Welcome to The University of New Mexico Department of Pathology’s PathFINDER. This sixth issue focuses on exciting emerging research, successful research trainees and exemplary research funding. Feature articles highlight emerging research on innovative models for ovarian cancer and on gene cutting approaches to myeloid disorders. The Department of Pathology is proud to be a lasting leader in biomedical and translational research.

With a heavy heart, we share a memorial tribute to Dr. William C. Black III, who served our patients, students and faculty for over 40 years. Three faculty’s enduring accomplishments are highlighted as they retire: Dr. Thérèse Bocklage, Dr. Walker (Kip) Wharton, and Dr. Jin Wu. Our esteemed faculty are speaking at conferences across North America, including Vancouver, Seattle, Cleveland, Miami and Philadelphia. Please consider attending their stimulating presentations and saying hello in person.

Our “Star Staff” article is a new feature and our first star is beloved by the residents.

The “Thomas M. Williams and Margaret G. Williams Endowment for Education and Training” recently funded the purchase of new educational equipment. I encourage you to make a contribution to a UNM Department of Pathology fund (pathology.unm.edu/make-a-gift). You are investing in the future of Pathology. Your generosity is appreciated and your contributions are managed carefully.

Hoping to hear from you and wishing you a joyful holiday season.

DOUGLAS P. CLARK, MD
Professor & The Frederick H. Harvey Chair of Pathology
Dr. Chong was a hematopathology fellow in the UNM Department of Pathology from 1998-99 and he kindly shared that Drs. Kathy Foucar and Richard Larson had a huge influence on his career. During his one year of hematopathology fellowship, Dr. Chong appreciated the professional training that gave him excellent diagnostic skills and observed how much Drs. Foucar and Larson cared for the fellows as colleagues and people. Both helped Dr. Chong tremendously to secure his first job as a Staff Pathologist at University Hospital in Cleveland and he has kept in touch with Drs. Foucar and Larson over the years.

Recently, Dr. Chong became the Vice Chair of Pathology and Laboratory Medicine at the Cleveland Clinic, chairing the Regional Operations Group, overseeing the labs of 11 hospitals and 17 family health centers with emergency rooms, ambulatory surgery centers and outpatient cancer clinics.

Dr. Chong enjoys gardening and Washington State wine. Sadly, wine tasting is on hold now that he has moved to Cleveland, Ohio. You may reach Dr. Chong at: CHONGY@ccf.org

DO YOU HAVE ALUMNI NEWS?
Please email your news, photos, and contact information to William Collins: wfcollins@salud.unm.edu. Your news will be included in a future newsletter. Thank you in advance for contributing!

YAP-YEE (CHRIS) CHONG, MD
Vice Chair, Robert J Tomsich Pathology and Laboratory Medicine Institute
Cleveland Clinic, Cleveland, OH.

The sun was setting as we dropped into the Rio Grande valley. The vibrant glow of the Sandia and Manzano mountains to the east captivated us immediately. My family and I knew right then that we would be moving to Albuquerque! My visit to UNM was the last stop on an exhaustive interview tour by car that included visits to pathology residency programs on the west coast and throughout the desert southwest.

Twenty-three years have passed since then, and I am continually grateful for the UNM opportunity that I was provided. During those short four years, I worked alongside a collegial group of fellow residents and interacted with some of the greatest mentors of my lifetime. Several of these faculty members were key in helping me secure my cytopathology fellowship training program at UT MD Anderson Cancer Center: a path which opened the doors to a highly rewarding private practice opportunity in the NASA / Space Center area of Houston. Several years ago, entering my career midpoint, I felt it proper to move back home to California to be closer to family. I am fortunate to have secured a very challenging position with the Kaiser-Permanente Medical Group in Northern California where I will complete my career.

I often reflect back to my days at UNM, and do long to return to the Valley to be reignited by the most beautiful skies I have ever seen!

Jeffrey Moore, MD
Private Practice Pathologist, Kaiser Permanente
South Sacramento Medical Center, Sacramento, CA.

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Even though ovarian cancer is a rare disease with only 22,000 cases per year in the USA, it is the fifth highest cause of cancer deaths in women. Diagnosis is often thwarted by the generic symptoms of bloating and common abdominal discomfort. By the time symptomatic patients seek medical attention, ovarian cancer has often disseminated throughout the abdomen and formed solid tumors on other organs. Although most patients initially respond to surgery and chemotherapy, the majority will relapse with chemotherapy-resistant disease. Five year survival is 45%. Dr. Steinkamp’s research looks for ways to limit relapse by targeting receptors expressed on the surface of cancer cells. She is particularly interested in the ErbB family of growth factor receptors that are frequently expressed in ovarian cancer tumors. These receptors can interact with each other as homo-dimers or hetero-dimers and the type of interaction can impact the cell response. In ovarian cancer, sixty percent of primary tumors have more than one ErbB family member expressed. Steinkamp’s group is testing drugs that inhibit all four members at once.

