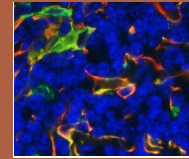


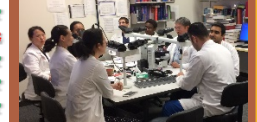
Under the Scope

Newsletter for the Department of Pathology and Laboratory Medicine
McGovern Medical School at UTHealth, Houston, Texas
April-June, 2021



UTHealth
The University of Texas
Health Science Center at Houston

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Congratulations and Well Wishes to our graduating senior residents and fellows!

Here is our Graduating Class of 2021 and the next step in their career paths:

Aakash, M.D., Hematopathology, MD Anderson Cancer Center, 2021-2023

Yasir Ali, M.D., Surgical Pathology, Univ. Texas Medical Branch, 2021-2022; Cytopathology, Univ. Texas Medical Branch, 2022-2023

Hanadi El Achi, M.D., Molecular Genetic Pathology, MD Anderson Cancer Center, 2021-2022; Hematopathology, Johns Hopkins University, 2022-2023

Albina Joldoshova, M.D., Surgical Pathology, Baylor College of Medicine, 2021-2022; GI/Hepatobiliary Pathology, Yale School of Medicine, 2022-2023

Mei Lin, M.D., Surgical Pathology, Houston Methodist Hospital, 2021-2022, Gynecologic Pathology, Northwestern University, 2022-2023

Vanessa Moreno, M.D., TBA

Joe Rodriguez, M.D., Surgical Pathology, MD Anderson Cancer Center, 2021-2022; Cytopathology, MD Anderson Cancer Center, 2022-2023

Graduating Fellows:

Liye Suo, M.D., Ph.D., Clinical Assistant Professor, SUNY Upstate Medical University

Noah Reilly, D.O., Forensic Pathology, Harris County Institute of Forensic Sciences, 2021-2022



Dr. Actor collaborates on COVID-19 studies related to Acute Respiratory Distress

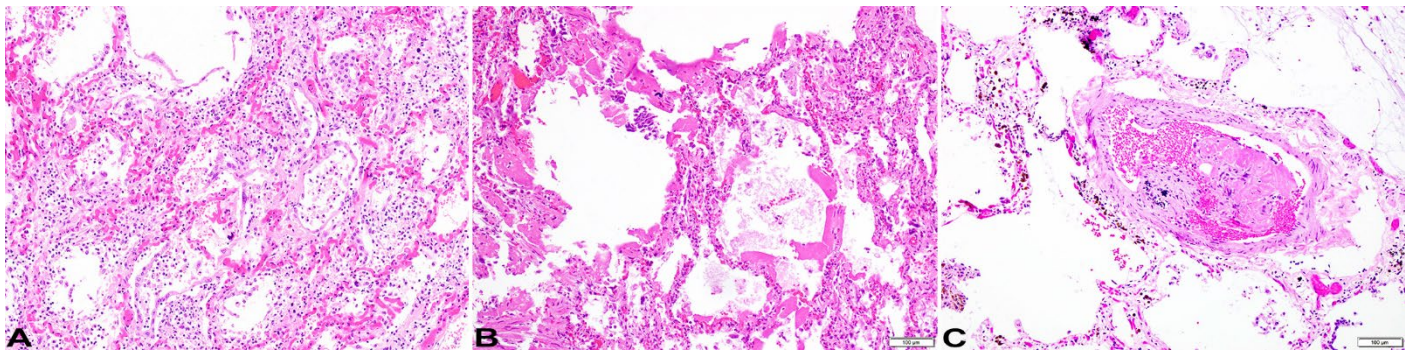


Dr. **Jeffrey Actor**, Professor in DPALM, is participating in a COVID-19 research project with Dr. Holger Eltzschig and colleagues in the Department of Anesthesiology. The group is using the DPALM Biosafety Level 3 laboratory (developed for research on tuberculosis) for studies regarding the underlying mechanisms of acute respiratory distress syndrome (ARDS) manifestations caused by COVID-19. Respiratory distress is by far the most common cause of death in COVID 19 patients. In the planned studies, a mouse model of SARS-CoV2 infection will be utilized to examine the role of cytokines and other host factors in increasing the inflammatory effects of the virus infection. The overall goal is to develop treatments that specifically dampen the pathologic response and reduce lung damage. This project was highlighted in a recent article in the [McGovern Medical School Scoop](#).

