

COLUMBIA PATHOLOGY AND CELL BIOLOGY REPORT

Winter Edition 2015

From the Chairman

There has been a hiatus since the last issue of our newsletter and the current one. Its reappearance is due to the efforts of Alexandra Meyer, who has taken over the editorial and reporting duties from Rich Kessin. The passage of time has left many events unreported and this issue and the next will attempt to introduce new faces in the department and say farewell to others. For me it marks one of the last times – if not the last – that I will write this column. As most of you are aware, I plan to step down as Chairman at the end of June 2015. At that time, I will have served as Chairman and Director of the Pathology Service for 28 ½ years.

I came to Columbia on January 1st, 1987 after almost 9 years as Chairman of Pharmacology at NYU – 9 years away from the practice of pathology. I can say with certainty that I had no idea what I was getting into. The department was small, had no research grants, had miserable facilities and had not yet learned how to send a bill. It did have a small core of exceptional faculty and residents who brought with them a culture of collegiality and of devotion to their work and our patients. A number of these people are still critical members of our department – Kathy O’Toole, Vivette D’Agati, Hanina Hibshoosh, Chuck Marboe, Jay Lefkowitz and Karl Perzin. Other critical department members have recently retired – Nicole Suci-Foca, Ralph Richart, Mike Pesce, and one – Dan Fink – died much too young. Without the support of all these people, I would have never succeeded. Many thanks to them all. I am also indebted to my scientific colleagues who migrated from NYU with me and have remained here for the long haul – Ron Liem, Carol Mason, Lloyd Greene and Riccardo Dalla-Favera.

This core of people has grown with the addition of numbers of outstanding pathologists and basic scientists. Each has absorbed the culture of service, investigation

Dr. Della-Latta Departs



After 23 years as the Director of the Clinical Microbiology Service at NYPH/CUMC, Dr. Phyllis Della-Latta will retire and venture into a new chapter of her career. Her tenure at Columbia began at the peak of New York City’s multidrug-resistant tuberculosis epidemic. As a native New Yorker, she welcomed the challenge and quickly established her mission that extends to this day: to expedite the diagnosis of infectious diseases by fast-tracking pathogen detection. In response to the TB crisis, Dr. Della-Latta conducted research that significantly contributed to the FDA approval of a rapid, novel nucleic acid amplification test that reduced diagnosis turn-around-time from months to hours. Throughout her career, Dr. Della-Latta has demonstrated that better tests improve patient care.

Dr. Della-Latta graduated from New York University in 1978 with a Ph.D. in Molecular Biology, earned board certification in Medical, Molecular and Public Health Microbiology by the American Board of Medical Microbiology, and was elected fellow of the American Academy of Microbiology. Her dedication to diagnostic microbiology is reflected in her scholarly accomplishments that include over 165 book chapters and scientific articles and participation in numerous research grants.

As a sought-after speaker and editor both nationally and internationally, she has given over 100 presentations and serves on many editorial boards.

Dr. Della-Latta’s leadership skills are epitomized by her role in developing the NYC branch of the American Society of Microbiology into one of the strongest in the nation. She served as president several times and has chaired the program and fundraising committees for decades. In recognition of her dedication, she was presented with the Award for Distinguished Achievements in Clinical Microbiology. To aid in times of city-wide challenges, she was appointed chair of the NYC Department of Health Advisory Council on Emerging Pathogens and Bioterrorism as well as the Clinical Microbiology Consortium. In addition, she served as advisor and consultant to the New York Academy of Sciences, CDC, FDA, NIH, and industrial and pharmaceutical firms.

Dr. Della-Latta looks forward to having more time but will miss interactions with our interdisciplinary network of clinicians and researchers. In recognition of her accomplishments, Dr. Della-Latta has been appointed Professor Emerita.



