FRI eNews provides updates on research and events at FRI and UW-Madison and other current food safety news. View this email in your browser



FRI News

FRESH seminars: FRI's spring seminars are underway! All seminars will be at 11 a.m. central time and will be held via a webinar. You can learn more and register here.

- Tuesday, April 15: <u>Sarah Adcock</u> (UW-Madison) will present "Tails, beaks, and horns: The welfare implications of their routine modifications in animal agriculture"
- Tuesday, April 22: FRI 2024 graduate fellowship award winners will speak:
 - Billy Erazo (PhD candidate, Knoll lab, and recipient of the Robert H. and Carol L. Deibel Distinguished Graduate Fellowship in Food Safety Research) will present "From contaminated food to host immunity: Investigating necroptosis as a defense against *Toxoplasma gondii*"
 - Mark Heggan (PhD candidate, van Pijkeren lab, and recipient of the Robert H. and Carol L. Deibel Distinguished Graduate Fellowship in Probiotic Research, will present "The role of (p)ppGpp in the survival of probiotics during gastrointestinal transit"









The cold plasma research program of FRI affiliate member Zifan Wan was featured in a recent article in Food Safety Magazine. In work funded by the Dairy Innovation Hub, Wan is investigating plasma-activated water as a sustainable, residue-free alternative to clean-in-place chemical sanitation of dairy processing equipment.

FRI executive committee member Nancy Keller's work investigating fungal secondary metabolites as novel antibacterial and antifungal molecules hearkens back to earlier work involving 1940s University of Wisconsin-Madison researchers in which molds from rotting cantaloupe were discovered to produce penicillin in high yields. Both of these endeavors are highlighted in a new article in The Scientist.





FRI executive member Jeff Sindelar and colleagues <u>found</u> that the relative levels of adenosine triphosphate (ATP) and ADP and AMP (its di- and mono-phosphate depletion products) can shift up to several orders of magnitude during the production of a variety of processed meats. The work suggests that using ATP-based assays for hygiene assessment during the manufacture of processed meats may be less sensitive than assays that monitor all three (ATP, ADP, and AMP).

<u>Registration is open</u> until April 10 for a symposium, **"Innovations in Cleaning and Sanitation for Low-Moisture Foods,**" sponsored by FRI, IAFNS, and IFSH, to

Register today!

Innovations in Cleaning and Sanitation for Low Moisture Foods RSS

- บปรายา บาทสานเลงเนาการ เลงแนเอง เปลากลางอิงสายเร
- Low water usage in cleaning and sanitation
- Microbiological monitoring of dry cleaning and sanitation
- Overcoming barriers in dry cleaning and sanitation
- · Research "lightning" talks
- Updates from the Food and Drug Administration



Registration is now open for the FRI Annual



UIFSH

Memorial lecture and will be recognized for his contributions to food microbiology and safety.

Food Safety News



The Listeria monocytogenes outbreak associated with ready-to-eat frozen supplemental shakes produced by Prairie Farms Dairy in Fort Wayne, Ind., <u>is</u> still considered to be ongoing by CDC, although the number of cases (38) and deaths (12) have not been updated since February. The shakes, all of which have been recalled, were sold to institutions such as long-term care facilities. FDA's investigation found a *L*.

monocytogenes strain closely related to the outbreak strain in environmental swabs obtained at the Prairie Farms facility.

Two new ongoing *Listeria monocytogenes* outbreaks were identified in March that have sickened at least 30 and three people, respectively; no food source has been identified for either outbreak. An additional *L. monocytogenes* outbreak first reported in January (that had 36 cases) has ended and the investigation has been closed; no food source was identified for this outbreak, either.

At least 35 people (up from 29) <u>were sickened</u> in a **Salmonella Newport** outbreak identified in February. FDA says that this outbreak (for which a food source was not identified) has ended.

The Salmonella Enteritidis outbreak associated with minipastries that sickened at least 69 people in Canada and at least 18 people in the U.S. (with one hospitalization but no deaths) is reported to be over, and the investigation is complete. No additional U.S. cases were reported since last month.

A U.S. district court <u>issued</u> a **consent decree of permanent injunction** for **ice cream maker Totally Cool, Inc**. FDA requested the injunction after **finding** *L. monocytogenes* **on a**



production line at the company's Maryland factory in July 2024. The company has already closed its doors. No illnesses appear to have resulted from the company's products. Read about the company's saga <u>here</u>.



Meanwhile, across the pond, the UK Health Security Agency is investigating a **2024** *L. monocytogenes* outbreak linked to Cool **Delight Desserts (single-serving RTE frozen mousse products)** that were supplied to NHS hospitals and care homes. Three of the five individuals sickened (all of whom had underlying health problems) died. Testing of product samples collected in February 2025 found *L. monocytogenes* that matched the outbreak strain at levels below the

100 CFU/g regulatory threshold for RTE foods in the UK.



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Highly pathogenic avian influenza (HPAI) in cows and milk as well as birds and humans continues to be an important topic in the news.