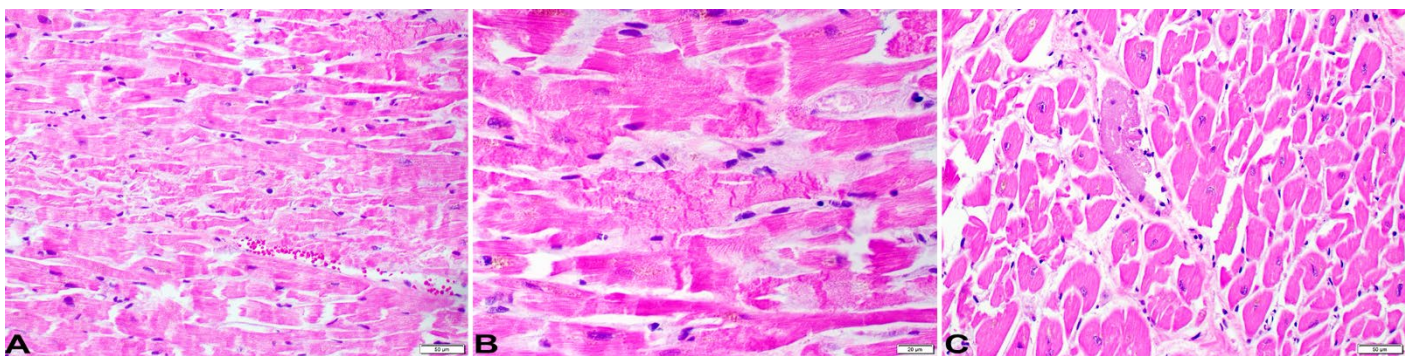
Cardiovascular pathologists recognized for important COVID-19 publication

Faculty and residents participating in our autopsy and cardiovascular pathology programs have actively taken on COVID-19, seeking insights into the disease to guide treatment and prevention. A publication by Dr. **Max Buja** and coauthors ([article available here](#)) recently received the 2020 Billingham Award from the Publications Committee of the Society for Cardiovascular Pathology (SCVP) as the best original article of the year. The article has already been cited over 200 times and brought attention to the effects of SARS-CoV2 infection on the heart and other vascular sites; a [commentary](#) providing background for the paper by Drs. **Buja, Bihong Zhao, Michelle McDonald, Giulia Ottaviani, and Dwayne A. Wolf** is now available in the July-August 2021 issue of the *Journal of Cardiovascular Pathology*. The SCVP 2021 Symposium held on March 13-15 included a wide variety of presentations on the topic "A Novel Coronavirus Meets the Cardiovascular System: What We Know and How We Know It."

The figures below provide examples of the pulmonary and cardiovascular manifestations of COVID-19, as documented by DPALM faculty, trainees, and staff.

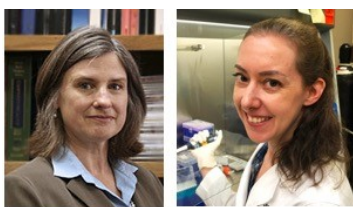


These photomicrographs show typical features of acute COVID-19 respiratory disease characterized by florid diffuse alveolar damage in the exudative phase. **A.** This area shows alveolar septal edema, marked congestion of pulmonary capillaries, clusters of type II pneumocytes and an inflammatory infiltrate composed of lymphocytes and histiocytes. **B.** This area has prominent hyaline membranes which appear as broad eosinophilic deposits which form from proteinaceous material derived from leaky capillaries and damaged epithelium. **C.** An organizing thrombus is present in a small pulmonary artery. (Source: L.M. Buja, MD)



