

## Curriculum Vitae

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### EDUCATION

Degree	Year
Doctor of Philosophy (Ph.D), Animal Science (Poultry Health and Safety) Department of Animal Science, University of Connecticut, CT, USA Thesis: Investigating the efficacy of natural antimicrobial molecules in reducing egg-borne transmission of <i>Salmonella enterica</i> serovar Enteritidis in layer hens	2011-2015
Master of Veterinary Science (M.V.Sc), in Veterinary Biochemistry Rajiv Gandhi Institute of Veterinary Education and Research, Pondicherry, India Thesis: A study on the haptoglobin gene expression in bovine mastitis	2008-2010
Bachelor of Veterinary Science and Animal Husbandry (B.V.Sc & A.H, recognized by the AVMA as equivalent to DVM) Rajiv Gandhi Institute of Veterinary Education and Research, Pondicherry, India	2002-2008

### EMPLOYMENT/TRAINING RECORD

<p><b>Assistant Food Safety Extension Educator,</b>            Department of Extension, University of Connecticut.            (Responsibilities include extension and applied research)</p>	<p><b>06/2019 -present</b></p>
<p><b>Assistant Professor of Poultry Science,</b>            College of Agriculture and Human Ecology,            Tennessee Tech University.            (50% research, 30% extension and 20% teaching)</p>	<p><b>06/2018 -05/2019</b></p>
<p><b>Postdoctoral Associate, Centre of Excellence for Poultry Science,</b>            University of Arkansas            Research Associate, Poultry Production and Product Safety Research Unit,            USDA, ARS, University of Arkansas (Joint Appointment).</p>	<p><b>04/2016-05/2018</b></p>
<p><b>Postdoctoral Associate, Food Microbiology and Safety Laboratory,</b>            Department of Animal Science, University of Connecticut.</p>	<p><b>01/2015-04/2016</b></p>

## **RESEARCH INTEREST**

1. Investigating the effect of plant molecules and probiotics on fresh produce either as wash or coating and determining their antimicrobial efficacy as nanoemulsions.
2. Reducing pathogen colonization in poultry, processing environment and enhancing microbial safety of meat and eggs using natural approaches such as plant-derived antimicrobials and probiotics.
3. Developing economical and natural strategies for improving post-harvest safety of poultry meat and eggs.
4. Elucidating the mechanisms of interaction between plant-derived antimicrobials and intestinal microbiome of chicken and their effect on gut health and disease resistance in poultry.
5. Developing diagnostic tools for detection of pathogens in poultry meat and eggs.
6. Studying tenderness, texture, color and sensory characteristics on poultry meat treated with antimicrobial natural compounds.
7. Developing applications for effective delivery of antimicrobials in produce farms to improve safety.

## **TEACHING INTEREST**

1. One health: Principles and Applications (Lecture)
2. Food microbiology and safety (Lecture, Lab, Scientific writing)
3. Microbial physiology of foodborne pathogens (Lecture)
4. Principles of Poultry science (Lecture, Lab, Scientific writing)
5. Alternatives to antibiotics in animal production (Lecture, Lab, Scientific writing)
6. Meat and poultry product safety (Lecture, Lab)
7. Mechanisms of pathogenicity of foodborne bacteria (Lecture)
8. Disease transmission in food animals (Lecture)
9. Detection technology and control strategies for food pathogens (Lecture, Lab, Scientific writing)

**Assistant Food Safety Extension Educator,  
Department of Extension, University of Connecticut.**

**06/2019 -present**

### **Extension:**

1. Working with Department of Agriculture to educate produce farmers on Produce Safety Rule to comply with FDA, FSMA.
2. Conduct Produce Safety Alliance Grower training course and develop employee education materials.
3. Administering HACCP workshops for meat and poultry processors in New England.
4. Working with New England Fruits and Vegetable producers to conduct On-farm Readiness Reviews (OFRR).
5. Collaborating with Expanded Food and Nutrition Education Program (EFNEP) on addressing food safety challenges.
6. Instructing 4-H students on importance of food safety – Food safety house demonstration (educational material developed for a grant in collaboration with URI).

**Teaching/Trainings:**

1. Lead Trainer for the **HACCP for Meat and Poultry Processors** – November 2019, December 2020, October 2021.
2. Trainer for **Produce Safety Grower Training** – January 2020.
3. Trainer for **Produce Safety Grower Web-based training** – May 2020, January 2021, March 2021, organized and taught the course on a Webex platform.
4. **Guest lectures** for ANSC-2271: Principles of poultry science, UConn, Animal Science, Spring 2020, Topics: (1) Principles of incubation, lab (2) Poultry Science paper review (3) Poultry carcass quality and USDA grading (4) Egg quality and USDA grading.
5. **Co-taught** ANSC-2271 – Spring 2021.

**Assistant Professor of Poultry Science,  
College of Agriculture and Human Ecology,  
Tennessee Tech University.**

**06/2018 -05/2019**

**Teaching:**

Semester	Course Name	Credits
<b>Fall 2018</b>	ANS -4140-001-Commercial poultry production and management	3
<b>Spring 2019</b>	ANS-3310-001-Meat, poultry and dairy products	3, 2+1 (Lab)
<b>Course Development:</b>	EVSA-7030-One health: Principles and Applications (To be offered Fall 2019)	3 (Grad)

**Extension:**

1. Actively involved with commercial poultry industry and Tennessee Poultry Association (TPA) to improve safety and quality of meat and eggs.
2. Advising small-scale farmers on safety and biosecurity in the state of Tennessee in collaboration with state department and UT-Extension.
3. Representing Tennessee in extension activities involved with poultry meat and egg safety at national Poultry Science Association.
4. Established a produce safety alliance training program in collaboration with Tennessee Department of Agriculture to be administered through TTU for middle Tennessee produce growers.
5. Fall clinic -2018 -network and improve recruitment in the poultry program at school of agriculture at Tennessee Tech
6. Poultry Spring Clinic 2019 – Responsible for coordinating, arranging and managing the clinic to facilitate recruitment in the poultry program at Tennessee Tech.
7. Organized and conducted the state poultry career development event (CDE) for Tennessee.



5. Development of diagnostic tools for detection of pathogens in poultry meat and eggs.

**Graduate Research Assistant: (January 2011- January 2015).**

University of Connecticut

Department of Animal Science

Advisor: Dr. Kumar Venkitanarayanan

**Research projects:**

1. Investigated the efficacy of natural antimicrobial molecules in reducing egg-borne transmission of *Salmonella enterica* serovar Enteritidis in layer hens.
2. Developed inactivation strategies for *Salmonella* Typhimurium, *Salmonella* Bredeney, and *Salmonella* Tennessee in peanut butter using combination of heat and *trans*-cinnamaldehyde.
3. Determined the efficacy of Octenidine hydrochloride for reducing *Escherichia coli* O157:H7, *Salmonella* spp. and *Listeria monocytogenes* on cattle hide.

**Graduate Research Assistant: (July 2008- December 2010).**

Rajiv Gandhi Institute of Veterinary Education and Research, Pondicherry, India.

