

Contents

1

Research Highlights

2

Global Travel Itineraries

3

Focus

Faculty Promotions

4

The Career of
Daniel M. Knowles, MD

5

Keynotes

7

Dr. Knowles, Philatelist

8

Residents' Corner

10

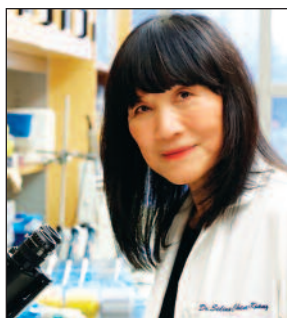
Faculty Publications

12

Newly Awarded
Pathology Grants

Research Highlights

Edited by David P. Hajjar, PhD



Selina Chen-Kiang, PhD,
Professor of Pathology
and Laboratory Medicine
and Professor of
Microbial Pathogenesis
and Immunology

Mantle cell lymphoma (MCL) is a non-Hodgkin lymphoma that remains incurable due to the development of drug resistance, despite the plethora of therapies available. Each successive treatment failure is associated with a more rapidly proliferating disease and fewer practical treatment options. For example, the FDA-approved BTK inhibitor ibrutinib initially has unprecedented efficacy in MCL, but failure is virtually universal and is associated with dismal outcomes. Understanding the genomic basis and mechanisms for drug resistance in MCL is therefore urgently needed.

To this end, **Selina Chen-Kiang, PhD**, Professor of Pathology and Laboratory Medicine and Professor of Microbial Pathogenesis and Immunology, was recently awarded **a five-year, \$9 million Program Project Grant (P01)** from the National Cancer Institute (NCI). National Institutes of Health offers program project grants to support integrated, multi-project research involving a number of independent investigators who together can improve scientific understanding on a common theme or disease area. This P01 grant, entitled "Mechanism-based Targeting of Mantle Cell Lymphoma," is the **first NCI-funded P01 grant solely focused on mantle cell lymphoma (MCL) research**. It is also only the third P01 grant awarded in the Department of Pathology at Weill Cornell Medicine by the NIH in the last 25 years.

The goal of her program is to develop superior therapies for MCL that are effective, durable, well tolerated and amenable to patient stratification, by defining the genomic and molecular

mechanisms for drug resistance. Targeting the cell cycle represents a rational approach to MCL therapy, as dysregulation of cyclin-dependent kinase 4 (CDK4) and cyclin D1 underlies unrestrained proliferation in disease progression. In preclinical and clinical studies, the Chen-Kiang team has demonstrated that induction of prolonged early G1 arrest (pG1) by inhibiting CDK4 (CDK6 is silenced in MCL) with the selective CDK4/6 inhibitor palbociclib not only prevents proliferation of primary MCL cells but also causes an imbalance in gene expression that reprograms them for therapy vulnerability.^{1,2} (Fig. 1). Longitudinal functional genomics of sequential biopsies from MCL patients treated with either palbociclib or ibrutinib further uncovered a close association between clinical response and inactivation of PI3K² as

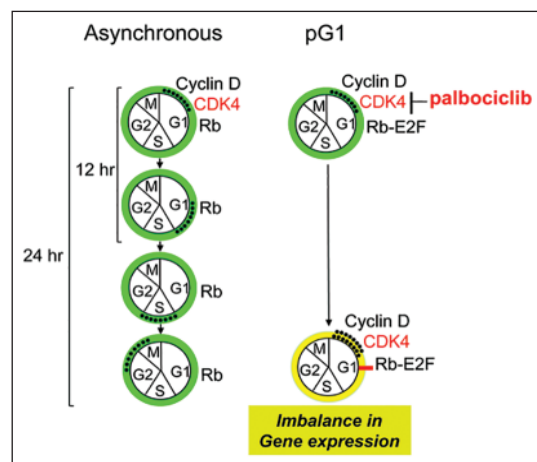


Figure 1: Model for reprogramming cancer cells by CDK4 inhibition, which leads to prolonged G1 arrest (pG1) that causes an imbalance in gene expression.

well as activation of the tumor suppressor transcription factor FOXO1 (unpublished). Moreover, chromatin remodeling appeared to be the proximal event that reprograms MCL cells for clinical response to CDK4 inhibition (unpublished).

Collectively, these novel findings suggest a **hypothesis** that by regulating the epigenome, PI3K and FOXO1, induction of pG1 by CDK4 inhibition reprograms MCL to deepen and prolong the clinical response to BTK or PI3K inhibition. Indeed, in a phase I clinical trial of palbociclib in combination with

continued on page 2

Research Highlights

continued from page 1

ibrutinib (PALIBR) in recurrent MCL, the complete response rate (37%) was significantly greater than that of ibrutinib alone (19%) despite a comparable overall response rate of 67%, and the responses were rapid and durable, with only 4 responding patients progressed since the trial opened more than four years ago.

Building on these exciting findings, the P01 grant aims to determine the genomic basis for clinical response to inhibition of CDK4 and identify the resistance genomic markers in MCL via longitudinal functional genomics of the newly opened phase II PALIBR trial; to elucidate chromatin remodeling and the role of PI3K and FOXO1 in cell cycle therapy; and to circumvent drug resistance by targeting therapy-induced vulnerability in individual patients. The P01 award is the culmination of long-term productive collaborations among basic and clinical investigators at Weill Cornell Medicine: Drs. Jihye Paik, Giorgio Inghirami, Maurizio Di Liberto and Xiangao Huang in the Department of Pathology and Laboratory Medicine; Drs. Lewis Cantley, Peter Martin, John Leonard and Jia Ruan in the Weill Department of Medicine; Drs. Olivier Elemento and Christopher Mason in the Department of Physiology and Biophysics; and Drs. Karla Ballman and Zhengming Chen in the Department of Healthcare Policy and Research, all of whom are members of the Sandra and Edward Meyer Cancer Center; and Drs. Robert Baiocchi, Kami Maddocks and Rosa Lapalombella at the Ohio State University.

Dr. Chen-Kiang also has the honor to serve as the principal investigator of a **five-year, \$2.5 million program project grant—the Mantle Cell Lymphoma Research Initiative Award (MCL SCOR)** from the Leukemia and Lymphoma Society this year. In synergy with the P01 grant, the MCL SCOR will fuel the development of innovative MCL therapies. The same collaborative team is deploying their unique bench-to bedside-and-back approach to target the B cell receptor signaling pathway and the tumor-immune interaction in new clinical trials, to advance early disease detection at the single cell level and to discover novel druggable targets for intervention by longitudinal genomics and functional studies in MCL.

