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Dear Alumni and Friends of the Department of Veterinary Biosciences,

We are happy to announce the return of the Department of Veterinary Bioscience's bi-annual BIOS Newsletter. This edition contains our accomplishments, awards, and growth from January 2021 through September 2022. For nearly two years we have navigated the COVID-19 terrain with resilience, innovation, and creativity and are excited to share the results with you. We hope you enjoy!

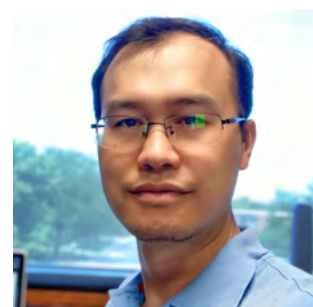
New Faculty Spotlight



Dr. Haichang Li joins us as an Assistant Professor in Oncology, beginning in August 2022. Dr. Li comes from "across the river" at OSU, where he was a Research Assistant Professor, Division of Cardiac Surgery in the College of Medicine. He received his PhD in Molecular Biology and Genetics at Gifu University in Japan.



Dr. Cody Warren joins us as an Assistant Professor in Viral Pathogens, beginning in August 2022. Dr. Warren comes from the University of Colorado, Department of Molecular, Cellular and Developmental Biology where he was a Postdoctoral Research Fellow at the BioFrontiers Institute. He received his PhD in Microbiology at the University of Colorado-Denver.



Dr. Kai Xu joined us as an Assistant Professor in Immunology, beginning in May 2021. Dr. Xu earned his PhD in Neuroscience and Structural Biology at Cornell University. His latest research experience has been as a Project Team Leader at the Vaccine Research Center at the National Institutes of Health in Bethesda, Maryland.

Awards and Contributions



Steven Weisbrode, VMD, MS, PhD, DACVP received the College of Veterinary Medicine’s 2021 Distinguished Alumni Award. This award is given to Ohio State graduates who have made exceptional contributions to the veterinary profession through scholarly work, teaching, research, education, mentorship, service, and outreach in the community. You can read more about Dr. Weisbrode’s remarkable accomplishments and contributions [here](#).

Dr. Ian Davis was the first-place winner for the category Faculty and Research Scientists at the 8th Annual CCTS Scientific Meeting.

Dr. Amit Sharma gave the Science Spotlight presentation at the virtual 2021 Conference on Retroviruses and Opportunistic Infections (CROI): “Novel Treatments for SARS-CoV-2: Starting at the Bench” Session.

Dr. Kara Corps was elected President of the Phi Zeta, Delta chapter and **Dr. Nongnuch Inpanbutr**, after 16 years as president, will serve as secretary.

Dr. Jianrong Li and **Dr. Stefan Niewiesk** were finalists for the OSU Innovators of the Year 2020 Award, nominated for their development of a new COVID-19 vaccine technology. The NIH published an article on their work [here](#).

Dr. Amit Sharma became review editor on the editorial board of *Viral Immunology* for *Frontiers in Immunology*. He was also elected to the editorial board of *Zoonoses* journal.

Dr. Samantha Evans wrote an article, included in the Ohio Veterinary Medical Association newsletter, about OSU’s cytometry flow and hemodialysis services. The CVM cytometry flow service has opened to receiving samples from practitioners in the community.

Dr. Nongnuch Inpanbutr is one of 14 faculty across campus to be invited to participate in the pilot program, “Drake Institute’s New IR-on-Demand Asynchronous Short Course Initiative.”

Dr. Kara Corps has been invited to co-lead the ACVP Trainee Mental Health Wellness Initiative.

Dr. Michael Oglesbee is now director of the Pathology Residency/PhD

Program. **Dr. Ryan Jennings** is the associate director.



Dr. Maxey Wellman, DVM, MS, PhD, DACVP received the ASVCP 2021 Lifetime Achievement Award. This award honors members who have made a strong contribution over many years to veterinary clinical pathology. A [short bio](#) on the ASVCP web page illustrates why Dr. Wellman was chosen for this distinguished award.

