

## Biographical Sketch

**Pratima Acharya Adhikari, PhD**  
Email: pratima.adhikari@msstate.edu

### EDUCATION AND TRAINING

**Doctor of Philosophy, Department of Poultry Science, 2017** **The University of Georgia**  
**Dissertation:** *Nutritional interventions in reducing Salmonella Enteritidis in laying hens; nutrition, microbiology and immunology aspect*  
Advisor: Woo Kyun Kim

**Master of Science, Department of Animal Science, 2013** **University of Manitoba**  
**Thesis:** *Phosphorus digestibility (true and standardized total tract) of canola meal (Brassica napus and Brassica juncea) in pigs*  
Advisor: Charles Martin Nyachoti

**Bachelor in Veterinary Science and Animal Husbandry, 2010** **Tribhuvan University**

### EMPLOYMENT

**Associate professor (Tenured)** **August 2023 – Current**  
Department of Poultry Science, Mississippi State University

**Assistant professor (Tenure-Track)** **August 2017-August 2023**  
Department of Poultry Science, Mississippi State University  
Research interests involve layer nutrition and management, laying hen housing, dietary strategies in different hen housing system, poultry intestinal health, and pathogen control strategies  
Appointment: 60% research, 40% teaching

**Graduate Research Assistant (Ph. D.)** **August 2013-May 2017**  
The University of Georgia

**Graduate Research Assistant (M.S.)** **September 2011-August 2013**  
University of Manitoba

**Undergraduate Internship Research** **August 2009-February 2010**  
Tribhuvan University

### TEACHING RESPONSIBILITY

#### Current Courses at Mississippi State University:

- Avian Anatomy and Physiology (PO 4844/6844) – 3 ch lecture/week and 2 ch lab/week, Spring Semester 2022 and 2023 (Co-Instructor; equal effort/credit, filling for a faculty that left)
  - Anatomy and physiology of the fowl with emphasis on morphology, structure, and function of the avian body

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- Management of Commercial Layers (PO 4313/6313)- 3 ch lecture/week, Fall Semester
  - Layer management, nutrition, physiology, equipment and housing, guest lecture
- Poultry Nutrition (PO 4413/6413) – 3 ch lecture/week, Fall Semester 2021 only (Co-Instructor; equal effort/credit, filling in for an absent faculty)
  - Poultry nutrition, digestion, absorption, ingredients, and feed formulation
- Poultry Nutrition (Protein and Amino Acids PO 8443) – Maymester course
  - Energy metabolism, Protein metabolism, feed formulation, literature critics, guest lecture
- Poultry Nutrition (Vitamins and Minerals PO 8043) – Maymester course
  - Vitamin metabolism, Mineral metabolism, guest lecture, literature critics
- Directed Individual Study (GA/PO 4000/4800)- various sections and hours of undergraduate student research training
- Research/Thesis/ Dissertation (PO 8000 and 9000) – various hours of graduate student research training
- Undergraduate Seminar (PO 3011/3021/4031/4041) – 1 hour of lecture/week; rotational between the faculties
  - Address and teach the current trends and problems in poultry science

### **Participatory Instructor at Mississippi State:**

- Scientific writing course (CVM 8973) – Participatory Instructor; 2020 Spring, 2021 Spring, and 2022 Spring; Instructor: Dr. Attila Karsi
  - Supervising participating graduate students for manuscript and proposal writing by setting weekly meetings before the actual class time taught by the instructor, proof-reading, reviewing panel

### **Active-Participant in Courses at Mississippi State:**

- Graduate Poultry Seminar (PO 8011) - 1 hr lecture; Instructor: Dr. Mary Beck (2017-2021), Dr. Kelley Wamsley (2022-current)
  - Student-led course on specially assigned current problems in poultry science
- Advanced Graduate Poultry Seminar (PO 8111) - 1 hr lecture; Instructor: Dr. Mary Beck (2017-2021), Dr. Kelley Wamsley (2022-current)
  - Student-led course on specially assigned current problems in poultry science