Both program project grants are rooted in fundamental discoveries. Chen-Kiang has a long-standing interest in discerning the mechanism of cell cycle control of immunity and translating discoveries in basic science into innovative cancer therapy. She

first discovered that modulation of CDK4 and CDK6 by the physiological inhibitor p18INK4c was required for cell cycle control of B cell activation as well as terminal differentiation to functional plasma cells in an antibody response.³ She then demonstrated that dysregulation of CDK4/6 underpins unrestrained proliferation in disease progression in lymphoma and multiple myeloma,⁴ and pioneered targeting CDK4/6 in cancer therapy when palbociclib (PD0332991), the first selective CDK4/6 inhibitor, became available in 2005.^{5,6} For her seminal contributions, Chen-Kiang was credited for resurrecting a “cancer drug that almost wasn’t” in Science.⁷

Dysregulation of CDK4/6 is a hallmark in human cancer. Palbociclib and related CDK4/6 inhibitors are now approved by the FDA for treatment of breast cancer and being intensely investigated in diverse human cancers, but the mechanism that mediates CDK4/6 inhibition for a clinical response remains elusive. The tools and knowledge assembled from these innovative and timely studies should significantly advance therapeutic targeting of the cell cycle and the epigenome in MCL, and provide new insights into the mechanism of drug resistance in MCL and beyond.

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◀ **Dr. Yen-Michael S. Hsu** traveled to Beijing, China: June 2018, the International Scientific Forum on Exosome Research and Application; September 2018, the Xiangshan Transfusion Medicine Forum and Academic Annual Meeting.



◀ **Dr. Jessica Tyler** spoke at The Center for Integrative Genomics Symposium on Aging and Anti-Aging, Lausanne, Switzerland. Pictured at Lake Geneva.



◀ **Dr. Jacob Rand** spoke at the International Society of Thrombosis and Haemostasis meetings in Dublin in July.



◀ **Dr. Rhonda Yantiss** attended the Australasian IAP meeting in Sydney, Australia in May 2018. (left) Professor Anthony J. Gill, of the University of Sydney. Pictured at Harbor Bridge in Sydney.



◀ **Dr. Syed Hoda** at the 60th Annual Meeting of the Mexican Association of Pathology in Ixtapa, Mexico.

▼ (right) **Dr. Ethel Cesarman** (4th), **Dr. Amy Chadburn** (1st); (left) **Dr. Elizabeth Margolskee** (2nd) in Tanzania, Africa for AMC (AIDS Malignancy Consortium) conference, a one-day pathology workshop with African colleagues.



Focus

by Daniel M. Knowles, MD

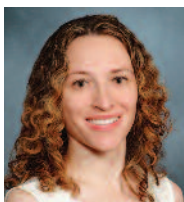
Welcome New Faculty



Benjamin Liechty, MD

SURGICAL PATHOLOGY **Benjamin Liechty, MD,** **Assistant Professor of** **Pathology and** **Laboratory Medicine**

Dr. Liechty received his medical degree from Jefferson Medical College in 2010. Subsequently, he completed two years of training in Neurological Surgery at Temple University Hospital before deciding to change his career path and pursue training in Anatomic Pathology and Neuropathology. He completed training in Anatomic Pathology and in Neuropathology at the NYU/Langone Medical Center. Subsequently, he completed a fellowship in Molecular Genetic Pathology at the Columbia University Medical Center. Dr. Liechty is certified in Anatomic Pathology and in Neuropathology by the American Board of Pathology.



Nina Schatz-Siemers, MD

SURGICAL PATHOLOGY **Nina Schatz-Siemers, MD,** **Assistant Professor** **of Pathology and** **Laboratory Medicine**

Dr. Schatz-Siemers received her degree from Touro College of Osteopathic Medicine in 2012. Subsequently, she obtained her graduate certificate in Pharmacology at University of Medicine and Dentistry of New Jersey Rutgers Graduate School of Biomedical Sciences in 2008. Dr. Schatz-Siemers has trained in Cytopathology and Gynecologic Pathology at the New York University Langone Medical Center and Weill Cornell Medical College. In Gynecologic Pathology, she has worked closely with Drs. Ellenson and Pirog.



Yi Ning, MD, PhD

CYTOGENETICS **Yi Ning, MD, PhD, Assistant** **Professor of Pathology and** **Laboratory Medicine**

Dr. Ning received her medical degree at the Shanghai First Medical College in her native China in 1984. Subsequently, she immigrated to the United States and obtained her PhD from the Baylor College of Medicine in 1991. She served as a fellow at the Baylor College

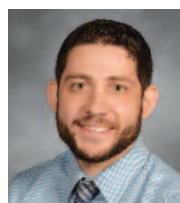
of Medicine between 1991 and 1994 and then served three additional years of fellowship at the National Human Genome Research Institute of the NIH. Upon completion of her fellowship training, she was appointed Director of Clinical Cytogenetics at the GeneCare Medical Genetics Center of George Washington University, a position she held until 2001. At that time, she relocated to the University of Maryland School of Medicine where she was appointed Assistant Professor and subsequently promoted to Associate Professor in 2006. She served as Director of Clinical Cytogenetics at the University of Maryland School of Medicine between April 2001 and February 2013. She was recruited to Johns Hopkins School of Medicine in March 2013 where she was appointed Associate Professor and Director of Clinical Cytogenetics. Dr. Ning has been appointed Co-Director of the Cytogenetics Laboratory.



Genevieve Crane, MD, PhD

HEMATOPATHOLOGY **Genevieve (Eve) Crane, MD,** **PhD, Assistant Professor** **of Pathology and** **Laboratory Medicine**

Dr. Crane completed a Master's of Philosophy degree at the University College, London in the United Kingdom between 1996 and 1998. Subsequently, she matriculated into the combined MD/PhD program at the University of Michigan School of Medicine, where she worked and studied between July 1998 to December 2005. Her M.Phil degree was awarded in 2000 and her MD and PhD degrees were awarded in 2006. Upon completion of her undergraduate medical education, she worked as a Postdoctoral Research Fellow at the Massachusetts Institute of Technology from January 2006 to June 2009. She spent until early 2012 as an Intern and Resident in general and urologic surgery at the Lahey Clinic in Burlington, Massachusetts. During this time, she decided to change her career path to pathology. She joined the anatomic pathology training program at the Johns Hopkins Hospital in July 2012, completing her training there in June 2015, and then stayed on to train in hematopathology with Dr. Michael Borowitz between 2015 and 2016. Upon completion of that fellowship, she spent another year as a Research Fellow at the University of Texas Southwestern. She began her formal academic career in July 2017 when she was appointed Assistant Professor of Pathology at the University of Rochester Medical Center. She is certified in Anatomic Pathology and Hematopathology by the American Board of Pathology.



