



## Friday Notes from

### *MSSTATE Poultry Science*

**Friday Notes** - to keep you informed about noteworthy news from Poultry Science at Mississippi State....and let us hear from you as well!

#### ***Poultry Science Department News:***

##### ***Faculty, Staff, and Student Travel and Activities.***

- **PO Faculty and Staff** continue meeting weekly via Zoom to discuss ongoing departmental strategies and events.
- **Dr. Beck** participated in the university task force meeting on Digital Measures and faculty evaluation, October 12
- **Dr. Tabler** visited a Koch breeder farm, October 13
- **Drs. Wamsley and Beck** and **Mr. Moon** hosted personnel from Easy Automation to discuss feed mill renovation options, October 13.
- **Dr. Tabler** visited a Sanderson Farms grower farm at Tylertown, October 16
- **Dr. Wells** and **Mrs. Christensen**, assisted by grad students **Marissa Powell** and **Peyton Taylor**, supervised the 4-H Poultry Chain contest at the MS State Fair, Jackson, October 16. Awards to the top winners in each category (Jr. and Sr. Meat and Egg Birds) were provided by the *MS Poultry Association Foundation*, the *MS Farm Bureau Federation*, and *USPoultry & Egg Association*.

#### ***Graduate Seminar - Scientific Writing; Style***

- **Sabin Poudel, Peyton Taylor:** "Words, Brevity"; October 16

#### ***Recent Publications and Media:***

- **Chicken Chat with MSU Poultry Science:**
  - **Dr. Tom Tabler** and **Dr. Jessica Wells**, "How to make your poultry farm environmentally friendly using a composter," July 7;  
<https://www.youtube.com/watch?v=Xfy-Uatx5Jc>

**Cumulative List of Scientific and Extension Publications, 2020**

- **Abstracts of Presentations at the IPSF, Atlanta, January 27-28, 2020; these can be accessed at [www.ippexpo.org/ispf](http://www.ippexpo.org/ispf):**
- **MSSTATE Poultry Science Presentations** were as follows; actual journal citations will be available later in the spring:
  - **Tomi Obe**, Rmam Nannapaneni, Wes Schilling, **Li Zhang**, **Aaron Kiess**, “Mode of persistence and antibiotic resistance of Salmonella isolates from poultry processing equipment.”
  - **Ishab Poudel**, **Christopher McDaniel**, M. Schilling, **Pratima Adhikari**, “Effects of split feeding limestone particle size ratios on egg production, egg quality, and eggshell strength of White Leghorn W-36 hens in the late production phase.”
  - **Bo Zhang**, **Sabin Poudel**, **Linan Jia**, **Wei Zhai**, “Effects of dietary amino acid and metabolizable energy reduction on growth performance and economic return of Ross 708 broilers.”
  - **Andrew Brown**, Jason Lee, **Kelley Wamsley**, “Determining the digestible isoleucine requirement of Ross x Ross 708 male broilers from 0 to 18 days of age.”
  - **Linan Jia**, **Sabin Poudel**, **Wei Zhai**, “Eimeria challenge and feed additives affected broiler woody breast incidence.”
  - **Courtney Ennis**, Curran Gehring, Mike Bedford, Craig Wyatt, **Kelley Wamsley**, “Response of Ross x Ross 708 male broilers fed varying phytase enzyme and activity during d 0-14.”
  - **Saman Fatemi**, **Katie Elliott**, **Abdulmohsen Alqhtani**, **Ayoub Amousstaaid**, Abiodun Bello, April Levy, **David Peebles**, “Improvement in the performance and inflammatory responses of Ross 708 broilers when injected in ovo with various forms of vitamin D<sub>3</sub>.”
    - **NOTE: This presentation received a Certificate of Excellence for scientific merit and quality of presentation.**
  - **Tianmin Li**, **Sadie White**, **Nikhil Nuthalapati**, **Anura Sukumaran**, **Aaron Kiess**, **Li Zhang**, “The prevalence and antimicrobial resistance properties of Campylobacter in Mississippi poultry.”
  - **Sadie White**, **Tianmin Li**, **Sabin Poudel**, **Aaron Kiess**, **Li Zhang**, “Comparison of four bacterial DNA extraction methods in poultry litter and fecal sample.”
    - **NOTE: This presentation received an Undergraduate Certificate of Participation.**
  - **Courtney Fancher**, **Hudson Thames**, **Alyssa Easterling**, **Alexis Dillender**, **Nikhil Nuthalapati**, **Li Zhang**, **Aaron Kiess**, Thu Dinh, **Anuraj Sukumaran**, “Influence of season and age of flock on the virulence gene profiles of Escherichia coli isolates from “no antibiotics ever” commercial broiler farms and their antibiotic susceptibility.
  - **Milan Sharma**, Dima White, Woo Kim, **Pratima Adhikari**, “Effects of housing environment and laying hen strain on tibia and femur bone properties.”
    - **NOTE: This presentation received a Certificate of Excellence for scientific merit and quality of presentation.**
  - **Milan Sharma**, **Li Zhang**, **Aaron Kiess**, **Pratima Adhikari**, “Housing environment and laying hen strain impacts on cloacal microbiology and incidence of avian pathogenic Escherichia coli (APEC) in the late phase of production.”

