

# PATHOLOGY BYTES

LSU Health Sciences Center Department of Pathology ♦ Spring 2022

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*Thank you for your support!*

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LSU New Orleans Pathology  
Residency Program



LSUHSC-NO-Pathology



lsunopath

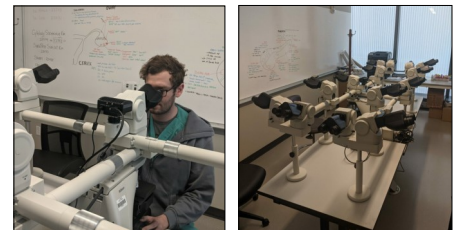
## Chair's Report:

### We are moving!

The renovation of the Interim LSU Hospital (ILH) will be completed by November, 2022. The Pathology Department will vacate the fifth floor of the Medical Education Building (MEB) by the end of December, 2022, to move into the renovated spaces. Note the blue annotated areas in the figure. In addition to Pathologists' offices, a five seat resident room and a microscope room will be available to us. Pathology will share our portion of the floor with Dermatology.



Extra space has been developed at University Medical Center-New Orleans (UMC-NO) for a large resident room and expanded cytopathology space. The Jack Perry Strong Resident Education Room has opened with the acquisition of the 14- head Nikon microscope with motorized turret head and automatic condenser. I hope that this microscope, obtained through the use of Jack Perry Strong Foundation funds, will improve opportunities for resident education.



### Other Noteworthy News:

- With respect to COVID-19, I am proud of how the department continued functioning in spite of the loss of personnel. Our department has taken the lead in development of SARS-CoV-2 testing both at LSU School of Medicine and UMC-NO (see page 2).
- Successful College of American Pathologists (CAP) inspections have been completed in the LSUHSC Precision Medicine Laboratory as well as in the UMC-NO clinical laboratory (see page 2).
- We continue the spirit of inquiry into COVID-19 disease at UMC and are in the process of publishing a study of 38 COVID brains by Roy Rhodes, M.D., Ph.D.
- Ellen Connor, M.D., Ph.D. replaced Dr. Richard Vander Heide as the Director of Autopsy Services at UMC and she has distinguished herself

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through contributions to resident and medical student teaching (see page 4).

- Zhiyan Fu, M.D. has been recruited for GI Pathology and we hope to have her onboard in July.
- Ritu Bhalla, M.D. has been recognized as Physician of the Quarter at UMC and we congratulate her (see page 4).

I look back at 2021 and I am pleased with the Pathology Department's accomplishments. I am confident that 2023 will be even better.

*Gordon L. Love, M.D.*

# Certifications in LSUHC Precision Medicine Laboratory

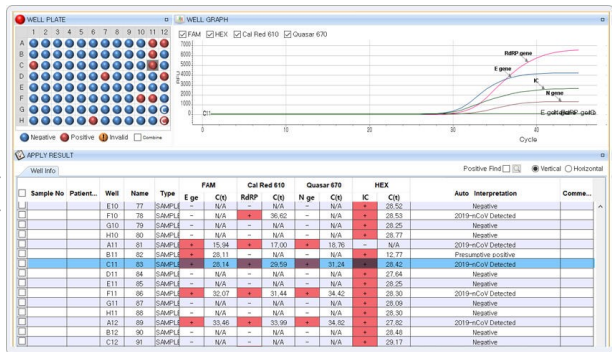
The LSUHC Precision Medicine Laboratory was inspected and accredited by the College of American Pathologists (CAP) on October 21, 2021. This certification

makes the laboratory one of the few coronavirus laboratories to become CAP accredited as many testing laboratories performed testing as research or as a public health laboratory. Congratulations to Judy Crabtree, Ph.D., Genetics, for her certification as Specialist in Molecular Biology (SMB) by the American Society for Clinical Pathology (ASCP) Board of Certification, an administratively independent certification agency that prepares relevant standards and develops procedures that will assure the proficiency of non-physician medical laboratory personnel! LSUHC is indeed lucky to have such an individual skilled in PCR implementation and interpretation to help guide our testing.