 <u>New FDA-funded research</u> at Cornell University demonstrated that aging raw milk cheese for 60 days or longer is not effective at eliminating viable H5N1 in cheese. H5N1 (spiked into milk or in naturally contaminated milk) survived in nonheat-treated raw milk cheese through and beyond the 60-day aging process when the cheese pH was 5.8 and higher. The virus could be inactivated in cheese if the milk was acidified



to pH 5.0 with lactic acid or by heating raw milk at 54°C (130°F) for at least 15 minutes or 60°C (140°F) for at least 10 seconds.

 Interim results from FDA's sampling of 60-day aged raw milk cheeses intended for retail were announced by FDA. Of the 110 samples collected and tested, 96 were negative by PCR for H5N1, with the remaining 14 samples still in progress.
Final results were planned originally to be available later this spring.

HPAI in Animals

- Cows
 - As of April 3, 998 dairy herds (up from 977 on March 4) in 17 states <u>have been</u> affected by H5N1 infections.
 - It's been one year since USDA reported H5N1 in U.S. dairy cattle. An article in the journal Science <u>discusses</u> the puzzle of how the H5N1 virus made the jump into U.S. cows and other unanswered questions about the outbreak in cattle.



- The National Milk Testing Strategy to identify affected herds is working, and efficiency is improving across the country. Early detection stopped the spread of D1.1 strains of H5N1 in NV and AZ, detected first in January 2025.
- Birds
 - Another HPAI strain, H7N9, was found recently in a broiler chicken breeding flock in Mississippi. This is the first HPAI H7 case in U.S. commercial poultry since 2017. The H7N9 virus originated in wild birds and is unrelated to the H5N1 virus currently circulating in the U.S.



- The emphasis on poultry vaccination as a key component of the five-pronged strategy against HPAI announced by USDA recently has been "pulled off the table" according to USDA Secretary Brooke Rollins. Meanwhile, the new head of the Department of Health and Human Services, Robert F. Kennedy, Jr., has advocated to simply allow the virus to spread on poultry farms, despite strong
- warnings from veterinarians and scientists. Many animal scientists and industry experts have rebuked this theory based on the pathophysiology of the disease and impacts on international trade.
- Other Animals
 - In March, HPAI was found in sheep for the first time. Only one ewe in the flock (located in Yorkshire, England) tested positive for the virus. The only clinical sign of illness in the animal was <u>mastitis</u>. The sheep was located in an area where bird flu has been found in captive birds.



 <u>Several new reports</u> in ferrets suggest that prior infection with H1N1 (seasonal influenza) can confer some protection Humans

The <u>H5N1 virus</u> that infected a poultry worker in Ohio who experienced respiratory involvement has been sequenced. The virus belongs to the D1.3 genotype, a new genotype related to the D1.1 genotype (which has been circulating in wild birds, was recently found in cattle, and in several severe human infections).

• A child in India recently died from an <u>H5N1 infection</u> which may have been linked to eating raw chicken.

General

- You can listen to a <u>March podcast (or read its transcript)</u> featuring UW-Madison veterinarian and virologist Yoshiro Kawaoka and others discussing H5N1 infections in birds, mammals, and humans here.
- The American Society for Microbiology recently published an <u>update</u> on the status of H5N1 vaccines for humans and livestock.



Government & Regulatory News

The restructuring of the federal government <u>has resulted in</u> significant employee reductions, including (as of March 28) the following:

- CDC: 3,150 employees (24.6% reduction)
- FDA: 3,589 employees (17.2% reduction)
- NIH: 2,300 employees (10.9% reduction)
- Reductions at USDA are expected soon.

Possible impacts of these reductions on food safety are discussed here, here, and here.

FDA <u>announced</u> that it plans to postpone the compliance date for the Food Traceability Rule by 30 months, which had been set to occur in January 2026.

Two key federal food safety advisory committees, NACMCF and NACMPI, were dissolved by USDA on March 7.

Potential impacts of new tariffs on food safety related to new supply chain challenges are explored <u>here</u>.

FDA <u>has been directed</u> to **explore ways to eliminate the self-affirming GRAS process**, which has been viewed by some as a loophole that allows ingredients to be used in foods without prior FDA review.



The new U.S. Director of Health and Human Services, Robert F. Kennedy, Jr., announced that a top priority for the agency will be <u>eliminating artificial dyes</u> from the U.S. food supply.

In a recent opinion piece, Mindy Brashear proposes that Red Dye #3 was recently banned (effective in 2027) due to strict interpretation of laws rather than scientific evaluation of data. In her words: "Despite extensive data and evaluation by leading scientists across the world stating that the dye is safe, Red Dye #3 was still banned because there was one study under extreme conditions that illustrated that thyroid cancer occurred in rats with metabolic disorders. Technically, this fits the definition in the Delany Clause, which is absolute with 'any' and 'all' statements that do not take into

account consumption rates. However, realistically, consumers should not be concerned that the exposure has caused any substantial risks."

