Jodie Allen

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SUMMARY: Graduate student pursuing the doctoral program in the Department of Animal Science at the University of Connecticut. My project aims to develop novel intervention strategies for controlling *Salmonella* spp. and *Campylobacter jejuni* at the pre-harvest level in poultry. Approaches include traditional and molecular microbiology, next generation sequencing, proteomics, and nanotechnology.

EDUCATION: **University of Connecticut, Storrs, Connecticut** 2022-present
Doctor of Philosophy, Food Microbiology & Safety

University of Connecticut, Storrs, Connecticut
Master of Science, Food Microbiology & Safety 2020-2022
GPA 3.7/4.000

University of Connecticut, Storrs, Connecticut
Bachelor of Science, Animal Science 2015-2019
GPA 3.7/4.000

PROFESSIONAL EXPERIENCE AND EMPLOYMENT RECORD:

***Graduate Research/Teaching Assistant,* University of Connecticut, Storrs, CT** **01/2020 –present**

- Investigating the efficacy of phytochemicals for controlling *Salmonella* Enteritidis and *Campylobacter jejuni* at the pre-harvest level in poultry by developing novel carrier systems such as nanoparticles for improving their antimicrobial efficacy.
- Investigating the efficacy of phytochemicals for controlling *Salmonella* Enteritidis on postharvest poultry products by developing novel carrier systems such as nanoparticles for improving their antimicrobial efficacy.
- Studying the effects of continuous exposure of *Salmonella* Enteritidis to phytochemicals and their induction of antimicrobial resistance.
- Participated in numerous food safety projects that investigated the efficacy of phytochemicals inactivating *Listeria monocytogenes*, *Escherichia coli* O157:H7*, Salmonella* spp. on fresh produce and controlling *Salmonella* colonization in broiler chickens.
- Assisted in teaching poultry science and behavior and training course in the Department of Animal Science by grading materials and preparing laboratory sections.

***Veterinary Assistant/Receptionist*, MacDonald Veterinary Hospital, Bloomfield, CT** **08/2018— 06/2020**

- Communicated effectively with clients, scheduled appointments, replenished prescriptions, and organized client documents.
- Prepared vaccines and instruments for veterinarian while assuring all examination rooms stocked, cleaned, organized, and prepared for next appointment.
- Restrained cats and dogs appropriately for examination.
- Performed tests for heartworm, Lyme, Bordetella, and fecal flotation.

***Student Intern*, UConn livestock units, Storrs, CT** **05/2017—07/2017**

- Learnt farm management skills, animal nutrition and animal care.
- Fed horses, cattle, sheep, and poultry twice daily, and cleaned animal units daily.
- Graded shelled eggs to be delivered to campus dining halls, and dairy bar.

***Sales Associate,* Macy's Corporation, Manchester, CT** **12/2015—06/2020**

- Provided excellent customer service to customers that would be conducive to shop.
- Communicated with diverse individuals with different behaviors and personalities.
- Organized sales floor scanned and restocked items for inventory.
- Encouraged customers to open a Macy's credit card to save on their purchase.

RESEARCH INTEREST:

- Reducing pathogen dissemination in animals and on animal-derived foods using antibiotic alternatives such as phytochemicals.
- Developing strategies to mitigate antimicrobial resistance in foodborne pathogens using antibiotic alternatives.
- Application of nanotechnology in enhancing food safety.

TEACHING INTEREST:

- Principles of Poultry Science and management of flocks.
- Mechanism(s) of bacterial pathogenicity in poultry and humans.
- Molecular approaches for identification of bacteria.

PROFESSIONAL SKILLS:

Laboratory skills:

- Microbiology Isolation, culture, identification of facultative anaerobic microorganisms. Screening of microorganisms for antimicrobial sensitivity.
- Molecular Biology Extraction of RNA from bacterial culture and real-time qPCR.
- Farm animal management Humane handling and management of poultry (broiler chickens) for research purpose.

Analytical skills:

- Competent in using data analysis programs (graph pad prism and R programming).

PEER-REVIEWED MANUSCRIPTS, CONFERENCE PRESENTATIONS, AND POSTERS:

Peer-reviewed manuscripts:

- **Allen, J**., Balasubramanian, B., Rankin, K., Shah, T., Donoghue, A. M., Upadhyaya, I., Sartini, B., Luo, Y., & Upadhyay, A. (2023). *Trans*-cinnamaldehyde nanoemulsion wash inactivates *Salmonella* Enteritidis on shelled eggs without affecting egg color. Poultry Science, 102:102523. doi: https://doi.org/10.1016/j.psj.2023.102523.

- **Allen, J**., Balasubramanian, B., Rankin, K., Shah, T., Upadhyaya, I., Luo, Y., & Upadhyay, A. (2023). Efficacy of *Trans*-cinnamaldehyde nanoemulsion in inactivating *Salmonella* Enteritidis on broiler chicken skin. Journal of Applied Poultry Research, Manuscript under revision.

- Balasubramanian, B., Shah, T., **Allen, J**., Rankin, K., Xue, J., Luo, Y., Mancini, R., & Upadhyay, A. (2022). Eugenol nanoemulsion inactivates *Listeria monocytogenes*, *Salmonella* Enteritidis, and *Escherichia coli* O157:H7 on cantaloupes without affecting rind color. Frontiers in Sustainable Food Systems, Agro-Food Safety, 6:984391. 1-14. doi: 10.3389/fsufs.2022.984391.