Dr. Kara Corps has been named Associate Director for the Comparative Pathology & Digital Imaging Shared Resource.

Dr. Sue Knoblauch is now Faculty Director for Diversity, Equity, Inclusion, and Belonging (DEIB) Program.

Dr. Megan Schreeg passed her American College of Veterinary Pathology Board Examination in 2021.



VBS Trainees

2021 ACVP Diplomates



Kelsey Brakel Mallory DiVincenzo Ching Yang Timothy Helms Joshua Lorbach Michael Martinez Samantha Sommer

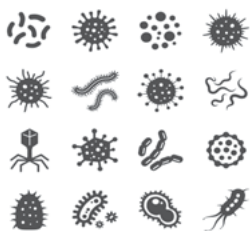
The following trainees passed the American College of Veterinary Pathology Board Exams: Kelsey Brakel, Cecilia Cuitino, Mallory DiVincenzo, Tim Helms, Josh DiVincenzo, Ching Yang, Timothy Helms, Joshua Lorbach, Michael Martinez, Ching Yang, and Samantha Sommer. In addition, we would like to congratulate the trainees who graduated in 2021: Drs. Kelsey Brakel, Mallory DiVincenzo, Ching Yang, Timothy Helms, Joshua Lorbach, and Michael Martinez.

In the News

The Department of Veterinary Biosciences featured heavily in OSU news during 2021 and throughout 2022. Though research and news on SARS-CoV-2 dominated the world, a host of studies and breakthroughs in other research areas were recognized, from food pollutants to cancer treatment complications. Click the headlines below to read the full articles.

Finding a way to stop chemotherapy from damaging the heart

From a study co-authored by Dr. Kara Corps, scientists found that use of another anti-cancer drug, nilotinib, could prevent the transport of doxorubicin to cardiac cells.



Tricking the novel coronavirus with a fake “handshake”

Co-lead author Dr. Amit Sharma, along with co-author Dr. Jianrong Li, developed peptides to bind to coronavirus Spike proteins.

A new treatment that might keep COVID-19 patients off the ventilator

A study, by senior author Dr. Ian Davis, found that in mice afflicted with ARDS (acute respiratory distress syndrome), cells were unable to produce surfactant, a substance that enables the lungs to expand and contract.

Engineering nanobodies as lifesavers when SARS-CoV-2 variants attack

Dr. Kai Xu co-led a study to

solve the quick emergence of new COVID-19 variants—by engineering nanobodies from camelid antibodies, Dr. Xu’s study found a way to prevent variants from binding to host cell receptors.



Blocking how the malaria parasite suppresses the immune response

A study, co-led by Dr. Kai Xu, uncovered the atomic-level structure of a *Plasmodium*-infected red blood cell connecting to an immune cell.

A COVID-19 vaccine strategy to give the body ‘border protection’

Dr. Prosper Boyaka, along with Drs. Cormet-Boyaka, Li, and Liu of VBS, found that a simple addition of enzyme inhibitor boosted performance of the vaccine in areas such as the nose and mouth.

Proteins that outwit emerging and re-emerging viruses

Author of this study, Dr. Shan-Lu Liu, tested SERINC proteins in their efficacy in signaling for type I interferons, proteins that were shown to help fight against viruses such as HIV, Ebola, and Zika, and are now being researched for their efficacy against COVID-19.

The path from pollutants in food to a heightened allergic response

A study authored by Dr. Prosper Boyaka, coauthored by Dr. Estelle Cormet-Boyaka, found that

the heavy metal cadmium, a water, soil, and food pollutant, at low doses causes an allergic response, leading to vitamin D degradation.

A potential role for ibuprofen in older adult’s immunity to RSV

In a study led by Dr. Stefan Niewiesk, ibuprofen administered to elderly mice, ibuprofen prevented RSV re-infection, perhaps because the ibuprofen reduced age-related inflammation.