### **Guest Lectures in Mississippi State:**

- Commercial Poultry Production (PO 3313) – 2021 Fall, 2019 Fall, 2018 Fall
  - Provided general introductory lecture on commercial layers and pullets
- Animal Agriculture and Society (ADS 1013) – 2018 and 2019 Spring
  - Provided an overview of standard agriculture practices in Nepal
- Poultry Nutrition (PO 4413/6413) - 2018 Fall
  - Provided a guest lecture on an overview of alternatives to antibiotics in poultry production
- Diseases of Poultry (PO 4033) – 2018 Spring

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- Delivered a lecture on the *Salmonella* Enteritidis challenge model that I worked at UGA

### Previous Courses at the University of Georgia

- Teaching Assistant for Poultry Nutrition (PO 3750) (Fall 2013, 2014, 2015, 2016) – graded quizzes and exams, organized labs, helped students with the lab and farm activities
- Teaching Assistant for Avian Anatomy and Physiology (PO 2020/2020-L) (Fall 2014, 2015) – organized lab and assisted the students with hands-on lab methods
- Teaching Assistant for Poultry Evaluation (PO 2040) (Fall 2016) – organized lab, assisted students with setting up the evaluation lab

### ADHIKARI LAB STUDENT TRAINED/CURRENT:

#### 1. UNDERGRADUATE RESEARCH TRAINING AND MENTORED (Researches are described later):

Student Name	Semester	Research Training and Additional Outcomes
Mackenzie Herrington	Jun. 23- current	Undergraduate worker
Maggie Parker	May 23- current	Undergraduate worker (Pre-Vet)
Jillian Gillum	Jun. 23- current	<i>Undergraduate Research Scholar Program</i> (Pre-Vet)
Elsianna Rodewald	May 22-May 23	Undergraduate worker
Julia Patrick	Feb 23-current	Undergraduate worker
Harper Bryan	Aug. 22-current	Undergraduate worker
Savannah Mahoney	Aug 22-current	Undergraduate worker
Abigail Carraway	Aug 22-Dec 2022	Undergraduate worker
Kelsey Bizzell	Apr 2022-Dec 2022	Undergraduate worker
Ruth Wallace	Feb 2022- current	<i>Undergraduate Research Scholar Program</i>
Mattie Graham	Aug 2021- May 2022	Undergraduate worker
Rodney Gerard Self	Jul 2021- May 2022	<i>Undergraduate Research Scholar Program</i>
Josh Morgan	June 2020-Dec 2021	Undergraduate worker
Kailey Strickland	Aug 2020-Dec 2020	Undergraduate worker; Medical Student at FSU
Marie Black-Watts	Aug 2020-Dec 2020	Undergraduate worker
Ashlyn McIntyre	Aug 2020-May 2021	<i>Undergraduate Research Scholar Program</i>
Robb Barr Oakes	May 2020-Dec 2020	DIS Student; Veterinary Student at MSU (2021-current)
Hannah Garvin	Jan 2020-May 2020	Undergraduate worker, <i>Pre-Vet</i>
Alexis Turnipseed	Mar 2019-Jul 2020	<i>Undergraduate Research Scholar Program</i> ; MS (Human Science), MSU

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Courtney Fancher	Jan. 2019-May 2019	DIS Student
Victoria Hodge	Aug. 2018 – Dec. 2019	<i>Undergraduate Research Scholar Program</i>
Anna Danya Brown	Aug. 2017-Sept. 2019	Undergraduate worker
Michael Tyler Fulton	Jan. 2018 – July 2018	Undergraduate worker

### 2. MAJOR PROFESSOR for the following Ph.D. Students at MSU:

#### **Current:**

1. Charis Waters – Summer 2023-Spring 2026 (Estimated graduation Spring 2026)

**Dissertation Title:** Evaluation of branched-chain amino acids in pullets and laying hen phases

2. Nelly Giovanna Cribillero– Spring 2022 – Fall 2024 (*Estimated graduation Fall 2024*)

**Dissertation Title:** Impact of exogenous enzymes supplementation on performance parameters, intestinal health, and the economic returns in pullet and laying hens fed alternative feed ingredients

3. Fozol Korim Ovi – Spring 2021- Fall 2023 (*Estimated graduation Fall 2023*)

**Dissertation Title:** Analysis of virulence factor, antimicrobial resistance gene, and zoonotic potential of avian pathogenic *Escherichia coli* isolates using complete genome analysis, embryo lethality assay, and experimental infection model in laying hen

### 3. MAJOR PROFESSOR for the following M.S. students at Mississippi State University:

#### **Current:**

1. Elsianna Rodewald – Fall 2022 – Fall 2023; Thrive in five programs. (*Estimated graduation May 2024*)

**Thesis Title:** Interaction of various exogenous enzyme and prebiotics combination in laying hen performance and egg qualities.