Robert DeSimone, MD

TRANSFUSION MEDICINE **Robert DeSimone, MD,** **Assistant Professor** **of Pathology and** **Laboratory Medicine**

Dr. DeSimone received his MD from Stony Brook University School of Medicine in 2013, following graduating Summa Cum Laude from Cornell University in 2009. Subsequently, he completed his training with us in Anatomic Pathology and Clinical Pathology. He served as Clinical Pathology Chief Resident between April 2015 and March 2017. He is currently completing a Transfusion Medicine Fellowship jointly directed by the New York Blood Center and the Department of Pathology.



Sarah Frost, MD

NETWORK **Sarah Frost, MD,** **Assistant Professor** **of Pathology and** **Laboratory Medicine**

Dr. Frost received her Medical Degree from Louisiana State University School of Medicine in 2007. Subsequently, she completed her training in anatomic and clinical pathology at the Mount Sinai Medical Center in 2011 followed by a Cytopathology Fellowship at Montefiore Medical Center and then a Breast Pathology Fellowship at the Mount Sinai Medical Center. She trained in breast pathology under the mentorship of Dr. Ira Bleiweiss, a well-known expert in the field, who now serves as Chief of Breast Pathology at the University of Pennsylvania Medical Center. She is certified in Anatomic and Clinical Pathology as well as in Cytopathology by the American Board of Pathology. ■

Faculty Promotions

Melissa Cushing, MD
Professor of Pathology
and Laboratory Medicine

Jessica Tyler, PhD
Professor of Pathology and
Laboratory Medicine with tenure

Jihye Paik, PhD
Associate Professor of Pathology
and Laboratory Medicine

Lars Westblade, PhD
Associate Professor of Pathology
and Laboratory Medicine

The Career of Daniel M. Knowles, MD: A Testament to Talent, Institutional Loyalty and Courage

By David P. Hajjar, PhD

This month, our Pathology Newsletter celebrates the many accomplishments of **Dr. Daniel Marshall Knowles**, who is currently, the David D. Thompson Professor and Chairman of the Department of Pathology and Laboratory Medicine at the Weill Cornell Medical College and Pathologist-in-Chief at NewYork-Presbyterian Hospital.

Dr. Knowles steps down from his tenure as chair in February 2019, where he has served admirably for 25 years during times of financial prosperity, challenges, and administrative upheavals. Dan never lost his focus, and was always there for WCM-NYP.

Dan has had an illustrious career since the 1970's; and, his work embodies a level of significant accomplishment that is not often seen in Pathology in the U.S. Often it is said that he is the **"father of hematopathology,"** that he is a gifted physician-scientist, and someone who has "duplicated himself" many times over. He has trained over 200 pathologists in his career, where many have also evolved into accomplished chairpersons across the country.

We congratulate you sir!

Dan received his MD from the University of Chicago Pritzker School of Medicine in 1973. He completed residency training in anatomic pathology at the Columbia University College of Physicians and Surgeons, and post-doctoral training in cellular immunology in the Hendry Kunkel Laboratory at The Rockefeller University. He served as Professor of Pathology and Chief of Surgical Pathology at the Columbia University College of Physicians and Surgeons for several years before his appointment as Pathology Chair at Weill Cornell Medical College in 1994.

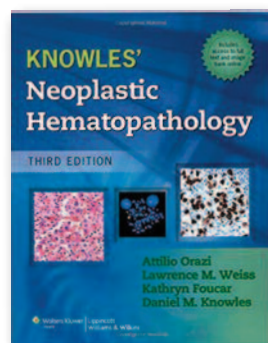
During the course of his scientific career, Dan pioneered the development and characterization of monoclonal antibodies which recognize leukocyte associated antigens. He also developed novel immunohistochemical, cyto-fluorometric and molecular biological techniques, and their correlative application in conjunction with morphologic assessment to the diagnosis and investigation of hematological malignancies. **This approach has vastly improved our ability to diagnose and classify hematologic malignancies.**

Dan has published more than 300 peer-reviewed-scientific papers, review articles, and textbook chapters in his career. He has received several research awards from the National Institutes of Health and the American Cancer Society; and, he is the recipient of the Philip Levine Award for Lifetime

Outstanding Research in Hematology from the American Society of Clinical Pathology.

At our medical center, Dan received its highest achievement award, viz., the Maurice R. Greenberg Distinguished Service Award from the NewYork-Presbyterian-Weill Cornell Medical College. He also received "The Distinguished Service Award" for outstanding leadership in- and making significant contributions to the biological sciences or medicine through research, clinical care, health service administration, public and professional service, or civic duties, from his alma mater, The University of Chicago Pritzker School of Medicine.

Dan, editor of the leading hematopathology textbook (now in its third edition), has directed the leading post-graduate course on neoplastic hematopathology for 25 years and has served on the editorial board of more than 20 medical and scientific journals during his stellar career.



Dr. Knowles has been listed in **"Best Doctors in America"** almost every year since 1992.

As Pathology Chair between 1994 and the present time, Dan developed one of the largest and most lucrative clinical laboratory outreach programs in the Northeast from almost nothing to greater than \$300M in gross charges last year, and he grew the department professional revenue 8-fold and extra-mural funding 12-fold. This change in the finances of the department evolved from the 1990's when we almost had to merge with Columbia. He also increased the full-time faculty from 36 to 83, the residents from 16 to 23, the clinical fellows from 1 to 14, the post-doctoral fellows and staff associates from 5 to 57 and the Weill Cornell support staff from 37 to 108.

Fifteen of the faculty have edited or co-edited major textbooks and seven of our faculty are currently cited as "Best Doctors in America." Three faculty have gone on to become chairs at other highly respected academic medical centers.

Dan was appointed President and CEO of the Weill Cornell Physician Organization in July 2005.



Under his leadership, the Weill Cornell Physician Organization underwent unprecedented economic growth and programmatic success. Patient care visits grew 125% and patient care receipts grew 150%.

Dan has spearheaded a marked expansion of the practice sites of the full-time faculty. He developed and implemented business models to support the build-out of new facilities on the upper east side, the upper west side, and in lower Manhattan to house primary care, multi-specialty practices and imaging. In addition, he oversaw the funding strategies to support a care management team and to implement installation of the EPIC-Practice Management System.

These efforts have propelled Weill Cornell to be designated by the AAMC as possessing the fastest growing revenue stream of any medical school in the United States.