The LSUHC Precision Medicine Laboratory was formed as a joint effort between the Departments of Pathology and Genetics in the summer of 2020 during the height of the first wave of coronavirus infections. Hyundai, the automobile company, donated a Bio-Rad PCR instrument and Seegene coronavirus kits. The Seegene assay is designed to detect RdRP, S and N genes specific for SARS-CoV-2, and E gene for all of Sarbecovirus including SARS-CoV-2 (see PCR report). Initial testing was performed by Grace Athas, Ph.D., MLS. Two Medical Technologists, Darlene Tazier and Elizabeth Gravois,

were hired as testing ramped up. Fannie Jackson, Research Associate III, assisted with specimen processing and instrument maintenance. Inventory control is one of Fannie's special skills given supply chain



shortages, and she ensured that in-date reagents and compatible supplies were available. To date, 719 positives, 102 presumptive positives, and 4,416 negatives were obtained out of 5,237 total tests processed.

Acquisition of a NextSeq 550 DX PCR expanded the diagnostic capability of the LSUHC laboratory to coronavirus sequencing and variant detection. A contract to sequence all Ochsner Foundation's coronavirus isolates soon followed as did requests for sequencing from the Louisiana Public Health Laboratory which had no in-house sequencing capability. Very few of UMC-NO isolates were sequenced as UMC-NO did not sequence isolates. UMC-NO submitted some to the Louisiana Public Health Laboratory. In terms of COVID specimens sequenced, we have processed 3,204 samples and submitted 2,597 sequences to the GISAID database, including the first delta and the second omicron case detected in the state of Louisiana. Ability to extract virus from tissue allowed autopsy specimens to be evaluated for delta and later omicron variants.

## Residents Present Abstracts at USCAP

We are proud to recognize our residents who presented abstracts at the 2022 United States and Canadian Academy of Pathology (USCAP) Meeting in Los Angeles, California. They are:

- Wenjing Qiu, M.B., Jihuan Chen, M.B., Michael Webber, D.O., Zaid Khreefa, M.B.Ch.B., "Molecular Methods in the Identification of Pulmonary Pathologic Traits of the SARS-CoV-2 Delta Variant at Autopsy"
- Zaid Khreefa, M.B.Ch.B., Jihuan Chen, M.B., Michael Webber, D.O., Wenjing Qiu, M.B., Maryam Sadough, M.D., "Correlation of Clinical and Histopathological Findings with Viral Variant in the Gastrointestinal Tract of COVID-19 Autopsy Cases"
- Fernanda da Silva Lameira, M.D., "Pathologic Features of Post-Acute Sequelae of COVID-19 (PASC) at Autopsy"

# New Developments at the UMC Microbiology Laboratory

Over the next several months, efforts over the years will come to fruition with enhanced microbiology diagnostic capabilities. These fall into two main currents: **enhancement of detection of microbes in blood and enhancement of mycology and mycobacteriology.**

## Enhancement of detection of microbes in blood

Most clinical laboratories produce many false positive blood culture results due to bacteria or fungi introduced during the blood collection process. At UMC, we have considerably reduced false positives through use of diversion devices that trap contaminating material during blood culture collection.

Each false positive blood culture costs UMC about \$10,000 in increased hospital services as well as causing direct patient harm through unneeded treatment. UMC purchased a new blood culture instrument, the BACT/ALERT® VIRTUO®(see figure). This instrument has the capability of determining the fill of blood vials. Over and under fill may cause failure of growth of bacteria.

Initial results show that most blood culture vials are improperly filled and we hope through feedback to blood-drawers that we can improve the fill rate. Some studies indicate improvement of 20% in pathogen detection with proper fill.

