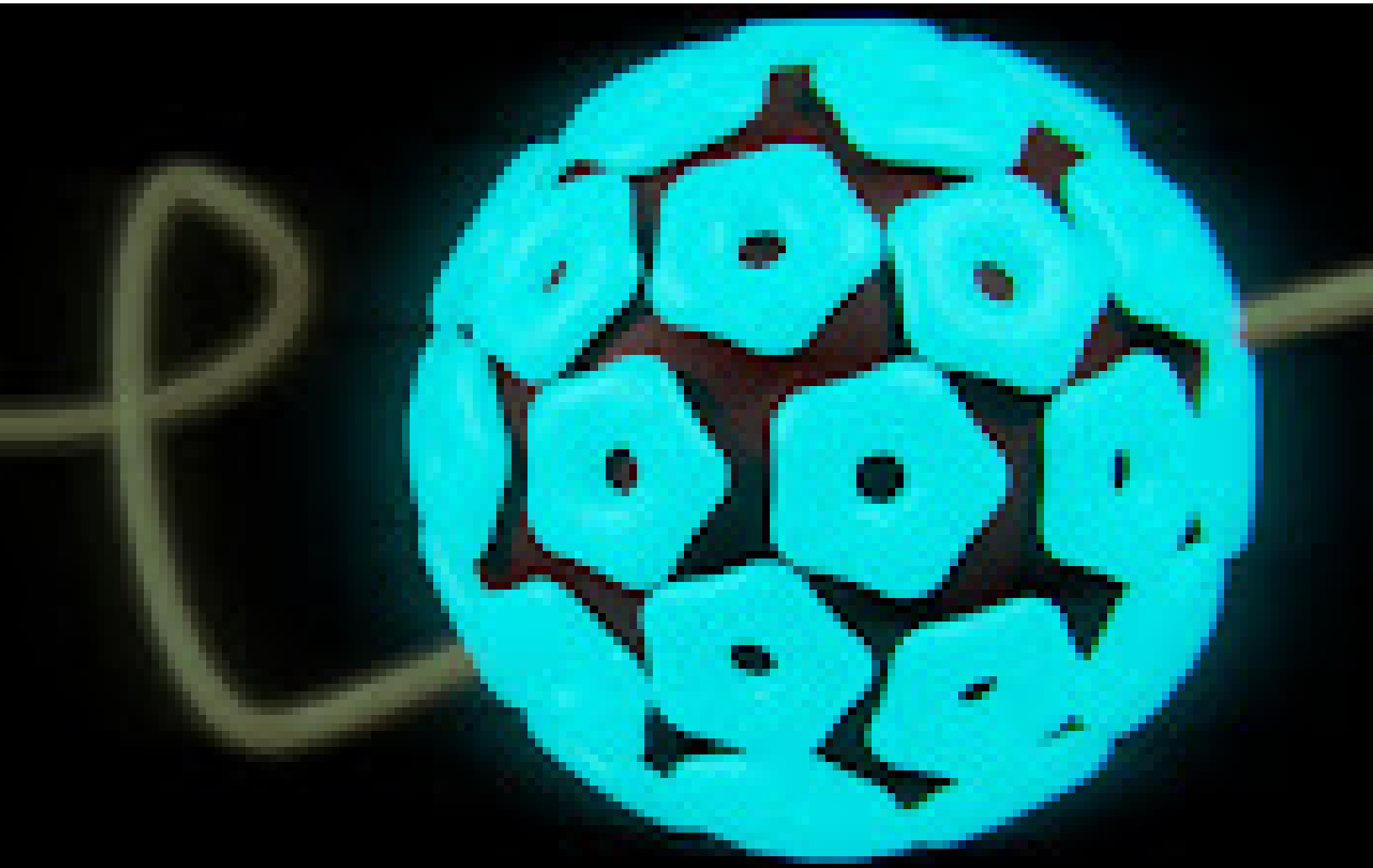


# *Path*FINDER

**WINTER 2024**



SCHOOL OF  
MEDICINE  
PATHOLOGY

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COVER IMAGE: Turquoise rendering, based on electron micrograph, of the human papillomavirus virion including pentamers (5 copies of the L1 capsid protein) and the DNA representation. Blue vision image courtesy of Erinala Horlbeck.

# PathFINDER

Welcome to the 2023-2024 Fall-Winter edition of the *PathFINDER*, our Department of Pathology semiannual news magazine. We have had a great start to Winter with significant snow in the Sandias and northern mountains. Let's hope it keeps up, to make for an excellent snowpack and a respite from the drought. It has been a typically busy Fall around the department with resident interviews well underway, medical school teaching in the basic science blocks being led by our faculty, and clinical work on the increase. The physical transformation of the campus is simply amazing with the new hospital Critical Care Tower in the final stages of completion, a new College of Nursing building rising in the M parking lot, and a new Behavior Health Crisis Center going up a little further to the east.

In this issue, we honor and recognize the passing of one of the founding members of our department, Dr. Charles Key. Dr. Key had a long and productive 36-years-plus career in UNM Pathology, joining the department in 1968, retiring in 2004, and continuing to serve as an Emeritus Professor for several years. Dr. Key was instrumental in the growth and development of our fledgling department and in the creation of the New Mexico Tumor Registry. The Registry has had an impact throughout the Health Sciences Center and state. It became - and continues as - a tremendous resource for understanding cancer epidemiology in New Mexico and conducting cancer research in our state.



Also profiled are two of our senior faculty with long and productive careers at UNM. Dr. Ross Zumwalt, our longtime forensic pathologist and former Chief Medical Investigator for the State of New Mexico, and Dr. Cosette Wheeler, with her decades-long career dedicated to human papillomavirus (HPV) research.

A 20-year funding opportunity in our department is the Drs. Kathryn and Elliot Foucar Endowment, which is dedicated to providing research and travel funds for our clinical trainees. The program has been tremendously successful with countless research projects and trips to professional meetings funded, which are critical for the professional development of our trainees. Thank you, Kathy and Elliot, for your ongoing gift of opportunity for our residents and fellows!

## *Path*FINDER *continued*

We also feature profiles of the current postdoctoral fellows in our department's laboratories, describing their research with their Pathology faculty mentors. You will get to hear of the December graduates from our Medical Laboratory Sciences program. These graduates are much welcomed into our laboratory workforce, which has a critical shortage of highly trained laboratory scientists.

Lastly, at this end of the year when you may be looking for opportunities to make charitable contributions, we provide you with information on how to keep your donations local by contributing to our Pathology departmental endowed funds. Please consider donating to one of our education supporting funds: The Thomas M. Williams & Margaret G. Williams Endowment for Education and Training, The George D. Montoya Research Scholarship Fund, The Kathryn Foucar & Elliott Foucar Endowed Pathology Faculty Trainee Fellowship, and the Pathology Education Fund. Instructions for donations are found on the closing pages of this newsletter, or [visit our "Make a Gift" website](#).

Wishing you joyful holidays with family and friends and a productive and healthy 2024!

Best Regards,

Nancy

Nancy Joste, MD

Professor & Chair of Pathology

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Please follow us on [Facebook](#), [Instagram](#) and [Twitter](#).

## IN MEMORY OF DR. CHARLES KEY

Please join us in celebrating the life and work of our mentor, colleague and friend, Dr. Charles Key. Dr. Key passed away peacefully in his sleep at home in Albuquerque on October 10th.

