

The Natural Inquirer



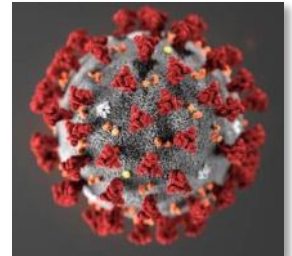
FORT HAYS STATE UNIVERSITY DEPARTMENT OF BIOLOGICAL SCIENCES

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Spring Semester, 2020

Coronavirus pandemic disrupts spring semester

In late 2019, a respiratory illness was reported infecting people in Wuhan, China. Chinese scientists identified the virus in January 2020 as a coronavirus, similar to SARS (severe acute respiratory syndrome) that emerged there in 2002. The virus was officially named SARS-CoV-2, and the resulting illness is what we came to know as COVID-19.



Infection spreads from person to person in aerosolized droplets. Common symptoms include fever, cough, shortness of breath, and pneumonia. Other perplexing symptoms can include loss of smell and taste, blood clots, seizures, and a “cytokine storm” prompted by an immune response. People with underlying health issues such as emphysema or diabetes are most severely affected. Asymptomatic infection and transmission assisted SARS-CoV-2 in quickly spreading to nearly all corners of the world.

In March 2020, the World Health Organization declared COVID-19 a pandemic. The first case in Kansas was reported in Johnson County on March 7th, with several more to follow. Governor Laura Kelly ordered all public schools closed for the remainder of the school year. The week before spring break, FHSU officials decided to send students home and finish the semester using online course delivery. In April, the governor enacted a statewide stay at home order.

Due to similar lockdown orders across the U.S., many people are out of work, and food banks have struggled to keep up with demand. The video conferencing software Zoom has become vital for school instruction and working remotely. Other words now permeating our language include “social distancing,” “essential workers”, and “N-95 facemasks”. Movie premieres, sporting events, and political conventions have all been postponed indefinitely. The Kansas Academy of Science (KAS) annual meeting was cancelled, as was the local branch of the American Society for Microbiology annual meeting.

As of early June 2020, the worldwide number of cases is over 7 million, with more than 400,000 deaths. In the U.S., more than 2 million people have been infected, and over 100,000 have died. Kansas cases stand at just over 11,000, with 243 deaths. Health officials predict a possible second wave of infections in the fall. Sources: <https://www.coronavirus.kdheks.gov/160/COVID-19-in-Kansas>; <https://www.who.int>

Biology Instructor Mark Eberle retires

Mark Eberle (B.S. '78, M.S. '83) has long been a familiar face in the Biology department. For several years, Mark served as lab coordinator and instructor for Human Biology labs, and assigned GTA positions for graduate students. Mark also taught Human Biology lecture, Scientific Writing, and various field courses to the Pacific Northwest and Desert Southwest. He was the faculty advisor for Biology-Secondary Ed majors, served as curator of fishes at the Sternberg Museum, was managing editor of the *Southwestern Naturalist* journal for several years, and published numerous articles and books, not only about fish, but also on the history of baseball in Kansas.



Mark's expertise and humor will be missed in the Biology department. Check out the following link for Mark's “Classification of Animal Cookies, Animal Crackers, and Related Taxa”, circa 1979:

<https://www.fhsu.edu/biology/faculty-and-staff/eberle/Mark-Eberle-Webpages/animalcookieclassification>

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Meetings and Presentations

18th Annual Kansas IDeA Network of Biomedical Research Excellence (K-INBRE) Symposium, Jan 18-19, 2020, Wichita, KS

Drees, R. G., and M. J. Greer. Results of soil nutrient additions in restoring magnesium concentration to common crop species.



Elliott, J. E., N. C. Quispe, K. D. Compton, Y. Kobayashi, and B. R. Maricle. Enzymatic tolerance to sulfide, lactic acid, and ethanol in corn and catfish tissues.



Engel, R. P., and B. R. Maricle. The influence of land use on the pollen diet of honey bee (*Apis mellifera*) colonies in Ellis County, Kansas.

Hess, P., and J. R. Balthazor. Effect of RNA interference mediated knockdown of protein disulfide isomerase on *Acyrtosiphon pisum* survival.

Higdon, N., and E. Gillock. Assessment of environmental bacteria for resistance to cetylpyridinium chloride, modes of potential resistance transmission, and clinical applications.

Kostner, D., B. Wertz, R. Spainhour, O. Abernathy, J. Ball, M. Dougherty, A. Schmidtberger, and Y. Kobayashi. Link between nutritional status and gene expression in regulatory associated protein of mammalian target or rapamycin mRNA (RPTOR) and rapamycin-insensitive companion of mammalian target of rapamycin (RICTR) messenger RNA.

Landgraf, A., N. Stewart, and Y. Kobayashi. De novo walleye transcriptomic database pairing and genetic market identification.

Lutgen, J., J. Ridder, and J. R. Balthazor. RNA interference of the unfolded protein response in *Acyrtosiphon pisum*.

Moyers, M., D. Kostner, B. Wertz, T. White, and Y. Kobayashi. Relationship between food intake and expression of messenger RNA encoding aromatic amino acid decarboxylase (AADC), tyrosine hydroxylase (TH), and catechol-O-methyltransferase (COMPT) in channel catfish.