Dr. Steinkamp and her team want to understand how the ErbB receptors are functioning in ovarian cancer and, based on this understanding, develop targeted treatment strategies. To evaluate targeted therapies in a model relevant to human disease, Dr. Steinkamp has developed an innovative, biologically relevant approach using patient-derived cancer cells. A collaborative study between clinicians and basic researchers at UNM allows researchers to obtain malignant ascites fluid from ovarian cancer patients undergoing surgery here at UNM. The ascites fluid is normally discarded, but it is a treasure to Dr. Steinkamp and the UNM Ovarian Cancer Research Group, because this fluid contains immune cells and free-floating ovarian cancer cell spheroids.

Steinkamp injects the isolated ovarian cancer spheroids from ovarian cancer patients into the abdomens of immunodeficient NSG mice. Over time, these human ovarian cancer cells will form solid tumors on organs in the mouse abdomen similar to what is seen in patients with disseminated disease. This model maintains many of the characteristics of the original disease, including expression of ErbB receptors, because these ovarian cancer cells are never cultured as a monolayer; they grow in the natural, three dimensional, abdominal microenvironment of mice. These abdominally cultured human ovarian cancer cells are called “patient derived xenographs (PDXs)”. Yes, PDX models are a much better tool for studying how ovarian cancer cells function in their normal microenvironment than cancer cell lines grown as monolayers!

The PDX mouse model has an additional advantage over cell lines in that it maintains the genetic heterogeneity of the human ovarian cancer cell population. Therefore, these models can be used to examine clonal variation in different tumors within the same mouse or among mice carrying tumors derived from the same patient. Currently Dr. Steinkamp is working with five PDX mouse models created from five different human ovarian cancer patients. Initially it takes up to six months to establish tumors in these models, but subsequent generations have a faster disease onset. Solid tumors or spheroids from the mice can be transferred into multiple new NSG recipient mice. These cohorts of mice can then be used to test response to clinical treatments, such as targeted antibodies or small molecule inhibitors. Dr. Steinkamp uses human-specific fluorescent probes to monitor tumor growth in live mice during treatment. With these models, we have shown a decrease in tumor burden with combination therapy of an ErbB inhibitor and paclitaxel. Dr. Steinkamp just received pilot funding from the UNM Cancer Center to compare the RNA expression patterns of solid tumors versus free-floating spheroids from the PDX models. Recent funding for Dr. Steinkamp’s research is provided by the New Mexico Spatiotemporal Modeling Center (STMC) lead by UNM Pathology Professor Bridget Wilson and by a young investigator research award from the American Cancer Society (ACS) Institutional Research Grant (Ozbun, PI). This fall she also received funding from the Phi Beta Psi Charity Trust to further investigate pan-ErbB inhibitors to target ovarian cancer. The team’s collaborative research on drug penetration in ovarian cancer tumors, which combined in vivo mouse studies and computational modeling was published in Cancer Research in 2016.

Our department is fortunate to have Dr. Steinkamp working innovatively to create mouse models for studying in vivo treatments for ovarian cancer.
Normal human bone marrow produces approximately 500 billion blood cells per day, necessary for many functions such as immune defense, blood clotting, oxygen transport and more. Diseases can result from bone marrow dysfunctions, including ceasing to make specific cell types, ceasing to make functional cell types, or making too many of a specific cell type.

Cédric Cleyrat, PhD is researching severe types of congenital amegakaryocytic thrombocytopenia (CAMT), a rare inherited disorder detected at birth. Children born with CAMT have too few platelets, cannot clot their blood and thus are susceptible to hemorrhaging. They also often suffer from severe anemia or leukemic transformation later in life and the only treatment currently available is a bone marrow transplant from a compatible donor. Interestingly, the children with CAMT carry mutations in the gene encoding the thrombopoietin receptor (called Mpl) that not only prevent hematopoietic stem cells maintenance and self-renewal, but also impact their ability to differentiate into megakaryocytes, which are the platelet-producing cells in the bone marrow.

In a recent study of a familial case of CAMT, Dr. Cleyrat and his team have identified a novel mutation of this specific gene and, after a thorough characterization using biochemical and imaging techniques, determined that, despite being still partially functional, the receptor is incapable of reaching the cell membrane. Thus, the underlying basic biologic problem is that the receptor doesn’t traffic to the cell surface, preventing its activation by its ligand. Images in Figure 1 show that wildtype (WT) Mpl receptor (green fluorescence) is present at the surface of the cell (green arrow head), while the mutant Mpl receptor is trapped inside as visualized by the co-localization with a marker of the endoplasmic reticulum in red (ER; an internal compartment of the cells) rendering a strong yellow color, which can be quantified using an image analysis software. Scale bars = 5 µm.

Dr. Cleyrat is using two different approaches to rescue the function of the receptor: 1) alternate trafficking and 2) genome editing. In the alternate trafficking approach, he forces the trapped receptors to the cell surface through autophagy. This unconventional delivery of the mutant receptor to the cell surface partially restores binding to the ligand and proper cell activation; opening the way for screening of Federal Drug Administration (FDA)-approved drugs that activate this autophagy pathway as potential alternate therapeutic agents to treat CAMT. In the genome editing approach, Dr. Cleyrat uses molecular scissors, called the CRISPR-Cas9 system, to cut out the mutated genomic DNA and replace it with the wildtype gene in the cell’s nucleus. Cleyrat was able to recover the stem cells contained in a cord blood sample collected at birth from one of this family’s kids and which was preserved in liquid nitrogen. He then applied the genome editing approach that he designed to these very few cells and demonstrated that after being genetically manipulated, these cells recovered their ability to differentiate into megakaryocytic cells in vitro. The final goal would be to reinfuse these “edited” cells into the patient with the unique advantage to remove the risk of graft vs. host adverse reactions, the most common reason for therapy failure in CAMT. This work represents a proof-of-principle that genome editing could be used to cure this disease, once approved for clinical application. A schematic summary of the two rescue approaches used to restore the mutant receptor function is presented in Figure 2.