All of us are immensely proud that we have worked with and for a true gentleman. His erudition and scholarship are exemplary. Dan is a great role model; and, I am personally indebted to him for being able to assimilate certain skill sets regarding leadership, valor, collegiality, and kindness... and, of course, to truly appreciate a superb glass of wine! ■



Keynotes

by Domenick J. Falcone, PhD

► 2018 has been a busy year for **Dr. Amy Chadburn**. In January, she was part of the Neoplastic Hematopathology Course, sponsored by Weill-Cornell Pathology and Laboratory Medicine, where she lectured on “Immunodeficiency Related Lymphoproliferative Disorders,” presented a case and moderated sessions. She was the grand rounds speaker at Montefiore Medical Center in February. She also presented an unknown slide seminar for the residents and fellows, as part of the day she spent at the Medical Center. During the USCAP meeting in March 2018, in Vancouver, BC, she attended her last Education Meeting. She rotated off the committee after four years of service. She also mentored PYG2 resident, Miguel Cantu, who had a podium presentation, entitled “Clinicopathologic Analysis of Clonal Composition of Multiple PTLDs Occurring in Individual Solid Organ and Bone Marrow Transplant Recipients.” In April, she attended the AMC meeting in San Francisco, as she is the primary pathologist for central review of HIV/AIDS lymphoma for the clinical trials run by this consortium. In early June, she lectured and gave two slide seminars as part of the 2018 Update in Lymphoma and Myeloma sponsored and run by Weill Cornell. Later in the month, she talked to students as part of the Lymphoma-Leukemia Society Student Fundraising Award Seminar. Dr. Chadburn traveling to Dar es Salaam, Tanzania to attend and lecture at the AMC Africa Sub-Saharan Africa (SAA) Meeting where she lectured on the “Pathology of AIDS-Related Lymphomas.” In July, she was in Chicago, IL, where she lectured at the AACC Annual Scientific Meeting on “Hemoglobin Electrophoresis” and then traveled to Madison, WI, to participate and present her research on “KSHV and Epstein Barr Virus (EBV) Latency Gene Expression in Solid Organ (SOT) and Bone Marrow (BMT) Post-transplant Lymphoproliferative Disorders (PTLDs)” at the International Conference on EBV&KSHV 2018. In September, she became the co-chair of the American Society of Clinical Pathology (ASCP) Annual Meeting, which was followed in early October by the ASCP Annual Meeting where she was part of a panel discussing competency based education and with Dr. Sarah Rutherford, from Weill Cornell Lymphoma Service, and Dr. Adam Woods from Mayo Clinic presented a slide seminar/lecture: “Challenging Cases in Hemato-pathology – Focus on Lymphoma.”

As part of the Lymphoma & Myeloma 2018: An International Congress on Hematologic Malignancies held here in New York in mid-October, Dr. Chadburn talked to nurse practitioners and physician assistants on “Interpretation of Bone Marrow Biopsies in

Hematologic Malignancies: What Happens to a Specimen in a Pathology Laboratory” and presented a case at the associated Lymphoma Research Foundation (LRF) New York Rounds.

► **Dr. Robert DeSimone** was selected as a recipient of the 2018 AABB Future Leader Scholarship Award. This award is given to those who promote interest in the research, development and continuing education of transfusion medicine.

► **Dr. Annarita Di Lorenzo** became Associate Editor of *Cardiovascular Research* journal and served as Member of the Organizing Committee of the International Nitric Oxide Conference (Oxford, UK, September 16-20). Dr. Di Lorenzo served as an ad-hoc reviewer on two NIH study sections. She was an invited speaker at the University of Geneva (Switzerland), King's College of London (UK), Goethe University (Germany), University of Essen (Germany), Vanderbilt University (TN) and Johns Hopkins University. Dr. Alice Marino, postdoctoral trainee in Dr. Di Lorenzo's laboratory, was recently awarded an American Heart Postdoctoral Fellowship, and presented her work at the Society for Heart and Vascular Metabolism (September 30).

► **Dr. Yi-Chieh Nancy Du's** lab focuses on understanding cancer metastasis in order to develop targeted therapies. Dr. Nancy Du spoke about her research on “Nuclear Bcl-xL in Metastasis” in “The Biology of Cancer: Micro-environment, Metastasis & Therapy meeting” at Cold Spring Harbor Laboratory (October, 2017) and 17th International Biennial Congress, Metastasis Research Society (August, 2018). She was also invited to speak at National Cheng Kung University, Taiwan (August, 2018). Dr. Nancy Du gave a seminar at National Cheng Kung University, Taiwan in August 2018. The title of her talk was “Nuclear Bcl-xL in promoting tumor metastasis.”

► **Dr. Mathew Greenblatt** was an invited speaker at the American Society of Bone and Mineral Research annual 2018 meeting where he presented: “Single Cell Sequencing of a Novel Periosteal Stem Cell” and gave endocrine grand rounds at Massachusetts General Hospital on “Rethinking the Cellular Building Blocks of Bone.” His lab was also invited to present at the 2018 Keystone Symposium “Novel Aspects of Bone Biology” on “Discovery of a Periosteal Stem Cell.” Dr. Greenblatt was elected to the Board of Directors of the Advances in Mineral Metabolism professional society and received an award from the Daedalus Fund for Innovation to study Treating Tumor-Mediated Osteolysis with Schnurri 3 Inhibition.

► **Dr. David P. Hajjar** presented a seminar at Bristol Myers Squibb in Princeton, NJ in June 2018 on the Pathogenesis of Atherosclerosis. Dr. Hajjar was also appointed to the Scientific Advisory Boards of the Lorenzini Medical Foundation, Therapeutic Solutions International, Regen Medical/New Directions Co., and Dyo Biotechnologies, Inc.