Charles Ray Key, MD, PhD, was one of the founding members of the Department of Pathology, joining the faculty at the UNM School of Medicine in 1968. Dr. Key was Director of the New Mexico Tumor Registry from 1969-2003 and continued to serve as the Registry's Medical Director for many years thereafter. Under his guidance, the New Mexico Tumor Registry became a founding participant in the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) Program, a premier source for cancer surveillance data that supports scientific research, public health, education and policy development. He is also well known for documenting distinct patterns of cancer among New Mexico's diverse populations.

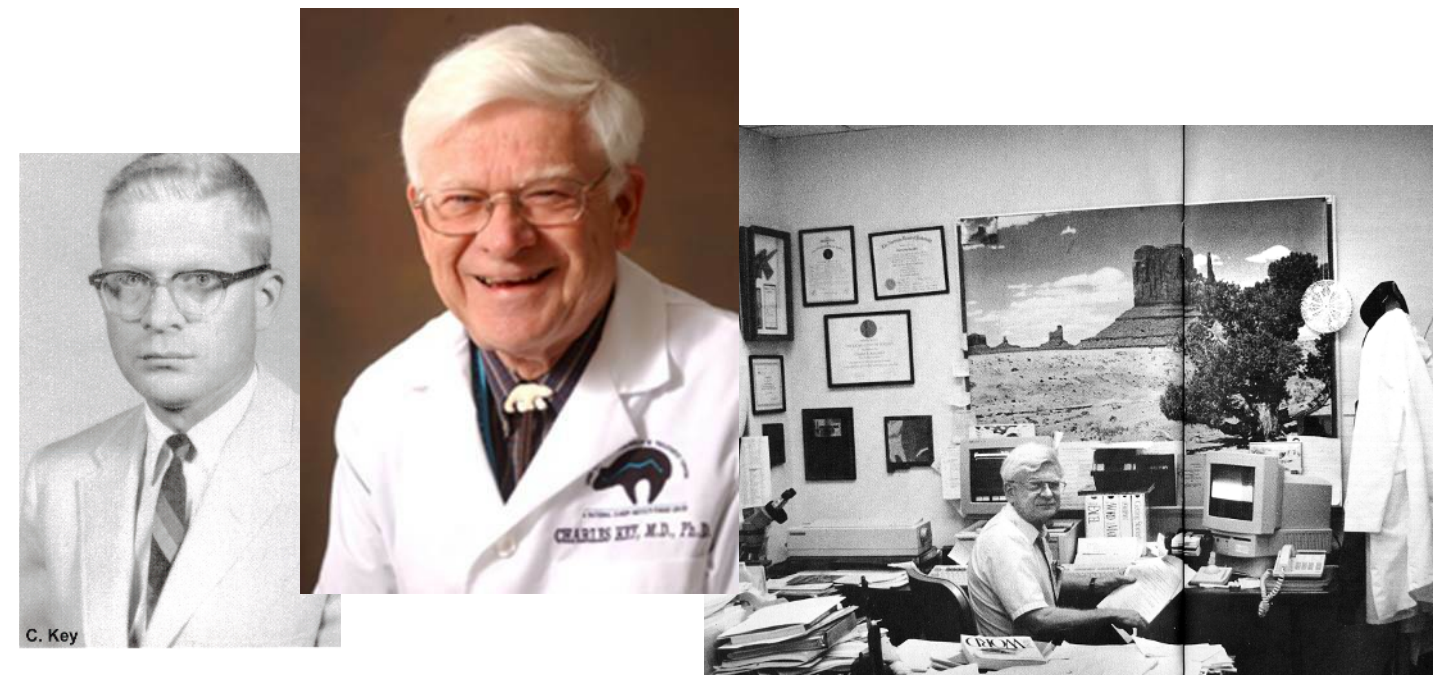
As Professor in the Department of Pathology, Dr. Key was a clinical pathologist who mentored faculty, students, and staff members. He is fondly remembered for his gentle and thoughtful manner. During his long tenure at UNM, he also served as interim Chair for the Department of Pathology and as interim Director for UNM Cancer Research and Treatment Center.

He is survived by his beloved wife of sixty-five years, Beverly, their three children, twelve grandchildren, and a growing number of great-grandchildren. A memorial service was held on Saturday, October 28th, at Del Norte Baptist Church in Albuquerque.

Chuck Wiggins, PhD, Director, New Mexico Tumor Registry

Carla Herman, MD, Professor Emeritus, Department of Internal Medicine

Nancy Joste, MD, Chair, Department of Pathology



# Feature

## FORENSIC PATHOLOGIST, CHIEF MEDICAL INVESTIGATOR, EDUCATOR

BY ROSS ZUMWALT, MD, PROFESSOR EMERITUS

### HOW DID YOU CHOOSE THE UNM PATHOLOGY DEPARTMENT?

I was strongly recruited by Robert (Bob) Anderson, the then Chairman, who called me and encouraged me to fill a position in the Department and at the Office of the Medical Investigator. I was skeptical and told him that I had a good position in the Department of Pathology at the University of Cincinnati and why would I want to come to New Mexico? Nevertheless, he persuaded me to come out to Albuquerque for a visit. I visited in February 1986 leaving Cincinnati in a sleet storm. When I arrived, the sun was out, and people were walking around in shirt sleeves. Most impressive though was that everyone that I met from the Department was enthusiastic about the Department and its academic potential. I was sold.

### DESCRIBE YOUR ROLE AS A FORENSIC PATHOLOGIST, BOTH CLINICALLY AND AS AN EDUCATOR.

My role as a forensic pathologist, clinically, was to determine cause of death in cases of sudden, unexpected or violent death using all available information, particularly information gained by a competent autopsy examination, and then come to a reasoned opinion of the manner of death and present that information to the appropriate party: family, law enforcement, medical personnel, public health officials, etc. My role as an educator was in interacting with medical students, pathology residents and forensic pathology fellows introducing basic and advanced concepts in gross and microscopic pathology.

### HOW IS THE OMI DIFFERENT FROM OTHER STATES?

Most other states have county or regional death investigation systems rather than a statewide system with a single central office. However, the major difference is that the OMI is administered and functions as a component of the Department of Pathology of the UNM Medical School. This is unique; other medical examiner offices are administered as a governmental agency, not as part of an academic institution. UNM's structure has great advantages for the OMI as forensic pathology is a sub-specialty of pathology and medicine, so being incorporated into a medical school and a department of Pathology provides a tremendous amount of support for determining cause and manner of death.

### DESCRIBE YOUR LEADERSHIP ROLE INTERFACING WITH THE GOVERNOR'S OFFICE AND THE OMI BOARD OF DIRECTORS.

Interfacing with the Governor's Office was mainly arguing for support for the OMI budget, dealing with requests or concerns directed to the Governor's Office about the OMI, or serving on a task force. Most important was traveling to Santa Fe and presenting OMI data and budget requests to legislative committees. The OMI Board of Directors was composed of the Dean of the Medical School, the Secretary of Health, the Secretary of Indian Affairs, the State Chief of Police, and the President of the State Funeral Directors' Association. They met several times a year for my status reports on the activities of the Office. They were consistently very supportive of the OMI and provided guidance for policy changes and controversial situations that occasionally found their way to us.



### WHAT WERE SOME OF THE CHALLENGES YOU FACED MANAGING AND EXPANDING THE OMI?

The biggest challenge was planning for, advocating for, and moving from the old autopsy facilities and offices into the current facility in the Tri-Services Building. This required convincing the University and the Governor's office of the need for a new facility and convincing the legislature to fund it. Working with the architect for the design of the facility was a huge challenge. My assistant chief at that time, Dr. Kurt Nolte, was instrumental in working on the design. The other big challenge was recruiting great forensic pathologists to come to New Mexico and join the OMI team when there was a national shortage of forensic pathologists.