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Markus Siegelin, MD

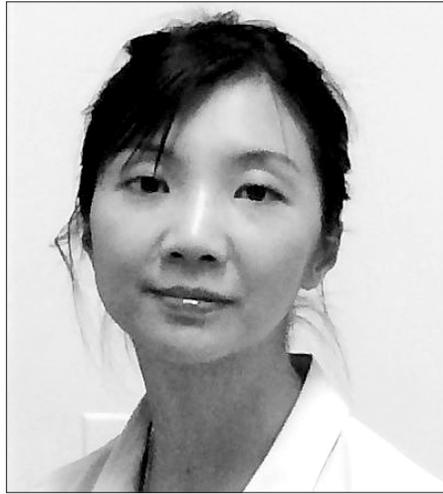


Dr. Markus Siegelin joined our faculty in July 2013 as Assistant Professor of Pathology and Cell Biology. He earned his M.D. from Goethe University in Frankfurt, Germany in 2005 and then trained in neurology at Heidelberg University. Working with renowned neuropathologist Dr. Andreas von Deimling, he completed a two-year fellowship focused on promoting apoptosis (cell death) in glioblastoma, the most common brain tumor that, despite surgery, radiation and chemotherapy, is uniformly fatal. Awarded a postdoctoral fellowship in 2009, Dr. Siegelin came to the U.S. to continue his research with Dr. Dario Altieri, then the chair of the Department of Cancer Biology at University of Massachusetts and now director of the Wistar Institute Cancer Center.

Dr. Siegelin started his pathology residency at CUMC in 2010 and was introduced to his mentor, Dr. Lloyd Greene, in 2012. Their shared interest in glioblastoma and apoptosis launched a collaboration based on a novel peptide that targets ATF5, a transcription factor that goes into overdrive in glioblastoma tumors. Their team is discovering how this peptide, the first known inhibitor of ATF5, kills glioblastoma tumor cells while leaving normal cells unaffected. Supported by this novel research, Dr. Siegelin intends to design a tumor-specific therapy for glioblastoma.

This work with Dr. Greene served as a jumping-off point for a series of four grants that Dr. Siegelin wrote in 2012, remarkably, while still sitting in the resident's room. Within two years, all four grants were funded and he was promoted to his current position as assistant professor. Dr. Siegelin joined Dr. Marboe and Dr. Szabolcs on the heart and lung transplant service, and is glad to work with these "advanced, extremely supportive people" while still having time to develop his glioblastoma research.

Hui-Min Yang, MD



Dr. Hui-Min Yang, Assistant Professor of Pathology and Cell Biology, joined our faculty in October 2013. She earned her M.D. from Vanderbilt University in 2005, and went on to complete pathology residencies and a gastrointestinal pathology fellowship at UCLA. Dr. Yang comes to CUMC from her hometown of Vancouver, B.C., where she was previously a member of the pathology faculty at the University of British Columbia.

Dr. Yang's enthusiasm for gastrointestinal pathology was inspired by the quality GI service at UCLA, and more specifically by her teacher and chief of GI pathology, Dr. Galen Cortina. Currently, Dr. Yang is studying mixed adenoneuroendocrine carcinoma as part of a multi-institutional collaborative effort. Their research suggests that this two-pronged disease stems from an initial case of adenocarcinoma, which differentiates into its neuroendocrine cancer complement. Indeed, testing the tumors for NOTCH1 confirms that some of the cells are making this shift. Working with her husband and dermatopathology faculty member Dr. Basil Horst, Dr. Yang also studies anal melanoma, a rare and typically fatal cancer. Through next-generation sequencing, they analyze the tumors in search of overlooked mutations that may be amenable to chemotherapy.

After one year in Manhattan, Dr. Yang is starting to feel like a New Yorker. In fact, for this Vancouverite, "the adjustment here was certainly easier than the slight culture shock in Los Angeles." We are pleased to welcome Dr. Yang to the department.