► **Dr. Stephen Jenkins** is the 2019 recipient of the American Society for Microbiology (ASM) inaugural Award for Research and Leadership in Clinical Microbiology, which recognizes an outstanding scientist/clinical microbiologist with distinguished research achievements, and a record of innovation and advancement of the Clinical Microbiology profession. This award represents the merging of the BD Research and Sonnenwirth Awards given annually since 1978 and 1986, respectively. In addition, in June Dr. Jenkins proposed, co-convened, and presented a workshop at the American Society for Microbiology Microbe 2018 Meeting entitled “The Microbes Are Winning: A Workshop on Antibiotic Resistance, Detection, Distribution, and Molecular Epidemiology of Significant Bacterial Pathogens.” He has also been asked to present a workshop addressing the same issues for the upcoming 2019 meeting. In February, Dr. Jenkins presented a lecture entitled “New Mechanisms of Antimicrobial Resistance and Methods for Carbapenemase Detection” at the 24th Annual First Coast Infectious Disease/Clinical Microbiology Symposium in Hammock Dunes, FL. In March, Dr. Jenkins presented a lecture entitled “An Ever-Evolving Clinical Nightmare - Multi-Drug Resistant Pathogens: Laboratory Detection and Approaches to De-Bug Our Patients” at the 2nd Annual Cornell Symposium on Antimicrobial Resistance: Research Synergies in Human and Animal Medicine. In July, Dr. Jenkins presented a lecture entitled “The Role of Anaerobes in Pneumonia: A Breath of Fresh Air” at the 14th Biennial Congress of the Anaerobe Society of the Americas in Las Vegas, NV. In June, Dr. Jenkins presented a lecture entitled: Case Studies in Antimicrobial Susceptibility Testing: The Path of Least Resistance” at the Weill Cornell Medicine 9th Annual Infectious Disease Update. Dr. Jenkins has been a Voting Member and Advisor to the Clinical Laboratory Standards Institute Subcommittee on Antimicrobial Susceptibility Testing for the past several years and co-chaired its Methodology Working Group during that time frame. Finally, Dr. Jenkins is a member of the NY State Organ Transplant Infectious Disease Working Group.

continued on page 6

Keynotes

continued from page 5

► **Dr. Daniel M. Knowles** was the recipient of the University of Chicago Distinguished Service Award. It is an award that recognizes alumni who have brought honor and distinction to the Division of the Biological Sciences and to the University of Chicago by demonstrating outstanding leadership in- and making significant contributions to- the biological sciences or medicine through research, clinical care, health service administration, public and professional service, or civic duties. Dr. Knowles joins an exclusive list of 295 other Pritzker and BSD alumni recipients. This selection was made by the Alumni Awards Committee, a committee comprised of fellow alumni of the Medical School and the Division of the Biological Sciences.

► **Dr. Selina Chen-Kiang** served on the Scientific Program Committee of AACR and chaired the “Targeting the cell cycle: mechanism and therapy” session at the AACR 2018 meeting in Chicago (April 13-18). Dr. Chen-Kiang was a speaker at the Mantle Cell Lymphoma Scientific Workshop in Atlanta (April 26-28), and an invited panelist at the “Thought Leadership Roundtable” of Leukemia and Lymphoma Society (LLS) (November 29th). To promote women in science, Dr. Chen-Kiang joined Dr. Gwen Nichols on the LLS – International Women’s Day Satellite



Media Tour of 28 TV and Radio Stations, which ended with an appearance on a screen in Times Square. Dr. Chen-Kiang was also the 2018 poster child of LLS’s “Fighting Cancer is in Our Blood Campaign.”

Basel Humos, a summer intern with Dr. Chen-Kiang from Weill Cornell Medicine Qatar, won an Abstract Achievement Award from the American Society of Hematology and presented his work at the ASH annual meeting in San Diego (December 1-4).

► **Dr. Cynthia Magro** presented a CME course at Harvard Medical School in September 2017. She was the keynote speaker. She spoke about various topics including psoriasiform dermatitis, interface dermatitis of collagen vascular disease, borderline melanocytic neoplasms and atypical nevi special sites. She lectured at the annual 2017 American Society of Dermatopathology (ASDP) meeting, on the topic of “Select Clonal Dendritic Cell Histiocytopathies.” In April 2018, Dr. Magro was a keynote speaker for the 1st Annual Degos Disease Symposium hosted by the National Institutes of Health (NIH) in Bethesda, MD. In June 2018, Dr. Magro was

a course director along with Dr. Mihm and Dr. Crowson at the American Society for Clinical Pathology (ASCP) meeting held in Charleston, SC where she gave 15 lectures during a weeklong course. Dr. Magro and colleagues’ textbook, *Biopsy Interpretation of the Skin: Primary Non-Lymphoid Neoplasms of the Skin*, 2nd edition was published in the Spring of 2018.

► **Dr. Juan Miguel Mosquera** was a guest speaker at the IX Meeting of the International Academy of Pathology (IAP; Mexican Division)/XVIII National Meeting of Mexican Federation of Pathology. Dr. Mosquera gave three lectures on the roles of Pathology in Precision Medicine, Precision Oncology and Molecular Applications in Renal Cancer. November 1-5, Puebla, Mexico.

► **Dr. Jacob H. Rand**, Vice Chairman for the Division of Laboratory Medicine, was invited to speak at the International Society of Thrombosis and Haemostasis meetings in Dublin, Ireland on “New Insights on Antiphospholipid Syndrome Diagnostics Derived from Imaging Immune Complexes.” He is being recognized as a 30-year Fellow at the New York Academy of Medicine’s 171st Anniversary Discourse and Awards ceremony. Dr. Rand was also appointed an Honorary Surgeon of the New York City Police Department, where he serves the NYPD Medical Division as a consultant for hematologic issues affecting police officers.

► **Dr. Rema Rao** was accepted as the LEAD advanced attending into the NYP LEAD academy, which is NYP’s initiative in training future physician leaders. The mission of the LEAD academy is to identify and invest in promising early-career NYP-affiliated attendings. Dr. Rao was also accepted into the Mentored Clinical Research Training Program, a collaborative initiative by Weill Cornell Medicine (WCM) and Houston Methodist (HM). The program is aimed at WCM and HM early career physicians who have a strong interest in clinical research but currently lack the time to participate in comprehensive clinical research training, such as the certificate and Master’s programs in clinical investigation of Weill Cornell’s Clinical and Translational Science Center (CTSC). Dr. Rao’s research mentor in this program is Dr. Alain Borczuk.

► **Dr. Hanna Rennert** has expanded her autosomal dominant polycystic kidney disease (ADPKD) genetic research to studying the role somatic mutations in *PKD* genes in renal tubular epithelium that may explain, at least in part, cyst formation and the pathogenesis of ADPKD. The findings implicate a cellular

recessive mechanism for cyst formation leading to the consideration of ADPKD as a benign neoplasm. A manuscript describing this work has just been published in the *JASN* in August 2018. Additionally, she has been invited to present this work at the Polycystic Kidney Disease Research Conference, The PKD Connect Conference in Kansas City, MO, in June, 2018. Dr. Rennert is currently working with industry to establish a collaboration aimed at identifying the cell types and corresponding biological processes involved in cyst formation by using single cell RNA sequencing (scRNA-seq) of isolated renal cyst cells. This year she has been invited to serve on a Roche Diagnostics Advisory Board for Next Generation Sequencing focusing on Bioinformatics solutions.