### WHAT ARE SOME OF YOUR FAVORITE MOMENTS WITH THE NM OMI?

I always loved hosting the annual Death Investigation Seminar which brought in all of our dedicated lay death investigators from around the state for a couple of days of lectures and workshops and a recognition dinner. The other great moments were the graduation presentations each year for our graduating forensic pathology fellows.

### COULD YOU HIGHLIGHT YOUR BIGGEST CAREER ACCOMPLISHMENTS?

1. Expanding the forensic pathology fellowship from 1 to 4 positions and having it generally recognized as the premier training program in the US for forensic pathology fellows.
2. Serving as a trustee on the American Board of Pathology for 12 years.

### HOW WOULD YOU DESCRIBE YOUR TRANSITION SINCE RETIRING FROM UNM?

I did not stay retired. I have taken a position as a pathologist in the Department of Pathology at the Mayo Clinic in Rochester, MN, where I supervise and teach pathology residents doing both hospital and forensic autopsies.

# Feature

## THE KATHRYN FOUCAR, MD, & ELLIOTT FOUCAR, MD, ENDOWED FACULTY TRAINEE FELLOWSHIP

BY KATHRYN FOUCAR, MD, PROFESSOR

### HOW WAS THE FOUCAR ENDOWED FUND INITIATED?

In 2002 I had lunch with a former resident, Herb Mooney, who, as I recall, suggested that former trainees might be interested in donating to the Pathology Department if there was a specific fund to support. I followed up on Herb's suggestion with Mary Lipscomb, the Pathology Department Chair at this time. She indicated that this fund could be named after Elliott and me based on our contribution level, and that the Department would provide matching funds. The School of Medicine (SOM) Foundation staff supported an initial fund-raising drive and subsequent fund raising and other support activities. Many Department of Pathology faculty, TriCore leaders and administrators, PAA (Pathology Associates of New Mexico), and many former residents and fellows, including Herb and his wife Beth, donated to this initial fund-raising campaign and the Foucar Fund was created. We celebrated this initial fundraising event at our home in 2003 which was attended by our prior long-term chair, Andy (Robert Anderson) and his wife Sue Bartow, as well as Mary Lipscomb, Tom Williams and other Department leaders and staff. With Department support and our ongoing contributions, the fund achieved endowed status. So this Fund enhances the educational experiences of our current trainees and will be there long into the future to support education and translational research activities for trainees.

### WHAT WAS YOUR INITIAL GOAL FOR THE NEW ENDOWMENT AND HAS IT CHANGED OVER TIME?

Our goal was to enhance our Pathology residency and fellowship training programs by providing funds to support translational research projects and various educational activities such as funding travel for national meetings as well as other specialized educational materials.

### WHAT HAVE BEEN YOUR FAVORITE MOMENTS?

The creation of the Fund has been one of our most rewarding experiences at UNM. It is a pleasure to help our trainees achieve their individual research and educational goals. Giving out awards is such fun and being acknowledged in lectures and publications just adds to this satisfaction. Many thanks to Herb Mooney and all of our former trainees, faculty and others whose contributions launched this initiative.

### WHAT DO YOU ENVISION FOR THE FUTURE OF THE FOUCAR FUND?

Elliott and I will continue to support this fund. The initial goals of the endowed fund are general enough to allow for more novel applications that will accommodate future educational and research needs of trainees

### UNM FOUNDATION UPDATE ON THE FOUCAR FUND:

Over the past ten years the Foucar Endowment has helped to enhance our Residents' and Fellows' educational experience as clinical trainees in the Pathology Department. Funds are used to support collaborative research projects and extend their ability to attend seminars and conferences. During the most recent academic year, the Foucar Endowment supported five fellows' attendance at national conferences as well as five residents and fellows research capabilities under the tutelage of pathology clinical mentors. Each year nearly \$20,000 total is awarded to trainees.

### HIGHLIGHTS:

- Start date 4/23/2003
- Foucar initial commitment \$50,000, fulfilled in 2005
- State Match 2005 \$94,000 (separate allocation)
- Individual donors: 38
- Number of gifts to the fund: 135

We invite you to help grow the Foucar Endowment and enhance educational opportunities for Pathology residents and fellows at the University of New Mexico. Your contribution at any level is gratefully appreciated.

**Scan to make a donation today!**



Pictured from left to right are Drs. Kathryn Foucar, Mary Lipscomb, and Elliott Foucar at the April 2003 UNM Foundation Fundraising event hosted at the home of the Foucars. Note Dr. Lipscomb was the Department Chair from 1994 - 2010.

*THE KATHRYN FOUCAR, MD, & ELLIOTT FOUCAR, MD, ENDOWED FACULTY  
TRAINEE FELLOWSHIP - CONTINUED*

RECENT RESEARCH AND TRAVEL AWARDS

**FISCAL YEAR 2024 TRAVEL AWARDS**

NAME (National Association of Medical Examiners) Annual Meeting  
Forensic Pathology Fellows – Allison Hade, DO, David Negrete, MD  
October 13 – 17, 2023, San Jose, CA

Association for The Advancement of Blood & Biotherapies (AABB) 2023 Meeting  
Transfusion Medicine Fellow – Andres E. Mindiola Romero, MD  
October 14 – 17, 2023, Nashville, TN

AMP (Association for Molecular Pathology) 2023 Annual Meeting  
Molecular Genetic Pathology Fellows – Jordan Redemann, MD, Ryan Rebbe, MD  
November 14 – 18, 2023, Salt Lake City, UT

2024 Tutorial on Neoplastic Hematopathology: Focus on New Classifications  
Hematopathology Fellows – Amira Kuzu, MD, Austin Green, MD, Clayton Kibler, MD,  
Ryan Braunberger, MD  
January 15 – 19, 2024, Phoenix, AZ

**FISCAL YEAR 2023 TRAVEL AWARDS**

Society for Hematopathology / USCAP (United States and Canadian Academy of Pathology) Meeting  
2023 Hematopathology Fellow – Andres Mindiola Romero, MD  
March 11 – 13, 2023, New Orleans, LA

**FISCAL YEAR 2022 TRAVEL AWARDS**

2022 Tutorial on Neoplastic Hematopathology  
Hematopathology Fellows – Anthony Jake Emanuel, MD, Stephanie Holdener, MD, Elise Venable, MBBS,  
Feras Zaiem, MD  
January 17 – 21, 2022, San Diego, CA

**FISCAL YEAR 2024 EDUCATIONAL MATERIALS**

Books: *Diagnostic Pathology: Blood and Bone Marrow*

Hematopathology and Molecular Genetic Pathology Fellows received a copy of Dr. Foucar's recently published 3rd edition of *Diagnostic Pathology: Blood and Bone Marrow* as a resource to enhance the UNM School of Medicine training mission for the Department of Pathology

**FISCAL YEAR 2023 RESEARCH AWARDS**

2023 Molecular Genetic Pathology Fellow – Elise Venable, MBBS, and Principal Investigators Devon Chabot-Richards, MD, Daniel Babu, MD