Additionally we are able to rapidly identify blood culture pathogens with the BioFire® FilmArray® Blood Culture Identification BCID2 Panel which tests for 43 targets associated with bloodstream infections, including gram-negative bacteria, gram-positive bacteria, yeast, and 10 antimicrobial resistance genes—all with one test and with results available in about an hour from



positive blood culture. This test can be applied to blood cultures that are flagged positive from our Virtuo blood culture instrument. We will be coordinating with Pharmacy to ensure rapid patient treatment with the most appropriate antibiotics.

Furthermore, validation of the fungus blood culture, which is currently a send-out, is nearly complete to bring this test inhouse.

## Enhancement of mycology and mycobacteriology:

Mycology services were started at UMC several months ago and we have already cultured more molds than we saw in a year of sending out to a reference laboratory – molds are delicate and the send-out process is inherently damaging. Over the next several months, we will validate mold and mycobacteriology databases for MALDI-TOF (see image).

VITEK MS is an automated mass spectrometry microbial identification system that uses Matrix Assisted Laser Desorption Ionization Time-of-Flight (MALDI-TOF) technology. This will enable rapid identification of molds before diagnostic condensation appears, saving days of delay. Also some molds never develop morphologic characteristics and cannot be identified by traditional methods. MALDI-TOF can identify these readily. Our MALDI-TOF already identified *Candida auris*, a resistant organism that is hard to identify by conventional means. This isolate was one of the first *Candida auris* cases in Louisiana.



Our mycobacteriology section has sent out mycobacteria for identification. These will be identified by MALDI-TOF, potentially saving weeks of delay and enabling more rapid patient treatment.

We aim to constantly strive to improve microbiology services to better service and protect UMC patients. Throughout my personal experiences as a clinical laboratory director, I have known that working with infectious disease physicians is essential for a good microbiology laboratory. Dr. Figueroa, Head of Infectious Disease at LSU and a gratis member of our department, is a great partner as we implement new capabilities, and he configures these for optimum patient effect.

**What's next?** I would like to start real-time PCR at the LSU Precision Medicine Laboratory to detect blood stream pathogens in severe sepsis. Such a system may have the ability to detect novel organisms in blood or body fluids as genomic material of non-human origin is recognized.

## We're In The News



Dr. Gordon Love, Head and Chair of the LSUHSC Pathology Department, was featured on Fox 8

in December for his work tracking the increasing number of omicron cases in Louisiana. [Click here](#) to view the article.

## LSUHSC Pathology Welcomes Dr. Ellen Connor



**Dr. Ellen Connor**

Medical Center – New Orleans.

We are pleased to welcome Ellen Connor, MD, PhD as an Assistant Professor of Clinical Pathology. Dr. Connor also serves as Director of Autopsy Service at University

Dr. Connor previously served as a Forensic Pathologist/Deputy Coroner at the Jefferson Parish Coroner's Office. She received her Bachelor of Science Degree in Biochemistry from LSU-Baton Rouge and her Doctor of Philosophy Degree in Pharmaceutical Sciences from the University of South Carolina College of Pharmacy in Columbia. She went on to receive her Doctor

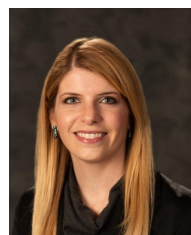
of Medicine Degree and complete her Medical Residency in Anatomic and Clinical Pathology at LSUHSC – New Orleans. She then completed a Medical Fellowship in Forensic Pathology at the University of South Florida in Tampa. She is a Fellow in both the American Society for Clinical Pathology and the National Association of Medical Examiners.

## Drs. Fox and Vander Heide Receive Billingham Award

Please join us in congratulating Sharon Fox, MD, PhD a Clinical Assistant Professor, and Richard Vander Heide, MD, PhD, MBA a Retired Professor, on their paper receiving the 2021 Billingham Award!

