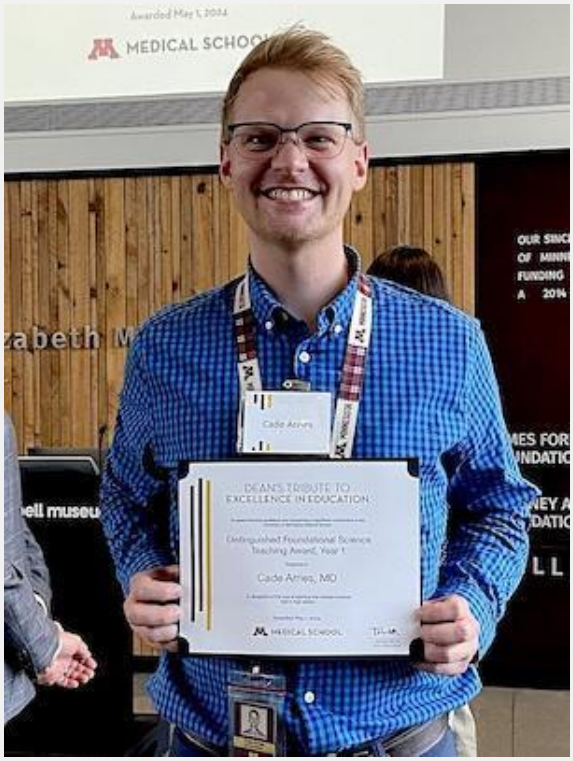
MEDICAL SCHOOL
UNIVERSITY OF MINNESOTA | DEPARTMENT OF LABORATORY MEDICINE & PATHOLOGY

FOR MEDICAL STUDENTS, THE FUTURE OF PATHOLOGY EDUCATION IS UNFOLDING NOW

"Like a steam locomotive roaring down the tracks, the events of 2020 brought into clear focus the concept of change," wrote Duke University pathologist Sarah Bean in "Change in Medical Education: the Time is Now," an introduction to a special section of *Archives in Pathology and Laboratory Medicine* on medical education published in 2021. "The pandemic forced us to rapidly embrace change to use technology in medical education so that education could continue during the pandemic while allowing for physical distancing."

What followed the pandemic was a surge in "distance learning" and "asynchronous learning," the latter defined as "a general term used to describe forms of education, instruction, and learning that do not occur in the same place or at the same time." Both are enabled by the computer, and both are transforming medical education.



Cade Arries, MD, with his Distinguished Foundational Science Teaching Award from the Medical School

When LMP assistant professor and hematopathologist Cade Arries became LMP's Director of Medical Student Pathology Education in August last year, he was already at work developing an asynchronous histopathology learning resource for medical students, residents, and fellows. In March, he and LMP professor Michael Linden, Hematopathology Division Head, published "Enhancing hematopathology peripheral blood smear education through asynchronous video material: A pilot report" in *Academic Pathology*. The 28 brief videos are posted on the LMP YouTube channel **here**.

"While more research is required to further evaluate the long-term effectiveness and impact of asynchronous video learning, this study provides encouraging preliminary evidence supporting its potential as a valuable tool in enhancing medical education," the authors wrote in the conclusion. "It is our hope that our work will inspire further development and application of such educational resources, thereby improving trainee education and ultimately patient care outcomes."

Initiatives like the asynchronous video project and his skill at implementing the new pathology curriculum for first-year medical students earned Arries a Distinguished Foundational Science Teaching Award from the Medical School, which he received at the Dean's Tribute to Excellence in Education event at the Bell Museum in May. "That award was specifically granted thanks to the first group of medical students enrolled in the new curriculum," Arries said in an interview. "One of the major changes that occurred in the curriculum in general was after COVID. We had to pivot. There was a lot that had to happen rather quickly."

Full story **here**.

BILL NYE THE SCIENCE GUY VISITS ORR LAB

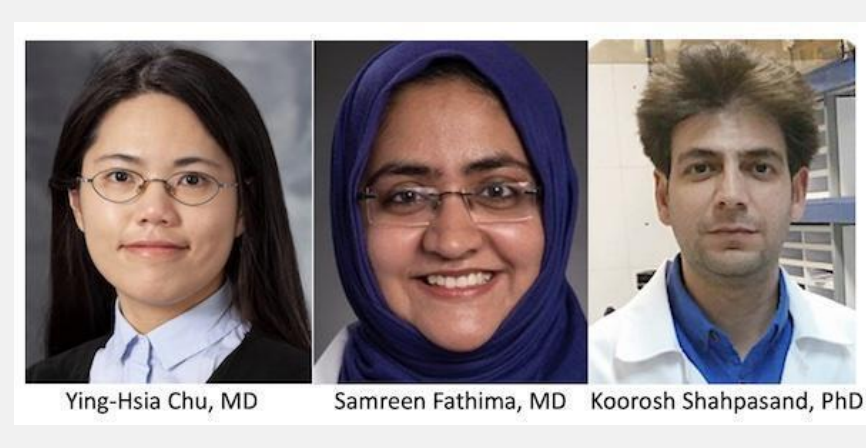
Science celebrity Bill Nye the Science Guy (center, in the blue sweater) visited the Orr laboratory last year