In the future, Dr. Cleyrat is optimistic that the genome editing approach will work in humans. Similar efforts are ongoing to treat multiple other disorders, such as sickle cell disease, specific kinds of blindness or Duchene muscular dystrophy, with first-in-human clinical trials just around the corner.

On the other end of the spectrum, other mutations in the bone marrow resident stem cells can lead to over-proliferation and cause myeloid cancers called myeloproliferative neoplasms (MPN). The excessive production of red blood cells or platelets triggers life-threatening clotting problems and the development of fibrosis in the bone marrow can lead to its loss of function and sometimes to leukemia. Dr. Cleyrat, in collaboration with Dr. Bridget Wilson in UNM Pathology and Dr. Cecilia Arana-Yi in UNM Internal Medicine, has initiated a clinical research protocol to study and bank MPN samples at UNM. Their clinical study, supported by funds from the Department of Defense and the American Cancer Society, successfully enrolled nearly...
80 patients in just 20 months. With the expert help of staff member Eun Ho Choi and the UNM Human Tissue Repository, Cleyrat has banked multiple samples for each patient in order to follow disease progression and treatment benefits. This new resource was also created with the goal to provide UNM basic scientists with high quality samples for their research effort and potentially guide future therapeutic applications.

Dr. Cleyrat’s research on “Gene Editing Rescue of a Novel MPL Mutant Associated with Congenital Amegakaryocytic Thrombocytopenia (CAMT),” is about to be published in September or October 2017 issue of “Blood Advances”. The MPL gene encodes the myeloproliferative leukemia protein (aka thrombopoietin receptor).

Dr. Cleyrat is hoping to renew a Department of Defense grant and will apply for an RO1 in October.

Our department is excited to have Dr. Cleyrat as an excellent cellular and molecular biologist working on clinically driven, translational biomedical research.

**EMERGING RESEARCH: MOLECULAR GENETIC APPROACHES TO CURING MYELOID DISORDERS**

continued from page 8

**MAKE A GIFT**

DR. THOMAS M. WILLIAMS & MARGARET G. WILLIAMS ENDOWMENT FOR EDUCATION AND TRAINING FUND SUPPORTS NEW EQUIPMENT PURCHASE

WRITTEN BY WILLIAM F. COLLINS, MFA

The UNM Department of Pathology is pleased to announce that funds from the “Dr. Thomas M. Williams & Margaret G. Williams Endowment for Education and Training” have been used to purchase new video equipment for use in educating fellows and residents. The department will produce a series of educational videos that will be hosted online for residents and fellows in an effort to enhance their training. Topics could include basic safety, performing frozen sections, and the major dissections in each organ. This exciting new video equipment purchase is in keeping with endowment’s mission to support the greatest educational and training needs within The University of New Mexico Department of Pathology.

Dr. Maryam Sayah (Resident) and Dr. Samuel Reynolds (Assistant Professor) reviewing clinical cases on the training microscope. photo: Rebecca Gustaf

Dr. Michael Harrell (Resident) and Dr. Samuel Reynolds (Assistant Professor) in the gross room, training on preparation of tissues for anatomic pathology. photo: Rebecca Gustaf
Developed and refined over the past eight years, the Undergraduate Pipeline Network (UPN) is a summer undergraduate research program that cultivates students’ interest in research and helps them attain the skills needed to apply for and eventually succeed in graduate/professional school. This experience also allows students to discover and explore career options available to them by working as researchers, assisting faculty and learning about new employment fields. Students gain the practical experience of applying their academic knowledge, which better prepares them to have a profound effect on the research field. The 2017 UPN program was held from May 31 – August 4, 2017 on the UNM HSC campus with a cohort of 35 students representing New Mexico and many other states across the country. Over the ten summer weeks, UPN students participated full-time in all three facets of the program: 1) independent research projects with their mentors, 2) skill-building seminars through their weekly one credit course and 3) structured, collaborative/cohoot building activities.

UPN Scholars were matched with research mentors from 6 major areas of study: Infectious Disease and Immunity, Environmental Toxicology, Cancer, Brain and Behavioral Neuroscience, Cardiovascular Disease and Metabolism, and Community-based health disparities research. UNM faculty representing at least seven different departments, including the Department of Pathology, gave of their time and energy to serve as UPN mentors. In addition to their mentors, the undergraduate students have contact with graduate students, post-doctoral fellows, medical residents, clinical fellows, or research staff member throughout the program. Each undergraduate student has a research project that provides the student with sufficient opportunity to demonstrate his/her ability to conduct independent research. They attain skills necessary for successful graduate school applications and productive post-baccalaureate education. They increase competency in presentation skills, team work with mentors and multi-disciplinary team members, research etiquette, responsible conduct of novel research, and awareness of scientific career options. The UPN Program awards each scholar summer financial support to cover a stipend and activity fees.