- **Courtney Ennis**, Curran Gehring, Mike Bedford, Craig Wyatt, **Kelley Wamsley**, “Effects of varying phytase enzyme and total activity on phytate degradation and nutrient digestibility of young male Ross x Ross 708 broilers.”
- **Abdulmohsen Alqhtani, Saman Fatemi, Katie Elliott, Ayoub Mousstaaid**, Abiodun Bello, Apri Levy, **David Peebles**, “Increased breast meat yield of Ross 709 broilers in response to the in ovo injection of various forms of vitamin D<sub>3</sub>.”
- **Sabin Poudel, Wei Zhai**, “Effects of riboflavin and *Bacillus subtilis* on blood components of male broiler with or without coccidial challenge.”
- **Carley Rhoads, Courtney Ennis, Andrew Brown, Pratima Adhikari, Tom Tabler**, A. Elzind, **Kelley Wamsley**, “Assessment of novel water treatment equipment (H<sub>2</sub>Oelite) on broiler performance, tibia ash and mineral digestibility.”
  - **NOTE: This presentation received an Undergraduate Certificate of Participation.**
- **Jonathan Moon**, Jan DuBien, **Andrew Brown**, Yi Liang, **Tom Tabler**, “Water conservation and production benefits of sprinkling broilers.”
- **Tom Tabler**, Jonathan R. Moyle, Shawna Weimer, **Jonathan Moon**, and **Jessica Wells**, “Poultry Farm Insurers Expect Proper Earth Grounding,”  
[http://extension.msstate.edu/sites/default/files/publications/publications/P3427\\_web.pdf](http://extension.msstate.edu/sites/default/files/publications/publications/P3427_web.pdf)
- **Tom Tabler**, “Sprinklers Cooling Benefits in Poultry Houses,”  
[https://en.engormix.com/MA-poultry-industry/videos/sprinklers-cooling-benefits-poultry-houses-t58106.htm?utm\\_source=notification&utm\\_medium=email&utm\\_campaign=2-1-0&smld=dc221e1c14965e8739bf705a7104cfc5&src\\_ga=1](https://en.engormix.com/MA-poultry-industry/videos/sprinklers-cooling-benefits-poultry-houses-t58106.htm?utm_source=notification&utm_medium=email&utm_campaign=2-1-0&smld=dc221e1c14965e8739bf705a7104cfc5&src_ga=1)
- **Tom Tabler**, “Gangrenous Dermatitis in Broilers,” [https://en.engormix.com/MA-poultry-industry/videos/gangrenous-dermatitis-broilers-t58317.htm?utm\\_source=notification&utm\\_medium=email&utm\\_campaign=2-1-0&smld=60481b605de89fd22c3d267a97b6d174&src\\_ga=1](https://en.engormix.com/MA-poultry-industry/videos/gangrenous-dermatitis-broilers-t58317.htm?utm_source=notification&utm_medium=email&utm_campaign=2-1-0&smld=60481b605de89fd22c3d267a97b6d174&src_ga=1)
- **Tom Tabler**, “Rotary Drum Composting of Poultry Mortalities,”  
[https://en.engormix.com/MA-poultry-industry/videos/rotary-drum-composting-poultry-mortalities-t58318.htm?utm\\_source=notification&utm\\_medium=email&utm\\_campaign=2-1-0&smld=609cb340ff134465ff7d309e5b1ee7cf&src\\_ga=1](https://en.engormix.com/MA-poultry-industry/videos/rotary-drum-composting-poultry-mortalities-t58318.htm?utm_source=notification&utm_medium=email&utm_campaign=2-1-0&smld=609cb340ff134465ff7d309e5b1ee7cf&src_ga=1)
- **Tom Tabler**, Yi Liang, **Jonathan Moon**, and **Jessica Wells**, “NAE Production Challenges Poultry Industry on Several Fronts,”  
[http://extension.msstate.edu/sites/default/files/publications/publications/P3428\\_web.pdf](http://extension.msstate.edu/sites/default/files/publications/publications/P3428_web.pdf)
- **Tom Tabler**, Helping growers navigate the NAE maze;  
<https://www.dpickicken.org/media/docs/TIMELY-TOPICS-March-2020.pdf>
- **Drs. Wells** and **Tabler**, Mississippi State Chicken Chat;  
[https://www.youtube.com/channel/UCHdrpk7h2meKontdypmRniQ?view\\_as=subscriber](https://www.youtube.com/channel/UCHdrpk7h2meKontdypmRniQ?view_as=subscriber)
- **Tom Tabler**, Yi Liang, Jonathan R. Moyle, Shawna L. Weimer, **Jonathan Moon**, and **Jessica Wells**, “Characteristics of Successful Poultry Growers,”  
[http://extension.msstate.edu/sites/default/files/publications/publications/P3446\\_web.pdf](http://extension.msstate.edu/sites/default/files/publications/publications/P3446_web.pdf)
- Jonathan Moyle, Maegan Perdue, **Dr. Tom Tabler**, Dr. Shawna Weimer, Jennifer Rhodes, “Hatching Eggs at Home,” <https://extension.umd.edu/learn/publications/hatching-eggs-home>