The legendary science communicator Bill Nye the Science Guy visited LMP professor Harry Orr's laboratory last October in his ongoing effort to champion ataxia research.

As a writer for the health and medicine news site STAT put it, Bill is rebranding himself for the time being. "For now, he's 'Bill Nye the Ataxia Advocate Guy,' as he aims to bring awareness to a neurological disease that has affected his family for generations."

See Bill Nye the Science Guy visits Orr lab to champion ataxia research

THREE NEW FACULTY JOIN LMP



Three new faculty members have joined LMP. They are:

- Ying-Hsia Chu, MD, assistant professor, molecular diagnostics
- Samreen Fathima, MD, assistant professor hematopathology
- Koorosh Shahpasand, PhD, assistant professor, neuroscience

DEHM-LED STUDY FINDS NEW BLOOD TEST PREDICTS PROGNOSIS FOR ADVANCED PROSTATE CANCER PATIENTS

Scott Dehm, PhD

MINNEAPOLIS/ST. PAUL (12/11/2024) — Published in *Nature Communications*, a new study led by the University of Minnesota Medical School and Duke University found that a DNA sequencing test for advanced prostate cancer patients can distinguish between patients with poor and favorable prognoses.

The new blood-based test — called AR-ctDETECT — is designed to detect and analyze small fragments of tumor-derived DNA in the blood of certain patients with advanced, metastatic prostate cancer.

In this new study, the AR-ctDETECT test was used to analyze DNA from more than 770 blood samples from a phase 3 clinical trial of advanced prostate cancer patients. The test identified circulating tumor DNA (ctDNA) in 59% of patients with metastatic prostate cancer. Patients with detectable circulating tumor DNA had significantly worse overall survival compared to those without. These results demonstrate the potential of the AR-ctDETECT test to provide key genetic information to tailor treatments based on similar characteristics among patients.

"Our AR-ctDETECT test, designed for prostate cancer, shows how valuable these blood tests could be in helping doctors better understand a patient's cancer and predict how the disease will progress, leading to more personalized treatment plans," said Scott Dehm, PhD, a professor at the U of M Medical School and member of the Masonic Cancer Center.

Full story **here**.

LMP'S MOLECULAR PATHOLOGY & GENOMICS DIVISION HOMES IN ON THE THE 3D MICROENVIRONMENTS OF CANCER

The dawn of spatial omics brings molecular sequencing and imaging together with advances in bioinformatics, giving us the ability to track the spatial activity of biomolecules such as RNA, DNA, and proteins directly in tissue microenvironments, where cancer, inflammation, tissue repair, and drug resistance typically originate. Spatial omics will have a lot to say about how disease is diagnosed in three-dimensional space rather than in two dimensions on microscope slides. Full story here:

Spatial omics makes its debut in pathology

LMP CLINICAL VIROLOGIST BALFOUR RETIRES

Henry H. Balfour, Jr., MD

Longtime LMP professor Henry Balfour retired in December and is now emeritus. Through his career Balfour has done pioneering research on herpes viruses including their role in HIV infection, and in preventative vaccines for human disease. His most recent research focus has been on the pathobiology of Epstein-Barr virus (EBV) and the development of an EBV vaccine.

View his "Legends in Pathology" video **here**.

LMP REMEMBERS RICHARD BRUNNING

Our department is remembering Richard D. Brunning, who headed the Hematopathology Division for 33 years. Brunning passed away on December 9. His *Minnesota StarTribune* obituary is **here**. Brunning joined LMP in 1965 after earning an MD degree from the McGill University in Montreal, Canada and completing a hematopathology residency in LMP. Over more than three decades until his retirement in 1998, he established himself as a leading hematopathologist and an international authority on bone marrow pathology. His LMP colleague Robert McKenna said Brunning "was the international leader in bone marrow pathology for the last quarter of the 20th century. No one

contributed more or trained more subsequent leaders in the field. That is clearly his legacy."

More information about Brunning and his career is available on the LMP website **here**.

LMP Grand Rounds