#### **Trained / Completed:**

1. Ishab Poudel – Fall 2020 – Summer 2023; Research Scholar at NC State University

**Dissertation Title:** Assessment of different feed additives as an alternative to *Salmonella* Enteritidis in laying hens

2. Rodney Gerald Self – Summer 2022- Summer 2023; Pursuing Vet School (MSU)

**Thesis Title:** Nutritional and managemental intervention strategies for pullet and laying hens.

3. Charis Waters- Fall 2021 – Spring 2023; Pursuing Ph. D. in Poultry Science (MSU)

**Thesis Title:** Role of ratios of limestone particle size and phytase to support late lay in single cycled laying hens – focus on eggshell quality and bone quality.

4. Milan Sharma – Summer 2018 – Spring 2020; Pursuing Ph. D. in Poultry Science (UGA)

**Thesis Title:** Effect of housing systems on egg safety, environment, hen health and well-being, gut health, and overall performance of White Leghorns W-36 and Hy-Line Brown hens.

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5. Ishab Poudel – Spring 2019 – Fall 2020, Pursuing Ph. D. in Poultry Science (MSU)  
**Thesis Title:** The effect of light-emitting diode light on the growth, egg production, egg quality, hormone concentration, and health of Hy-Line W-36 laying hens
6. Victoria Hodge\* - Spring 2020- Fall 2021 (all but thesis); Junior Research Analyst (LDC Company)  
**Thesis Title:** Effect of protease feeding on egg size and total egg solids in post-peak and late-lay of Hy-Line W-36 hens.

\*This student completed all the pertinent research information for an MS program. The student was also awarded for her abstract presentation at a national scientific meeting. She withdrew from the program in her expected semester of graduation (Fall 2021).

### COMMITTEE MEMBER FOR THE FOLLOWING STUDENTS:

Student Name	Degree Program	Graduation or Estimated date
Ragini Reddyvari	PhD (UConn)	Fall 2024
Hunter Mentges	MS	Fall 2024
Michael Carroll	MS	Fall 2024
Lauren Lindsey	MS	Fall 2022
Sabin Poudel	PhD	Summer 2023
Jiddu Joseph	MS	Summer 2023
Caleb Marshall	MS	Summer 2023
Priyanka Devkota	MS	Spring 2023
Maria Jose Alvarenga Ramirez	MS	Spring 2023
Andrew Brown	PhD	Summer 2021

### STUDENT AWARDS AND RECOGNITION IN RESEARCH AND MENTORING:

Student	Award
Elsianna Rodewald	<i>Certificate of Excellence, Undergraduate Student Research Certificate of Participation in PSA, PSA Travel Award, PSA 2023</i>
Ishab Poudel	<i>PSA Travel Award, PSA 2023</i>
Charis A. Waters	<i>Certificate of Excellence, IPSF 2023</i>
Ishab Poudel	<i>Young Scholar Award and Travel Award (World Poultry Congress 2022, Paris)</i>
Fozol Korim Ovi	<i>Young Scholar Award and Travel Award (World Poultry Congress 2022, Paris)</i>
Charis A. Waters	<i>Certificate of Excellence in PSA 2022 and Mississippi Poultry Association International Paper Scholarship 2022</i>
Milan K. Sharma	<i>Alltech Manuscript Award in IPSF 2022</i>
Milan K. Sharma	<i>Maurice Stein Fellowship Award in PSA 2022</i>
Rodney Gerald Self	<i>Jones-Hamilton Co. Undergraduate Student Travel Award and Undergraduate Student Research Certificate of Participation in PSA 2022</i>
Fozol Korim Ovi	<i>Certificate of Excellence in PSA 2021</i>
Ashlyn McIntyre	<i>Undergraduate Student Research Certificate of Participation in PSA 2021</i>
Victoria Hodge	<i>Certificate of Excellence in IPSF 2021</i>
Milan K. Sharma	<i>Certificate of Excellence in IPSF 2020</i>
Michael Tyler Fulton	<i>Jones-Hamilton Co. Undergraduate Student Travel Award and Undergraduate Student Research Certificate of Participation in PSA 2018</i>