- **Tom Tabler**, Jonathan R. Moyle, Shawna L. Weimer, **Jonathan Moon**, and **Jessica Wells**, “Backyard Chickens and COVID-19,” [http://extension.msstate.edu/sites/default/files/publications/publications/P3447\\_web.pdf](http://extension.msstate.edu/sites/default/files/publications/publications/P3447_web.pdf)
- **News Release on Easter Tornadoes from MSU Extension**, <https://www.wattagnet.com/articles/40055-tornadoes-hit-least-90-mississippi-poultry-houses>
- **Tom Tabler**, Natalie Armour, **Jonathan Moon**, and **Jessica Wells**, “Infectious Bronchitis in Commercial Chickens,” [http://extension.msstate.edu/sites/default/files/publications/publications/P3449\\_web.pdf](http://extension.msstate.edu/sites/default/files/publications/publications/P3449_web.pdf)
- Abdelhamed H, **Ramachandran R**, Narayanan L, Ozdemir O, Cooper A, Olivier AK, Karsi A, Lawrence ML. “Contributions of a LysR transcriptional regulator to *Listeria monocytogenes* virulence and identification of its regulons” 2020 Apr 27;202(10). DOI: 10.1128/JB.00087-20 .
- **Drs. Wells** and **Tabler** posted a YouTube video, “What to consider before purchasing a backyard flock,” May 6 : [https://www.youtube.com/channel/UChdrpk7h2meKontdypmRniQ?view\\_as=subscriber](https://www.youtube.com/channel/UChdrpk7h2meKontdypmRniQ?view_as=subscriber)
- **Tom Tabler**, “Prepare now for summer heat, humidity,” [https://poultryhealthtoday.com/prepare-now-for-summer-heat-humidity/?utm\\_source=Poultry+Health+Today+Newsletter&utm\\_campaign=fe6116322d-AAAP\\_antimicrobial\\_stewardship\\_PHT\\_1\\_8\\_2018\\_COPY\\_0&utm\\_medium=email&utm\\_term=0\\_5ac605299a-fe6116322d-315441937](https://poultryhealthtoday.com/prepare-now-for-summer-heat-humidity/?utm_source=Poultry+Health+Today+Newsletter&utm_campaign=fe6116322d-AAAP_antimicrobial_stewardship_PHT_1_8_2018_COPY_0&utm_medium=email&utm_term=0_5ac605299a-fe6116322d-315441937)
- **Tom Tabler**, “Cooling chickens with sprinklers has multiple benefits,” <https://poultryhealthtoday.com/cooling-chickens-with-sprinklers-has-multiple-benefits/>
- **Tom Tabler**, “Proper water pressure, volume essential to good flock performance,” <https://poultryhealthtoday.com/proper-water-pressure-volume-essential-to-good-flock-performance/>
- **Hudson T. Thames** and **Anuraj T. Sukumaran**, “A review of Salmonella and Campylobacter in broiler meat: Emerging challenges and food safety measures,” *Foods*: 9, 776; <https://doi.org/10.3390/foods9060776>
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- **Tom Tabler**, Yi Liang, Jonathan R. Moyle, Shawna L. Weiner, **Jonathan Moon**, and **Jessica Wells**, Characteristics of successful contract poultry growers, [https://www.poultrytimes.com/eedition/page\\_7b3ce268-ddab-540f-8698-b2bf9157fa77.html](https://www.poultrytimes.com/eedition/page_7b3ce268-ddab-540f-8698-b2bf9157fa77.html)
- **Tom Tabler**, Intestinal health in the era of NAE, <https://www.poultryproducer.com/commentaries/intestinal-health-in-the-era-of-nae-by-tom-tabler-phd-extension-professor-mississippi-state-university-extension-service-poultry-science-department/>