Department of Veterinary Biochemistry and Biotechnology

Advisor: Dr. J. Thanislass

**Research project:** Thesis: A study on the haptoglobin gene expression in bovine mastitis

## **TEACHING EXPERIENCE**

**Teaching Assignments: Department of Animal Science, University of Connecticut**

1. Spring 2012
  - ANSC 3122- Reproductive physiology (Lecture and Lab)
2. Fall 2012:
  - ANSC 3121- Principles of Animal Genetics (Lecture and Lab)
3. Spring 2013
  - ANSC 2271- Principles of Poultry Science (Lecture and Lab)
4. Fall 2013:
  - ANSC 4311- Advanced Animal Nutrition (Lecture and Lab)
5. Spring 2014:
  - ANSC 4642- Food Microbiology and Safety (Lecture and Lab)
  - ANSC 2271- Principles of Poultry Science (Lecture and Lab)
6. Fall 2014, 2015:
  - ANSC 3121- Principles of Animal Genetics (Lecture and Lab)

## CERTIFICATION

1. **HACCP for Meat and Poultry Processors:** Approved by International HACCP Alliance, College of Agriculture Health and Natural Resources, University of Connecticut, June 3<sup>rd</sup>-June 5<sup>th</sup> 2014.
2. **Produce Safety Train -the -Trainer course:** Approved by Produce Safety Alliance, Phoenix Arizona, March 14-15 2019.
3. **Advanced HACCP Workshop:** Approved by International HACCP Alliance, Burlington, Vermont, July 16-17, 2019.
4. **Preventive controls qualified individual (PCQI).** Food Safety Preventive Controls Alliance (FSPCA), November 2019.
5. **On-Farm Readiness Review Training.** NASDA – May 2021.

## GRANT WRITING AND FUNDING

### **As Principal Investigator:**

1. Title of Project: *Mitigating the food safety risks associated with fresh produce production through evidence-based research and farmer training in CT*  
Agency/Company: **NIMSS-Multistate -USDA-NIFA**  
Total Dollar Amount: \$89,882  
Role: *PI*  
Collaborators: *Abhinav Upadhyay (Co-PI)*  
Period of Contract: *08/01/2020-07/01/2023*
2. Title of Project: *Produce Safety MOU*  
Agency/Company: - **US-FDA**  
Total Dollar Amount: \$372,269  
Role: *PI*  
Collaborators: *Connecticut Department of Agriculture,*  
Period of Contract: *01/09/2018 - 06/30/2021*

### **Proposals Submitted**

Title of Project: *Connecticut produce safety program*  
Agency/Company: **US-FDA**  
Total Dollar Amount: *-\$200,610,*  
Role: *PI*  
Collaborators: *CT-Department of Agriculture*  
Period of Contract: *07/01/2021-06/30/2026*

### **Co-Principal Investigator**

1. Title of Project: *Systems-based integrated program for enhancing the sustainability of antibiotic-restricted poultry production*  
Agency/Company: **USDA -SAS**  
Total Dollar Amount: *\$10,000,000*  
Role: *Co-PI*  
Collaborators: *Kumar Venkitanarayanan (PI), Maryanne Amalaradjou (Co-PI), Abhinav Upadhyay(Co-PI), Yangchao Luo (Co-PI)and 15 other participating institutions.*  
Period of Contract: *09/30/2020-09/29/2025*

2. Title of Project: *Developing Evidence-based Handling Guidelines for Improving the Safety of Free-range Poultry Eggs*  
 Agency/Company: **USDA-NIFA-AFRI**  
 Total Dollar Amount: \$199,483.00 (UConn -\$36,869)  
 Role: *Co-PI*  
 Collaborators: *Becky Sartini (PI, URI), Abhinav Upadhyay (Co-PI)*  
 Period of Contract: *05/01/2021- 04/30/2023*
3. Title of Project: *Enhancing the Safety of Eggs and Fresh Produce by Novel Ultra-fine Bubble Technology and Farmer Training*  
 Agency/Company: **NE-SARE**  
 Total Dollar Amount: \$148,874  
 Role: *Co-PI*  
 Collaborators: *Abhinav Upadhyay (PI), Shuresh Ghimire (Co-PI)*  
 Period of Contract: *03/01/2020 – 02/28/2023*
4. Title of Project: *Equipment Item: Biotek Cytation 5 Cell imaging Multi-Mode Reader (for use with Fluorescence, Brightfield, Color Brightfield, and Phase Contrast Imaging, Model CYT5)*  
 Agency/Company: **CAHNR Equipment grant.**  
 Total Dollar Amount: \$74, 895.  
 Role: *Co-PI*  
 Collaborators: *Abhinav Upadhyay (PI), Young Tang (Co-PI), Neha Mishra (Co-PI)*  
 Period of Contract: *Till purchase of equipment*
5. Title of Project: *A comprehensive probiotic-based approach to promote layer performance, layer health and egg safety for small and midsize farms* Agency/Company: **USDA-NIFA.**  
 Total Dollar Amount: \$500,000  
 Role: *Co-PI*  
 Collaborators: *Maryanne Amalardjou (PI), Nathan Fiala (Co-PI), John Boney (Penn State Co-PI)*  
 Period of Contract: *08/01/2021-07/31/2025.*
6. Title of Project: *In-ovo and Early Probiotic Supplementation to control Salmonella in Broilers*  
 Agency/Company: **NE-SARE.**  
 Total Dollar Amount: -\$150,000  
 Role: *Co-PI*  
 Collaborators: *Maryanne Amalardjou (PI)*  
 Period of Contract: *-05/01/2021 – 04/30/2023.*

### **Co-Principal Investigator, Proposals Submitted**

1. Title of Project: *Identifying Produce Safety Research Priorities while Considering Inspectional and Educational On-farm Observational Data*  
 Agency/Company: **UVM/USDA-AFRI**  
 Total Dollar Amount: - -\$28,657  
 Role: *Co-PI*  
 Collaborators: *Elizabeth Newbold & Chris Callahan (PI, UVM)*  
 Period of Contract: *-10/1/2021 – 9/30/2024.*

### Senior Personnel or Contributor

1. Title of Project: *Developing plant-based drinking water supplements for controlling Salmonella and Campylobacter jejuni in broiler chickens*  
Agency/Company: **USDA-NIFA**  
Total Dollar Amount: - \$455,000  
Role: *Contributor/Leading* the Stakeholder advisory board  
Collaborators: *Maryanne Amalardjou (PI)*  
Period of Contract: -. 01/2021 – 01/2026.

### Proposals not funded:

1. Title of Project: *Biocontrol of foodborne pathogens on apples under simulated commercial conditions*  
Agency/Company: **USDA-NIFA**  
Total Dollar Amount: - \$300,000  
Role: *Co-PI*  
Collaborators: *Maryanne Amalardjou (PI)*  
Period of Contract: -. 08/01/2022- 07/31/2024.
2. Title of Project: *De-bugging Synthetic Methionine from Organic Poultry Diets: Exploiting the Potential of Insect meal as a Sustainable Source of Methionine* Agency/Company: *University of Arkansas/USDA-NIFA*  
Total Dollar Amount: - - \$499,000  
Role: *Co-PI*  
Collaborators: *Annie Donoghue (USDA, Fayetteville, Arkansas-PI), Komala Arsi (Co-PI), Kumar Venkitanarayanan (Co-PI)*  
Period of Contract: -. 03/2021 – 03/2026.
3. Title of Project: *Integrated approach for mitigating AMR in backyard and small-scale egg production*  
Agency/Company: **USDA – AFRI**.  
Total Dollar Amount: - - \$1,000,000  
Role: *Co-PI*  
Collaborators: *Kumar Venkitanarayanan(PI), Abhinav Upadhyay(Co-PI), Siddharth Thakur (NCState, Co-PI)*  
Period of Contract: -. 02/2020 – 02/2025.
4. Title of Project: *Developing phytochemical based strategy to mitigate evolution of antibiotic mediated cecal, fecal and litter resistome in broiler chickens* Agency/Company: *University of Arkansas/USDA-NIFA*  
Total Dollar Amount: - \$450,000.  
Role: *Co-PI*  
Collaborators: *Abhinav Upadhyay (PI)*  
Period of Contract: - 08/2020 – 08/2025.
5. Title of Project: *Develop insects as novel feed ingredients from sustainable sources to facilitate economical poultry production and farmer profitability*  
Agency/Company: *University of Arkansas/ Foundation for Food and Agricultural Research (FFAR)*  
Total Dollar Amount: - \$1,000,000  
Role: *Co-PI*



Collaborators: *Kelsey Robinson (PI), Annie Donoghue (Co-PI), Komala Arsi (Co-PI), Kumar Venkitanarayanan (Co-PI), Abhinav Upadhyay (Co-PI).*

Period of Contract: 02/2020 – 02/2025.