The article, "COVID-19 myocarditis: quantitative analysis of the inflammatory infiltrate and a proposed mechanism", is included in the third set of publications to be recognized by this award, named in honor of Dr. Margaret Billingham, a world-

class cardiovascular pathologist, a pioneer in cardiac transplant pathology, and a stalwart of the Society. The authors were formally recognized at the annual meeting of the Society for Cardiovascular Pathology on March 20. They are also being invited to write a Commentary featuring their award-winning papers to be published in CVP. And through the generosity and support of Elsevier, the corresponding author will receive a



**Dr. Sharon Fox**



**Dr. Richard Vander Heide**

free color figure for a future publication in the journal.

## Dr. Rachna Jetly-Shridhar Promoted To Professor



**Dr. Rachna Jetly-Shridhar**

Congratulations to Rachna Jetly-Shridhar, MBBS, MPH who will be promoted to Professor of Clinical Pathology effective July 1, 2022! Dr. Jetly has been a member of the LSU Health Sciences Center faculty for nearly 12 years. She holds the William A. Rock, Jr. Endowed Professorship. She serves as the director of the Hematology and Flow Cytometry Labs as well as director of the Electrophoresis Lab at University Medical Center. In addition she is the director of the hematology block MCLIN

231, co-director of the Pathology 201 course, and consultant

## Dr. Ritu Bhalla Receives UMC-NO Award

Congratulations to Ritu Bhalla, M.D., Pathology Residency Program Director for receiving the University Medical Center-New Orleans Attending Physician of the Quarter Award!

Dr. Bhalla was presented with a plaque by Peter DeBlieux, M.D., UMC-NO Chief Experience Officer (CXO), at a celebration held at the

pathologist for the Louisiana Tumor Registry at LSU Health Sciences Center.

hospital on Friday, March 4, 2022.



**Pictured, from left, are: Dr. Peter DeBlieux and Dr. Ritu Bhalla.**

Each quarter a physician is selected who continuously demonstrates compassion, respect, integrity, and teamwork.

Dr. DeBlieux explained that Dr. Bhalla went out of her way to ensure her clinical duties and the Pathology Residency Program continued to function normally during

and after Hurricane Ida.

## Dr. Nicole Jackson, 2019 Residency Graduate, Selected As 40 Under 40



Nicole Jackson, MD, MPH, FASCP, a 2019 graduate, was selected as one of the top six of the ASCP's 40 under Forty

recipients.

Dr. Jackson is an Assistant Medical Examiner in Chicago and is board-certified in anatomic, clinical and forensic pathology. She is a fellow of ASCP, the National Association of Medical Examiners, the National Medical Association, and the College of American Pathologists. She serves as a ASCP mentor, and is a founder and board member of the

newly-formed Society of Black Pathologists. Among her interests,

Dr. Jackson enjoys serving as a mentor, participating in community outreach, focusing on mental health issues, and increasing the visibility of forensic pathologists as first-responders to threats on the nation's life expectancy. She is also interested in studying deaths in vulnerable populations and ways to reduce the number of preventable deaths.

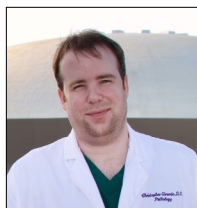
The 40 ASCP members under the age of 40 are recognized for their

achievements and leadership qualities that are making an impact on pathology and laboratory medicine.

The top six 40 Under Forty honorees were selected based on public voting and committee selection. They include two laboratory professionals, two pathologists, and two pathologists in training. Each of the six will receive free registration to attend the ASCP 2021 Annual Meeting in Boston, a \$1,000 stipend toward airfare and lodging, and were recognized at the Annual Meeting.

## Residents

### Accept Fellowships



**Dr. Chris Girardo**



**Dr. Jack Harbert**

Congratulations to our PGY4 resident, Chris Girardo, D.O. and to our PGY3 residents, Jack Harbert, M.D. and Fernanda Da Silva Lameira, M.D. who accepted fellowships! Dr. Girardo accepted a Clinical Informatics Fellowship at LSU-Ochsner program in Shreveport, Louisiana in 2022. Dr. Harbert accepted a Hematopathology Fellowship at the University of Minnesota in 2023, and Dr. Lameira accepted a Forensic Pathology Fellowship at the Virginia Commonwealth University in Richmond, Virginia in 2023.