The 2017 UPN program culminated on August 4th with the UNM-HSC Summer Undergraduate Research Symposium. Sixty students presented posters on their research to the UNM-HSC community. This summer, twelve higher educational institutions in New Mexico had students participating in the UPN Summer Research Program. Dr. Bill Shuttleworth, Regents’ Professor, UNM HSC Department of Neurosciences, delivered the Keynote seminar entitled “Tsunamis in the Brain: Personal perspectives on Training and Opportunities In Biomedical Research.” The day finished up with an awards presentation and a luncheon served for all of the scholars, their families and their mentors. In summary, it was a proud day for research at the UNM HSC.
Christina Garcia-Tenorio MA, Medical Education Program Specialist, is the inaugural “STAR STAFF” to be highlighted in PathFinder. Her “Star Staff” status has soared within this first year of her service to the Pathology Residency program. The UNM Pathology Residents are delighted with Christina’s support, from her formal duties to her extra efforts to make the residents feel appreciated during their long working hours. Christina loves her job and it shows.

Ms. Garcia-Tenorio oversees the daily operations of the UNM Pathology Residency Program, including resident recruitment, residency program accreditation, scheduling resident rotations, resident event planning, and Brightspace online learning development.

• **RECRUITMENT:** Christina schedules interview dates, makes hotel reservations and selects interview rooms at the Office of the Medical Investigator.

• **ACCREDITATION:** Christina provides annual updates to the Accreditation Counsel for Graduate Medical Education (ACGME) including resident assessments.

• **ROTATIONS:** Residents are scheduled for rotations at the Veteran’s Administration Medical Center (VAMC), The University of New Mexico Hospital (UNMH), Office of the Medical Investigator (OMI) and TriCore Reference Laboratories, based on the funding formula from Medicare, the OMI and UNMH. Might this rotation scheduling be complex and sensitive? Oh, yes!

• **EVENT PLANNING:** Christina organizes the Fall welcome party which allows residents to meet, greet and network with fellows, faculty, and other residents. In 2017, all enjoyed the welcome party at Sandia Lakes Recreation Area, especially the personalized “Koozies” crafted by Christina and given to each resident. The Spring commencement party celebrates the accomplishments of the graduating pathology residents.

• **BRIGHTSPACE:** In conjunction with Dr. Czuchlewski, Christina is developing content for residency rotations’ online learning.

Christina balances her highly demanding work life with the delights of her family and relaxation of her crafts. Christina is an avid crafter, leading workshops to teach crafts.

The UNM Department of Pathology is fortunate and proud to have Ms. Christina Garcia-Tenorio as a new Star Staff!
In fiscal year 2017, Pathology faculty received over $22 million in research funding—13% of the record high University of New Mexico Health Science Center’s research funding.

We are pleased to announce the promotion to Associate Professor with Tenure for Dr. Jennifer Gillette and tenure for Associate Professor Dr. Tione Buranda.

Our research faculty continue to provide leadership roles throughout the institution, with Angela Wandinger-Ness as the Director of Education Training and Mentoring for the University of New Mexico Comprehensive Cancer Center (UNM CCC) and Principal Investigator for high school to postdoctoral training programs and Dr. Gillette as the Director of the Undergraduate Pipeline Network (UPN) undergraduate summer research internship program. Dr. Bridget Wilson and Dr. Larry Sklar lead Cancer Research Programs in Translational Cell Signaling and Cancer Therapeutics, respectively.

Pathology faculty have also assumed new leadership roles for Shared Research Resources, including Dr. Diane Lidke as Director for the Fluorescence Microscopy Shared Resource, Dr. Jennifer Gillette as Director of the Flow Cytometry Shared Resource and Dr. Mara Steinkamp as Director of the Animal Models Shared Resource.

The Pathology research faculty continue to be strong leaders in driving basic to translational sciences initiatives. Drs. Wandinger-Ness and Buranda were awarded a National Science Foundation (NSF) Innovation Corps (I-Corps) grant to launch their diagnostic technology as a start-up. Dr. Bridget Wilson and members of the SpatioTemporal Modeling Center (Cannon, Cleyrat, Gillette Lidke, Neumann, Steinkamp and Wandinger-Ness) are translating their research to cancer therapeutics and diagnostics. Dr. Larry Sklar leads the National Cancer Institute (NCI) Experimental Therapeutics Program. Dr. Bearer spearheaded a Child Health Signature Program Symposium with leading national experts. Dr. Tracy George was recently published in the New England Journal of Medicine for her involvement with an international team that advanced the development of a drug proven to be effective in treating Mastocytosis, which is a rare immune disorder.

The Department of Pathology’s research programs continued to thrive and make their mark in research with approximately 100 publications.