6. Title of Project: *An exploratory study investigating the prevalence, persistence, and risk assessment of SARS-CoV-2 virus as a foodborne pathogen on selected produce and farming environment*  
 Agency/Company: **USDA-AFRI**  
 Total Dollar Amount: - \$1,000,000  
 Role: *Co-PI*  
 Collaborators: *Kumar Venkitanarayanan (PI), Maryanne Amalaradjou (Co-PI)*  
 Period of Contract: - 06/2020 – 07/2022.
7. Title of Project: *AI Institute: Integrated Design for Equitable Agricultural Systems*  
 Agency/Company: **NC A&T/ NSF**  
 Total Dollar Amount: - \$20,000,000  
 Role: *Co-PI*  
 Collaborators: *Kathleen Liang (NC-A&T -PI), Kumar Venkitanarayanan (Co-PI), and 8 more institutions.*  
 Period of Contract: -10/01/2021-09/30/2026
8. Title of Project: *De-Bugging Synthetic Methionine from Organic Poultry Diets: Exploiting the Potential of Insect Meal as a Sustainable Source of Methionine* Agency/Company: **USDA-NIFA, resubmission.**  
 Total Dollar Amount: \$500,000  
 Role: *Co-PI*  
 Collaborators: *Annie Donoghue (Co-PI), Komala Arsi (Co-PI), Kumar Venkitanarayanan (Co-PI), Abhinav Upadhyay (Co-PI).*  
 Period of Contract: 03/2021 – 02/2026.
9. Title of Project: *Acquisition of an Oxygen Transmission Rate Tester for Food Science and Food Packaging Applications.*  
 Agency/Company: **Equipment grant with Institute of Material Science, UConn**  
 Total Dollar Amount: - \$91,000  
 Role: *Contributor*  
 Collaborators: *Luyi Sun (PI - IMS)*  
 Period of Contract: -. *Till purchase of equipment.*

## PUBLICATIONS

### PEER-REVIEWED MANUSCRIPTS

1. Kollanoor-Johny, A., Upadhyay, A., Baskaran, S. A., **Upadhyaya, I.**, Moyoottu S., Mishra, N., Michael J. Darre, Mazhar I. Khan, Annie M. Donoghue, Dan J. Donoghue, and Kumar Venkitanarayanan, (2012). Effect of therapeutic supplementation of the plant compounds *trans-cinnamaldehyde* and *eugenol* on *Salmonella* Enteritidis in market age broiler chicken. ***Journal of Applied Poultry Research***. 21(4): 816-822.
2. Baskaran, S.A., Upadhyay, A., **Upadhyaya, I.**, Bhattaram, V., and Venkitanarayanan, K. (2012). Efficacy of Octenidine hydrochloride for reducing *E. coli* O157:H7, *Salmonella* spp. and *L. monocytogenes* on cattle hide. ***Applied and Environmental microbiology***. 78(12): 4538-41.

3. **Upadhyaya, I.**, Upadhyay, A., Kollanoor-Johny, A., Baskaran, S. A., Mooyottu, S., Darre, M. J., & Venkitanarayanan, K. (2013). Rapid inactivation of *Salmonella* Enteritidis on shell eggs by plant-derived antimicrobials. *Poultry Science*, 92(12), 3228-3235.
4. **Upadhyaya, I.**, Upadhyay, A., Kollanoor-Johny, A., Darre, M. J., & Venkitanarayanan, K. (2013). Effect of plant derived antimicrobials on *Salmonella* Enteritidis adhesion to and invasion of primary chicken oviduct epithelial cells *in vitro* and virulence gene expression. *International Journal of Molecular Sciences*, 14(5), 10608-10625.
5. Upadhyay, A., **Upadhyaya, I.**, Kollanoor-Johny, A., & Venkitanarayanan, K. (2013). Antibiofilm effect of plant derived antimicrobials on *Listeria monocytogenes*. *Food Microbiology*, 36(1), 79-89.
6. Upadhyay, A., **Upadhyaya, I.**, Kollanoor-Johny, A., Mooyottu, S., Karumathil, D., & Venkitanarayanan, K. (2013). Inactivation of *Listeria monocytogenes* on skinless frankfurters by plant-derived antimicrobials alone or in combination with hydrogen peroxide. *International Journal of Food Microbiology*, 163(2-3), 114-118.A.
7. Baskaran, S. A., Bhattaram, V., **Upadhyaya, I.**, Upadhyay, A., Johny, A. K., D. Schreiber Jr, K. Venkitanarayanan, (2013). Inactivation of *Escherichia coli* O157:H7 on cattle hides by caprylic acid and  $\beta$ -resorcylic acid. *Journal of Food Protection*. 76(2): 318-22.
8. Baskaran, S. A., Upadhyay, A., Kollanoor Johny, A., **Upadhyaya, I.**, Mooyottu, S., Roshni Amalaradjou, M. A., ... & Venkitanarayanan, K. (2013). Efficacy of plant-derived antimicrobials as antimicrobial wash treatments for reducing enterohemorrhagic *Escherichia Coli* O157: H7 on apples. *Journal of Food Science*, 78(9), 1399-1404.
9. Upadhyay, A., **Upadhyaya, I.**, A. K. Johny, S. Mooyottu, K. Venkitanarayanan, (2014). Inactivation of *Listeria monocytogenes* on cantaloupes by plant-derived antimicrobial compounds alone or in combination with hydrogen peroxide. *Food Microbiology*. DOI: 10.1016/j.fm.2014.05.005.
10. Mooyottu, S., Flock, G., **Upadhyaya, I.** and Venkitanarayanan, K. (2014). The Peptoclostridium difficile whole genome shotgun (WGS) project. **National Centre for Biotechnology Information (NCBI)**. <http://www.ncbi.nlm.nih.gov/nuccore/JFAF00000000>.
11. Darre, M.J., Kollanoor-Johny, A., Venkitanarayanan, K., & **Upadhyaya, I.** (2014). Practical implications of plant derived antimicrobials in poultry diets for the control of *Salmonella* Enteritidis. *Journal of Applied Poultry Research*. doi: 10.3382/japr.2014-00942.
12. **Upadhyaya, I.**, Upadhyay, A., Kollanoor-Johny A., Mooyottu S., Baskaran, S. A., Yin, H., Schreiber, D. T., Khan, M. I., Darre, M. J., Curtis, P. A. and K. Venkitanarayanan. (2015). In-feed supplementation of *trans*-cinnamaldehyde reduces egg-borne transmission of *Salmonella* Enteritidis in layer chickens. *Applied and Environmental Microbiology*. doi: 10.1128/AEM.03809-14.
13. **Upadhyaya, I.**, H. Yin, M. Nair, C. Chen, A. Upadhyay, M. J. Darre, and K. Venkitanarayanan. (2015). Efficacy of fumigation with *trans*-cinnamaldehyde and eugenol in reducing *Salmonella enterica* serovar Enteritidis on embryonated eggs. *Poultry Science*. doi:10.3382/ps/pev126.
14. **Upadhyaya, I.**, A. Upadhyay, H. Yin, Meera Nair, V. Bhattaram, D. Karumathil, A. Kollanoor-Johny, M. Khan, M. J. Darre, Curtis, P. A and K. Venkitanarayanan. (2015) Reducing Colonization and Egg-borne Transmission of *Salmonella* Enteritidis in Layer Chickens by in-feed Supplementation of Caprylic Acid. *Foodborne Pathogens and Disease*. doi:10.1089/fpd.2014.1931.