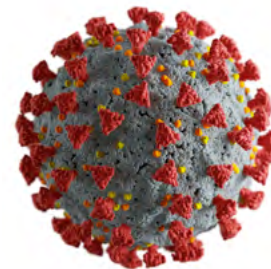
SARS-CoV-2 goes ‘underground’ to spread from cell to cell

A new study by Dr. Shan-Lu Liu found that the SARS-CoV-2 virus is able to avoid immune system detection through cell-to-cell transmission, as opposed to the more common cell-free transmission. This cell-to-cell method of transmission makes antibodies ineffective at neutralizing the virus.



Booster critical as COVID-19 vaccine-induced antibodies wane in 6 months, don’t protect against omicron

In a new study authored by Dr. Shan-Lu Liu, co-authored by Dr. Kai Xu, researchers found that 6 months after the second shot, there was a five-fold drop in immunity. Furthermore, the first two shots provided no immunity against the omicron variant.



COVID booster needed for broad protection against omicron variants

In a study by senior author Dr. Shan-Lu Liu and coauthor Dr. Kai Xu, researchers tested neutralizing antibodies against the BA.2 and BA.3 omicron variants and deltacron.

Blocking enzyme could hold the key to preventing, treating severe COVID-19

A study, co-authored by Drs. Jianrong Li, Prosper Boyaka, and Estelle Cormet-Boyaka, found that without caspase 11, an analogous enzyme in mice, mice did not develop thrombosis of lung capillaries.

Good news on blocking a virus considered a global threat

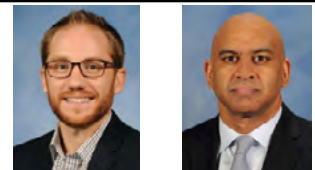
Dr. Kai Xu co-led a study in developing a four-antibody cocktail effective in neutralizing a new Hendra variant of the *Henipavirus* family.

Scientists develop effective intranasal mumps-based COVID-19 vaccine candidate

Lead author Dr. Jianrong Li, along with coauthor Dr. Prosper Boyaka, developed an intranasal mumps-based COVID-19 vaccine candidate. Furthermore, administering the vaccine intranasally provided greater protection from the virus in mucosal antibodies.

Promotions

We are pleased to announce the promotion of two department faculty members: **Dr. Ryan Jennings** (left) was promoted to Associate Professor in 2021. **Dr. Chris Premanandan** (right) was promoted to Professor in 2022.



Grants

Dr. Jianrong Li, along with a colleague at University of Chicago, has been awarded a supplemental grant of \$388,014 from the NIH National Human Genome Research Institute for understanding the dynamics of RNA epitranscriptomes in coronaviruses.

Dr. Amit Sharma received MI&I pilot funding for the project, Small molecule and macrocyclic peptide inhibitors for therapeutic targeting of SARS-CoV-2.

Dr. Estelle Cormet-Boyaka is an MPI (multiple principle investigator) on an NIH R21 grant for the project, Susceptibility determinants to Legionella pneumophila infection in smokers.

Dr. Alexander Davies has been awarded a K01 grant for the project, Targeting ERK-AKT-mediated single-cell drug response heterogeneity in metastatic osteosarcoma.

Dr. Ian Davis' FY21 Department of Defense (DoD) CDMRP PRMRP proposal on the role of impaired phospholipid metabolism in COVID-19 pathogenesis has been approved for submission.

Dr. Amanda Panfil received an Ohio Cancer Research Award for, "The Effects of m6A RNA Modifications on the Oncogenic Retrovirus HTLV-1."

Veterinary Pathology Alumni & Friends Reception 2021

Though the ACVP 2021 Annual Meeting was virtual, the Veterinary Biosciences Department organized a reception for alumni and friends of OSU's Veterinary Pathology program. The event, both in-person and on-line, was held on October 29, 2021 on the college's campus, and allowed faculty, trainees, and alumni to meet in person for the first time in over a year. The 1998 Distinguished Alumni Award recipient, **Sanford Bishop, DVM PhD, DACVP**, pictured below, was recognized at the event for his many contributions to the department.



Publications

Faculty in the department have published numerous journal articles as authors and co-authors. For a detailed list, please click [here](#).



Meeting face-to-face again: The start of Autumn Semester 2022.