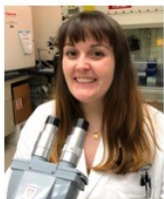
Photomicrographs showing focal cardiomyocyte necrosis in a COVID-19 patient. **A.** Focus of cardiomyocyte necrosis shows necrotic myocytes with loss of nuclei and disrupted myofibrils. **B.** Higher magnification view of a damaged cardiomyocyte with contraction bands. **C.** A microthrombus is present in a small myocardial blood vessel. There is no associated inflammatory infiltrate. Such focal changes in the absence of overt myocarditis appear to correlate with clinical finding of elevated troponin elevation. The pathogenesis may involve viral-induced microvascular changes. (Source: L.M. Buja, MD)

DPALM team develops a new tool in the battle against syphilis



Diane Edmondson

Bridget DeLay



Lindsay Kowis

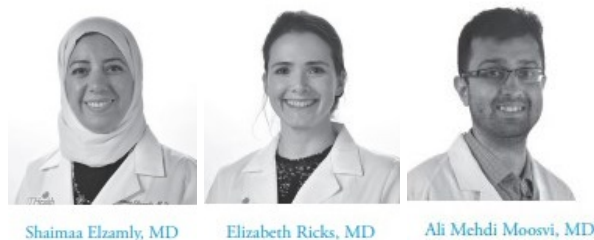


Steven Norris

A few years back, the syphilis spirochete, *Treponema pallidum*, was one of the few major bacterial pathogens that had not been grown *in vitro*, i.e. in a test tube. On October 20, 2017, DPALM faculty members Drs. **Diane Edmondson** and **Steven Norris** started an experiment with new conditions that broke down that barrier. Two cultures from 2017 are still going 3 ½ years later, and hundreds of experiments employing this methodology have been performed by Drs. Edmondson and Norris and co-workers Dr. **Bridget DeLay** and **Lindsay Kowis**. Four [articles](#) using the *T. pallidum* culture system have now been published, and many others are in the works. Drs. Edmondson and Norris obtained NIH funding for this project and recently received a Notice of Allowance from the U. S. Patent and Trademark Office indicating that a patent on this technology will be issued soon. Use of the *T. pallidum* culture system is expected to help improve the diagnosis, treatment, and prevention of syphilis, an old disease that unfortunately has been making a comeback in the U.S. and worldwide since 2000.

CAP Resident Forum delegates

Congratulations to Drs. **Elizabeth Ricks** and **Ali Moosvi** who were chosen to represent our program as College of American Pathologists (CAP) Resident Forum Delegates. They join Dr. **Shaimaa Elzamy**, appointed last year, who continues in that position. The Resident Forum Delegate meetings are held biannually, covering a broad range of informative topics pertinent to pathology residents in training. They will relay meeting updates to the department following the Fall Meeting in September, held in Chicago, Illinois.