**RESEARCH FUNDING ACHIEVES NEW RECORD AT THE UNM HEALTH SCIENCES CENTER IN 2016-2017**

The UNM Health Sciences Center received a record $203 million in fiscal year 2017 in external grant funding for biomedical research, capping 13 consecutive years of growth. The funding represents a 24% or $39 million increase over the previous fiscal year. The Health Sciences Center has more than tripled its research funding since 1998. The additional $39 million in external research funding translates into approximately 100-200 additional research jobs at the UNM Health Sciences Center, which creates a “ripple effect,” making the UNM Health Sciences Center a bright spot in New Mexico's economy. UNM researchers have achieved major breakthroughs in treating diabetes, cancer, multiple sclerosis, asthma, brain trauma and other diseases and disorders, leading to improved health care delivery in our communities.
MEMORIAL TRIBUTE
WILLIAM C. BLACK III, MD: BELOVED PROFESSOR

Dr. William (Bill) Black, beloved Professor at the UNM Department of Pathology for over 40 years, passed away in Albuquerque, NM on August 21, 2017, at the age of 86. Dr. Black is deeply missed.

Bill was born and raised in Denver, CO. He attended Colorado College for three years and briefly explored a career in professional golf before enrolling in Medical School at the University of Colorado in Denver. There he met Katherine whom he married in 1956. Dr. Black completed his internship at the University of Kansas Medical Center before moving back to Penrose Hospital in Colorado Springs, CO. He completed his training in Surgical Pathology at Columbia University in New York before fulfilling his military service as a surgical pathologist at the Veteran’s Administration Hospital in St. Louis. He served briefly as an Assistant Professor at Washington University. Dr. Black became a life-long fan of the greatest baseball team on earth, the St. Louis Cardinals.

In 1968, The University of New Mexico opened a new Medical School. Heavily recruited and very excited about being part of a new program, Dr. Black gathered up his family, and moved to Albuquerque, NM, where he thrived for 41 years, teaching medical students, training pathology residents, and working as a surgical pathologist. His colleagues in The University of New Mexico Department of Pathology held Dr. Black in high esteem for his gentle nature, his astute mind, and his dedication to patient care. Dr. Black’s accomplishments were recognized by The University of New Mexico, but he most prized the annual Hippo Awards presented by the UNM medical students to their most revered and entertaining teachers.

Dr. Black is keenly remembered for his deep love and interest in fly fishing which he shared with his entire family, many friends and students. Dr. Black authored six books and numerous magazine articles on fly fishing and fly tying. He also taught ‘Fly Fishing Basics’ every spring for 38 years, the longest running course in UNM’s Continuing Education program. His son Jim continues to teach this course. Dr. Black and his wife Kathie enjoyed fly fishing all across the globe, in Argentina, New Zealand, England, Scotland and Ireland. Dr. Black enjoyed listening to opera, gardening, and cultivating different varieties of chili peppers.

Dr. Black had a natural curiosity, which enriched his life. He loved writing, reading Dickens, nature, and animals, especially dogs. He was moderator to countless engaging conversations around the family dinner table. His children and grandchildren inherited this legacy of curiosity and discovery, which is a great tribute to Bill. Bill is survived by his steadfast wife of 61 years, Katherine, sons William IV, Charlie, Jim, and daughter Elisabeth. He had four grandchildren: Christine, Emma, Spencer, and Eva and one great grandson, Santiago. His dog Socks also misses her papa. A private memorial service for Dr. Black was held on September 2, 2017 at his home.
FACULTY RETIREE
WALKER (KIP) WHARTON, PHD: INNOVATIVE RESEARCHER (AND HUMORIST!)
WRITTEN BY BARBARA GRIFFITH, MS

If you knew or worked with Dr. Kip Wharton during his extensive research career, count yourself lucky! Dr. Wharton is truly “one in a 325 million”. Kip’s creativity, sense of humor, and frank style made every day productive, cheerful and surprising.

Dr. Kip Wharton, Research Professor Emeritus in the UNM Department of Pathology, retired on July 1, 2017 after contributing to research at UNM for a whirlwind sixteen years. Kip migrated to UNM after five years at the Moffitt Cancer Center in Florida and 15 years at Los Alamos National Laboratories (LANL) in New Mexico. Kip reminisces wildly about his post-doctoral fellowship years with Dr. Jack Pledger. Kip Wharton completed his PhD in pharmacology with Dr. Barry Goz at the University of North Carolina at Chapel Hill in 1978; Kip was Dr. Goz’s first and only graduate student. One and done!

Dr. Wharton’s research career primarily focused on cell cycle regulation, with over 110 publications and 7 graduate students to his credit. He was the first scientist to show that the epidermal growth factor receptor (EGF-receptor) had to be internalized to get a mitotic response. His seminal papers in the mid 1970’s are still critical and referenced by review articles written even in 2011. Kip collaborated with his esteemed colleagues and mentors, including Jack Pledger, Janet Oliver, Larry Sklar and Lawrence Gurley. Kip was proud to have played a role in recruiting Dr. Larry Sklar to split his time between LANL and UNM; Dr. Sklar is one of the most serious and smartest scientists that Kip has known. Dr. Janet Oliver and Dr. Tom Williams inspired and supported Dr. Wharton’s fruitful career. Kip greatly admired Dr. Gurley’s beautiful histone work and was saddened by Dr. Gurley’s passing.