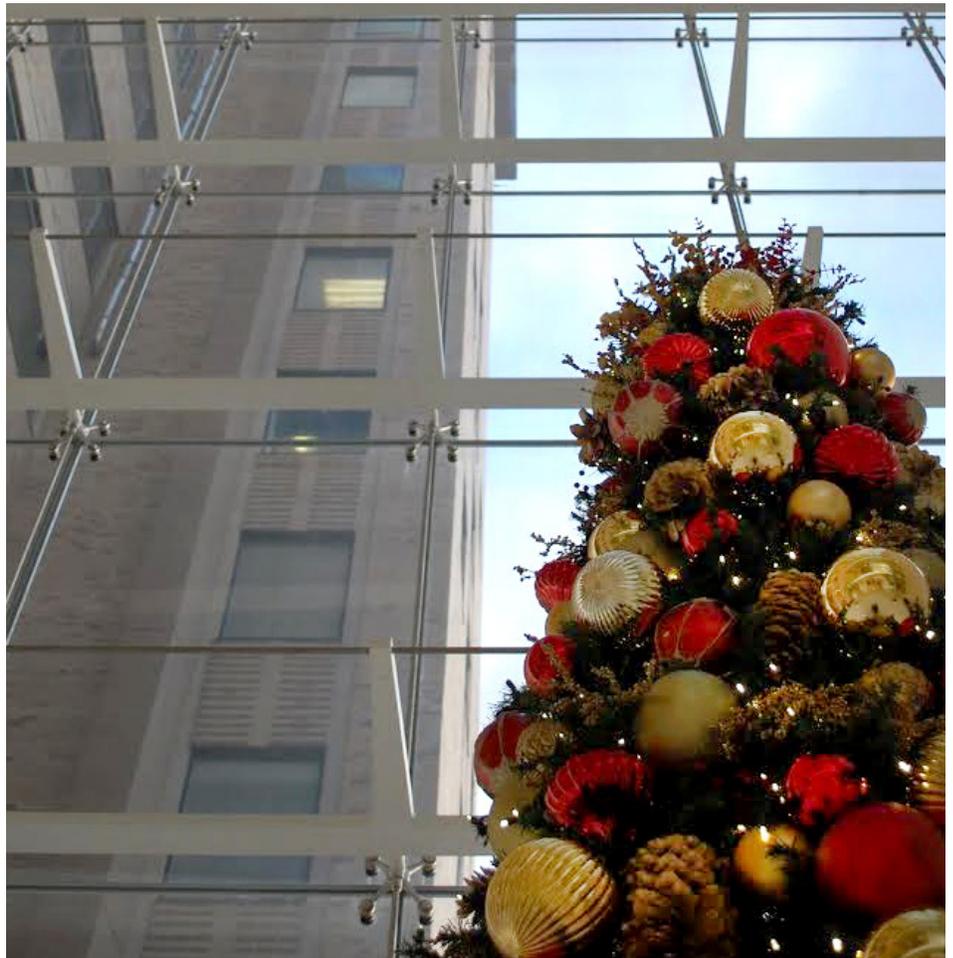


Photo courtesy of Alexandra Meyer

Piero Dalerba, MD



The newsletter extends a warm welcome to Dr. Piero Dalerba, who joined us in June 2014 as Assistant Professor of Pathology and Cell Biology. Dr. Dalerba graduated from medical school in 1995 from the Università degli Studi di Milano in Italy. After completing a medical oncology fellowship at the Istituto Nazionale dei Tumori, the National Cancer Institute in Milan, Dr. Dalerba came to the University of Michigan for a fellowship focused on colon cancer stem cells. In 2005 he arrived at Stanford University where he began as a postdoctoral fellow and departed as an instructor.

At Stanford, Dr. Dalerba collaborated with Dr. Michael Clarke, a pioneer of the cancer stem cell theory. Working in Dr. Clarke's lab inspired the research that Dr. Dalerba fosters in his new lab at the Herbert Irving Comprehensive Cancer Center. Dr. Dalerba is interested in analyzing the stem cell population in colon and breast cancer tumors. Through single-cell genomic approaches, the Dalerba Lab will isolate and study individual tumor cells in pursuit of the small society of stem cells that lie at the tumor's core. Dr. Dalerba also analyzes the correlation between a stem cell's compositional profile and its response to drug therapies. His enthusiasm for this nuance of research stems from the idea that "diseases that were once mysterious and complex can be elegantly deleted."

Dr. Dalerba is pleased to join the CUMC community. And though he admits that California's nature and weather are far superior, he finds that "the human potential, the wealth of variety, diversity and perspectives that you find in New York City is unmatched."

Susan Hsiao, MD, PhD



We are happy to welcome Dr. Susan Hsiao, who joined us in July 2014 as Assistant Professor of Pathology and Cell Biology. Dr. Hsiao graduated with an M.D. (2010) and Ph.D. (2009) from New York University School of Medicine, where she studied tumor biology. After completing her anatomic pathology residency at CUMC in 2013, she went on to pursue a molecular pathology fellowship at University of Pittsburgh Medical Center. Dr. Hsiao is pleased to return to the department as faculty.

Dr. Hsiao's interest in molecular pathology was fostered at CUMC during her residency, thanks to stimulating molecular rotations and the expert guidance of senior AP faculty. As a molecular pathologist, Dr. Hsiao interprets diagnostic testing that includes genetics assays, whole exome sequencing, and molecular oncology tests. She is especially excited about the new large panels offered by Columbia such as the Columbia Combined Cancer Panel. In fact, she is often a go-to source of guidance and clarification for others learning to work with these tests.

Currently, Dr. Hsiao is collaborating with colleagues from endocrinology, surgical pathology, and cytopathology to develop a thyroid mutation panel that optimizes the testing of FNA (fine-needle aspiration) specimens. While she is mainly engaged in clinical work, Dr. Hsiao looks forward to developing research at Columbia, and is particularly interested in molecular mechanisms that underlie thyroid and pancreatic tumors.