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### ADVISOR PROFESSOR FOR THE FOLLOWING INTERNATIONAL VISITING INTERNS:

1. USDA-FAS Fellow (Aug. 2023- Dec. 2023)
2. Jose Fernando Menjivar (University of Zamorano; Honduras) – Sept – Nov 2021

### POST-DOCTORAL/RESEARCH ASSOCIATE MENTORED/CO-SUPERVISED

1. Linan Jia, Post-Doctoral Associate (MS State University) – Jan 2022-current
2. Haley Nabors, Research Associate (MS State University) – Aug 2021-current
3. Nikhil Nuthalapati, Research Associate (MS State University; currently at University of Alabama) – Aug 2018 - Jun 2021

## SERVICE

### Public:

- Member of Junior Auxiliary of Starkville (Oktibbeha County, MS; Summer 2019-Spring 2021)
  - Serve on Backpack project (2019-2020)
  - Serve on Fundraising at Kentucky Derby Fundraising Event (2019)
  - Serve on TK Martin Center events (2019-2020)
  - Attended Kentucky Derby Fundraising Event (2018)
- Work directly with major egg-layer companies and their nutritionists (Cal-Maine Foods, Michael Foods, Versova, Rose-Acre Farm)
- Mississippi Poultry Association (2018-current)
  - Attend and assist Annual Convention (September, Destin, FL)
- Present seminars to the poultry industry and its members (see invited talks and abstract presentation section)
- Faculty Advisor, Nepalese Students Association, MS State University (2017-current)
- Student Advisor, Nepalese Students Association, University of Georgia (2013-2017)
- Member of Nepal Red Cross Society, Chitwan, Nepal (July 2005-June 2007)
- Member of Lions Club of Nepal, Lainchaur, Kathmandu, Nepal (August 2008-June 2009)
- Secretary in International Rotaract Club, Chitwan, Nepal (July 2008-July 2010).

### Professional Organization:

- Chair, *Broiler Research Award Selection Committee (PSA)*, 2023-current
- Proposal Reviewer, *Egg Industry Center (EIC)*, Spring 2023
- Grant Panel Reviewer, *Agriculture and Food Research Initiative (AFRI) Animal Nutrition, Growth and Lactation (A1231) program area*, 2022
- Proposal Reviewer, *Egg Farmers of Canada (EFC)*, 2021-current
- Proposal Reviewer, *Mitacs Accelerate Research Proposal, Montreal, Canada*, 2021-current.
- Proposal Reviewer, *Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and University of Guelph joint proposal* (2019-current)
- Proposal Reviewer, *Food for Agriculture and Research (FFAR; 2019-2021)*