► **Dr. Momin Siddiqui** serves as the Chief of Papanicolaou Cytology Service at Weill Cornell Medical College. This year, he had a number of national and international speaking presentations. These included, ACE – Advanced Cytopathology Education in Salt Lake City, Utah; American Society of Cytopathology Companion Meeting at the 41st European Congress of Cytology, Madrid, Spain; American Society of Clinical Pathology Annual Meeting, Baltimore, Maryland; American Society of Cytopathology, 66th Annual Scientific Meeting, Washington D.C. He also directed the Papanicolaou and Frost 2018 Cytopathology Tutorial in New York, NY, in July 2018. Dr. Siddiqui and colleagues’ *Atlas of Non-Gynecologic Cytology*. Springer International Publishing, Switzerland; 1st Edition, was published in 2018.

► **Dr. Lars Westblade** was busy speaking across the country. His webinar: “Carbapenem-Resistant Enterobacteriaceae (CRE): Raising the Bar with High Stakes Bacteria” (November, 2017), was highlighted in CAP Today (March 2018). In May 2018, he presented “Cell-Free DNA for Microbial Diagnostics” at the ASM Clin Micro Open in West Palm Beach, FL. Also in May, he gave Weill Cornell Medicine Department of Pathology and Laboratory Medicine Grand Rounds. The title of his seminar was: “From Dog Bites to the ICU: a Clinical Microbiologist’s Antimicrobial Journey,” and participated in Stump the Stars! At the annual Spring meeting of the New York City Branch of the American Society for Microbiology. In June, Dr. Westblade gave two talks at the 2018 ASM Microbe Meeting: “Integrating Rapid Diagnostics into Antimicrobial Stewardship: Microbiology and Stewardship Synergies,” and a “Literature Review, Infectious Diseases Diagnostics.”

continued on page 7

Keynotes

continued from page 6

► Dr. Lars Westblade *continued*

Lastly, Dr. Westblade served as an organizer for the Antimicrobial Resistance: Research Synergies in Human and Animal Medicine. 2nd Annual Cornell University Symposium. March 2018, in New York.

► **Dr. Rhonda Yantiss** had a number of national and international speaking engagements, including presentations at the 2017 California Tumor and Tissue Registry Annual Seminar and 2017 California Society of Pathologists 70th Annual Meeting in San Francisco, California; the 31st Brazilian Congress of Pathology in Belo Horizonte, Brazil; the 2018 United States and Canadian Academy of Pathology Annual Meeting in Vancouver, Canada; the 2018 Australasian Division of the International Academy of Pathology Annual Meeting in Sydney, Australia; and Diagnostic Pathology Updates of the United States and Canadian Academy of Pathology in Florence, Italy. She was the Nakamura Lecturer at Scripps Green Hospital, San Diego, California, and a visiting lecturer in the Practical Advances in Pathology Course of the University of Miami Miller School of Medicine, as well as the 39th

Annual Current Concepts in Surgical Pathology Course of Harvard Medical School in Boston, Massachusetts. She directed the Tutorial on Pathology of the GI Tract, Pancreas, and Liver in New Orleans, Louisiana. Dr. Yantiss was recently appointed to the American Board of Pathology Test Development and Advisory Committee for Anatomic Pathology.

► **Dr. Zhen Zhao** serves as President, the North American Chinese Clinical Chemists Association. She was invited to give a Plenary lecture at the 2018 Mass Spectrometry for Clinical Diagnosis in Kaohsiung Taiwan. The title of the lecture is "Pathogen Identification and Antibiotic Resistance Detection by Mass Spectrometry." She was the Co-Chair of the 3rd Beijing Lab Medicine Forum in Women and Children's Health, where she also presented a talk titled "Update on preeclampsia biomarkers." She was also invited to provide a short course at the Association for Mass Spectrometry: Applications to the Clinical Laboratory 10th Annual Conference, January 2018, Palm Springs, CA. The course title was "MALDI-MS Fundamentals and its Emerging Role in Pathology and Labora-

tory Medicine." At the 2nd Changcheng laboratory medicine conference, May, 2017, Beijing, China, she presented "Study design for biomarker validation." In April, at the First Clinical Mass Spectrometry Conference, Beijing, she presented "MALDI TOF MS application in protein quantitation."

► **Dr. Yen-Michael Hsu** chaired the scientific session on the topic of "The Regenerative Utilization of Endothelial Cells: Bench to Bedside," at the 2018 AABB Annual Meeting in Boston, MA. Starting in 2018, Dr. Hsu served as the Leader of the AABB Cellular Therapy Asia-Pacific Group Subcommittee and continues to promote the cellular therapy scholar network in Asia. He was an invited speaker at the 2nd International Scientific Forum on Exosome Research and Application in Beijing, China: The title of the lecture was: "Novel cell therapy practice with standardization: From Cornell to China." He was a speaker at the 2nd Xiangshan Transfusion Medicine Forum and Academic Annual Meeting in Beijing, China. The lecture title was: "Cellular therapy practices supported by hospital blood bank environment." ■

Dr. Knowles, Philatelist

Dan has many interests and talents beyond the Department of Pathology. He is an expert philatelist. Specifically, one of his many interests involves "Communication in America in the 19th Century." During the 1800's, both personal and commercial communication were performed by hand written letters which were either transported by the U.S. Post Office Department or by private carriers, akin to today's Federal Express and United Parcel Service. The letters were carried by stagecoach, riverboat, by horseback and sometimes on foot. The study of postal communication is referred to as "Postal History." Fundamentally, this is the study of the routes by which mail is carried, the highly variable and changing rates for letters going to different domestic and international destinations, and the markings placed on the letters by the Post Office to indicate their origin, destination, delivery routes and rates. Dan has been actively collecting postal history artifacts for more than 50 years. One of his major areas of interest is the postal history of the 1860s, the decade that witnessed the American Civil War, western and territorial expansion, establishment of

the Transcontinental Railroad and Transcontinental Telegraph, the Pony Express, and the marked expansion of Transatlantic and Pacific commerce. To this end, Dan Knowles is one of the foremost collectors and authorities on the postal history of the American Civil War period. He has been invited to speak on the topic by the prestigious United States Philatelic Classics Society and The Collectors Club of New York. He has also exhibited competitively at a national level. Most recently, his eight-frame exhibit "The Confederate States of America (CSA) Postal Initiative" received a Large Gold medal at the annual meeting of the American Philatelic Society. This is the highest medal level awarded to an exhibit. This exhibit received the Reserve Grand Award at the show, which represented second place among 125 competitive exhibits from throughout the world. This exhibit also received The Postal History Society Award for the best postal history exhibit at the show. This exhibit explained the development and evolution of the Confederate Postal Services from the secession of South Carolina in December 1860 to the surrender of Robert E. Lee at Appomattox in April 1865. ■



► Dr. Knowles' award-winning exhibit.