Photo courtesy of Richard Miller

First Year Pathobiology and Molecular Medicine Students



Francesca Garretti, M.S. earned a B.S. in Biochemistry in 2012, and went on to the Icahn School of Medicine at Mount Sinai where she graduated with an M.S. in Biomedical Science. She

is interested in clarifying the molecular mechanisms that propagate Alzheimer's disease pathology.



William Raab received a B.S. in Biology from Stony Brook University where he studied glutamate receptor gating kinetics. He went on to research breast cancer therapeutics in Dr. Helen

Blau's Stanford University laboratory. William is interested in cancer therapeutics and mechanisms of chemotherapy resistance, and is currently rotating in Dr. Ken Olive's laboratory.



Aidan Quinn, M.A. graduated with his M.A. in Biotechnology from Columbia University in 2012. While working in the Cordon-Cardo Laboratory, he studied chemotherapy resistance in

prostate cancer. He looks forward to studying the genetics of cancer and is interested in the transition from indolent to aggressive disease.



Yoon Kim, Pharm.D. went to pharmacy school in Boston, Massachusetts, and is now pursuing her love of scientific research. She studies neurodegenerative disease with a focus on Alzheimer's.



Lisa Sprinzen, M.S. graduated from Colgate University with a B.A. in Natural Science and continued her studies to New York University, where she earned her M.S. in Biology in 2014. Lisa is

interested in cancer biology.

New Residents



Shane Betman, M.D. (AP/CP) did his B.S. in Biology at Johns Hopkins University, and graduated in 2014 with his M.D. from the University of Virginia. His interests span surgical

pathology, blood banking, laboratory management, and informatics.



Stefanie Forest, M.D., Ph.D. (CP) received her B.S. and M.S. in Neuroscience at Tulane University, and continued to the Albert Einstein College of Medicine to complete an M.S.

in Biomedical Sciences. She then pursued Albert Einstein's MSTP program, graduating with her Ph.D. in 2012 and M.D. in 2014. Her Ph.D. thesis was titled, "Immunotherapy targeting tau pathology in Alzheimer's disease – studies in an Htau mouse model."



Gunnar Hargus, M.D., Ph.D. (AP/NP) went to medical school in Lubeck, Germany, and did his Ph.D. in Neuroscience at the University of Hamburg. He completed a postdoctoral

fellowship at the Neuroregeneration Institute at Harvard Medical School where he worked with animal models of Parkinson's disease. Before joining our residency program this year, he was a neuropathology fellow at the University of Munster.



Sandeep Wontakal, M.D., Ph.D. (CP) graduated from Rutgers University with a B.A. in Molecular Biology and Biochemistry, and went on to pursue the MSTP

program at the Albert Einstein College of Medicine. He was a molecular genetic pathology fellow within PGM (2013-2014), and is interested in the application of genomic approaches in clinical practice.

New Fellows

GI Pathology



Ladan Fazlollahi, M.D., M.P.H., graduated with her M.D. from Shahid Beheshti University of Medical Sciences in Tehran, Iran in 2004, and then

pursued her M.P.H. at the Harvard School of Public Health. Dr. Fazlollahi did her AP residency at Washington University School of Medicine in St. Louis from 2011-2012, and continued her residency at Massachusetts General Hospital from 2012-2014.

Hematopathology



Hashem Ayyad, M.D. graduated from the University of Jordan in 2007 with his M.D. He completed an AP/CP residency at the Henry Ford Medical Center at Wayne

State University in Detroit, Michigan from 2010-2014. Dr. Ayyad is interested in the genetics of leukemia and quality management.



Sarah Chaudhary, M.D. went to Shifa College of Medicine in Islamabad, Pakistan, earning her M.D. in 2007. She was then a resident at BayState

Medical Center in Springfield, Massachusetts from 2010-2014. Dr. Chaudhary is currently working on complex karyotypes in MDS/AML.

Renal Pathology



Dominick Santoriello, M.D. earned his M.D. in 2011 from SUNY Downstate Medical Center College of Medicine in Brooklyn. From 2011-2014, he did

his anatomic pathology residency at New York University's Langone Medical Center.

Molecular Genetic Pathology



Chiraag Patel, M.D. received his B.S. from Tulane University, and went on to graduate with his M.D. from St. George's University in 2010. His research inter-

ests include non-invasive cancer diagnostics, high performance computing, and multi-omic algorithm development.