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- Proposal Reviewer, *Southern SARE Research and Education grant* (2019-2021)
- Chair, *Maurice Stein Award Selection Committee* (2020 and 2021)
- Chair, *American Egg Board Award Selection Committee* (2020)
- Active Member, *Multistate Meeting Committee* NE-1442 (2018-2021)
- Committee Member, *Maurice Stein Award Selection Committee* (2018-2019)
- Committee Member, *American Egg Board Award Selection Committee* (2018-2019)
- Section Editor, Layer Management, *Journal of Applied Poultry Research* (2019-current)
- Reviewer as needed for manuscripts from the USDA-ARS, Starkville, MS (2018-current)
- Jr. Executive and active member, *Multistate Meeting Committee* NE-1942, 2018-current
- Reviewer as needed for manuscripts and research proposals from the MSU Poultry Science Department (2017-current)
- *Ad hoc* Reviewer, *Poultry Science Journal*, *Journal of Applied Poultry Research*, *Avian Pathology*, *Plos One*, *Frontiers in Veterinary Science*, *Canadian Journal of Animal Science* (2017-current)
- Member, *Southern Poultry Science Society* (2013-current)
- Member, *Poultry Science Association* (2013-current)
- Member, *World Poultry Science* (2013- current)
  - Poultry Science Association Annual Meeting
  - Assisted with the review of nutrition and metabolism, environment and management, and pathology abstracts (2017-current)
  - Served as a member of award committee, *National Chicken Council Broiler Research Award Selection Committee* (2021-current)
  - Served as a Judge for the nutrition section in Virtual Meeting (2021)
  - Served as Session Moderator (San Antonio, 2022, Montreal, 2019 and San Antonio, 2018)
  - Served as Student Competition Judge (Montreal, Canada, 2019)
  - Served as a Judge for a 5-minutes abstract competition (Montreal, 2019)
  - Served as reviewer for Jones Hamilton Undergraduate Travel Award (Montreal, 2019)
- International Poultry Scientific Forum (Atlanta, GA)
  - Served as Student Competition Judge (2018, 2019, 2020, 2022, 2023)
  - Served as Poster Session Moderator (2022)
  - Served as Student Competition Session Moderator (2019, 2020)
  - Member, *American Society of Animal and Dairy Science* (ADSA; 2011 – 2013)
  - Member, *Nepal Veterinary Council* (2010 – current)

### University:

- Serve on MS State IACUC (2023- current)
- Serve on University's Honor Code Council (2023-current)
- Attend and Judge MSU Undergraduate Research Symposium in Honors college every spring (2018-current)
- Judge MSU Teaching Workshop for Graduate Students (GTA level 1, 2, 3) (Spring 2023)
- Assist with visitors, interviewing students and industry collaborators tour to poultry farm (2018-current)
- Assist with Academic Insight on Saturday (Spring 2018, 2019, 2021, 2022)

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- Attend MSU Graduate Research Symposium (Spring 2018 and 2019)
- Attend and judge the Mississippi Academy of Sciences Student Research Symposium (2018, 2019, 2020)
- Level 1 graduate faculty (2017-current)

### College:

- Serve as a senator on the DAFVM faculty senate (Spring 2021-current) – Academic Affairs Committee
  - Task-force member of digital measures committee inside the senate (Spring 2022)
- Serve as a search committee for CALS Agricultural Microbiome tenure track assistant professor position (Fall 2022-Spring 2023)
- CALS Excellence in Teaching Award Selection Committee (Fall 2018- Spring 2021)
- Evaluated students in Student Networking Event for Senior Seminar Course in Agricultural and Biological Engineering Department (2018-2019).
- Attended CALS department head meeting in the absence of the department head (Sept. 2017)

### Department:

- Attend department Advisory Board Meetings (2018-current)
- Attend Craw-fish boil networking event every year (Spring 2018-current)
- Attend department faculty meetings (2017-current)
- Attend Graduate Student Seminar for Poultry Science Grads (Spring 2013 - Current)
- Provide Guest Lectures as needed in various PO and CALS courses (2017-current)
- Attend Zoetis Workshop on layers (November 2022)
- Attend Aviagen Day (February 2022)
- Renovation of facilities on MSU Poultry Research farm (2017-current)
- Search Committee Member, Extension Instructors (May and June 2022)
- Search Committee Member, Department Head (Spring 2022-Fall 2022)
- Attend meeting with Mississippi Power Association (Feb 2022)
- Search Committee Member, Nutrition faculty hiring committee (Fall 2021)
- Search Committee Member, General poultry science category (Fall 2021)
- Search Committee Member, Business Manager hiring committee (Summer 2021)
- Search Committee Member, Processing and Food Safety position hiring committee (Fall 2019)
- Search Committee Member, Reproductive Physiology position hiring committee (Spring 2019)
- Search Committee Chair, Research Associate position hiring committee (Summer 2018)
- Search Committee Member, Assistant Research Professor position hiring committee (Summer 2018)
- Assist with other research on PO farm (Adhikari lab assists other labs with chick placement, processing and live birds trials) and formulate different layer breed diets as needed on the farm.