► Dr. Knowles receiving the Reserve Grand Award from Patricia Kaufman, Vice President of the American Philatelic Society.

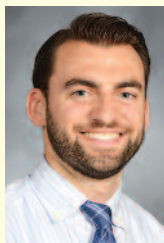


Residents' Corner

Welcome to our New Residents



Amelia Baxter-Stoltzfus, MD
Amelia Baxter-Stoltzfus completed her MD from Emory University School of Medicine. Her undergraduate degree is in Anthropology from the University of Chicago; she also has an MA in Human Skeletal Biology from NYU. Amelia is an incoming AP/CP resident.



Matthew Canver, MD, PhD
Matt Canver completed his MD/PhD from Harvard Medical School. His PhD is in Biological and Biomedical Sciences; his research project focuses on developing computational tools to analyze CRISPR genome editing experiments. His undergraduate degree is in Bioengineering from the University of Pennsylvania. Matt is an incoming CP-only PSTP resident.



Tobias (Toby) Cohen, MD, PhD
Toby Cohen completed his MD/PhD from Icahn School of Medicine at Mount Sinai. His PhD is in microbiology with research projects in CMV. His undergraduate degree is in Statistics and Biology and Classics from Brown University. Toby is an incoming AP/CP resident.



Mona Farahi, MD
Mona Farahi completed her MD at St. George's University School of Medicine. She received her BS in Biology and Psychology from the University of California San Diego. Mona is an incoming AP/CP resident.



Maria Mostyka, DO
Maria Mostyka completed her DO at Philadelphia College of Osteopathic Medicine. She received her BS in Biology from the College of New Jersey. Maria is an incoming AP/CP resident.

Ninth Annual Residents' Research Day

The Ninth Annual Residents Research Day was held on Tuesday, April 17, 2018 at the Griffis Faculty Club at Weill Cornell Medicine. The judges for this year's platform presentations were: Brian Robinson, MD, Associate Professor of Pathology and Laboratory Medicine, Chief, Surgical Pathology; Matthew Greenblatt, MD, PhD, Assistant Professor of Pathology and Laboratory Medicine; Julia Geyer, MD, Associate Professor of Clinical Pathology and Laboratory Medicine Program Director, Hematopathology Fellowship.

There were 7 oral presentations with 2 winners. The winners of the oral presentations were **Dr. Miguel Cantu (PGY-2, AP/CP)** and **Dr. Joseph (Justin) Mulvey (PGY-2, CP)**. In addition, there was an award for the best scientific poster presentation with 12 posters presented. **Dr. Jacob Sweeney (PGY-2, AP/CP)** won the best scientific poster award. This year the digital image contest had 10 entries, and the winner was **Dr. Lorene Yoxtheimer (Cytopathology Fellow)** for her photo titled "Questionable Cell." All winners were awarded with gift certificates. *Congratulations to all on your excellent presentations and participation.*



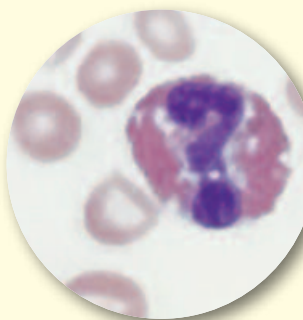
▲ **Dr. Miguel Cantu**
(PGY-2, AP/CP)



▲ **Dr. Joseph (Justin) Mulvey**
(PGY-2, CP)



▲ **Dr. Jacob Sweeney**
(PGY-2, AP/CP)



◀ **Digital Image Contest**
Winning Photo:
Questionable Cell by
Dr. Lorene Yoxtheimer
(Cytopathology Fellow)



◀ Three Weill Cornell residents were among the winners nationwide in of this year's Paul E. Strandjord Young Investigator Awards at the 2018 annual meeting of the Academy of Clinical Laboratory Physicians and Scientists (ACLPS) in Houston TX. The winners from our department included (front row, 2nd, 3rd and 4th from the left) Drs. Justin Mulvey, Rebecca Marrero Rolon and Gavriel Mullokandov. Gavriel also won a Fondren Foundation Young Investigator Award.

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Fellows

Welcome to our New Fellows



Jordan Baum, MD
Breast Fellow

Dr. Baum graduated from the Indiana University School of Medicine in 2013. She completed our AP/CP residency training program. During her PGY-3 year, she served as the Assistant AP Chief Resident and in her PGY-4 year, was the AP Chief Resident. She has also completed our Molecular Genetics fellowship at Cornell last year.



Adela Cimic, MD
Cytopathology

Dr. Cimic graduated from Medical School, University of Sarajevo, Bosnia and Herzegovina in 2004. She joined Clinical Center University of Sarajevo, Bosnia and Herzegovina as Anatomic pathology intern/resident from 2004-2010. She then became a research fellow at Wake Forest Baptist Medical Center, followed by completing her AP residency from 2011-2017. Following her residency she became our Gynecologic and perinatal pathology fellow at Weill Cornell Medical College. Post fellowship she was an Assistant Professor at Stony Brook University, Department of Pathology and then an attending Pathologist at Maimonides Medical Center.



Amin Hedayat, MD
Dermatopathology

Dr. Hedayat graduated from St. George's University, School of Medicine in Great River New York in 2014. Prior to medical school he was a Visiting Scholar Fellow at the University of California, San Francisco from 2007-2016. He completed his AP/CP residency training program at Dartmouth Hitchcock Medical Center.



Jad Saab, MBBS
Dermatopathology

Dr. Saab completed his medical school training at the American University of Beirut Medical Center in Lebanon, and a pathology residency here at NewYork-Presbyterian/Weill Cornell Medical Center from 2012-2016, where he served as AP Chief Resident. He followed that with a Surgical Pathology Fellowship at MSKCC from

2016-2017 and recently completed a molecular genetic pathology fellowship from University of Pennsylvania.



Erika Hissong, MD
Gastrointestinal Pathology

Dr. Hissong graduated in 2014 from Indiana University School of Medicine. She completed our AP/CP residency training program. During her PGY-3 year, she served as the Assistant AP Chief Resident and in her PGY-4 year, was the AP Chief Resident.



Aram Vosoughi, MD
Genitourinary Pathology

Dr. Vosoughi received his MD degree in 2005 from the Shahid Beheshti University, Iran. He recently completed his pathology residency training program at the University of Miami, Jackson Memorial Hospital. He completed his Post-doctoral Research Fellowship here prior to becoming a clinical fellow.