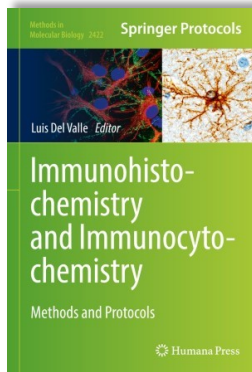


**Dr. Fernanda Da Silva Lameira**

## Dr. Luis Del Valle Has A New Book

Congratulations to Luis Del Valle, M.D. on his new publication, *Immunohistochemistry and Immunocytochemistry: Methods and Protocols!*

This volume provides a comprehensive reference guide for researchers to study the applications of labeled antibodies. Chapters guide reader through the practice of immunohistochemistry, immunocytochemistry and immunofluorescence techniques.



Written in the highly successful *Methods in Molecular Biology* series format,

chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and useful tips on troubleshooting and avoiding known pitfalls.

Dr. Del Valle's book is available online at Springer. [Click](#)

[here](#) to access the book.

## Welcome New LSUHSC Pathology Residents 2022-2023



Asra Feroze, MBBS

Jinah Sindh Medical University, Pakistan



Julia Rivera, MD

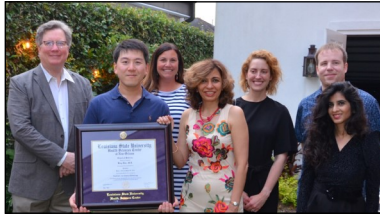
Ponce Health Sciences University School of Medicine, Puerto Rico



Haibo Wang, MD, PhD

China Medical University, China

# May 2021 Pathology Residency Graduates



Front, from left: 2021 Graduates, Bing Han, M.D., Gloria Sura, M.D., and Katherine Wang, M.D., are presented with their certificates by LSUHSC Pathology Head and Chair, Gordon Love, M.D., and Residency Program Director, Ritu Bhalla, M.D.

We are proud to announce the May 2021 LSUHSC Pathology Residency Program graduates, Bing Han, M.D., Gloria Sura, M.D., and Katherine Wang, M.D. All of our graduates appeared for the ABPath examination and successfully passed their AP/CP boards!

Dr. Han accepted a Breast Pathology Fellowship at Moffitt Cancer Center in Tampa in 2021 and a Dermatopathology Fellowship at Tulane Hospital in New Orleans in 2022. Dr. Sura accepted both a Cytopathology Fellowship in 2021 and a Molecular

Genetic Pathology Fellowship in 2022 at Methodist Hospital in Houston. Dr. Wang accepted a Cytopathology Fellowship in 2021 and a Surgical/GI Fellowship in 2022 at the Medical University of South Carolina in Charleston.

## Resident Poster Awarded At Conference



Congratulations to Fernanda Da Silva Lameira, M.D. for winning the clinical vignette section at the 2021 LSU Medical Research Day! Her poster is titled "A Rare Cause of Hemophagocytic Lymphohistiocytosis: an Autopsy Report."

## 2022 Chief Residents Announced



Join us in congratulating our chief residents for the year 2022: Jack Harbert, M.D. and Fernanda Da Silva Lameira, M.D. Thank you to our outgoing chiefs, Chris Girardo, D.O. and Hina Khokhar, M.B.,B.S.

**A Rare Cause of Hemophagocytic Lymphohistiocytosis: an Autopsy Report**

Fernanda da Silva Lameira, MD<sup>1</sup>, Anh O. Nguyen, DO, PhD<sup>2</sup>, Sharon Fox, MD, PhD<sup>3</sup>, Rachna Jetly, MD, MPH<sup>4</sup>  
<sup>1</sup>Department of Pathology, <sup>2</sup>Department of Hematology and Oncology, Louisiana State University Health Science Center, New Orleans, Louisiana, USA  
<sup>3</sup>Southeast Louisiana Veterans Health Care System