15. Upadhyay, A., **Upadhyaya, I.**, D. Karumathil, H. Yin, M. Nair, V. Bhattaram, C. Chen, G. Flock, S. Mooyottu and K. Venkitanarayanan. (2015). Control of *Listeria monocytogenes* on skinless frankfurters by coating with phytochemicals. *LWT-Food science and Technology*. doi:[10.1016/j.lwt.2015.03.100](https://doi.org/10.1016/j.lwt.2015.03.100).
16. Mooyottu S., Flock G., Kollanoor-Johny, A, **Upadhyaya, I.**, Jayarao B., and Venkitanarayanan, K. (2015). Isolation and Characterization of a Multidrug Resistant *C. difficile* isolate from Retail Meat. *International Journal of Food Microbiology*. doi:[10.1016/j.ijfoodmicro.2014.10.002](https://doi.org/10.1016/j.ijfoodmicro.2014.10.002).
17. Donoghue, A. M., Venkitanarayanan, K., Arsi, K., Woo-Ming, A., **Upadhyaya, I.**, Kollanoor-Johny, A., Darre, M. J., Upadhyay, A., Fanatico, A. C., and Donoghue, D. J. (2015). Organic Poultry: Developing Natural Solutions for Reducing Pathogens and improving production. *Proceedings of the Organic Agriculture Research Symposium* LaCrosse, WI.
18. **Upadhyaya, I.**, Yin, H., Nair, M., Chen, C., Lang, R., Darre, M., Venkitanarayanan, K. (2016). Inactivation of *Salmonella* Enteritidis on shell eggs by coating with phytochemicals. *Poultry Science*. doi: 10.3382/ps/pew152.
19. **Upadhyaya, I.**, Thanislass, J., Veerapandyan A., Badami S., Antony P.X. (2016). Characterization of Haptoglobin isotype in milk of mastitis affected cows. *Veterinary Sciences*. 2016, 3(4), 29; doi:[10.3390/vetsci3040029](https://doi.org/10.3390/vetsci3040029)
20. Nair M., Lau P., Belskie, K., Chen, C., Fancher, S., D. Karumathil, H. Yin, Y. Liu, F. Ma, **Upadhyaya, I.**, Upadhyay, A., R. Mancini, K. Venkitanarayanan. (2016). Potentiating the heat inactivation of *Escherichia coli* O157:H7 in ground beef patties by natural antimicrobials. *Frontiers in Microbiology*. 7, 15. <http://dx.doi.org/10.3389/fmicb.2016.00015>.
21. Upadhyay, A., **Upadhyaya, I.**, Mooyottu, S., & Venkitanarayanan, K. (2016). Eugenol in combination with lactic acid bacteria attenuate *Listeria monocytogenes* virulence *in vitro* and in invertebrate model, *Galleria mellonella*. *Journal of Medical Microbiology*. doi: 10.1099/jmm.0.000251.
22. Upadhyay, A., Chen, C.H., Yin, H., **Upadhyaya, I.**, Fancher, S., Nair, M.S., Liu., Y.Y., Jankelunas, L., & Venkitanarayanan, K. (2016). Inactivation of *Listeria monocytogenes*, *Salmonella* spp. and *Escherichia coli* O157:H7 on cantaloupes by Octenidine hydrochloride. *Food Microbiology*, 58, 121-127.
23. Hu, Q., Gerhard, H., **Upadhyaya, I.**, Venkitanarayanan, K., Luo, Y. (2016). Antimicrobial eugenol nanoemulsion prepared with natural emulsifiers and evaluation of nano spray drying technology to enhance redispersibility. *International Journal of Biological Macromolecules* doi:[10.1016/j.ijbiomac.2016.02.051](https://doi.org/10.1016/j.ijbiomac.2016.02.051).
24. Upadhyay, A., Arsi, K., Wagle, B.R., **Upadhyaya, I.**, Shrestha, S., Donoghue, A.M., Donoghue, D.J. (2017). Phytochemicals reduce *Campylobacter jejuni* colonization factors and expression of virulence genes *in vitro*. *Frontiers in Microbiology*. <https://doi.org/10.3389/fmicb.2017.00713>
25. Mooyottu, S., Flock, G., Upadhyay A., **Upadhyaya I.**, Mass K., and Venkitanarayanan, K. (2017). Protective effect of carvacrol against gut dysbiosis and *Clostridium difficile* associated disease in a mouse model. *Frontiers in Microbiology*. <https://doi.org/10.3389/fmicb.2017.00625>
26. Arsi, K., Donoghue, A. M., **Upadhyaya, I.**, Upadhyay, A., Wagle, B. R., Shrestha, S., Venkitanaraynan K., Darre M.J., Kollanoor Johny, A., Fanatico, A., Pescatore A., Jacob J., Hulet, M., Byrd, A., Gekara O., Moyle, J., Donoghue, D. (2017). Alternatives to Antibiotics: Novel Strategies to Reduce Foodborne Pathogens in Organic Poultry. *Proceedings of the Organic Agriculture Research Symposium*, Midwest Poultry Federation. Minneapolis, MN.

27. Fanatico, A.C., Arsi, K., **Upadhyaya, I.**, Morales Ramos, J., Donoghue, D., Donoghue, A.M. (2018). Sustainable Fish and Invertebrate Meals for Methionine and Protein Feeds in Organic Poultry Production. *The Journal of Applied Poultry Research*. <http://dx.doi.org/10.3382/japr/pfy037>.
28. Wagle, B. R., Upadhyay, A., Shrestha, S., Arsi, K., **Upadhyaya, I.**, Donoghue, A. M., & Donoghue, D. J. (2018). Pectin or chitosan coating fortified with eugenol reduces *Campylobacter jejuni* on chicken wingettes and modulates expression of critical survival genes. *Poultry science*. <https://doi.org/10.3382/ps/pey505>.
29. Nair, M. S., Upadhyay, A., Fancher, S., **Upadhyaya I.**, Dey, S., Kollanoor-Johny, A., ... & Venkitanarayanan, K. (2018). Inhibition and Inactivation of *Escherichia coli* O157: H7 Biofilms by Selenium. *Journal of food protection*, 81(6), 926-933.
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### **MANUSCRIPTS UNDER PREPARATION**

1. **Upadhyaya I.**, C. Chen, A. Upadhyay, H. Yin, M. S. Nair, M. I. Khan, M. J. Darre, A. M. Donoghue, D. J. Donoghue and K. Venkitanarayanan. Effect of in-feed supplementation of *trans*-cinnamaldehyde and caprylic acid on chicken cecal microbiome in response to *Salmonella* Enteritidis. For submission to *Applied and Environmental Microbiology*.
2. **Upadhyaya I.**, D. Karumathil, Upadhyay A., H. Yin, and K. Venkitanarayanan. Rapid inactivation of *Salmonella* Tennessee, *Salmonella* Typhimurium, and *Salmonella* Bredeney in peanut butter using combination of heat and *trans* – cinnamaldehyde. For submission to *LWT-Food Science and Technology*.
3. **Upadhyaya I.**, Upadhyay A., H. Yin, Meera Nair, D. Karumathil, V. Bhattaram, J. Li, C. Chen, A. Kollanoor-Johny, M. Khan, M. J. Darre, A. Donoghue, D. Donoghue and K. Venkitanarayanan. Effect of  $\beta$  –resorcylic acid and Chitosan on reducing *Salmonella* Enteritidis colonization in 21-day-old broiler chicks. For submission to *Poultry Science*.
4. **Upadhyaya I.**, S. Fancher, H. Yin, M. S. Nair, C. Chen, D. Karumathil, V. Bhattaram, A. Upadhyay, M. Muiyariikkandy, M. Khan, M. J. Darre, A. Donoghue, D. Donoghue and K. Venkitanarayanan. Reducing *Salmonella* Heidelberg colonization in 21-day-old broiler chicks by in-feed supplementation of  $\beta$  –resorcylic acid and *trans*-cinnamaldehyde. For submission to *Foodborne pathogens and diseases*.
5. **Upadhyaya, I.**, A. Upadhyay, K. Arsi, R. Liyanage, A. M. Donoghue, N.C. Rath and D.J. Donoghue. Whole cell proteomic profile of the foodborne pathogen *Campylobacter jejuni* in response to the phytophenolic compound, eugenol. *For submission to Journal of Proteomics*.