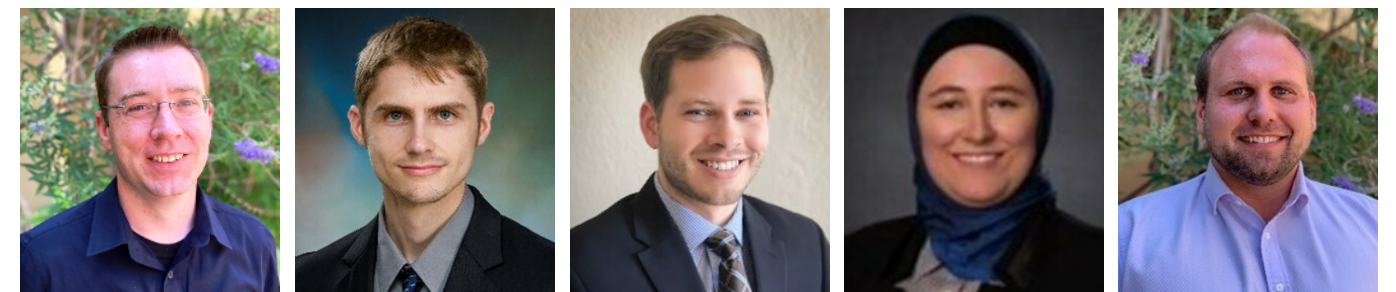
We plan to pursue RNA sequencing on a case of a U2AFJ-mutated acute myeloid leukemia found to have an interesting translocation t(18;19)(q12;p13) of unclear significance. Given the atypical leukemic cell morphology, abnormal phenotype, and unusual translocation, we seek further genetic characterization of this unusual leukemia.

Residents – Megan Gage, DO, Mariah Hukins, MD, and Principal Investigator David Grenache, PhD

Comparison Study of Two Glucose Beverages Used for Glucose Tolerance Tests This study will compare blood glucose concentrations in nonpregnant, adult volunteers on two occasions one week apart. The first two glucose concentrations will be measured before and after consuming the traditional beverage currently utilized by TriCore Reference Laboratories, and the second two values will be measured before and after consuming the Fresh Test beverage. The hypothesis is that the Fresh Test glucose beverage is equivalent to the traditional glucose beverage.

Resident – Yonatan Carl, MD, and Principal Investigators Lauren E. Dvorscak, MD, Jamie Elifritz MD, Kethery K. Haber MHA, BS, RT(R)(M)(CT)(MR),ARRT, Michael Harrell, MD

Postmortem CT-Guided Biopsy, pneumonia, Minimally Invasive Post Mortem Autopsies Using CT-guided Biopsies in Suspected Cases of Pneumonia: A Feasibility Study: PMCT-guided biopsy could provide invaluable histologic and culture samples in cases of suspected pneumonia, acting as a surrogate to full autopsy. As such, we set out to develop a protocol for CT-guided biopsy in the postmortem setting, as well as evaluate the usefulness of CT-guided biopsies in culturing and diagnosing pneumonia. We hope to compare tissue diagnosis from tissue sampling at autopsy to that interpreted from a blinded forensic pathologist reviewing the CT-guided sample. Both Forensic pathologists will have access to relevant case and scene information as well as the PMCT.



Pictured: 2024 Travel Awardees (from left to right) top row: Drs. Allison Hade, David Negrete, Andres Mindiola Romero, and Jordan Redemann; bottom row: Ryan Braunberger, Clayton Kibler, Austin Green, Amira Kuzu, and Ryan Rebbe.

# Pathology Research Laboratory

## Post-doctoral Fellows

### DR. MIJUNG OH - KIM LAB

I started working in Dr. Kim's lab in September 2021. Time has certainly flown by since my arrival in Albuquerque from South Korea, and it's difficult to believe that two years have already passed.

My prior research primarily revolved around delving into the molecular intricacies of the cancer metastatic process. However, upon joining Dr. Kim's lab, I decided to shift my research focus towards exploring the captivating relationship between the mechanical properties of cancer cells and the metastasis phenomenon. I was drawn to Professor Kim's laboratory in the Department of Pathology for its focus on innovative research techniques for measuring cell mechanical properties. Moreover, being part of a pathology laboratory offers the advantage of close collaboration with clinical samples, which I expect will provide a valuable opportunity to advance my research into the field of translational research.

My research is driven by a desire to contribute positively to our world. While I may not directly revolutionize clinical treatments, I find immense satisfaction in every discovery, whether mine or my peers', as it holds potential for positive impact. My career goals center on continuous knowledge pursuit in my research field. I firmly believe in the limitless potential to understand human life phenomena, and my research goal is to devote myself to research for a long time.

As a mother to a 6-year-old, my free time is limited. I treasure every moment spent with my child, and we often enjoy shared activities. Our favorite is the "Color Hunter Game" on our patio, where we explore the colors around us, finding unexpected hues in everyday objects, and having delightful conversations about our discoveries. These moments of exploration and connection with my child bring me immense joy.



### DR. AADIL QADIR BHAT - KIM LAB

I am working as postdoctoral fellow in Dr. Tae-Hyung Kim's Lab. Dr Kim's lab piqued my interest because of its emphasis on the mechanobiology of breast cancer – an extremely fascinating area of research. I have been working in Dr Kim's lab for six months. My research is mainly focused on "Understanding the underlying mechanisms of how mechanobiology plays a role in cancer progression and immune modulation." My research is more focused towards triple-negative breast cancers (TNBC). Moreover, I am also working on other projects where our primary focus is on how GLUT inhibitors and the other selected compounds from LOAC (Library of Pharmacologically active compounds) regulate the cytoskeleton organization, migration, and invasion in breast cancer.

During my graduate work most of my research was focused on IGF1R where we have discovered a unique allosteric inhibitor binding pocket in IGF1R which may be exploited for developing allosteric inhibitors specifically for IGF1R and sparing other receptor tyrosine kinases. I am excited to explore the effect of receptor tyrosine kinases in the field of mechanobiology which is until now mostly unexplored.

My research goals are to identify new therapeutic targets in breast cancers which can be exploited for designing drugs which will eventually lead to the reduce metastasis and Triple- negative breast cancer (TNBC) associated mortality.

In my free time, I love to spend most of my time with my family. I enjoy playing cricket, hiking, and cooking.



## DR. TETIANA BOWLEY - MARCHETTI LAB



I have been working as a postdoctoral fellow in Dr. Dario Marchetti's laboratory in the Departments of Internal Medicine and Pathology for the last three years. I was attracted to Marchetti's lab due to cutting-edge research on translational advances in the field of cancer/brain metastasis and investigating the biology of circulating tumor cells (CTCs), specifically for clinical implementation of Liquid Biopsy and its clinical utility. I found the UNM Pathology Department to have outstanding core facilities and resources, and a collegial environment.

My research is focused on identifying mechanisms which regulate the spatial and temporal characteristics of patient-isolated CTCs that promote melanoma metastasis in general, brain metastasis (MBM) in particular. Our multi-level independent approaches have identified a unique CTC RPL/RPS gene signature directly linked to MBM onset. My long-term goals include development of a solid

experimental system to evaluate the potency of gene signatures promoting melanoma metastasis and suppress CTC occurrence in blood by using translational approaches, thus reducing MBM in preclinical models. These findings were published in *Cancer Research Communications* in 2022, and the paper was selected as Editor's Pick among all journals of the American Association for Cancer Research.

