to our Pathology community and CUIMC!

Welcome back, Peter!

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.

Other Honors and Awards



Dr. Nicole Suci-Foca (middle) at the 48th ASHI Annual Meeting

At the 48th Annual Congress of The American Society of Histocompatibility and Immunogenetics (October 24 to 24), Dr. Nicole Suci-Foca, Professor Emeritus of Pathology and Cell Biology, was awarded the title of Woman Pioneer in Immunogenetics and Transplantation Immunology. Her remarkable contributions were honored through a recollection of her 60 years devoted to this field, multiple discussions, and a reception.

As one of the pioneers in the transplantation field, Dr. Nicole Suci-Foca, recounted the adversities experienced because of her gender, a common practice during the late twentieth century as transplantation was in its infancy. Despite the hardships, her contribution to the science of immunology and clinical transplantation is recognized and resonated throughout the world.

In the past thirty years, society has made tremendous progress toward gender bias, particularly in the scientific and transplant community. The “Women in Transplantation” symposium serves as a stepping-stone to best exemplify the efforts of female scientists and clinicians in the field of transplantation. Congratulations to Dr. Suci-Foca on this notable achievement and recognition!

New Faculty



Hasini Reddy, MD, DPhil Assistant Professor of Pathology and Cell Biology at CUMC

Dr. Hasini Reddy obtained her MD at Memorial University of Newfoundland, Canada then received her DPhil (PhD) degree at Oxford University where she studied as a Rhodes Scholar. She began her postgraduate training in Neurology at McGill University in Montreal and completed her Neuropathology Residency at Western University in London, Ontario. She has been on faculty at Harvard University and Dalhousie University in Halifax and joins the Neuropathology Division at Columbia where she will also be working extensively at the New York Brain Bank. She has an interest in neurodegenerative disease, multiple sclerosis and traumatic brain injury.

2022 Shelanski Research Innovation Award

We are pleased to announce the 2022 Shelanski Research Innovation Award in Pathology. This year's recipient is Yu Sun for her proposal titled: “Dissecting IDH-mutant dependence and intratumor heterogeneity during astrocytoma progression”.

Supported by gifts from the Ralph Abrams Fund (from Anatomy and Cell Biology) and the Herman Shelanski Memorial Fund, this competitive award program is designed to support the development of innovative research ideas and concepts contributed by fellows and residents within the Department of Pathology and Cell Biology. Funds will be made available for Residents and Fellows in Pathology to support innovative research projects that further our understanding of mechanisms of biology and pathophysiology of the disease. Applications will be received and reviewed on a rolling basis and scored and ranked by an ad hoc review committee of faculty and staff.

Let's all congratulate Yu!

WE'RE HIRING!

Refer your network.

Pathology and Cell Biology is hiring!

**Grants Manager -- Pathologist's Assistant -- Technician A -- Technician B --
Clinical Laboratory Technologist -- H.R. Generalist -- Cytogenetic/FISH Technologist**

The department of Pathology and Cell Biology is looking for passionate, qualified, high-performing candidates to join us in our mission of providing global leadership in scientific research, patient care, and health and medical education. The Employee Referral Program Pilot is intended to increase recruitment success by widening applicant pools beyond current search measures (Indeed posting, Zip Recruiter, LinkedIn, and University Applicant Tracking System applications), engaging current employees in the recruitment process, and providing a reward structure for employees who refer candidates into the pool who can be converted into successful new hires.

[See All Non-Academic Job Opportunities at Pathology](#)

Submit a Referral



Team Path to a Cure Hits Velocity Milestone!

Due to severe weather, the 2022 Velocity Ride to End Cancer was canceled. But despite the cancellation, Team Path to a Cure reached its fundraising goal of \$5,000! Thank you to everyone who contributed to this meaningful goal!

\$5,071 RAISED

GOAL \$5,000



*Team Path to a Cure Captain,
Joann Li, DA, proudly completing
her ride to end cancer!*



COLUMBIA

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BASIC SCIENCE SEMINAR SERIES

**MONDAYS
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FALL 2022 / SPRING 2023

Contact seminar chairs Drs. Eunhee Choi &
Alison Taylor for more information.

Retirements

After 40+ Years, Dr. Jay Lefkowitz, MD Says Farewell to CUIMC

BY HELEN REMOTTI, MD

Associate Professor of Pathology and Cell Biology at CUIMC



How many faculty are able to celebrate a distinguished medical career spanning 40 plus years of service at Columbia University and at the NewYork-Presbyterian Hospital? In the Department of Pathology and Cell Biology at CUIMC, Dr. Jay Lefkowitz is deserving of this honor. Jay began his career as a medical student at the College of Physicians and Surgeons of Columbia University

(1972-1976) and remained at Columbia-Presbyterian Medical Center for his residency training in Anatomic Pathology. He then pursued specialty training in liver pathology during a fellowship year spent working with Professor Peter J. Scheuer at the Royal Free Hospital - a major international referral center for patients with liver and biliary tract diseases in London, U.K. Jay was also afforded the opportunity to work with renowned clinical hepatologists such as Professor Dame Sheila Sherlock. Upon his return from London in 1980, Jay became a faculty member of the Department of Pathology at Columbia University.

Jay quickly established himself as an internationally recognized leader in hepatic pathology. Jay has directed many post-graduate liver pathology courses at national and international conferences (IAP, USCAP, AFIP, AASLD). With Dr. Scheuer, Jay co-authored the most utilized textbook in liver pathology that serves as a practical guide for diagnosis, and can be found on the desks of practicing liver pathologists worldwide. The 10th edition of Scheuer's Liver Biopsy Interpretation was published in 2020. In addition, Jay served as Chief Editor of Anatomic Pathology Board Review, the leading textbook utilized by pathology residents in the US. Additionally, Jay has published over 100 peer-reviewed papers in leading pathology and hepatology journals. Jay's publications span

a wide spectrum of liver pathology topics including pediatric and adult fatty liver disease, autoimmune hepatitis, biliary tract disease and rare liver diseases including bile salt transporter mutations, storage disorders, and mitochondriopathies.

Jay is a master educator. Jay has always had passion for art, theater and music. He has been successful at utilizing his artistic talents in his teaching. His ability to tell compelling stories and sketch clear "JL diagrams" to convey complex medical concepts are qualities that have always received unanimous praise from a broad audience of medical students, residents, pathologists, and hepatologists. Jay served as course director for general pathology courses, in addition to teaching histology labs and liver lectures for first and second year medical students throughout his career.

Jay was the director of the autopsy service, during which his popular "Man in the Pan" teaching activity compelled medical students to perform a pathologic review of organs to glean the clinical story of the patient. Students always enjoyed this approach to learning which mimicked the investigative and deductive reasoning used by Sherlock Holmes. Jay also often employed a creative, game-like approach for teaching liver pathology where histologic features were first examined followed by a discussion of hypothetical clinical vignettes, and lastly followed by integration with laboratory findings and clinical history. As such, it is no wonder that Jay has received numerous teaching awards including Best Teacher of the Year Award from the 2nd year medical students in the Foundations Course for over 10 years, and the Presidential Teaching Award from Columbia University, among many other honors.

For over 40 years at Columbia University and NYPH, Jay has been vital part of our department and we hope that as Professor Emeritus, we continue to benefit from his outstanding teaching and superb diagnostic expertise.



Dr. Lefkowitz (second row, first from the left) with Columbia Pathology faculty in the 1980s