### **BOOK CHAPTERS:**

1. **Upadhyaya, I.**, H. Yin, A.K. Johny, and K. Venkitanarayanan, (2014). “A current update on Avian Pathogenic *E. coli*”. In *Advances in Medicine and Biology*. Volume 78. *Nova Science Publishers*.
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  8. **Upadhyaya, I.**, Upadhyay, A., Venkitanarayanan, K (2019). Applications of ‘omics’ technologies to study gut health in poultry. In *Food Safety in Poultry Meat Production* (pp. 211-234). **Springer, Cham**.
  9. Upadhyay, A., Arsi K., **Upadhyaya I.**, Donoghue A.M., Donoghue D.J. (2019). Natural and environmentally friendly strategies for controlling *Campylobacter jejuni* colonization in poultry, survival in poultry products and infection in humans. In *Food safety in Poultry Meat Production*, (pp. 67-93). **Springer, Cham**.

#### **REVIEW ARTICLES:**

1. **Upadhyaya, I.**, Kollanoor-Johny, A., Darre, M. J., & Venkitanarayanan, K. (2014). Efficacy of plant-derived antimicrobials for reducing egg-borne transmission of *Salmonella* Enteritidis. *Journal of Applied Poultry Research*, doi: 10.3382/japr.2014-00941.
2. Upadhyay, A., **Upadhyaya, I.**, Kollanoor-Johny, A., & Venkitanarayanan, K. (2014). Combating pathogenic microorganisms using plant-derived antimicrobials: a mini-review on the mechanistic basis. *Biomed Research International*. <http://dx.doi.org/10.1155/2014/761741>.

#### **PUBLISHED ABSTRACTS :**

1. **Upadhyaya, I.**, Abhinav Upadhyay, Anup Kollanoor Johny, Michael Darre and Kumar Venkitanarayanan. Food-grade molecules reduce *Salmonella* Enteritidis adhesion to and invasion of primary chicken oviduct epithelial cells *in vitro* by down-regulating virulence gene expression. **2012 IFT Annual Meeting, Las Vegas, NV**. Poster presentation.
2. **Upadhyaya, I.**, Abhinav Upadhyay, Anup Kollanoor Johny, Sangeetha Ananda Baskaran, Shankumar Mooyottu, Michael Darre and Kumar Venkitanarayanan. Efficacy of plant-derived compounds for rapid inactivation of *Salmonella* Enteritidis on shell eggs. **2012 IFT Annual Meeting, Las Vegas, NV**. Poster presentation.
3. A. Upadhyay, **I. Upadhyaya**, A. K. Johny, S.A. Baskaran, S. Mooyottu, D. Karumathil, K. Venkitanarayanan. Inactivation of *Listeria monocytogenes* on skinless frankfurters by plant-derived antimicrobial compounds alone or in combination with hydrogen peroxide. **2012 IFT Annual Meeting, Las Vegas, NV**. Poster presentation.

4. A. Upadhyay, **I. Upadhyaya**, A. K. Johny, K. Venkitanarayanan. Antibiofilm effect of plant-derived antimicrobials on *Listeria monocytogenes*. **2012 IFT Annual Meeting, Las Vegas, NV**. Oral presentation.
5. A. Upadhyay, **I. Upadhyaya**, A. K. Johny, S. Mooyottu, K. Venkitanarayanan, Inactivation of *Listeria monocytogenes* on cantaloupes by plant-derived antimicrobial compounds alone or in combination with hydrogen peroxide. **2012 IFT Annual Meeting, Las Vegas, NV**. Oral presentation.
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7. S. A. Baskaran, A. Upadhyay, A.K. Johny, **I. Upadhyaya**, S. Mooyottu, M. A. R. Amalaradjou and K. Venkitanarayanan. 2012. Efficacy of trans-cinnamaldehyde, carvacrol and  $\beta$ -resorcylic acid for killing *Escherichia coli* O157:H7 on apples. **2012 IFT Annual Meeting, Las Vegas, NV**. Poster Presentation.
8. S. A. Baskaran, A. Upadhyay, **I. Upadhyaya**, V. Bhattaram, K. Venkitanarayanan, (2012). Efficacy of Octenidine hydrochloride for reducing *E. coli* O157:H7, *Salmonella* spp. and *L. monocytogenes* on cattle hide. **2012 IFT Annual Meeting, Las Vegas, NV**. Poster presentation.
9. **Upadhyaya, I**, A. Upadhyay. A. K. Johny, S. Mooyottu, S. A. Baskaran, H. Yin, D. Schreiber, M. Khan, M. Darre, Curtis, P. A and K. Venkitanarayanan. Effect of *Trans* Cinnamaldehyde in reducing egg-borne transmission of *Salmonella* Enteritidis *invitro* and *invivo*. **2013 PSA annual meeting, San Diego, CA**. Oral presentation.
10. **Upadhyaya, I**, A. Upadhyay. A. K. Johny, D. Schreiber, S. Mooyottu, S. A. Baskaran, H. Yin, M. Khan, M. Darre, and K. Venkitanarayanan. Reducing egg-borne transmission of *Salmonella* Enteritidis in layer chickens by in-feed supplementation of *trans*-cinnamaldehyde. **2013 CVB-ASM Regional meeting, University of Connecticut, CT**. Poster presentation.
11. **Upadhyaya, I**, D. Karumathil, A. Upadhyay, H. Yin and K. Venkitanarayanan. Inactivation of *Salmonella* Typhimurium, *Salmonella* Bredeney, and *Salmonella* Tennessee in peanut butter using combination of heat and trans cinnamaldehyde. **2013 IFT Annual Meeting, Chicago, IL**. Oral presentation.
12. A. Upadhyay, **I. Upadhyaya** and K. Venkitanarayanan. Inactivation of *Listeria monocytogenes*, *Escherichia coli* O157:H7 and *Salmonella* spp. on cantaloupes by Octenidine hydrochloride. **2013 IFT Annual Meeting, Chicago, IL**. Poster presentation.
13. A. Upadhyay, **I. Upadhyaya**, D. Karumathil, H. Yin, S. Mooyottu, M. Nair, V. Bhattaram, G. flock, A.K. Johny, and K. Venkitanarayanan. Control of *Listeria monocytogenes* on skinless frankfurters by coating with plant-derived antimicrobials. **2013 IFT Annual Meeting, Chicago, IL**. Poster presentation.
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15. A. Upadhyay, **I. Upadhyaya** and K. Venkitanarayanan. Control of *Listeria monocytogenes* virulence using beneficial gut microbiota. **2013 IFT Annual Meeting, Chicago, IL**. Poster presentation.