Furthermore, we have recently published exciting findings (Bowley T., Merkley S et al, *Cancers*, 2023), identifying specific RPL/RPS members (four) responsible for driving melanoma metastasis. Briefly, we treated parallel cohorts of MBM mice with the protein translation inhibitor Omacetaxine with or without CDK4/CDK6 inhibitor Palbociclib - both FDA-approved drugs - and monitored metastatic development and cell proliferation. Necropsies and IVIS imaging showed decreased MBM/extracranial metastasis in drug-treated mice, and RNA-Seq on mouse blood-derived CTCs revealed downregulation of four RPL/RPS genes. This research expands classical understanding of RP subunit canonical functions and opens up new, exciting and pioneering horizons. The manuscript was selected for the cover page of the *Cancers* journal.

## DR. CAITLIN MCPHERSON - EDGAR LAB

I'm an NIH ASERT-IRACDA postdoctoral fellow and a member of the Department of Anthropology's Bridge Lab under the mentorship of Drs. Heather Edgar and Lexi O'Donnell. Dr. Edgar also serves as Forensic Anthropologist for the Office of the Medical Investigator (OMI). The Bridge Lab combines anthropological research methods with a contemporary public health perspective to explore how social determinants of health have shaped patterns of growth, disease susceptibility and mortality throughout human history. Since Fall 2022, I've been collaborating with members of the lab to address public health questions related to the lifetime impacts of gestational stress using approaches from skeletal biology and digital osteology. A bioarchaeologist by training, I'm broadly interested in applying insights from the extended evolutionary synthesis to archaeological and biomedical research. By exploring skeletal evidence of developmental plasticity in a variety of geographic and temporal contexts, I hope to better understand how phenotypic-environmental interactions shape aspects of life history strategies at individual and evolutionary timescales.



My current project uses skeletal and dental biomarkers to examine associations between indicators of gestational stress, developmental instability, and health in New Mexico Decedent Image Database (NMDID). A primary goal of this research is to identify skeletal and dental biomarkers consistently associated with measures of gestational stress that predict poor health outcomes in adulthood. Improving our understanding of biomarker formation will facilitate more nuanced approaches to testing the Developmental Origins of Health and Disease (DOHaD) hypothesis in both archaeological and biomedical research contexts. In the future, I hope to further explore how the informational properties of early life stress (e.g., timing, duration, and frequency) influence critical life history trade-offs related to growth and survivorship.

When not in the field or lab, I enjoy brushing up on my illustration skills by sketching outdoors, playing tabletop games with my friends, and trail running with my dog.

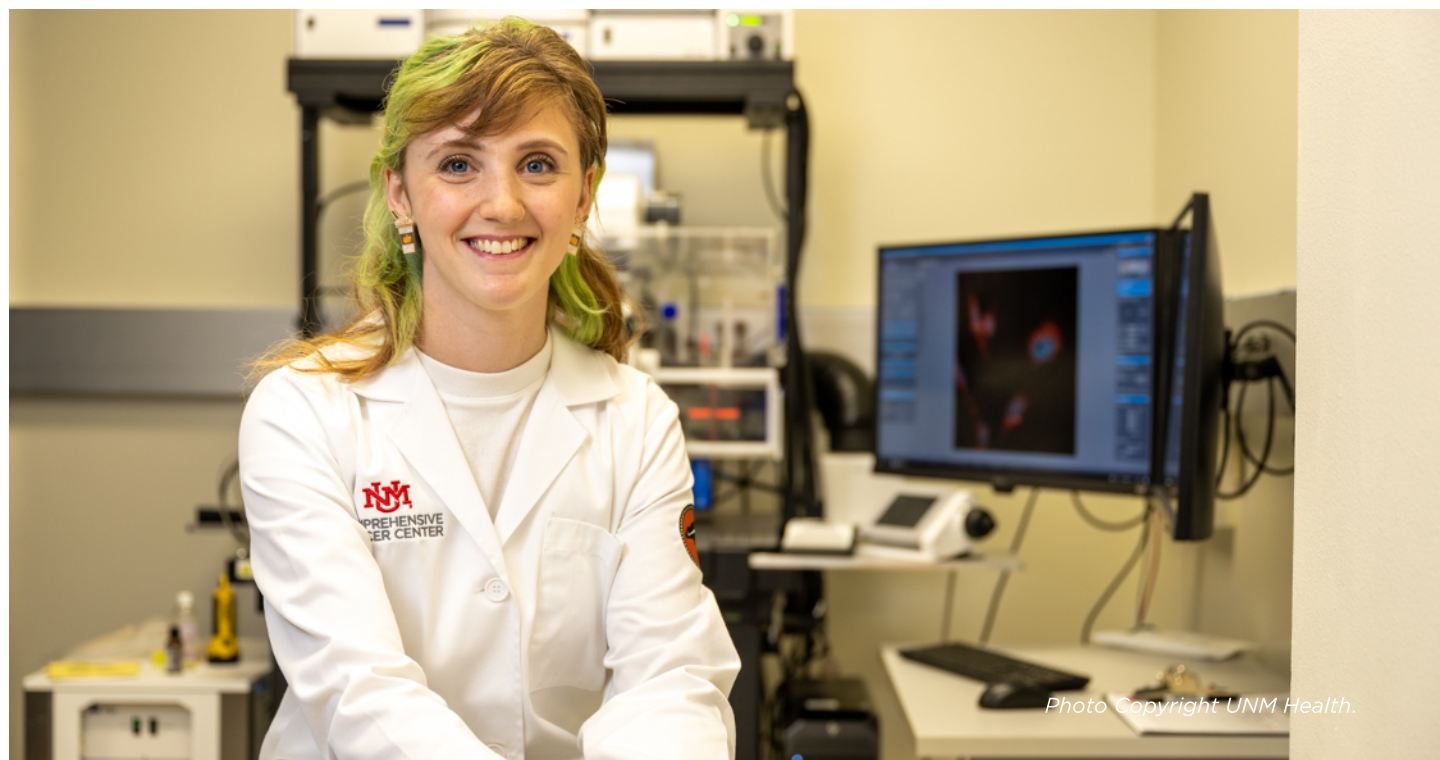


## DR. ELIZABETH BAILEY - LIDKE LAB

I have been working in the lab of Dr. Diane Lidke since January 2020. I knew I wanted to work in the Lidke lab after reading many of their papers throughout graduate school. Their work using single-molecule imaging techniques to study immune receptor signaling dynamics was really impactful on my own work, and I knew this lab would help me develop the knowledge and skillset I needed to pursue my research interests. In general, my interests blend bio-imaging with quantitative biology to understand the biophysical properties that govern immune cell signaling pathways and inform immunotherapy.

My work within the Lidke lab focuses on T cells. Specifically, I am interested in the Program Death Receptor-1 (PD-1) activation and phosphatase recruitment, a significant gap in understanding T cell receptor activation and inhibition. As a part of this project, I have learned a technique called Single Molecule Pull-down, which combines fluorescence microscopy with immunoprecipitation to look at phosphorylation of individual proteins on a glass slide. I am currently working to use this technique to inform PD-1 phosphorylation patterns and how they pertain to overall PD-1 signaling dynamics. In the future, I would ideally like to pursue similar research as a PI of my own lab, preferably at a minority serving institution, like UNM.

In my free time, I enjoy running, reading, and just about anything that keeps me home to hang out with my two cats. Currently, that includes sewing, painting, or jigsaw puzzles.