As a husband, father, and grandfather, Kip Wharton has shown even more dedication to his family than to his career. That’s colossal dedication. His loving wife, Debbie, is the longest surviving Type I diabetes patient that Dr. Burge at UNM has treated, ever. Kip shared that “no one should have had to endure marriage to him for 47 years and Type I diabetes for 60 years”; Debbie is an angel and survivor! She has great anti-oxidant genes. Their son, Tyler, enlisted in the US Marines after high school, and later pursued a career as a Program Manager at Sandia National Laboratories- a job that Tyler loves. Grandson, Thomas, is taller than his father Tyler and has lunch with his Grandfather Kip most Saturdays. Kip mentors Thomas on the value of avoiding unnecessary conflicts. May the grandson learn from the “hard knock” experiences of the grandfather? Definitely, yes.

Kip once told Sheryl Curtin that he wanted “to die in the laboratory - until it became a real possibility”! So Dr. Kip Wharton retired quietly and peacefully, to spend time taking care of Debbie. She’s a lucky lady indeed. Dr. Kip Wharton, his infectious laughter and his brilliant scientific mind will be missed at the UNM Department of Pathology.

Janet Oliver, PhD, Kip Wharton, PhD, and Larry Sklar, PhD relaxing at the Indigo Crow Restaurant.
Ever cheerful, constantly optimistic and always adventurous, Dr. Jin Wu, Research Associate Professor, will plunge into her retirement with the same enthusiasm that she brought to 25 years of human and non-human primate HLA research at UNM.

Dr. Jin Wu bravely emigrated from China to the USA in 1992, with Dr. Thomas M. Williams as her sponsor. In Tianjin, China, Dr. Wu was an Assistant Professor specializing in ophthalmology with solid clinical skills, minimal research experience and rudimentary English. Jin joined Dr. Tom Williams’ research lab, swiftly mastered English and quickly grasped research techniques from the kind and proficient George Montoya. Dr. Williams had wisely recruited Dr. Wu!

Going “above and beyond” and always accepting new scientific challenges was Dr. Wu’s daily mode of operation. Multiple times, Jin generated critical preliminary data over a few weeks including weekends to allow Dr. Tom Williams and Jin to apply for major research project funding. They obtained National Marrow Donor Program (NMDP) funding to perform high resolution HLA typing in humans and National Institutes of Health (NIH) funding to illuminate the Major Histocompatibility Complex (MHC) genes in non-human primates. Dubbed “The Monkey Project”, the latter was Dr. Wu and Williams’ first NIH grant application, written over a weekend, and securing $7 million for UNM and five subcontractors in the USA and Australia. What an astounding accomplishment! As a relatively new lab in the HLA field, this UNM team successfully competed and collaborated with established labs like those of Dr. Lee Ann Baxter-Lowe, Dr. Ann Begovich and Dr. Caroline Hurley. Drs. Williams’ and Wu’s HLA laboratory became one of the best well-known and highly respected HLA laboratories in the nation.

Scientifically, Jin and Tom pioneered HLA locus specific amplifications and single molecule/single allele amplifications to separate and detect new human and primate alleles. They utilized hundreds of locus specific primers and discovered over 700 new alleles in 3 species of macaques. The NIH funded the MHC studies in non-human primates to support new vaccine development. A new vaccine must be developed in 2 animal models, including 1 non-human primate animal model.

Dr. Jin Wu had the ultimate respect for Dr. Tom Williams’ and his scientific enthusiasm, brilliance, and sense of humor. Dr. Wu will be remembered for her hard work, scientific creativity, dedication, and positive “can do” attitude.

In retirement, Jin will pursue current hobbies including downhill skiing, Argentine tango dancing and traveling, as well as starting a new hobby - playing piano. Jin will visit her 90 year old Mom in China for a couple of months and hopefully take her artistic husband to France to see the paintings of the masters. Their daughter, Mia, who is in the midst of her MD, PhD program at the University of Illinois, was married on June 10, 2017 to Ian Bothwell, PhD. Ah, life is good for Dr. Jin Wu and her family. We wish Jin all the best in her well-deserved retirement!
When you first meet Dr. Thérèse Bocklage, you are relaxed by her calm demeanor, refined manners, and perceptive mind. Quickly, you become awed by her accomplishments and true grit.

Dr. Bocklage arrived at UNM in 1991 as a fellow in surgical pathology, transitioned to an instructor for three years, pursued a cytopathology fellowship at Baylor Medical Center and returned to UNM as an Assistant Professor in 1995. During her career at UNM, Dr. Bocklage served 11 years as the Pathology Residency Director, started the Cytopathology Fellowship in 2003 serving as the Fellowship Director for all subsequent years, became Medical Director of the Human Tissue Repository (HTR), serving in that position since 2008, and obtained a five year, $3 million dollar competitive contract from the National Cancer Institute (NCI) to help define best practices for human tissue collection, preservation and storage. When Dr. Bocklage and her HTR team (Cathy Martinez, Fred Schultz and Angela Meisner) secured this contract on their first ever NCI funding application, Dr. Bocklage ran to Dr. Tom Williams’ office and declared that “practice is over”. Astonishingly, she had received the phone call notification of the contract award only minutes after Dr. Williams had gently counseled the HTR staff that they were unlikely to be successful but that the immense effort was “good practice”. Quite an amazing first time accomplishment!