- **Tom Tabler**, Margaret L. Khaitsa, Said H. Mbaga, John N. Jeckoniah, **Jonathan Moon**, and **Jessica Wells**, Poultry Extension Personnel Needed across East Africa, [http://extension.msstate.edu/sites/default/files/publications/publications/P3494\\_web.pdf](http://extension.msstate.edu/sites/default/files/publications/publications/P3494_web.pdf)
- **Tom Tabler**, Margaret L. Khaitsa, Said H. Mbaga, John N. Jeckoniah, **Jonathan Moon**, and **Jessica Wells**, “Improved Biosecurity and Extension Programming can Benefit African Chicken Production,” [http://extension.msstate.edu/sites/default/files/publications/publications/P3505\\_web.pdf](http://extension.msstate.edu/sites/default/files/publications/publications/P3505_web.pdf)
- **Tom Tabler**, Margaret L. Khaitsa, Said H. Mbaga, John N. Jeckoniah, **Jonathan Moon**, and **Jessica Wells**, “Gender Issues in Ag Extension Programming in sub-Saharan Africa,” [http://extension.msstate.edu/sites/default/files/publications/publications/P3501\\_web.pdf](http://extension.msstate.edu/sites/default/files/publications/publications/P3501_web.pdf)
- **Tom Tabler**, Gangrenous Dermatitis in Broilers, [https://en.engormix.com/MA-poultry-industry/videos/gangrenous-dermatitis-broilers-t58317.htm?utm\\_source=notification&utm\\_medium=email&utm\\_campaign=2-1-0&smid=b43108a0b1be17d89c5b97f7836d81bd&src\\_ga=1](https://en.engormix.com/MA-poultry-industry/videos/gangrenous-dermatitis-broilers-t58317.htm?utm_source=notification&utm_medium=email&utm_campaign=2-1-0&smid=b43108a0b1be17d89c5b97f7836d81bd&src_ga=1)
- **Tom Tabler**, Brigid Elchos, **Jonathan Moon**, and **Jessica Wells**, “Commercial Chickens and COVID-19: Recommendations for Depopulating Poultry Flocks,” [http://extension.msstate.edu/sites/default/files/publications/publications/P3458\\_web.pdf](http://extension.msstate.edu/sites/default/files/publications/publications/P3458_web.pdf)
- **Tom Tabler**, “Poultry biosecurity has lessons for coping with COVID-19,” [https://poultryhealthtoday.com/poultry-biosecurity-has-lessons-for-coping-with-covid-19/?utm\\_source=Poultry+Health+Today+Newsletter&utm\\_campaign=c26e26ed15-AAAP\\_antimicrobial\\_stewardship\\_PHT\\_1\\_8\\_2018\\_COPY\\_0&utm\\_medium=email&utm\\_term=0\\_5ac605299a-c26e26ed15-315442097](https://poultryhealthtoday.com/poultry-biosecurity-has-lessons-for-coping-with-covid-19/?utm_source=Poultry+Health+Today+Newsletter&utm_campaign=c26e26ed15-AAAP_antimicrobial_stewardship_PHT_1_8_2018_COPY_0&utm_medium=email&utm_term=0_5ac605299a-c26e26ed15-315442097)
- Jon Moyle, Maegan Perdue, **Tom Tabler**, Paul Goeringer, Identifying and Preventing Poultry Predators in the Mid-Atlantic Region, [https://extension.umd.edu/sites/extension.umd.edu/files/\\_images/programs/poultry/Poultry%20and%20Predators.pdf](https://extension.umd.edu/sites/extension.umd.edu/files/_images/programs/poultry/Poultry%20and%20Predators.pdf)
- **Abstracts presented at the 2020 Virtual PSA Annual Meeting (link to abstracts will be provided as soon as these are published in Poultry Science)**
  - **W. Zhai**, “How to be a better reviewer: Section Editor perspective,” invited presentation in Student Workshop Symposium
  - **Reshma Ramachandran**, Chuan-Yu Hsu, **Li Zhang**, “Development of probe-based multiplex real-time PCR assays for the rapid detection of avian pathogenic *Escherichia coli*,”
  - **Jessica B. Wells**, “Recruitment Strategies for the Next Generation of Poultry Workers,” invited presentation in Recruitment and Engagement of Future Poultry Workforce Symposium
  - **Linan Jia**, “Effects of antibiotic and probiotic feed additives on growth performance of Eimeria infected broilers”
  - **Ishab Poudel**, **Nikhil Nuthalapati**, **Anuraj Sukumaran**, **Li Zhang**, **Mary Beck**, **Aaron Kiess**, **Pratima Adhikari**, “Prevalence of avian pathogenic *Escherichia coli* in cage-free W-36 pullets reared under monochromatic blue and normal LED lights”
  - **Katie Elliott**, Ethan DeHart, **Saman Fatemi**, **abdul Mohssen Alqhtani**, **Ayoub Mousstaaid**, Kayla Bannister, **Wei Zhai**, **David Peebles**, “Effects of reduced incubation temperature starting as 12 days of incubation on post-hatch broiler performance”
  - **Sabin Poudel**, **Wei Zhai**, “Effects of *Bacillus subtilis* on intestinal morphological structure of male broilers with or without coccidial challenge”