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17. **Upadhyaya, I.**, A. Upadhyay, H. Yin, Meera Nair, D. Karumathil, V. Bhattaram, Jianping Li, M. I. Khan, A. Kollanoor-Johny, M. J. Darre, A. Donoghue, D. Donoghue and K. Venkitanarayanan. Effect of  $\beta$ -resorcylic acid and Chitosan on reducing *Salmonella* Enteritidis colonization in 21-day-old broiler chicks. **2014 PSA Annual meeting, Corpus Christi, TX.** Poster presentation.
18. **Upadhyaya, I.**, A. Upadhyay & K. Venkitanarayanan. Efficacy of fumigation with plant-derived antimicrobials in reducing *Salmonella enterica* serovar Enteritidis on Shelled Eggs. Presented at the **2014 IFT Annual meeting, New Orleans, LA.** Poster presentation.
19. M. S. Nair, A. Upadhyay, **I. Upadhyaya**, A. Kollanoor-Johny and K. Venkitanarayanan. Inhibition and Inactivation of *Listeria monocytogenes* and *Escherichia coli* O157:H7 Biofilms by Selenium. Presented at the **2014 IFT Annual meeting, New Orleans, LA.** Oral presentation.
20. **Upadhyaya, I.**, C. Chen, A. Upadhyay, H. Yin, M. S. Nair, M. I. Khan, M. J. Darre, A. M. Donoghue, D. J. Donoghue and K. Venkitanarayanan. Effect of in-feed supplementation of *trans*-cinnamaldehyde and caprylic acid on chicken cecal microbiome in response to *Salmonella* Enteritidis. **2015 PSA Annual meeting, Louisville, KY.** Oral presentation.
21. H. Yin, C. Chen, **I. Upadhyaya**, A. Upadhyay, S. Fancher, J. Li, M. S. Nair, S. Mooyottu, M. I. Khan, M. J. Darre, A. M. Donoghue, D. J. Donoghue, and K. Venkitanarayanan. Efficacy of in-feed supplementation of plant-derived antimicrobials in reducing aflatoxicosis in chickens. **2015 PSA Annual meeting, Louisville, KY.** Oral presentation.
22. H. Yin, C. Chen, **I. Upadhyaya**, M. J. Darre, A. M. Donoghue, D. J. Donoghue, and K. Venkitanarayanan. Phytochemicals reduce aflatoxin-induced toxicity in chicken embryos. **2015 PSA Annual meeting, Louisville, KY.** Oral presentation.
23. M. S. Nair, P. Lau, K. Belskie, S. Fancher, C. Chen, D. P. Karumathil, H. Yin, F. Ma, Y. Liu, **I. Upadhyaya**, A. Upadhyay and K. Venkitanarayanan. Enhancing the thermal destruction of *Escherichia coli* O157:H7 in ground beef patties by natural antimicrobials. **2015 Annual meeting of the American Meat Science Association, Lincoln, NE.** Poster presentation.
24. S. Mooyottu, G. Flock, A. Upadhyay, **I. Upadhyaya**, and K. Venkitanarayanan. Carvacrol reduces *C. difficile* associated disease without inducing gut dysbiosis in a mouse model **ASM, 2015 Annual Meeting in New Orleans, Louisiana, May 30-June 2, 2015.**
25. **Upadhyaya I.**, S. Fancher, H. Yin, M. S. Nair, C. Chen, D. Karumathil, V. Bhattaram, A. Upadhyay, M. Muiyarrikkandy, M. Khan, M. J. Darre, A. Donoghue, D. Donoghue and K. Venkitanarayanan. Reducing *Salmonella* Heidelberg colonization in 21-day-old broiler chicks by in-feed supplementation of  $\beta$ -resorcylic acid and *trans*-cinnamaldehyde. **Accepted for presentation at 2016 PSA Annual meeting, New Orleans, LA.** Poster presentation.
26. **Upadhyaya, I.**, Yin, H., Nair, M., Chen, C., Lang, R., Darre, M., Venkitanarayanan, K. (2016). Inactivation of *Salmonella* Enteritidis on shell eggs by coating with phytochemicals. **Accepted for presentation at 2016 PSA Annual meeting, New Orleans, LA.** Poster presentation.
27. Pellissery, A. J., Nair, M. S., Z. Helal, C. Chen, J. Li, **Upadhyaya, I.**, M. J. Darre, M. I. Khan and K. Venkitanarayanan. Antiviral effect of carvacrol against Avian Influenza virus in an in ovo infection model. **Accepted for presentation at 2016 PSA Annual meeting, New Orleans, LA.** Oral presentation.



28. H. Yin, **Upadhyaya, I.**, C. Chen, A. Upadhyay, J. Wegrzyn, M. J. Darre, D. J. Donoghue, A. M. Donoghue, K. Venkitanarayanan. Effect of in-feed supplementation of phytochemicals on the response of hepatic transcriptome to aflatoxin in broilers. **Accepted for presentation at 2016 PSA Annual meeting, New Orleans, LA. Oral presentation.**
29. M. S. Nair, F. Ma, P. Lau, **Upadhyaya, I.** and K. Venkitanarayanan. Resveratrol and Naringenin Inactivate *Escherichia Coli* O157:H7 in Apple Cider by Impairing Bacterial Cells and Down-Regulating Acid Resistance Genes. **2016 IFT Annual Meeting, Chicago.** Poster presentation.
30. Upadhyay, A., Donoghue, A.M., Arsi, K., Wagle, B.R., **Upadhyaya I.**, Shrestha S., Rath, N.C., and Donoghue, D.J. Phytochemicals reduce *Campylobacter jejuni* colonization factors and transcription of virulence genes *in vitro*. **2016 International Symposium on Alternatives to Antibiotics. Poster presentation.**
31. **Upadhyaya, I.**, H. Yin, J. Gidden, J. O. Lay Jr., A. M. Donoghue, D. J. Donoghue, M. Darre, K. Venkitanarayanan: Heat Stability of Carvacrol and Trans-cinnamaldehyde during Commercial Manufacturing Temperatures in Chicken Feed. **2017 PSA Annual meeting, Orlando, FL. Oral presentation. Poster presentation.**
32. **Upadhyaya, I.**, A. Upadhyay, K. Arsi, R. Liyanage, A. M. Donoghue, N. C. Rath, D. J. Donoghue. Plant-derived Antimicrobial Eugenol Modulates *C. jejuni* Proteome and Virulence critical for Colonization in Chickens. **2017 PSA Annual meeting, Orlando, FL. Poster presentation.**
33. A. Upadhyay, K. Arsi, B. R. Wagle, S. Shrestha, **Upadhyaya, I.**, K. Bhargava, A. M. Donoghue, and D. J. Donoghue. In-water supplementation of Trans-cinnamaldehyde nanoemulsion reduces *Campylobacter jejuni* colonization in broiler chickens. **2017 PSA Annual meeting, Orlando, FL. Oral presentation.**
34. A. Upadhyay, B. R. Wagle, S. Shrestha, **Upadhyaya, I.**, K. Arsi, K. Bhargava, A. M. Donoghue, and D. J. Donoghue. Antimicrobial wash with Trans-cinnamaldehyde nanoemulsion reduces *Campylobacter jejuni* on chicken skin. **2017 PSA Annual meeting, Orlando, FL. Poster presentation.**
35. B. R. Wagle, A. Upadhyay, K. Arsi, **Upadhyaya, I.**, S. Shrestha, P. J. Blore, A. M. Donoghue, and D. J. Donoghue. Phytochemicals reduce biofilm formation and inactivates mature biofilm of *Campylobacter jejuni*. **2017 PSA Annual meeting, Orlando, FL. Oral presentation.**
36. **Upadhyaya, I.**, K. Arsi, B. R. Wagle, S. Shrestha, A. Upadhyay, A. Donoghue, C. Coon, M. Schlumbohm, J. Trushenski, C. Owens-Hanning, M. Riaz, M. Farnell, A. Davis, A. Fanatico, D. Donoghue. Dry-extrusion of Asian carp to supplement natural methionine in organic poultry production. **2018 PSA Annual meeting, San Antonio, TX. Poster presentation.**
37. B. R. Wagle, A. Upadhyay, **Upadhyaya, I.**, K. Arsi, S. Shrestha, R. Liyanage, K. Venkitanarayanan, A. Donoghue, and D. Donoghue. Phytochemicals modulate *Campylobacter jejuni* proteome critical for biofilm formation. **2018 PSA Annual meeting, San Antonio, TX. Oral presentation.**
38. S. Shrestha, B. R. Wagle, A. Upadhyay, K. Arsi, **Upadhyaya, I.**, A. Donoghue, and D. Donoghue. Efficacy of peracetic acid and zinc in reducing *Campylobacter jejuni* on chicken skin. **2018 PSA Annual meeting, San Antonio, TX. Oral presentation.**
39. A. Upadhyay, **Upadhyaya I.**, S. Shrestha, K. Arsi, S. Shrestha, A. Donoghue, and D. Donoghue. Whole-genome sequencing and virulence characterization of *Campylobacter jejuni* strains isolated from poultry. **2018 PSA Annual meeting, San Antonio, TX. Poster presentation.**