## RESEARCH PROFILE

### THE NEW MEXICO HPV PAP REGISTRY: PUBLIC HEALTH AND CERVICAL CANCER PREVENTION POLICY CHANGE

BY COSETTE WHEELER, PHD, REGENTS' DISTINGUISHED PROFESSOR  
DIRECTOR OF THE NEW MEXICO HPV PAP REGISTRY (NMHPVPR)

THE VICTOR AND RUBY HANSEN SURFACE ENDOWED CHAIR IN TRANSLATIONAL  
MEDICINE AND PUBLIC HEALTH SCIENCES



### HOW DID YOU CHOOSE THE UNM PATHOLOGY DEPARTMENT?

Well, this is a bit of a longer answer than you might expect but my story at UNM is a road less traveled in academia. Hopefully, it may be of interest to others given that I share both personal and professional perspectives likely not known to many.

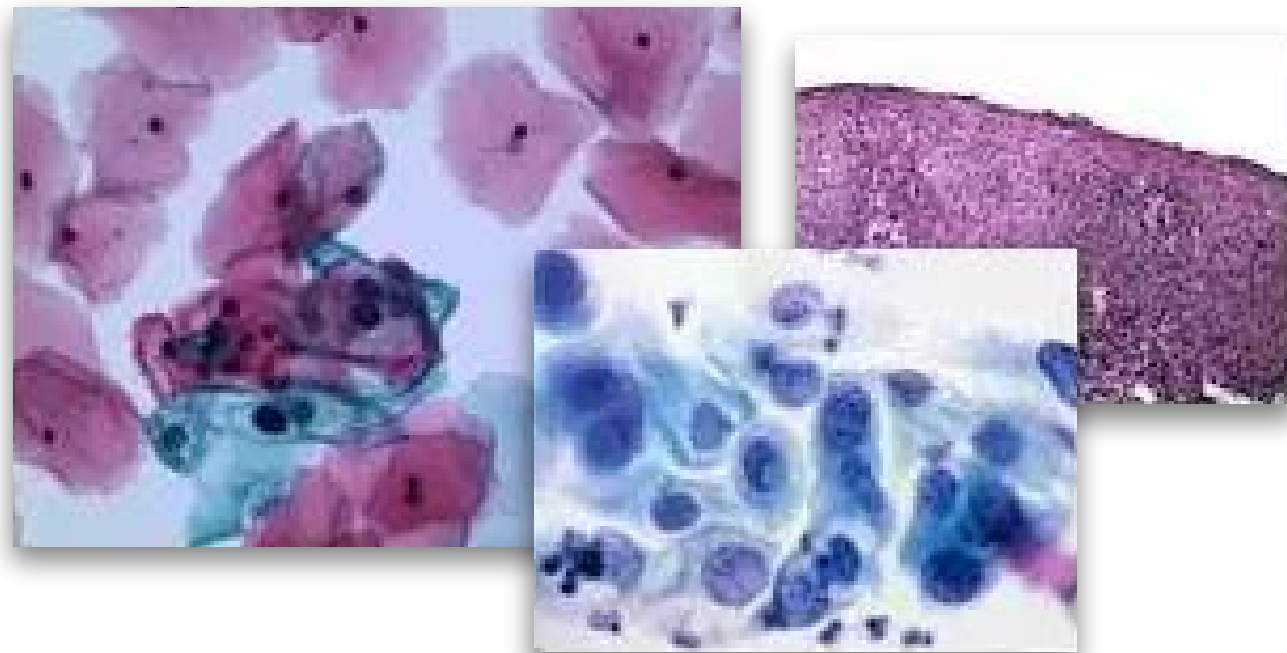
I joined UNM in December 1987 and did not apply to, nor was I recruited by, any UNM department. I moved to Albuquerque with no job for my husband's career, leaving the US Centers for Disease Control and Prevention (CDC) in Atlanta where I had just received a permanent position with multiple new labs and staff to establish the CDC's laboratory for human papillomaviruses (HPVs). I unfortunately did not understand that as I was not recruited with space commitments, a hiring package, or an institutional investment, a "supported" career in academics would not exist.

Dr. Tom Becker, whom I had known at CDC, had also moved to Albuquerque and we discussed studying the etiology of cervical cancer, for which there was speculation from Harold zur Hausen's group in 1986 that HPVs might be involved. We ultimately got CDC funding to work in New Mexico's American Indian populations which had incidence rates of cervical cancer that were three times those of white women. This funding enabled a cursory appointment for me at UNM as a Research Assistant Professor in the Department of Cell Biology. By 1988, I had forged a strong collaboration with Drs. Michele Manos and Henry Erlich, Cetus investigators involved in the use of and invention of polymerase chain reaction (PCR). Using PCR we sought to detect and clone HPVs to describe the plethora of this virus family and associated variants infecting the female lower genital tract. I received my first NIH R01 in 1989 from the National Institute of Allergy and Infectious Diseases (NIAID) working on a mere ten feet of linear bench space that I begged from an MD working in the basement of the old Cancer Center, which is now the Clinical and Translational Science Center (CTSC) building.

I was young and remained optimistic that UNM would offer me a “real job” and in 1994 Dr. Leonard Napolitano, the Dean of the UNM School of Medicine, granted me a UNM tenure track faculty position. His enthusiasm came following a position offer from the Harvard School of Public Health, renewal of my R01, and the receipt of a contract from the National Cancer Institute (NCI) leading ALTs trial HPV Quality Control group. ALTS was a multi-center national clinical trial evaluating the efficacy of HPV testing in the triage of borderline cervical cytology.

One of the next big steps in my career at UNM was when I received staunch support from Dr. Phil Eaton, HSC VP, in 1998 to open the House of Prevention Epidemiology (HOPE), a clinical trials facility dedicated to the testing and implementation of HPV vaccines. My group conducted the first phase I HPV vaccine trial at HOPE, bringing Merck and GSK HPV vaccines to phase III licensure, and overseeing a dedicated UNM clinical trials unit which included research and mid-level team members.

Our Phase 2b HPV vaccine trial data published in the New England Journal of Medicine in 2002 showed 100% sterilizing immunity of the Merck monovalent HPV 16 vaccine prototype. Shortly thereafter, I told Drs. Cheryl Willman, Director of the UNM Cancer Center, and Phil Eaton that creating a population-based registry capturing the full continuum of cervical cancer prevention would be the central means of being able to measure the population effectiveness and impact of HPV vaccines, as well as any changes in cervical screening going forward. Further, the emerging quadrivalent vaccine we were testing did not cover all high-risk HPVs so it was unclear what would happen in populations. Through the championing of UNM Drs. Eaton, Willman and Nancy Joste, and Drs. Mack Sewell, state epidemiologist, and Ron Vorhees, medical director for the New Mexico Department of Health (NM-DOH), the NM Secretary of Health agreed to enable the New Mexico HPV Pap Registry (NMHPVPR). The NM-DOH required UNM to fund a specified annual budget for the registry before it would make changes to the New Mexico Notifiable Diseases and Conditions under NM Administrative Code NMAC 7.4.12.



HPV infected cells/HPV transformed tissue sections. Three panel images courtesy of Dr. Nancy Joste.

Under NMAC, all tests performed on New Mexico residents or by NM providers (if address is missing) for HPV screening (HPV and cytology), and all pathology that includes cervical, vulvar, vaginal, endometrial and hysterectomy, are mandated to be reported to the NMHPVPR. The Registry has been operational for nearly 18 years now, capturing data from over one million New Mexican women and data for approximately five million clinical tests and procedures across the continuum of cervical cancer prevention. I see the NMHPVPR as one of my chief contributions to public health and cervical cancer prevention policy change. The NMHPVPR is formally overseen by a steering committee of over 21 members, including leaders from the NCI, CDC, American Cancer Society, Harvard and other universities, Kaiser Permanente, Indian Health Services, Albuquerque Area Indian Health Board, UNM, NM-DOH and New Mexican community members. Dr. Nancy Joste, our Pathology Department Chair, has been my close collaborator and supporter of the NMHPVPR and has served continuously as the co-chair of its Steering Committee since 2008.