CASE PRESENTATION	RESULT	DISCUSSION
<ul style="list-style-type: none"> <li>60 year old African American woman presented with bilateral leg weakness, malaise, fever and unintentional weight loss for a few months.</li> <li>She then developed seizure and encephalopathy, prompting hospital admission.</li> <li>She has history of esophageal stricture, mild chronic anemia, mild idiopathic monocytosis, thrombocytopenia, and latent syphilis.</li> <li>Broad spectrum antibiotic was initiated for suspected sepsis from urinary tract infection. Infectious work-up did not reveal any bacterial, viral, or fungal growth in the blood and CSF. CT head revealed diffuse edema with intraparenchymal hemorrhage.</li> <li>Her mentation initially improved however continued to decline over the course of the hospitalization.</li> <li>Bone marrow biopsy suggested Hemophagocytic Lymphohistiocytosis (HLH). Mantle Cell Lymphoma was suspected from a peripheral blood flow cytometry however not diagnostic due to low number of CD5+ cells.</li> <li>PET-CT was performed and was non-diagnostic.</li> <li>Patient did not improve with plasmapheresis and dexamethasone, decompensated quickly with bilateral pleural effusion, tamponade from pericardial effusion, distributive shock, kidney failure and eventually expired.</li> </ul>	<p><b>23882.1</b> H&amp;E stain of ganglion</p> <p><b>23882.2</b> CD20 stain of the ganglion</p> <p><b>23882.3</b> H&amp;E stain of the lung</p> <p><b>23882.4</b> H&amp;E stain (left) and CD20 stain (right) of the bone marrow and hemophagocytic in the bone marrow aspirate.</p>	<ul style="list-style-type: none"> <li>Gross pathology. Physical examination revealed no palpable mass. There was no thrombosis in major pulmonary and cardiac arteries, or in the aorta and major descending arteries. There was no gross abnormality in the respiratory, gastrointestinal, hepatobiliary, genitourinary, reticuloendothelial (spleen, lymph nodes), and endocrine (thyroid, adrenal glands) system.</li> <li>Microscopic pathology. Extensive capillary intraluminal involvement of large B-cell lymphoma in all dissected organs, including but not limited to lung, heart, kidney, ganglions, adrenal glands. There was rare capillary sinus involvement and only highlighted by immunohistochemical stain in the bone marrow. These cells were positive for CD5, CD20, PAX-5, MUM-1, and BCL2.</li> </ul>
		<ul style="list-style-type: none"> <li>Intravascular large B-cell lymphoma is rare subtype of extranodal large B cell lymphoma, characterized by proliferation of lymphoma cells within a lumina of small blood vessels, particularly capillaries and post-capillary venules, causing disseminated occlusion of blood vessels, resulting organ dysfunction.</li> <li>Symptoms are usually nonspecific such as fever of unknown origin.</li> <li>Site of involvement are usually central nervous system and skin.</li> <li>Intravascular large B-cell lymphoma is aggressive in nature and render poor prognosis.</li> <li>Historically, this diagnosis is usually determined on autopsy due to lack of a tool for biopsy during work-up or detectable circulatory tumor cells in the peripheral blood. In this case, patient had symptoms for a few months and have had extensive work-up without a diagnosis, including multiple flow and bone marrow biopsy prior to hospital presentation.</li> </ul>
		<p><b>REFERENCES</b></p> <ul style="list-style-type: none"> <li>1. Ponzoni, M. et al. Blood 2018 132 (15): 1561 – 1567.</li> <li>2. Shimada et al. Lancet Oncol. 2020 Apr; 21(4): 503 – 602.</li> </ul>
		<p><b>ACKNOWLEDGEMENTS</b></p> <p>This study was conducted in collaboration with the Louisiana State University Health Science Center and University Medical Center New Orleans LCMC Health.</p>

## Precision Medicine Team Celebrate Lab Week



From left are: Judy Crabtree, Ph.D., Fannie Jackson, Grace Athas, Ph.D., MLS, Darlene Tazier, MT, and Elizabeth Gravois, MT.