Conference presentations/published abstracts:

- **Allen, J**., Balasubramanian, B., Rankin, K., Shah, T., Donoghue, A., Upadhyaya, I., Luo, Y., Upadhyay, A. (2022). Trans-cinnamaldehyde nanoemulsions reduces *Salmonella* Enteritidis survival and trans-shell migration on eggs without affecting egg color or embryo development. Presentation/Published abstract- Poultry Science Association In-person Annual Meeting, July 11-14, 2022. (Abstract selected for National competition at PSA, 2022).

- **Allen, J**., Balasubramanian, B., Rankin K., Donoghue, A., Upadhyaya, I., Luo, Y., Upadhyay, A. (2021). Trans-cinnamaldehyde nanoemulsion dip treatments rapidly inactivate *Salmonella* Enteritidis on eggs. Presentation/Published abstract- International Poultry Scientific Forum Virtual Annual Meeting, January 25-26, 2021. (Abstract selected for National competition at IPSF, 2021).

- **Allen, J**., Balasubramanian, B., Rankin, K., Shah, T., Donoghue, A., Upadhyaya, I., Luo, Y., Upadhyay, A. (2021). Efficacy of Trans-cinnamaldehyde nanoemulsions in inactivating *Salmonella* Enteritidis on shelled eggs and chicken skin. Presentation/Published abstract- Poultry Science Association Virtual Annual Meeting, July 19-22, 2021. (Abstract selected for National competition at PSA, 2021).

- Balasubramanian, B., Shah, T., **Allen, J**., Rankin, K., Xue, J., Luo, Y., Upadhyay, A. (2022). Efficacy of eugenol nanoemulsions in inactivating *Listeria monocytogenes*, *Salmonella* Enteritidis, and *Escherichia coli* O157:H7 on cantaloupes. Presentation/Published abstract-IFT In-person Annual Meeting, July 10-13, 2022.

- Rankin, K., Zhu, C., Balasubramanian, B., **Allen, J**., Shah, T., Upadhyay, A. (2022). Application of Carvacrol, Eugenol, and Trans-cinnamaldehyde Nanoemulsions for controlling *Salmonella* spp. on Fresh produce. Presentation/Published abstract-IFT In-person Annual Meeting, July 10-13, 2022.

- Balasubramanian, B., Rankin, K., **Allen, J**., Upadhyay, A. (2021). Inactivation of Listeria monocytogenes on cantaloupe by eugenol nanoemulsion in combination with commercial sanitizers. Poster/Published abstract-IAFP Virtual Annual Meeting, July 18-21, 2021.

Posters

- Trans-cinnamaldehyde nanoemulsion dip treatments rapidly inactivate *Salmonella* Enteritidis on eggs. College of Agriculture, Health and Natural Resources Graduate Student Research Forum (CAHNR), Storrs, CT, April 13-14, 2021.

CONFERENCE APPEARANCES:

- UConn Extension's 2023 Vegetable & Small Fruit Growers' Conference **01/2023**

UNDERGRADUATE TRAINEES

- **Wesley Crouch (ANSC2699 student)** **11/2022—present**
  Department of Animal Science, UConn
- **Heather Cashman (ANSC2699 student)** **09/2020—12/2020**
  Ratcliffe Hicks School of Agriculture, UConn
- **Aneury Moya (ANSC2699 student)** **09/2020—12/2020**
  Ratcliffe Hicks School of Agriculture, UConn

HONORS AND AWARDS:

- Connecticut Board of Trustees Eastern States Exposition Graduate Student Scholarship **2022-2023**
- 2018 New England Scholar **03/2019**

CERTIFICATIONS:

- HACCP for Meat and Poultry Processors: To Identify, reduce, and prevent potential sources of contamination in meat and poultry processing facilities by implementing a food safety plan. November 13-15, 2019. (Instructor: Diane Wright Hirsch).

PROFESSIONAL DEVELOPMENT WORKSHOP:

- NYIFT Meeting: Design Features of PepsiCo's New R&D Laboratory **April 29, 2021**
- Webinar: Sustainable Poultry Farming **June 24, 2021**
- Proteomics & Metabolomics Facility: Introduction to Proteomics **May 18-20, 2022**
- Microbial Analysis, Resources, and Services: Microbiome Analysis **August 15-18, 2022**

PROFESSIONAL AFFILIATIONS:

- Poultry Science Association (PSA) **04/2021—present**
- PSA Hatchery **02/2023—present**
- Institute of Food Technologists (IFT) **03/2020—present**
- CAHNR Graduate Student Council **2020-2021**
- UConn Poultry Club Treasurer **09/2020—2021**
- The National Society of Leadership and Success **04/2019—present**
- UConn Wildlife Society **02/2018—05/2019**
- UConn Paws and Claws **02/2018—05/2019**
- UConn Operation Rhino **02/2018—05/2019**
- UConn Alpha Lambda Delta **02/2016—05/2019**

VOLUNTEER SERVICES:

- 25th Annual South Park Road Race and Fitness Walk 5K **09/2022**
- Milk Lipid Study **08/2020 – 09/2020**
- Connecticut Cat Connection **03/2019**
- Distributed medals and cookies to children and adults in a 5K Marathon **03/2014**
- Participated in a 5K Marathon to spread Breast Cancer Awareness **06/2014**
- Volunteered as a Food Runner for the Lion's Club, taking orders and distributing meals **05/2014**
- Marched in annual Shad Derby parade promoting a new receptacle for disposing recycled material **05/2014**