Transfusion Medicine



Yan Cheng, M.D., Pharm.D. will rotate at the Columbia blood bank in 2015. After graduating with a Doctor of Pharmacy from St. John's University, he completed his

M.D. at St. George's University in 2011. He has just passed the ABIM, and is now a board-certified internist. Dr. Cheng is interested in mitigating CMV in transfusion and stem cell transplantation in the treatment of hematological malignancies.

Genetics



Colleen Bilancia, Ph.D. pursued a Ph.D. in Cell and Development Biology at the Graduate School of Biomedical Sciences of New Jersey, graduating in

2009. She was previously a Cell and Developmental Biology Fellow and molecular analyst at the University of North Carolina at Chapel Hill. Dr. Bilancia is interested in the role of genetics in coordinating proper human development.



Mythili Ganapathi, M.S., Ph.D. went to the University of Delhi and graduated with an M.S. in Biomedical Sciences as well as a Ph.D. (Thesis: "Mapping of nucleosomes

on eukaryotic genome sequences.") She worked with the Clinical Molecular Genetics Lab at Mount Sinai from 2010-2014 and is interested in reproductive genetics, prenatal genetic diagnosis, chromatin biology and epigenetics, and epigenetics-based diagnostics.



Preti Jain, M.S., Ph.D. graduated from the University of Alabama with her Ph.D. in Biotechnology and Bio-engineering in 2009, and then did a postdoctoral fellowship

at HudsonAlpha Institute for Biotechnology. She is interested in human genetics and genomics of rare and common diseases.

Chairman's Letter *(continued)*

and outstanding teaching and added to our strength. Very few of our faculty have left and among those who have are the Chairmen of both Pathology and Biochemistry at Cornell, the Chairman of Oncology at Mount Sinai, the Chairman of Oncology at Mount Sinai, the Directors of Clinical Laboratories at both Mount Sinai and Memorial Sloan Kettering, the Vice-Chairman for Anatomic Pathology at Mount Sinai and the Head of the Laboratory of Developmental Neurobiology at Rockefeller. Two of our former faculty members have moved to positions in Pharma.

The department is currently composed of over 100 faculty members, 31 clinical residents and fellows, over 60 postdoctoral fellows and 30 graduate students. The department is 4th in the nation among pathology departments in its NIH grant support, has the leading laboratory medicine training program in the New York area, and its Personalized Genomic Medicine division has led the way in making next-generation DNA sequencing a clinical resource for our patients. Our merger with the Department of Anatomy and Cell Bi-

ology strengthened both departments and resulted in the consolidation of an exceptional research presence in Cell Biology. Mike Gershon, who served for 30 years as chairman of Anatomy and Cell Biology, is the world's leading authority on the enteric nervous system and continues to direct a vibrant research program in this area. Three members of the department are members of the Institute of Medicine (soon to be the National Academy of Medicine) of the National Academy of Sciences.

I am now serving under my fourth Dean and do not intend to outlast this one. The search for a new chairman is on. Current candidates include David Engman, MD, PhD, Professor of Pathology at Northwestern University; Kevin Roth, MD, PhD, Professor and Chairman of the Department of Pathology at the University of Alabama; Barry Sleckman, MD, PhD, Professor of Pathology at Washington University and Matthew Meyerson, MD, PhD, Professor of Pathology at the Harvard Medical School. The candidates are all strong but we are facing competition from Hopkins and Stanford who started searches at the same time we did. I am optimistic that Lee

Goldman and Steve Corwin will select the next chairman in the near future.

The new chairman will occupy the new King Professorship of Pathology that has been established by my predecessor, Donald King, MD and his wife Mary Elizabeth King, MD who is also a former member of our department. I will relinquish the Delafield Professorship when I step down and this will be used as the new chairman sees fit.

What happens to me? I will continue to work as the Henry Taub Professor of Alzheimer's Disease Research and will serve as co-director of the Taub Institute. Hopefully, I will be able to spend more time in the laboratory and return to doing my own experiments. I will also continue to assist the Dean with issues of space utilization and allocation.

Michael Shelanski

Our Diagnostic Services

The Department offers a very broad range of expertise and diagnostic services. We are available for consultation at the following locations.

Web:
www.pathology.columbia.edu

Email:
pathology@columbia.edu

Laboratory services:
1-800-653-8200/1-212-305-4840

Administrative Services:
1-212-305-7164

A Note on Publications

The members of the department contributed approximately 260 peer reviewed publications in the years 2013-2014. The newsletter suggests that interested parties search the websites of the individual faculty members at <http://pathology.columbia.edu/>

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