### NOW TO ANSWER YOUR QUESTION: HOW DID I CHOOSE THE DEPARTMENT OF PATHOLOGY?

It was with this background and history that Dr. Tom Williams, in 2009, offered me a position in the Department of Pathology. Tom and I were contemporaries and close in our scientific interests, having each worked in the study of human leukocyte antigens (HLA) and the genetics of linked loci. Further there were individuals in Pathology involved in diagnostics development, both molecular- and imaged-based, which was one of my strengths. Thus, this is when I chose to join Pathology or Pathology chose me. In 2009, I received a ~\$15 million U19 award as a Program Director/PI from the NIAID with support from Drs. Mary Lipscomb and Rick Lyons who had created the UNM Center for Infectious Diseases and Immunity (CID). Pathology and CID supported our program by agreeing to set aside overhead funds from our U19 awards to help support our research. Dr. Hattie Gresham, a long-time supportive faculty colleague, was also key to our U19 success. While in Pathology over the past 15 years, I received multiple U19 awards, a U54 award and multiple R01 awards.

### WHAT ARE YOU CURRENTLY WORKING ON?

My group is currently working on a \$5 million dollar study with Becton Dickinson (BD) and working with other industry partners to conduct evaluations that have the potential (as we have been able to do with BD) to enable new HPV diagnostic device indications using existing NMHPVPR data and research specimens. We are currently part of the NCI's 'Last Mile' Initiative, an FDA-regulated randomized trial to evaluate multiple cervico-vaginal self-sampling devices for primary cervical cancer screening. Self-sampling may be the “Last Mile” needed to reach women who currently do not screen, although follow-up of HPV positive women is likely to be faced with challenges. Self-sampling has been implemented successfully in a number of countries.

I have spent the last several years working tirelessly to have UNM prioritize its NM-DOH commitment from 2005 - to fund the full base operations of the NMHPVPR. This remains requisite to enabling the core operations of the NMHPVPR or it is in jeopardy of closing down. With backing from HSC leadership, including Drs. Ziedonis, Sanchez, Joste, Finn and Collins as well as others, we are hopeful that this support will finally be realized.

### WHAT ARE YOUR RESEARCH GOALS?

My research goals are to promote utilization and capitalization on the resources that have been established through the NMHPVPR, which has had, and will continue to have, major impacts in directing US cancer screening and vaccination policies. The National Roundtable for Cervical Cancer Screening, funded by the Moonshot, has expressed interest in extension of the registry's surveillance and data integration approaches to other states across the nation. If the NMHPVPR continues, its associated research will continue to inform New Mexico and the nation on the risks and benefits of recommended primary HPV screening and for future screening, diagnostic and treatment innovations through the longitudinal capture of clinical practice utilization and disease outcomes data over time.

### WHAT ARE THE GOALS FOR THE CENTER FOR HPV PREVENTION (CHPVP)?

If the core program operations are fully funded, CHPVP investigators will continue to submit research proposals for external research funding. The goals of the Center include interventions with New Mexico's Managed Care Organizations, New Mexico Human Services Department, and with primary care clinics, including Federally Qualified Health Centers. Interventions will target individuals in need of screening, diagnosis and precancer treatment through real-time data outputs; moreover, this work will target building New Mexico's public health workforce. In particular, we are exploring funding arrangements to educate and integrate Community Health Workers, who are critical to improving cervical cancer prevention and other preventive health measures across New Mexico.



The research team of the UNM Center for HPV Prevention (CHPVP).

### -WHAT ARE YOUR FAVORITE MOMENTS?

- When Dr. Joe Scalletti approved my IRB proposal for the study of HPV natural history. This was my first clinical study supervising a BSN clinician collecting gynecological specimens at UNM Student Health Center with support from Dr. Olga Eaton.
- When Dr. Leonard Napolitano pulled his white handkerchief out and waived it after he asked me to tell him why he should hire me.
- When Dr. Carolyn Mold delivered the announcement of my promotion to Associate Professor with tenure, she stated to those attending the ceremony that she knew of no other research track faculty in her time at UNM who had achieved tenure.
- When I received the Distinguished Scientific Achievement award from the American Society of Colposcopy and Cervical Pathology in 2006.
- When we received word that our U19, The UNM Interdisciplinary Human Papillomavirus Center, was funded in 2009.
- When Tom Williams and I attended Henry Erlich's retirement party in San Francisco in 2013.
- When I received an award delivered by then-Congresswoman Lujan-Grisham from the Southwest Women's Law Center for Outstanding Achievement in Advancing Quality Healthcare for Women and Children in 2015.
- When the NMHPVPR received the first recurring (albeit small) funding of its operations in 2019.
- When we received FDA approval in 2023 for a new HPV device indication solely through use of existing NMHPVPR data and clinical research specimens.



Members of the New Mexico HPV Pap Registry Steering Committee and CHPVP research team.

# Faculty News

## NEW FACULTY



**NICOLE DESHMUKH, MD**  
Assistant Professor, Anatomic Pathology, August 21, 2023



**CHRISTOPHER SCHLOSSER, PA**  
Lecturer III, Office of the Medical Investigator, October 1, 2023

## FACULTY RETIREMENTS

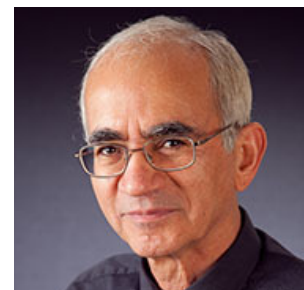
**GLYNNIS INGALL, MD, PhD**  
Professor Emerita, Clinical Pathology, October 1, 2023



**CARLA WILSON, MD, PhD**  
Professor Emerita, Hematopathology, January 1, 2024



**MOHAMMAD VASEF, MD**  
Professor, Hematopathology, January 1, 2024



# Resident and Fellow News

## NATIONAL PRESENTATIONS

The Association for the Advancement of Blood and Biotherapies (AABB) Annual meeting was in Nashville, TN, this year. Faculty Jay Raval, MD, Marian Rollins-Raval, MD, Joseph Griggs, DO, and Transfusion Medicine Fellow **Andres Mendiola Romero, MD, FCAP** attended this year, and Drs. Raval and Rollins-Raval both presented education sessions.

For her session, Dr. Rollins-Raval spoke about "Application of Coagulation Assays in Bleeding (Pediatric) Trauma Patients with an emphasis on fibrinolysis." She acknowledged Dr. Griggs as a contributor, as well as Drs. Evelyn Lockhart and **Alanah Hosford (PGY-2)** for use of their slides.

Our fellow, **Dr. Mendiola Romero**, presented a poster titled: "Day 6 and 7 Platelets are not Associated with Increased Transfusion Reaction Rates - A Multicenter Analysis." His poster is included in the 2023 abstracts in Transfusion (the AABB Journal).

UNM HSC was well represented at this year's annual Pathology Visions conference. The premier annual digital pathology conference, held in Orlando, Florida, had over 50+ presenters, 75+ posters and 45+ vendors this year, the largest in the history of the association.