40. **Upadhyaya I.**, K. Arsi, B. R. Wagle, S. Shrestha, A. Upadhyay, D. Donoghue, C. Coon, C. Owens-Hanning, B. A. Mallmann, J. Caldas-Cueva, A. Fanatico, A. Donoghue. Bigheaded Carp-based fishmeal as a potential methionine source for organic poultry: Effect on meat quality characteristics in market age broilers. **2019 PSA Annual meeting, Montreal, ON, Canada. Poster presentation.**
41. B. R. Wagle, S. Shrestha, K. Arsi, D. Marasini, A. M. Donoghue, **Upadhyaya I.**, A. Upadhyay, and D. Donoghue. Effect of eugenol and trans-cinnamaldehyde on *Campylobacter jejuni* cecal colonization, proteome and gut microbiome profile in broiler chickens. **2019 American Society for Microbiology Annual meeting, San Francisco, CA. Poster presentation.**
42. B. Balasubramanian, J. Xue, **I. Upadhyaya**, Y. Luo & A. Upadhyay. Antibiofilm efficacy of eugenol nanoemulsion against *Listeria monocytogenes*. Graduate student research Forum, **CAHNR**, Spring 2021. State wide.
43. B. Balasubramanian, J. Xue, **I. Upadhyaya**, Y. Luo, and A. Upadhyay. Eugenol modulates *Listeria monocytogenes* proteome and virulence factors critical for biofilm formation. **Institute of Food Technologists, 2021. Oral Presentation. National.**
44. 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.**
45. Shah, T., Balasubramanian, B., **Upadhyaya, I.**, Venkitanarayanan, K., Upadhyay, A. (2021). Effect of Trans-cinnamaldehyde, Eugenol and Carvacrol on *Salmonella* Enteritidis proteome critical for colonization in chickens. **Presentation/Published abstract- Poultry Science Association Virtual Annual Meeting, July 19-22, 2021.**
46. Shah, T., Balasubramanian, B., **Upadhyaya, I.**, Venkitanarayanan, K., Upadhyay, A. Plant-derived compounds modulate *Salmonella* Enteritidis proteome critical for colonization in chickens. The conference of Research Workers in Animal Diseases (**CRWAD**), **December, 2021.** Annual meeting.
47. Allen, J., Balasubramanian, B., Rankin, K., Shah, T., Donoghue, A., **Upadhyaya, I.**, Luo, Y., Upadhyay, A. Trans-cinnamaldehyde nanoemulsions reduces *Salmonella* Enteritidis survival and trans-shell migration on eggs without affecting egg color or embryo development. **Poultry Science Association, 2022** Annual meeting.

#### Other publications/ creative products/media reports:

1. **I. Upadhyaya:** Farm worker training: A Day in the life of a farm worker: Part I: Safe Harvesting Practices. Produced, scripted and narrated. Released in August 2022. <https://www.youtube.com/watch?v=NXLx2FZyk-U&t=17s>.
2. **I. Upadhyaya:** Farm worker training: A day in the life of a farm worker: Part II: Safe Post-Harvest Practices. Produced, scripted and narrated. Released in August 2022. <https://www.youtube.com/watch?v=PjZ629VEPts>.
3. **Best Practices for Cooking and Storing Meats** -#AskUConnExtension, scripted and narrated. Released in June 2021. <https://www.youtube.com/watch?v=Wiu63yMDmis>
4. **Food Safety Expert opinion:** Spring on the Shoreline. Connecticut Digging In- How to start a vegetable garden in your own backyard. Canning. *Zip06 Magazine*. April 2021. Pg 17. <https://www.zip06.com/Assets/iMag/SpringontheShoreline-2021/>
5. **I. Upadhyaya:** Farmer Q & A food safety video. Produced, scripted and narrated. Released in April 2021. <https://www.youtube.com/watch?v=2uTxVY9b7EE&t=205s>
6. **Food Safety Expert opinion:** Food safety during Thanksgiving. *NBC-CT news*. Featured on November 24<sup>th</sup> 2020, 5.30 pm NEWS.
7. S. Ghimire, J. Martin, S. Stearns, and **I. Upadhyaya**. Guest Commentary: Sustainable Food Success Stories From Connecticut. Writer, *Ag Web/Farm Journal*. Internet. (November 1, 2020).

<https://d3lmx47ynt7pur.cloudfront.net/news/education/guest-commentary-sustainable-food-success-stories-connecticut>

8. **Educator Spotlight:** Highlights of Extension -UConn CAHNR:2020-2021. <http://cag.uconn.edu/ces/highlights/2020/index.html> Pg. 26-27.
9. Blog post during COVID-19 Pandemic on Food Safety. Writer, Food Safety and COVID-19, internet (March 26, 2020)
10. Blogpost- food safety resources during pandemic. Writer, Food safetyresources for farmers, internet (March 19, 2020)
11. Blog post – Pandemic resources. Writer, Food Safety with COVID-19 -Resources for food businesses. Internet.(March 18, 2020)
12. Blog post – Grower consideration. Writer, Considerations for Fruit and Vegetable Growers related to coronavirus – CT.Internet. (March 17, 2020)
13. **Upadhyaya I.** (Fall 2018). Improving poultry gut health to produce safe food products. TPA Newsletter
14. **Upadhyaya I.** (Spring 2019). Improving poultry health: Role of gut barrier and effect of antibiotic. TPA Newsletter.

### AWARDS AND RECOGNITIONS.

1. **Invited Presentation:** Food-grade molecules reduce *Salmonella* Enteritidis adhesion to and invasion of primary chicken oviduct epithelial cells *in vitro* by down-regulating virulence gene expression at the Annual meeting of the Institute of Food technologists held in June 2012 at Las Vegas, NV.
2. **Winner** – Z. John Ordal Graduate Student Research Paper Oral Competition, Annual meeting of the Institute of Food Technologists, July 2013, Chicago, IL.
3. **Winner** – Nutmeg (Connecticut Chapter) IFT Graduate Scholarship April 2013.
4. **Winner** – Graduate Research excellence award (oral presentation) in poultry products and food safety, presented at the Annual meeting of the Poultry Science Association held in July 2013 at San Diego, CA.
5. **Recipient** of Jones-Hamilton travel grant for attending the Annual meeting of the Poultry Science Association in July 2013 at San Diego, CA.
6. **Winner-** Best oral presentation award at Graduate Research Forum, College of Agriculture and Natural Resources, University of Connecticut, April 2013.
7. **Winner** – Dr. Jerry Yang Scholarship for excellence in research, University of Connecticut (2013-2014).
8. **Winner** - Graduate research excellence award in poultry products and food safety at the Annual meeting of the Poultry Science Association, July 2014, Corpus Christi, TX.
9. **Winner** - Student Voice Travel award to attend the National Agricultural Biotechnology Council annual meeting held in October 2014 at Ithaca, NY.
10. **Recipient** of Maurice-Stein Graduate Fellowship, Poultry Science Association 2014.
11. **Graduate Student featured** in Naturally@UConn. <http://naturally.uconn.edu/2014/07/23/meet-graduate-student-indu-upadhyaya/>.
12. **Graduate Research featured** in Naturally@UConn. <http://naturally.uconn.edu/2014/11/25/graduate-student-brings-experience-as-a-practicing-vet-to-her-efforts-to-reduce-salmonella-in-poultry/>.
13. **Phi Kappa Phi Honor Society induction**, Chapter 59, 2014.