- **Saman Fatemi, Katie E. Elliott, Abdul Mohssen Alqhtani, Ayoub Mousstaaid, Li Zhang, E. David Peebles**, “Effects of the in ovo injection of vitamin D<sub>3</sub> and 25-hydroxyvitamin D<sub>3</sub> on the vitamin D<sub>3</sub> activity-related gene expression of broilers challenged with coccidiosis”
- **Saman Fatemi, Katie E. Elliott, Abdul Mohssen Alqhtani, Ayoub Mousstaaid, Li Zhang, E. David Peebles**, “Effects of the in ovo injection of vitamin D<sub>3</sub> and 25-hydroxyvitamin D<sub>3</sub> on the immune-related gene expression of broilers challenged with coccidiosis”
- **Ayoub Mousstaaid, Saman Fatemi, Katie E. Elliott, Abdul Mohssen Alqhtani, David Peebles**, “Effects of the in ovo injection of L-ascorbic acid (AA) on the serum AA concentrations and hatchability of broiler embryos”
- **Tianmin Li Claudia Castañeda, Mark A. Arick II, Chuan-Yu Hsu, Li Zhang**, “Whole-genome sequence analysis of multidrug-resistant avian pathogenic Escherichia coli (APEC) MS1170 isolated from broiler”
- **Chicken Chat – YouTube Videos:**
  - **Welcome to Chicken Chat:**  
[https://www.youtube.com/watch?v=3fHAMr9AVnY&feature=share&fbclid=IwAR1rdJMoKlQyCnqaOMbsQ3LHODGaU8o6rIEt0HEB\\_vHEUDJnRPfvjQ-UTwM](https://www.youtube.com/watch?v=3fHAMr9AVnY&feature=share&fbclid=IwAR1rdJMoKlQyCnqaOMbsQ3LHODGaU8o6rIEt0HEB_vHEUDJnRPfvjQ-UTwM)
  - **Gnat Remedies in Poultry:** <https://youtu.be/9oVERxHHJDk>
  - **What to Consider before Purchasing a Backyard Flock:**  
<https://www.youtube.com/watch?v=uveU1G0Atko&feature=share&fbclid=IwAR3wUcBafjBwVGDStrFicWwTFVxdkAzdlytvdrYZQbSODmj1KF0Nwtb5xyg>
  - **What to Consider when Choosing Your Chicken Breed:**  
<https://youtu.be/w5PIEUdEzqw>
  - **Poultry Biosecurity:** <https://youtu.be/NB4iez60xGI>
  - **Tom Tabler**, “Manual helps poultry producers with hurricane prep, recovery,” <http://extension.msstate.edu/news/feature-story/2020/manual-helps-poultry-producers-hurricane-prep-recovery>
  - **Tom Tabler, Jonathan Moon, and Jessica Wells**, “Issues with Poultry House LED Lamps and Light Dimmers,”  
[http://extension.msstate.edu/sites/default/files/publications/publications/P3510\\_web.pdf](http://extension.msstate.edu/sites/default/files/publications/publications/P3510_web.pdf)
  - **Tom Tabler**, “Intestinal health in the era of NAE,”  
<https://avicultura.info/en/intestinal-health-in-the-era-of-nae/>
  - **Dr. Tom Tabler and Jonathan Moon**, “Preparing for Baby Chicks in a Commercial House,”  
<https://www.youtube.com/watch?v=ZFU5D8rwWNk&feature=youtu.be&fbclid=IwAR1-S456gjcVrpg6O2vV7HPHNyxKHqtv-k2OUEEqZrrl7sNRuXvXwf4qZs0>
  - **Dr. Tom Tabler and Jonathan Moon**, “Useful Tools to Better Manage Your Flock,” <https://www.youtube.com/watch?v=gPSvUre-qT4&feature=youtu.be&fbclid=IwAR0dxYAXytnhpeY4lCYEpRxdz91I9yCAL2sa20Vg7Hyxj5xqO0ODX0b0Uh4>
  - **Dr. Tom Tabler and Jonathan Moon**, “Thermal Thermometer Use,”  
[https://www.youtube.com/watch?v=-smWqW\\_PeZM&feature=youtu.be&fbclid=IwAR1LOpkvz2pmyeXDSL56b4QETMxUFUF2Q6CDPU51smle4utaPzgKe5RfiFEo](https://www.youtube.com/watch?v=-smWqW_PeZM&feature=youtu.be&fbclid=IwAR1LOpkvz2pmyeXDSL56b4QETMxUFUF2Q6CDPU51smle4utaPzgKe5RfiFEo)
- **Tom Tabler, Yi Liang, Jonathan Moon, Jessica Wells**, “Broiler Litter: Odor and