## AWARDS AND HONORS

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1. July 2023. **Nominated** for PSA board of directors Poultry Science Association.
2. March 2023. Mississippi Agricultural and Forestry Experiment Station **\$1,500 travel grant** to 2023 NE1442 at Auburn University, Auburn.
3. March 2023. **Nominated** for the **PSA American Egg Board Research Award**. Poultry Science Association.
4. Feb 2023. **Nominated** for the **CALS MAFES Excellence in Research Award**.
5. August 2022. **Awarded** with the **MSU Gamma Sigma Delta Research Award**. The Honor Society of Agriculture, Mississippi State University.
6. July 2022. **Nominated and elected** as *Senior Executive* of the NE 1942 Multi-State group.
7. March 2022. **Nominated** for the **PSA Early Achievement Award for Research**. Poultry Science Association.
8. July 2021. **Nominated and elected** as *Jr. Executive of the NE 1942* Multi-State.
9. August 2019. Mississippi Agricultural and Forestry Experiment Station **\$1,500 travel grant** to 2019 NE1442 at University of Hawaii, Honolulu, Hawaii.
10. August 2018. Mississippi Agricultural and Forestry Experiment Station **\$1,500 travel grant** to 2018 NE1442 at Purdue University, Lafayette, IN.
11. July 2017. **Awarded** with *Maurice Stein Fellowship Award*, Poultry Science Association. \$1,000.
12. July 2017. **Awarded** with *Graduate Students Travel Award*, Poultry Science Association. \$500.
13. 2016. **Awarded** with *Phibro Animal Health Graduate Fellowship*, Phibro Inc. \$5,000.
14. 2016. *Graduate Studies Travel Award*, University of Georgia.
15. 2013. *PSA Alltech early manuscript submission Award*, Alltech, USA.
16. 2013. *Graduate Studies Travel Award*, University of Manitoba, Canada.
17. 2013. *Graduate Students Association Travel Award*, University of Manitoba, Canada.
18. 2007. *World Ambassador for peace*. World Carp Association, Nepal.
19. 2005- *Merit Scholarship* to pursue BVSc. and A. H., Tribhuvan University, Nepal.

## IN-KIND GIFTS, RENOVATIONS AND INDUSTRY COLLABORATION

2023. Instron Universal Testing System = \$23,000, funded by Mississippi Agriculture and Forestry Experiment Station Equipment grant
2022. Renovation of cage layer house = \$18,224, funded by Mississippi Agriculture and Forestry Experiment Station, NIFA-Hatch project
2022. Renovation and addition of newer A-Frame conventional layer cages = \$28,000, funded by Mississippi Agriculture and Forestry Experiment Station, NIFA-Hatch project
2020. Cal-Maine Foods Inc. = \$10,000 to procure new pullet cages at MS State University
2020. Alaso Equipment and Cage Company = \$10,000 to procure new pullet cages at MS State University
2018. Renovation of Cage-free floor and Free-Range house: from PI start-up funds = ~\$20,000
2019. Invited for Laying hen farm and organic feed Mill visit, organized by Hy-Line International and Devenish Nutrition.

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2017- current. Collaboration with several researchers, nutritionists, consultants and veterinarians in student's graduate research program committee since 2018 (Michael Foods, Cal-Maine Foods, Freemont Farms of IA, Wilson Vet. Co., AB Vista, Hy-Line International, DSM Nutrition, USDA-ARS)