A poster by UNM Pathology residents, **Dr. Martika Percy (PGY-3) and Alanah Hosford (PGY-2)**, was presented at the conference. Titled, "Structured Evaluation of Large Language Model (LLM) Outputs as a Tool for Pathology Education: An Emerging Novel AI Paradigm," their presentation was well received.

A second poster by Dr. Rama Gullapalli titled "Understanding the Recent Evolution of Med-AI Research Activity in Pathology and Other Specialties Using a Text Mining Approach" won the best poster award in the faculty category. Congratulations!



Andres Mendiola Romero



Alanah Hosford

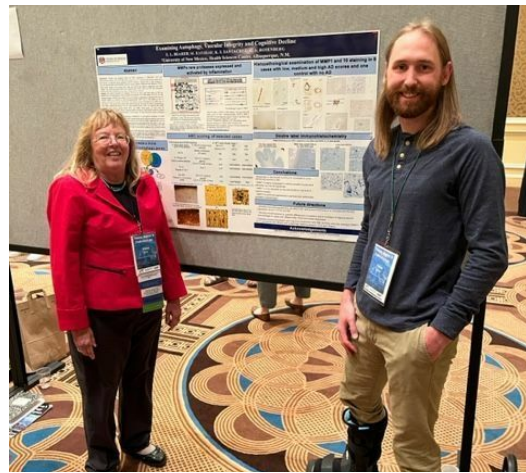


Martika Percy

# Graduate Student News

## BEARER LAB ACCOLADES

**Taylor Uselman**, PhD candidate in the Bearer lab, presented his work and his experiences at three different platform sessions this Fall. He received two awards at the American Society for Investigative Pathology (ASIP) annual meeting where he gave a platform oral presentation entitled "Noradrenergic Stimulation Reconfigures Brain States." **Taylor** received the Experimental Pathologist-in-Training Merit Award for 2023 as well as the Trainee Professional Development award from the Society for Neuroscience. The annual ASIP meeting was held in Salt Lake City, Utah, in October. Dr. Bearer led a Neuropathology Symposium during the meeting.



The Bearer Lab, including PhD candidate **Taylor Uselman**, recent graduate **Mohsen Ranjbar, MSc**, and mentor Elaine Bearer, MD, PhD, attended the Annual Society for Neuroscience (SfN) Meeting held in Washington, DC, in early November. **Taylor** was selected for a merit-based Trainee Professional Development Award (TPDA) from the Society for Neuroscience (SfN) to present his research at the meeting. Dr. Bearer chaired the Nanosymposium on Glia and Vasculature at the meeting.

**Christopher Medina, MD**, UNM Medical School alumnus from the Bearer lab, joined Dr. Bearer in early December at the Cell Bio 2023 Conference (an ASCB joint meeting) in Boston to present their abstract on harnessing cell biology to map the brain's reward circuit. **Chris** is finishing his neurology residency in New York and planning to return to New Mexico upon completion.



# Graduate Student News

## LIDKE LAB THESIS DEFENSE: DEREK RINALDI

**Derek Rinaldi**, graduate student in Dr. Diane Lidke's research lab, successfully completed his BSGP Thesis Defense in October! His thesis is titled, "Interrogation of the Molecular Mechanisms that Fine-tune FcεRI Signaling and Mast Cell Outcomes." **Derek** will continue in the Lidke lab as a post-doctoral fellow.



## FASEB BIOART AWARD WINNER

One of our own graduate students, **Parisa Nikeghbal** from the Steinkamp Lab, received a FASEB BioArt Award for her short video of macrophage distribution within an ovarian cancer 3D spheroid! Her video is titled, "Ovarian Cancer 3D Spheroid & Macrophage Fusion." This 3D video explores the interplay of protumorigenic M2 macrophages (green) within ovarian cancer 3D spheroids (blue), which are vital in influencing tumor growth and immunomodulation. Understanding this interplay is vital due to late diagnoses and promises novel therapeutic targets, personalized treatment approaches, and improved immunotherapy in the immunosuppressive ovarian cancer environment. Congratulations, **Parisa**! Follow the link below to view the video and other award-winning images.



Visit the 2023 FASEB BioArt Awards: <https://www.faseb.org/awards/bioart>

## MEDICAL LABORATORY SCIENCES DECEMBER 2023 GRADUATES

Congratulations to the Fall 2023 Medical Laboratory Sciences graduates! Participants in the commencement ceremony are pictured below. For more photos and a video [visit the student society Facebook page!](#)



SCHOOL OF  
MEDICINE  
MEDICAL LABORATORY  
SCIENCES PROGRAM



## NEWS & AWARDS

### CONGRATULATIONS - ANNUAL 2023 STAFF AWARDS

This year we had fourteen staff members nominated! Narrowing the list down to only seven was tough. Congratulations - and a big **THANK YOU** - to all our staff for successfully facing challenges every day while supporting the department's goals in the areas of education, research, and/or administration. The year's award recipients are:

JAMES CHAVEZ   AMBER VALDEZ   FRED SCHULTZ  
KRISTEN BROESDER   ANGELA MILLER  
DEEANNA GUTIERREZ   LAUREN MCDONALD



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### ORDER A PATHOLOGY DEPARTMENT JACKET!

Do you have a Pathology Department Jacket yet? This fleece jacket is a nice mid-weight sweater/fleece material, with a full zip. There is also a new soft-shell vest option. The Pathology Department lobo logo is embroidered on the front. Orders can be made online at the link below and will be shipped directly to your address. Allow approximately three weeks for delivery.

Contact Burt Martinez at [brmartinez@salud.unm.edu](mailto:brmartinez@salud.unm.edu) if you have questions regarding the ordering process.

[Click here to order](#) or scan this QR code:



## Make a Gift

Your gift today impacts health care and research for tomorrow. Please consider making a recurring, one time, or legacy donation to one of the following funds:

### THE PATHOLOGY EDUCATION FUND

Advance the education and research missions of the department.

VISIT: [The Pathology Education Fund](#)

### THE FOUCAR ENDOWMENT

Invest in future Pathologists. Recruiting and training highly proficient Pathology residents and fellows is a top priority.

VISIT: [The Foucar Endowment](#)

### THE GEORGE D. MONTOYA RESEARCH SCHOLARSHIP FUND

Encourage UNM students to pursue a career in biomedical research.

VISIT: [The George D. Montoya Research Scholarship Fund](#)

### THE HARVEY ENDOWED CHAIR AND PROFESSORSHIP

Invest in Pathology research faculty. Endowed professorships attract and retain expert faculty who teach passionately and lead innovative translational research.

VISIT: [The Harvey Endowed Chair and Professorship](#)

### THE THOMAS M. WILLIAMS & MARGARET G. WILLIAMS ENDOWMENT FOR EDUCATION AND TRAINING

Support the greatest educational and training needs within the Department of Pathology.

VISIT: [The Dr. Thomas M. Williams & Margaret G. Williams Endowment for Education and Training](#)

### If you need assistance with your gift please contact:

Maggie Schold, MFA, Director of Development, UNM School of Medicine

Mobile: (505) 259-9164 or Email: [maggie.schold@unmfund.org](mailto:maggie.schold@unmfund.org)

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# Acknowledgements

The University of New Mexico Department of Pathology gratefully acknowledges Nancy Risenhoover for the layout of this newsletter.

For more information on our department, please visit our website:

**[pathology.unm.edu](http://pathology.unm.edu)**

Do you have news? Please share! Contact: [HSC\\_PathAdmin@salud.unm.edu](mailto:HSC_PathAdmin@salud.unm.edu)