Moisture Concerns,”

[http://extension.msstate.edu/sites/default/files/publications/publications/P3515\\_web.pdf](http://extension.msstate.edu/sites/default/files/publications/publications/P3515_web.pdf)

- Yi Liang, **Geroge T. Tabler**, and Sami Dridi, “Sprinkler technology improves broiler production sustainability: From stress alleviation to water usage conservation: A mini review,” *Frontiers in Veterinary Science*, Vol 7, September 2020, [http://journal.frontiersin.org/article/10.3389/fvets.2020.544814/full?utm\\_source=Email\\_to\\_authors&utm\\_medium=Email&utm\\_content=T1\\_11.5e1\\_author&utm\\_campaign=Email\\_publication&field=&journalName=Frontiers\\_in\\_Veterinary\\_Science&id=544814](http://journal.frontiersin.org/article/10.3389/fvets.2020.544814/full?utm_source=Email_to_authors&utm_medium=Email&utm_content=T1_11.5e1_author&utm_campaign=Email_publication&field=&journalName=Frontiers_in_Veterinary_Science&id=544814)
- **Tom Tabler**, “Tackling stress key to protecting birds from coryza resurgence, says expert,” <https://poultryhealthtoday.com/tackling-stress-key-to-protecting-birds-from-coryza-resurgence-says-expert/>
- Mousa AA, **Ramachandran R**, Ozdemir O, Karsi A, Abdelhamed H. Dietary trans-cinnamaldehyde improves oxidative stress response of channel catfish (*Ictalurus punctatus*) following *Edwardsiella ictaluri* infection. 2020 Sep 28, “In Press.” DOI: <https://doi.org/10.1016/j.aquaculture.2020.735985>.
- **Fancher, CA; Zhang, L; Kiess, AS; Adhikari, PA; Dinh, TT; Sukumaran, AT**, 2020. “Avian Pathogenic *Escherichia coli* and *Clostridium perfringens*: Challenges in No Antibiotics Ever Broiler Production and Potential Solutions,” *Microorganisms* 8:1533. Mousa AA, **Ramachandran R**, Ozdemir O, Karsi A, Abdelhamed H. Dietary trans-cinnamaldehyde improves oxidative stress response of channel catfish (*Ictalurus punctatus*) following *Edwardsiella ictaluri* infection. 2020 Sep 28, “In Press.” DOI: <https://doi.org/10.1016/j.aquaculture.2020.735985>.
- **Tom Tabler**, F. Dustan Clark, **Jessica Wells**, and Morgan Farnell, “Avian Influenza: Things You Should Know,” <https://www.poultryproducer.com/united-states/avian-influenza-things-you-should-know/>