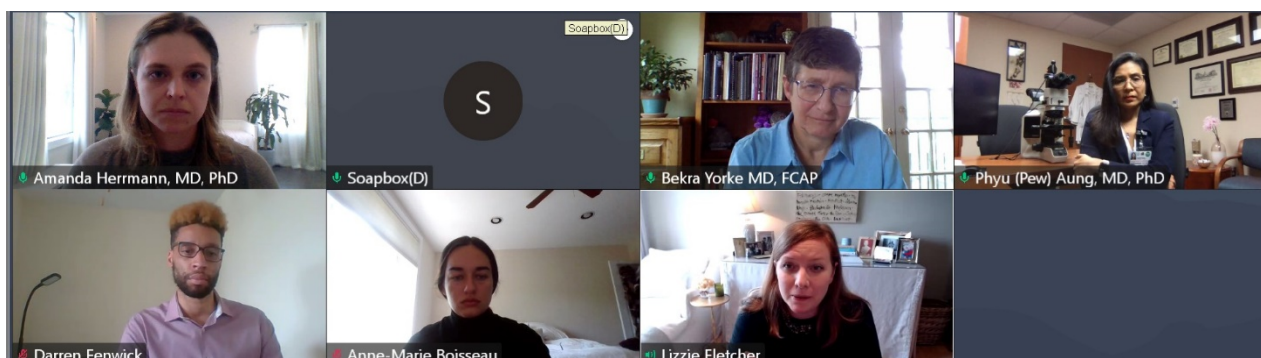
Shaimaa Elzamy, MD

Elizabeth Ricks, MD

Ali Mehdi Moosvi, MD

Pathology advocacy goes virtual in 2021

The inaugural [Pathologists Leadership Summit](#) sponsored by the College of American Pathologists was held virtually from May 1-4, 2021, and included three days of engaging presentations, discussions, and a meeting of the House of Delegates. The event brought together pathologists and pathology advocates from around the country and from all training levels to learn about and discuss current issues in the field and practice of pathology. The event culminated with a virtual Capitol Hill day visit with legislators and their staff with the goal of advocating for continued federal funding to mitigate cuts for pathology service reimbursement through the Centers for Medicare and Medicaid Services. Resident **Amanda Herrmann**, as part of her Leadership Development Award through the CAP Foundation, attended the summit and the Hill Day, advocating with her fellow pathologists from around Texas and meeting, among others, Rep. Lizzie Fletcher who represents TX District 7 in Houston. Following the event, Amanda was interviewed about her experiences for a CAPcasts podcast, which can be accessed at the following link: <https://soundcloud.com/pathologists/reflections-from-cap-hill-day-with-dr-amanda-c-herrmann>.



One of the small group discussions at the Pathologists Leadership Summit

Additional News

- Dr. **Robert Brown** and colleagues recently received acceptance for publication for two articles:
 - Refractory Hydroa Vacciniforme-like Lymphoma: Biological Insights from Morphoproteomic Analysis, *Int. J. Hematol. Oncol. Stem Cell Res.*
 - *Letter to the Editor*: Morphoproteomics Confirms the Expression of Fatty Acid Synthase (FAS) in Reactive Alveolar Pneumocytes in a COVID-19 Victim: Biological and Therapeutic Implications, *Ann. Clin. Lab. Sci.*
- Dr. **Jamie M. Everett** will be speaking at the National Medical Association's 2021 Virtual Convention & Scientific Assembly. Dr. Everett will be the leading first day of the pathology section's exciting lecture series with a talk entitled "Infectious Disease Manifestations in Liver Biopsy Pathology: A Review" on July 17, 2021 at 1pm.
- Dr. **Jeffrey K. Actor** is Co-Principal Investigator with Dr. **Upendra Marathi** of 7 Hills Pharma, LLC for a new project entitled "[Integrin Activation to Augment SARS-CoV-2 Vaccination](#)". The research study is funded through a Small Business Innovation Research (SBIR) Grant from the NIH Institute of Allergy and Infectious Diseases.
- Dr. **Michelle McDonald** will be providing a platform presentation entitled, "Neuropathology in COVID-19 autopsy examinations: a single institutional experience" at the AANP's 97th Annual Hybrid Convention, July 15-17, 2021. Her abstract will be published in the June edition of the Journal of Neuropathology and Experimental Neurology.
- Dr. **Amanda Herrmann** has been selected to serve as junior member/resident representative on the CAP Professional and Community Engagement Committee. In addition, Dr. Herrmann will serve as president of the McGovern Medical School House Staff Association during the 2021-2022 academic year.
- An abstract entitled "The first case of BRG (SMARCA4)/INI Deficient Tracheal Carcinoma: A Case Report and Review of the Literature" will be presented by Dr. **Allen Omo-Ogboi** at the 2021 ASCP Annual Meeting.

Under the Scope® is published quarterly by the Department of Pathology and Laboratory Medicine of the McGovern Medical School, University of Texas Health Science Center at Houston. Copies of this newsletter and additional information regarding the department and its programs are available at the departmental website, <https://med.uth.edu/pathology/>. Please submit stories for future editions to one of the co-editors listed below. Co-editors: Amanda Herrmann (Amanda.C.Herrmann@uth.tmc.edu), Karan Saluja (Karan.Saluja@uth.tmc.edu), Jamie Everett (Jamie.M.Everett@uth.tmc.edu), and Steven Norris (Steven.J.Norris@uth.tmc.edu). Administrative Assistant: Shanequa Bradley (Shanequa.C.Bradley@uth.tmc.edu).