Numerous states, including <u>West Virginia</u> and <u>Oklahoma</u>, have announced plans (or proposals) to ban artificial food dyes. Of note: Oklahoma is also proposing to prohibit aspartame, leading <u>some to predict</u> that **artificial sweeteners** could become the next focus for bans.

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that is intended to ensure the **ongoing quality, safety, nutritional** adequacy, and resilience of the domestic infant formula supply. This announcement comes as Abbott is again <u>playing</u> <u>defense</u> against recent <u>media attention</u> to "unaddressed contamination issues" that could be exacerbated by the mass layoffs happening at FDA.



FDA has announced a <u>new Chemical Contaminants Transparency Tool</u>, an online **searchable database providing a consolidated list of contaminant levels** that are used to evaluate potential health risks in human foods.



A California company, **Mission Barns**, <u>became</u> <u>the first company</u> to <u>have approval</u> to sell a **cultivated pork product (cultivated pork fat) in the U.S**. Mission Barns joins Upside Foods and Eat Just to have had FDA approval for **a cultivated meat product**. The company will use its cultivated fat with plant-based ingredients to

make **meatball and bacon analogs**. These products are planned to be marketed at restaurants and also at Sprouts Farmers Market, which would make them the first cultivated meat products marketed at a U.S. grocery store.

Mississippi recently joined Florida and Alabama in banning the manufacture, sale, and distribution of cultivated meat products.

FDA's rescheduled "Healthy" Claims stakeholder webinar is now planned for April 10 from 1–2 p.m. EDT.



Current Literature

What are the main factors leading to foodborne disease outbreaks in the U.S.? A report from the National Outbreak Reporting System <u>identified</u> key factors contributing to foodborne illnesses in the U.S. from 2014 to 2022. The most common factor leading to outbreaks was food contaminated by an animal or environmental source before arriving at its point of final preparation, including pre-or post-harvest contamination of raw foods. Improper cooling of foods and improper time and temperature procedures were also cited as common contributors to bacterial outbreaks, while the bare-handed contact by food workers with infectious illnesses was identified as the most common contributor to viral outbreaks. The coronavirus pandemic was noted to markedly affect the rates by which various contributing factors occurred during the 2020–2022 period.



A **human clinical trial** <u>demonstrated</u> safety and immunity in older adults for an <u>oral norovirus vaccine</u>.

A new study <u>reported</u> minimum growth temperatures for 48 Shiga toxin-producing *E. coli* strains in culture. All strains grew at temperatures \geq 10.3°C, but none were able to grow at temperatures \leq 7.4°C.

<u>A new report</u> from university researchers in New Zealand and Australia reviews and investigates **environmental**, **nutritional**, **and animal welfare-based claims regarding cultivated meat** and discusses the main challenges facing this industry.



USDA, FDA, industry, and university researchers <u>have developed a</u> predictive growth model of *Staphylococcus aureus* during temperature abuse conditions under non-isothermal temperatures. Future work includes validation in food systems such as RTE meats, dairy products, and other high-risk foods (and creation of a user-friendly interface for food safety professionals).

Last month, we highlighted <u>a review article</u> that explored the interrelationships between **microplastics (MP), microbial biofilms**, and the development of **antimicrobial**

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biofilm formation and development of AMR. Although the size of the MPs did not affect AMR, the type of plastic did, with **polystyrene having the most impact** on AMR development.

UW-Madison and Wisconsin News



<u>Susan P. Coller Monarez</u>, who received her <u>PhD</u> from the University of Wisconsin-Madison in 2003, has been nominated to serve as **director of the U.S. Centers for Disease Control**. Monarez has been serving as acting director of the CDC since January.

To learn more about how NIH funding cuts are affecting UW-

Madison (and how the university is responding), read here, here,

and a trove of articles here.



The Wisconsin Association of Meat Processors Annual Convention<u>starts</u> Wednesday, April 9 and runs through April 11 in Madison, with events on Thursday held at the UW-Madison Meat Science & Animal Biologics Discover building. FRI executive committee and affiliate members who will speak at the event include Andy Milkowski, Jeff Sindelar, and Sara Gragg.



UW-Madison's annual Life Sciences Career Day will be held April 12. To learn more or register for the event, which is designed to introduce graduate students and postdocs to a wide range of career opportunities they might consider, visit <u>this website</u>.



UW-Madison's Department of Food Science is offering **a new online summer course** (Food <u>Science 140</u>), **The Chocolate Experience**: Science, Society, and Sustainability. The department is also offering another online summer course (Food Science 150), **Fermented**



Food and Beverages: Science, Art, and Health.

Upcoming training opportunities on the UW-Madison campus include the following:

- <u>Cheesemaking Fundamentals</u> (May 6–7)
- <u>Cooked and Emulsified Sausage School (May 20–25)</u>
- Advanced Cheesemaking: American Varieties (April 29-May 1)
- Confectionary Technology Course ("Candy School") (July 21–Aug. 1, 2025)

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