### PROFESSIONAL DEVELOPMENT

- USDA-FAS Mentor for African fellows, organized by Mississippi State University. (August-Oct 2023)
- Attended seminar on "Proposal Budgets: Practical Tools for Building Your Budget and Justification," organized by the Office of Research and Economic Development at Mississippi State (Apr 20, 2022)
- Attended Aviagen Day, sponsored by Aviagen at Mississippi State (Feb 21-22, 2022)
- Teacher for Nepali virtual online class (2021-current)
- Attended and Presented in Poultry Leaders of Tomorrow, hosted by Adisseo at Mississippi State (Nov 17-19, 2021)
- Attended workshop on "Write Winning Grant Proposals," organized by MAFES (Jan 14, 2021)
- Faculty Advisor for Nepalese Students Association, MS State University (2017-current)
- Attended workshop on "Using Canvas Studio (ARC) Effectively in Canvas", organized by Information Technology System (ITS) MSU (Mar 20, 2020)
- Attended workshop on "Getting Started with WebEx," organized by Information Technology System (ITS) MSU (Mar 18, 2020)
- Attended workshop on "Convert Your Course to Canvas," organized by Information Technology System (ITS) MSU (Mar 18, 2020)
- Attended workshop on "Plagiarism in a Proposal is the Kiss of Death to a Research Career," organized by MSU (Jan 27, 2020)
- Attended CALS MAFES Award Luncheon (2018, 2019, and 2022)
- Attended workshop on "Getting Started with Your Online Program," organized by MS State Center for Distance Education (Feb 28, 2019)
- Attended Alabama Feed and Grain Meeting, Huntsville, AL (April 2018 and 2019)
- Attended Arkansas Nutrition Conference, Little Rock, ARK (September 2018 and 2019)
- Attended "Angus- Analyzing Sequencing Data," organized by UC-Davis, CA. (Jul 2018)
- Attended seminar on "A Primer in Federal Funding and Appropriations for Institutional Research and Outreach," organized by MAFES MSU (Nov 9, 2017)
- Attended seminar on "Organizational Tips for Grant Management," organized by CALS/MAFES MSU (Aug 31, 2017)
- Attended workshop on "Campus Resources Necessary for Research Success," organized by CALS/MAFES MSU (Aug 28, 2017)
- Attended CALS, New faculty Luncheon (Aug 27, 2017)
- Attended seminar on "New Faculty Mentoring session," organized by CALS MSU (Aug 20, 2017)

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- Attended workshop on “Evonik Doctoral Seminar Presentation,” organized by Evonik International. Isle of Palm, SC. (Sept 2016)
- Advisor for International Student Advisory Board, UGA (2016-2017)
- International Poultry Scientific Forum, Atlanta, GA (2013-current)
- International Poultry Expo, Atlanta, GA (2013-current)
- President for Nepalese Students Association, UGA (2014 -2015)
- Volunteer for Poultry Ventilation and Short-course Workshop, UGA (2014 and 2015)
- Volunteer for Ventilation and Management workshop, UGA (2014, 2015 and 2016)
- Poultry Science Association Annual Meetings (2013-present)
- Animal and Dairy Science Association Annual Meeting (2011-2013)

## POPULAR PRESS

1. Egg Industry Insight (Feb 23, 2022). **Article featuring research** “Colored lighting could positively impact cage-free layers”. <https://www.wattagnet.com/articles/44501-colored-lighting-could-positively-impact-cage-free-layers?v=preview>.
2. **Featured in MAFES discovers** (December 5, 2021). “Science that illuminates”. <https://www.mafes.msstate.edu/discovered/article.asp?id=221>
3. The Poultry Site (May 14, 2021). **Article featuring research** “New research examines the role of protease on layers and egg quality”. <https://www.thepoultrysite.com/news/2021/05/new-research-examines-the-role-of-protease-on-layers-and-egg-quality>
4. Watt Poultry USA (May 21, 2021). **Article featuring research** ”Researchers examine the role of protease and amino acid levels on hen performance and egg quality | WATTPoultry (wattagnet.com)”. <https://www.wattagnet.com/articles/42889-researchers-examine-the-role-of-protease-and-amino-acid-levels-on-hen-performance-and-egg-quality>
5. US Poultry and Egg Association (Mar 21, 2021). **Video interview** “Role of limestone ratios and phytase on production and eggshell quality in laying hens”. <https://www.youtube.com/watch?v=WDwzWAW7N0c&t=252s>
6. US Poultry and Egg Association (Jul 12, 2021). **Video interview** “Protease in Laying hens” <https://www.youtube.com/watch?v=wlwieBS3ad4>
7. **Featured in MAFES Discovers** (December 10, 2018). “Cage-free unit added to MSU poultry department”.

## RESEARCH PROJECTS AND FUNDING SOURCES

### *Hatch and CRIS Projects:*

**Special Cooperative Agreement with USDA; NP 103 (2018-current)**, “Environmental management and animal health as they relate to processing yields and food safety of broiler meat and table eggs”

**MSU PI: P. Adhikari** (Collaborators: L. Zhang, R. Ramachandran)

Funding amount ~ \$ 400,000/year. Adhikari’s split ~**100,000/year**.