Dr. Thérèse Bocklage has fun and fond remembrances of her 25 years in the UNM Department of Pathology. The fun is exemplified by the associated 1991 and 2017 “Alien Autopsy” photos, taken with other Pathology faculty and residents. These photos were used in the national Directory of Pathology Residency Programs annual editions and certainly made UNM stand out. Only in New Mexico, thanks to Roswell! Thérèse warmly recalled the “Pajama Party Breakfast” held in honor of Dr. “Andy” Anderson’s farewell and highlighted with Dr. Tom McConnell’s new poem “Ode to the Putative Man”. Apparently, Dr. Anderson used the word “putative” rather often. Dr. Bocklage is grateful to Drs. Tom Williams for his sense of humor, support and always engaging impromptu chats, Mary Lipscomb for her absolute integrity and exemplary leadership, and Charlie Key for his consistent positivity and willingness to try new ventures and support them whole-heartedy. Dr. Bocklage appreciated the collegiality of the pathologists, trainees and surgeons throughout her tenure at UNM.

On a more personal life history note, Thérèse commented how lucky she is to be alive; a life state that she never takes for granted. Her CT scans are clear 5 years after diagnosis and treatment for metastatic Stage 4B melanoma. Dr. Antoni Ribas at the University of California at Los Angeles successfully treated Dr. Bocklage with emerging immunotherapy in an early Phase IB trial. Thérèse and three other sustained complete responders are immeasurably grateful to Dr. Ribas for his unwavering commitment to immunotherapy research and practice.

Dedicated even to the last day at UNM, Dr. Bocklage was finishing at least a dozen projects with residents and fellows and was planning new collaborations between the UNM Department of Pathology and her new Department at the University of Kentucky at Lexington. The University of Kentucky, The University of New Mexico, Stanford University, Vanderbilt University and The University of Vermont hope to collaborate on an NCI U01 Grant over the next few years to study pathology resident learning with quantitative assessment and eye movement tracking.

Dr. Thérèse Bocklage will greatly miss UNM and New Mexico, but looks forward to returning to the horse country of the Blue Grass State, being surrounded by the green of Kentucky and living close to family. Kentucky has been her family’s home state for more than 200 years.

The UNM Department of Pathology has been lucky to have Dr. Bocklage on our team for the past 25 years! We wish her well in her retirement and new academic pursuits.

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1998 the original "Alien Autopsy". Left to right: Mike Markey, MD, Thérèse Bocklage, MD, Jason Heese, MD, Jeff Moore, MD, Christine Moore, MD, Mark Wolz, MD, Gillian Redlich, MD, Matt Luke, MD, Elizabeth McKinley, MD, Amy Hart, MD and Min Kang, MD as the alien.

2017 Reenactment photo of the "Alien Autopsy". Left to right: Matt Luke, MD, Thérèse Bocklage, MD, Sam Reynolds, MD, Audra Kerwin, MD, Emily Wolak, MD, Marissa Tafoya, MD, Michael Harrell, MD, Dennis Sosnovske, MD, Hannah Kastenbaum, MD (standing in back), Marsha Xiong, MD, Favia Dubyk, MD, Ben Ramos, MD.

THÉRÈSE BOCKLAGE MD: ALIVE, ENERGIZED AND OFF TO HER “OLD KENTUCKY HOME”
GRADUATE STUDENT NEWS

Janie Byrum, a graduate student in Dr. Judy Cannon’s lab, received the American Association of Immunologists Careers in Immunology Fellowship. Byrum also was selected as an Infectious Disease and Immunity T32 fellow.

Dr. Yolanda McDonald, a recent graduate student in Dr. Cosette Wheeler’s laboratory, defended her PhD thesis on May 19, 2017 and secured an Assistant Professor position at Vanderbilt University in Nashville, TN. Dr. McDonald is faculty in the Department of Human and Organizational Development.

Brianna Mulligan, a graduate student in Dr. Elaine Bearer’s laboratory, will be presenting her poster entitled “Differential epigenetic patterns in children with documented trauma” at the Society for Neuroscience annual meeting in Washington, DC on November 14, 2017. Mulligan was also invited to give a press conference on “Stress and the Brain” based on her poster’s abstract, and the press conference will be moderated by Dr. Bruce McEwen of Rockefeller University. As a first year graduate student, Mulligan’s selection for the press conference is distinctive honor. Only 4 or 5 abstracts are selected per press conference and over 15,000 abstracts are submitted to Society for Neuroscience every year. This press conference will be held on November 13, 2017.

GRADUATE STUDENTS / MENTORS

Eduardo Anaya / Aaron Neumann
Janie Byrum / Judy Cannon
Rohan Choraghe / Aaron Neumann
Prashant Dogra / Elaine Bearer
Akram Etemadi Amin / Aaron Neumann
Muskan Floren / Jennifer Gillette
Cristina Flores-Cadengo / Diane Lidke
William Kanagy / Diane Lidke
Carmen Martinez / Aaron Neumann
Brianna Mulligan / Elaine Bearer
Dominique Perez / Larry Sklar
Derek Rinaldi / Diane Lidke
Melanie Rivera / Angela Wandinger-Ness
Chelsea Saito-Reis / Jennifer Gillette
Emanuel Salazar Cavazos / Diane Lidke

THESIS DEFENSES


Zohreh Karimi, member of Dr. Aaron Neumann’s lab, completed her MS on April 11, 2017.