14. **Winner** – College of Agriculture, Health and Natural Resources, UConn, Graduate Student Research Award 2015.

### CONSULTING/VISITING PROFESSORSHIPS

1. **Adjunct faculty** - Department of Fisheries, Animal and Veterinary Sciences, University of Rhode Island. As part of PhD advisory committee of student Julie Bosland.
2. **Lanxess Corporation** - Executed an NDA to offer scientific consultant services on poultry safety.
3. **Smart feed company**– Guiding the startup company on food safety regulations. This includes navigating various HACCP requirements, animal food preventive controls requirement and other safety advice.

### EDUCATIONAL/OUTREACH SERVICES

1. **Attended Webinar** to address meat slaughter and meat processing. (April 2021)
2. **Produce Safety Alliance Grower trainings**, Jan 2020, May 2020, January 2021, March 2021, February 2022.
3. **Virtual Farmer Counseling Sessions**. (January 2021 - March 2021).
4. **Meat and Poultry HACCP training**, in-person in November 2019, virtual December 2020, October 2021.
5. **Invited educator** - Preventive controls qualified individual (PCQI), URI. November 2020.
6. **Connecticut Poultry Association meeting** – attended stakeholder meeting February 2020.
7. **Invited educator** – Produce safety grower training -URI, January 2020.
8. **Invited educator**- Dairy Food Safety Training Workshop – January 2020.
9. **CT Vegetable and Small Fruit Growers Meeting**, Presenting a booth for UConn Extension food safety, January 2020.
10. **Farm to School Implementation Meeting**, University of Connecticut (November 6 -7, 2019)
11. **On-Farm Readiness Review (OFRR)** – 11 farm visits as part of FDA grant in 2019-2020.
12. **Networking at Farm Bureau 100<sup>th</sup> annual meeting**, October 2019
13. **Collaborating on Sea Food HACCP training**, September 2019.
14. **Food Safety Basics** – guest lecture to 4H students – Food revolution week August 2019.
15. **Invited talk** – CT-Northeast Organic Farming Association 38<sup>th</sup> winter conference (State), FSMA for small farms: Produce safety rule update, Middletown, CT. March 2020.
16. **Invited talk** – Northern Connecticut Ag Summit (State), CT Meat and Poultry regulations and HACCP, Enfield, CT. February, 2020.
17. **Invited educator - Produce Safety Alliance** curriculum course audited and taught at New Hampshire (December 2019) and Rhode Island (January 2020) (**Regional**). Approximately 40 farmers attended 2 trainings

### PROFESSIONAL SERVICES

#### Tennessee Tech University (TTU)

- Strategic planning implementation committee TTU

- Graduate research planning committee TTU
- Diversity committee TTU
- Spring 2019 and Fall 2018 clinics TTU
- Career Fair Fall 2018 TTU
- Scholarship Committee -2019

#### **University of Connecticut**

- **Graduate committee** – Julie Bosland URI, Ph.D. student, Kimberly Rankin, UConn-ANSC, MS student
- **Search Committee** - Member, Search committee for Evaluation Specialist- March – July 2021.
- **Search Committee** Member, Search committee for 2 Program specialists, June-August 2021.

#### **State:**

- Tennessee Poultry Association (2018 -2019)
- Advisor, Advisory board member of CT Department of Public Health -Food safety Advisory committee, Department of Public Health, (October 1, 2020 – Present).

#### **Regional:**

- Northeast Center to Advance Food Safety, State Representative (January 1, 2020 - Present).
- South east SARE (2016 to present)
- Served as a judge for “Poultry Products and Safety” section student competition at SPSS (Southern Poultry Science Society) annual meeting, Atlanta, Georgia, January 2019.

#### **National:**

- Niche Meat Processor Assistance Network, State affiliate/representative (April 29, 2020 - Present).
- Member of board of directors of Poultry Science Association (PSA) hatchery (2014-2016).
- Judge at Invention Convention, Charles H Barrows STEM Academy, Storrs, CT, March 2015-2016.
- Served as Moderator and Judge for “Microbiology and Food Safety” section student competition at 2015 PSA Annual meeting, Louisville, KY.
- Served as Moderator and Judge for “Processing and Products” section student competition at 2015 PSA Annual meeting, Louisville, KY.
- Served as Judge for “Microbiology and Food Safety” section student competition at 2016 PSA Annual meeting, New Orleans, LA.
- Served as Judge for “Processing and Products” section student competition at 2016 PSA Annual meeting, New Orleans, LA.
- Served as Moderator for “Animal Well-Being and Behavior” section student competition at 2018 PSA annual meeting, San Antonio, TX.
- Poultry science membership committee – 2014- present
- Poultry science hatchery committee – 2014- present

### **PEER REVIEW SERVICE**

- **USDA Panel Reviewer** - USDA-NIFA-HSI Educational grants program – June 2018
- **Associate Editor** – BMC Veterinary Research.
- **Editorial Board Member** – ScienceVier Journals.

- **Editorial Board Member** – Current Research in Poultry Science (Science Alert).
- **Track Team Reviewer** for Food Microbiology Symposia proposals- 2017 and 2018 Annual IFT meetings.
- **Reviewer** for the Food Microbiology Division's Technical Research Paper abstracts -2017 and 2018 Annual IFT meetings.

### **REVIEWED MANUSCRIPTS**

- BMC Veterinary Research - BioMed Central
- Food Control –Elsevier Publication
- Food Microbiology – Elsevier Publication
- Foodborne Pathogens and Diseases- Mary Ann Lieber Inc., Publishers
- Poultry Science – Oxford Journals
- International Journal of Food Microbiology – Elsevier Publication
- International Journal of Biological Macromolecules – Elsevier Publication
- British Microbiology Research Journal – Science domain International
- Microorganisms – MDPI Journals
- International Journal of Molecular Sciences - MDPI Journals
- Foods - MDPI Journals
- Veterinary Sciences - MDPI Journals

### **PROFESSIONAL DEVELOPMENT WORKSHOPS**

1. Characterization of Microbial communities by 16S rRNA gene sequencing: Workshop on laboratory techniques in Microbiology, Department of Molecular and Cell Biology, University of Connecticut, June 2014.
2. Operations of the Illumina MiSeq: Workshop on laboratory techniques in Microbiology, Department of Molecular and Cell Biology, University of Connecticut, January 2014.
3. Whole genome sequencing of small genomes using Illumina MisSeq: Workshop on laboratory techniques in Microbiology, Department of Molecular and Cell Biology, University of Connecticut, January 2014.
4. Case Study method of Teaching Food Microbiology and Safety, University of Connecticut, July 2014.
5. mRNA-Seq Library Preparation and Sequencing on the Illumina NextSeq 500: Workshop in Center for Genome Innovation, CGI, University of Connecticut, July, 2015.
6. RNA-Seq Data Analysis: Workshop in Center for Genome Innovation, CGI, University of Connecticut, July, 2015

### **PROFESSIONAL AFFILIATIONS**

- Poultry Science Association (PSA, 2012 to present)
- Institute of Food Technologists (IFT, 2011 to present)
- American Society for Microbiologists (ASM, 2012 to present)

- American Society for the Advancement in Science (ASAS, 2012 to present)
- International Association of Food Protection (IAFP, 2013 to present)
- Sustainable Agriculture Research and Education Program (SARE, 2014 to present)
- Tennessee Poultry Association (TPA, 2018 to August 2020)
- North East Centre to Advance Food Safety (NECAFS, 2019- to present)
- Niche Meat Processor Assistance Network, State affiliate/representative. (April 29, 2020 - Present).
- Niche meat processor assistance network. Professional. (April 2020 - Present).
- Northeast Center to Advance Food Safety, State Representative. (January 1, 2020 - Present).
- North East Centre to Advance Food Safety. Professional. (August 1, 2019 - Present).