Meetings and Presentations, continued:



Nansel-Lantz, S. C., and B. R. Maricle. Determining effective levels of antibacterial qualities of Kansas honeys.

Stricker, M., N. Stewart, B. McAllister, and R. Rogers. Identification of genomic regions that influence meiotic drive favoring metacentric chromosomes in *Drosophila americana*.

Vazquez Plaza, N., B. Bhakta, and C. M. Carvalho. Examination of prevalence and associated behaviors of MRSA carriers among college populations.

Wallis, Z. K., N. Stewart, and E. Gillock. Genetic analysis of the porcine shadow of prion protein gene.

Wertz, B., D. Kostner, T. White, M. Moyers, and Y. Kobayashi. Seeking satiety: Dopamine receptors 1,2 mRNA expression in channel catfish.

White, T., M. Moyers, B. Wertz, D. Kostner, B. Peterson, and Y. Kobayashi. Effects of food intake on relaxin 3 (Rxn 3) mRNA expression in the muscle of Atlantic salmon.

Zahnter, K., N. Stewart, and T. Miorin. Karyotype evolution and meiotic drive of hybrid *Drosophila* fruit flies.

Great Plains Genetic Conflict Meeting, Jan 25, 2020, Lawrence, KS.

Stewart, N. Female associated meiotic drive, drive chromosome evolution in the *Drosophila virilis* subgroup (Oral Presentation).

Publications:

Maricle, K. L., and E. T. Gillock. 2020. Phylogenetic distribution of DMV-D10, an endogenous strain of Dahlia mosaic virus, in members of Asteraceae. *Transactions of the Kansas Academy of Science*. 123(1-2): 165-177.

Pittenger, M. S., K. L. Maricle, S. G. Baer, L. C. Johnson, and B. R. Maricle. 2020. No difference in herbivory preferences among ecotypes of big bluestem (*Andropogon gerardii*). *Transactions of the Kansas Academy of Science*. 123(1-2): 151-164.

Smith, N. E. G., E. G. Tooley, and B. R. Maricle. 2020. Inorganic fertilizer and salt tolerance in *Sorghum bicolor* (L.) moench ssp. *bicolor*. *Journal of Plant Nutrition*. 43(10): 1390-1399.

Nathan Smith (left) and Greg Tooley (right) working in the FHSU greenhouse.



Congratulations!

These students have been accepted to professional schools for fall 2020:

Joshua Adcock, accepted to University of Kansas Medical Center Physical Therapy School and Creighton University Physical Therapy School, Creighton, NE.

Cheyenne Armbruster-Wahrman (B.S. '17), accepted to Wichita State University Physician Assistant Program, Wichita, KS.

Nicole Blackwill, accepted to University of Missouri College of Veterinary Medicine, Columbia, MO.

Madison Duran, accepted to Rockhurst University School of Occupational Therapy, Kansas City, MO.

Marisa Jonas, accepted to Northeastern State University College of Optometry, Tallequah, OK.

Macy Moyers, accepted to and will attend University of Kansas Pharmacy School, Lawrence, KS (also accepted to the University of Florida-Gainesville Pharmacy School).

Chad Ryerse (B.S. '19) completed M.S. in biomedical sciences program at Kansas City University, May '20. Accepted to Kansas City University College of Osteopathic Medicine, Joplin, MO.

Greg Tooley, accepted to Kansas State University M.S. Program in Biology, Manhattan, KS.

Zoey Wallis, accepted to the Biology PhD program at Boston College, Chestnut Hill, MA.

Conner Weinman, accepted to the University of Saint Mary Doctor of Physical Therapy Program, Leavenworth, KS.

Samantha Callahan-Garner completed her B.S. in Biology - Natural Resources with a certificate in Rangeland Management in May. She has accepted a job as a soil technician with the Natural Resource Conservation Service in Hoxie, KS.



Graduate Student News:

Passed thesis defense: Madison Pittenger

Passed comprehensive oral exam: Ashley Durr

Congratulations to **Dr. Lori Patrick**, who was awarded a \$25,000 K-INBRE recruitment grant! She will study next-generation sequencing methods to monitor bat community composition, diet, and roost occupancy.

Alumni news:

Congratulations to the following alumni, who recently graduated
from professional school!

Garrett Holle (B.S., '16), University of Kansas Physical Therapy school, Kansas City, KS.

Courtney Kaba (B.S., '16) and **Nuvia Lemus** (B.S., '16), University of Missouri Dental School, Kansas City MO.

Kevin Klug (B.S., '16) and **Jesse Trent** (B.S., '16), University of Kansas Medical School, Kansas City, KS.

Alexyss Leiker (B.S. '16), University of Nebraska Medical Center College of Dentistry, Lincoln, NE.

Brooke Ostmeyer (B.S., '16), University of Kansas Occupational Therapy School, Kansas City, KS.

Michaela Sasse (B.S., '16), Southern College of Optometry, Memphis TN.

Brianna Watkins Teel (B.S., '15), Iowa State University College of Veterinary Medicine, Ames, IA.

Melissa Vides (B.S., '15), Northeastern State University School of Optometry, Tahlequah, OK.

600 Park Street
Hays, KS 67601
Phone: 785-628-4214

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