Rina Sylejmani, member of Dr. Aaron Neumann’s lab, completed her MS on July 14, 2017.

Yolanda McDonald, member of Dr. Cosette Wheeler’s lab, defended her PhD thesis on May 19, 2017

POSTDOCTORAL FELLOWS / MENTORS

Daniel Barto / Elaine Bearer
Carolina Franco Nitta / Diane Lidke
Stephanie Jerman / Angela Wandinger-Ness
Elton Jhamba / Diane Lidke
Alfreda Nelson / Bridget Wilson
Charuta Palsuledesai / Angela Wandinger-Ness
Lynette Rios / Larry Sklar
Therese Shideler / Angela Wandinger-Ness
Salina Torres / Cosette Wheeler
Nesia Zurek / Aaron Neumann
FACULTY RETIREES

Walker (Kip) Wharton, PhD  Research Professor, retired as of July 1, 2017.

Glynnis Ingall, MD PhD  Professor, retired as of July 1, 2017; continuing as .25 FTE working retiree.

Thérèse Bocklage, MD  Professor, retired as of September 1, 2017.

Jin Wu, MD  Research Associate Professor, retired as of December 31, 2017.

NEW FACULTY

Elena Trabaudo, MT  Lecturer II, Medical Laboratory Sciences Program, started August 1, 2017.

Jain Zhou, MD, PhD  Assistant Professor, Anatomic Pathology, started August 4, 2017. Board certified in anatomic and clinical pathology.

FACULTY AWARDS

Karissa Culbreath PhD  Clinical Assistant Professor, received the New Mexico Women of Science, Technology, Engineering and Math (STEM) award in August of 2017.

Nancy Joste, MD  Professor, received the Leonard M. Napolitano Award from the UNM School of Medicine’s Alumni Association in October of 2017.

2018 FACULTY APPEARANCES

Douglas P. Clark, MD

April 16, 2018: “James E. Wheeler Distinguished Alumnus Lecture”, Department of Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA.

Kathryn Foucar, MD


Tracy George, MD

April 5, 2018: “Current Concepts on Mastocytosis”, Cleveland Clinic Grand Rounds, at the Department of Pathology and Laboratory Medicine at the Cleveland Clinic, Cleveland, OH.

March 21, 2018: “Bone Marrow Manifestations of Systemic Disease”, United States and Canadian Academy of Pathology Annual Meeting in Vancouver, BC, Canada.

Sarah Lathrop, DVM, PhD

February 20, 2018: “Emerging Infectious Diseases and the Medical Examiner: The Challenges and Rewards of Effective Surveillance”, National Association of Medical Examiners Interim Scientific Meeting at the American Academy of Forensic Sciences 2018 Annual Conference, Seattle, WA.
FACULTY AND TRAINEE RECENT CHILDREN

Dr. Sarah Kelting, Hematopathology Fellow and her husband Jonas Malever welcomed their baby girl, Silvie Marie Malever, on July 6, 2017.

Dr. Brittany Coffman, Co-Chief Resident Physician, and her husband Dr. Ross Clark welcomed their baby girl, Charlotte Blaine Clark, on July 30, 2017.

Dr. Kathy Foucar’s Son, Jim Foucar, daughter-in-law, Morgan Foucar, and granddaughter/big sister, Avery, welcomed their baby boy, Rowan Foucar, on August 2, 2017.

Dr. Dr. Joshua Routh, Molecular Genetics Fellow, and his wife Kristen welcomed their baby boy, Ezra Augustus Routh, on August 1, 2017.

Dr. Aisha Sethi and her husband welcomed their baby girl, Evalina Sethi Arora, on October 24, 2017.

Dr. Dr. Shaun Yang, Assistant Professor, and his wife, Yi Zhang, along with big brother Lucas Yang, welcomed their baby boy, Miles Yang, on July 16, 2017.

Dr. Dr. Ross Clark welcomed their baby girl, Charlotte Blaine Clark, on July 30, 2017.

Dr. Aisha Sethi and her husband welcomed their baby girl, Evalina Sethi Arora, on October 24, 2017.

Dr. Glynnis Ingall’s son, Jonah Katz, and her daughter-in-law, Tiana Zellet, welcomed their daughter, Adira Rose Katz, on October 13, 2017. This is Dr. Ingall’s first grandchild.

Dr. Aisha Sethi and her husband welcomed their baby girl, Evalina Sethi Arora, on October 24, 2017.
The University of New Mexico Department of Pathology gratefully acknowledges Mr. William F. Collins for the design and layout and Mrs. Barbara B. Griffith for the content creation of the PathFINDER newsletter.

Please share your comments, suggestions, and questions with:

William F. Collins: wfcollins@salud.unm.edu

We look forward to your feedback.

For more information on our department, please visit our website: pathology.unm.edu