Daniel Levitan, MD
Gynecologic Pathology

Dr. Levitan graduated from St. George's University School of Medicine in 2013. In 2017, he completed his AP/CP residency-training program from State University of New York Downstate Medical Center (SUNY Downstate). Subsequently he went on to complete his Oncologic Surgical Pathology fellowship at Memorial Sloan Kettering Cancer Center this past year.



Shane Betman, MD
Hematopathology

Dr. Betman graduated from the University of Virginia School of Medicine in 2014. He recently completed AP/CP pathology residency-training program at the NewYork-Presbyterian Hospital/Columbia.



Sergei Guma, MD, PhD
Hematopathology

Dr. Guma graduated in 2014 from the University of Puerto Rico-School of Medicine. He recently completed his AP/CP residency-training from NYU Langone Medical Center.



Seung He (Anna) Nam, MD
Molecular Genetic Pathology

Dr. Nam graduated in 2014 from the University of Missouri-Columbia School of Medicine. She completed our AP residency-training program as well as our Hematopathology fellowship.



Sabrina Racine-Brzostek, MD, PhD
Transfusion Medicine

Dr. Racine-Brzostek graduated from Stony Brook University School of Medicine in 2013. She recently completed her AP/CP residency-training program at Montefiore Medical Center/Albert Einstein College of Medicine.

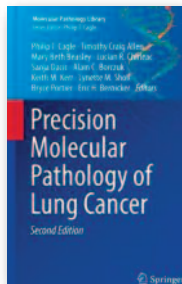
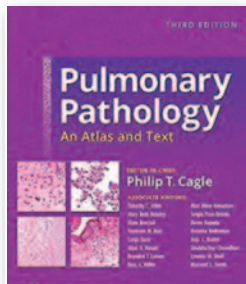
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Faculty Publications in 2018



Sfeir MM, Schuetz A, Van Besien K, **Borcuk AC**, Soave R, **Jenkins SG**, Walsh TJ, Small CB: Mycobacterial spindle cell pseudotumor: Epidemiology and clinical outcomes. *J Clin Pathol* 71:626-630, 2018.

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► **The Greenblatt Laboratory** (Dr. Matt Greenblatt, center) made a groundbreaking discovery that has impacted our understanding of bone formation and remodeling in the setting of bone injury. Bone is divided into endosteal and periosteal compartments. Much is known about the cells that give rise to the endo-steal compartment, but nothing had been known about the development of the periosteal compartment. In the paper, Discovery of a periosteal stem cell mediating intramembranous bone formation published in *Nature*, Matt Greenblatt and his lab have identified a new bone stem cell that is required to give rise to periosteal bone and to respond to bone injury. These cells were identified in mice and through a series of elegant analyses were shown to have clearly distinct molecular signatures as compared to endosteal stem cells. Moreover, the Greenblatt laboratory identified a population of cells with similar features in human bone. In addition to being an important addition to our understanding of bone biology, this pioneering work has important implications for the generation of novel therapies aimed at stimulating bone remodeling in the setting of injury.

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Faculty Publications

continued

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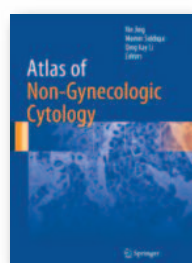
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continued from page 11

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Newly Awarded Pathology Grants

◆ National Institutes of Health (NIH) Program Project Research Grant (P01)

Title: *Mechanism-Based Targeting of Mantle Cell Lymphoma*
Principal Investigator: **Selina Chen-Kiang, PhD**
Period of Support: 09/01/2018 - 08/31/2019
Total Direct Costs: \$5,927,509

◆ STARR Cancer Consortium

Title: *The function and regulation of MIT/TFE activation in autophagy and pancreatic ductal adenocarcinoma*
Principal Investigator: **Yi-Chieh Nancy Du, PhD**
Period of Support: 01/01/2019 - 12/31/2020
Total Direct Costs: \$700,000

◆ Emerson Collective Cancer Research Fund

Title: *Creating autologous Immuno-Oncology Avatars to Foster Immuno-Oncology Programs*
Principal Investigator: **Giorgio Inghirami, MD**
Period of Support: 1/3/19 - 12/31/21
Total Direct Costs: \$166,666

◆ Rosenfeld Heart Foundation

Title: *Study of the Pathogenesis of Heart Disease*
Principal Investigator: **David P. Hajjar, PhD**
Period of Support: 2017-2020
Total Direct Costs: \$100,000

◆ Kellen Foundation Research Grant

Title: *Defining the Cellular Oncogenome of Kaposi Sarcoma*
Principal Investigator: **Francesca Khani, MD**
Period of Support: 07/01/2018 - 06/30/2019
Total Direct Costs: \$50,000

◆ Tri-Institutional Therapeutics Discovery Institute Research Grant

Title: *Study of S1PR2*
Principal Investigator: **Teresa Sanchez, PhD**
Period of Support: 03/01/18 - 02/29/20
Total Direct Costs: \$500,000

◆ Emerson Collective Cancer Research Fund

Title: *Exploring the Kinome for DNA Repair and Cancer Regulatory Pathways*
Principal Investigator: **Barry Sleckman, MD, PhD**
Period of Support: 01/01/2019 - 12/31/2020
Total Direct Costs: \$166,667

◆ STARR Cancer Consortium Research Grant

Title: *Genomic instability in the chromosomal context of physiological DNA double-strand break formation*
Principal Investigator: **Jessica Tyler, PhD**
(Co-PIs: **Barry Sleckman, MD, PhD & Marcin Imielinski, PhD**)
Period of Support: 01/01/2019 - 12/31/2020

◆ National Institutes of Health Research Grant

Title: *Chromatin's Role in Repair of Radiation-Induced Damage*
Principal Investigator: **Jessica Tyler, PhD**
Period of Support: 12/01/2018 - 11/30/2023
Total Direct Costs: \$950,000

◆ SPORE DRP Award Research Award

Title: *Small molecule activators of the SPOP tumor suppressors to treat G3BP1 high prostate cancer*
Principal Investigator: **Pengbo Zhou, PhD**
Period of Support: 08/01/2018 - 07/31/2019
Total Direct Costs: \$100,000

◆ NYSTAR Designated Center for Advanced Technology

Title: *Topical Therapeutics for Skin Diseases associated with DNA Damage*
Principal Investigator: **Pengbo Zhou, PhD**
Period of Support: 07/01/2018 - 06/30/2019
Total Direct Costs: \$50,000

◆ STARR Cancer Consortium

Title: *Identification of Transcriptional Determinants of asparaginase sensitivity in Leukemias*
Principal Investigator: **Giorgio Inghirami, MD**
Period of Support: 01/01/2019 - 12/31/2020
Total Direct Costs: \$100,000 ■