**Hatch Funding CRIS project** – MIS 329280 (Jan 2018 – Dec 2022) “Nutrition and management strategies to overcome issues related to health, diseases and environment in laying hens and broilers

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**PI: P. Adhikari** (Collaborators: W. K. Kim, K. W. S. Wamsley, A. S. Kiess)

**Hatch Funding CRIS project** – (October 2022-December 2027) “Nutrition and management strategies to overcome issues related to production, health and environment in egg-laying hens”. MSU PI: **P. Adhikari** (Collaborators: W. K. Kim, K. Wamsley, L. Zhang, A. Sukumaran, B. Slominski). (Approved May 2022)

**Multistate project- NE-1942** (Formerly NE-1042/1442) “Poultry production systems and well-being: sustainability for tomorrow”

- Active project participant (July 2018 – Current)
- Attend annual meetings (2018 – Current)
- Junior Executive (2021-2022)
- Senior Executive (2022-2023)

### *Grants, Contracts-*

#### *Adhikari Cumulative Funding Details from September 2017-January 2023<sup>1</sup>:*

	Total (\$)	PI (\$)	Co-PI (\$)
<b>Total Applied</b>	<b>4,854,257</b>	<b>2,184,216</b>	<b>2,670,041</b>
<b>Total Received</b>	<b>2,801,123</b>	<b>8,18,082</b>	<b>1,983,041</b>

<sup>1</sup>Does not include Hatch/ CRIS and SCA funding.

**Total Funds Used for Undergraduate Research Specific Projects = \$ 200,000 (from URSP and other research funding)**

#### **Current Grants, Contracts – Specific for Undergraduate Research (Funded)**

August 2023-May 2023, CALS/MAFES Undergraduate Research Scholars Program (MSU). “Replacement of organic trace minerals in laying hens”. MSU PI: **P. Adhikari**; Undergraduate Student: Ruth Wallace, Major: Poultry Science. Funding Requested: **\$3,000**. Outcome: **Funded**.

August 2022- May 2023 CALS / MAFES Undergraduate Research Scholars Program (MSU). “Prevalence of E. coli and other bacteria in cage-free floor type housing.” MSU PI: **P. Adhikari**; Undergraduate Student: Ruth Wallace, Major: Poultry Science. Funding Requested: **\$3,000**. Outcome: **Funded**.

August 2021- May 2022 CALS / MAFES Undergraduate Research Scholars Program (MSU). “Detail assessment of hen behavior using a video camera in cage-free floor pen system.” MSU PI: **P. Adhikari**; Undergraduate Student: Rodney Self, Major: Poultry Science. Funding Requested: **\$3,000**. Outcome: **Funded**.

August 2020- May 2021 CALS / MAFES Undergraduate Research Scholars Program (MSU). “Role of perch material on perching behavior in hens housed in the cage-free system.” MSU PI: **P. Adhikari**; Undergraduate Student: Ashlyn McIntyre, Major: Poultry Science. Funding Requested: **\$3,000**. Outcome: **Funded**.

## Biographical Sketch

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August 2019- May 2020 CALS / MAFES Undergraduate Research Scholars Program (MSU). “Assessment of perch height in Hy-Line W-36 laying hens.” MSU PI: **P. Adhikari**; Undergraduate Student: Alexis Turnipseed, Major: Poultry Science. Funding Requested: **\$3,000**. Outcome: **Funded**.

August 2018- May 2019 CALS / MAFES Undergraduate Research Scholars Program (MSU). “Effect of split feeding to optimize calcium absorption in laying hens.” MSU PI: **P. Adhikari**; Undergraduate Student: Victoria Williams, Major: Poultry Science. Funding Requested: **\$3,000**. Outcome: **Funded**.

### ***Grants, Contracts and Unrestricted Gifts (Funded)***

May 2023, **CALS/MAFES Undergraduate Research Scholars Program (MSU)**. “Replacement of organic trace minerals in laying hens”. MSU PI: P. Adhikari. Funding requested: **\$3,000**. Outcome: **Funded**. (Undergraduate Research). *Type: CALS Internal*

May 2023, **BRI**. “Investigating the role of novel feed compound in mitigating *Salmonella* in layers,” MSU PI: **P. Adhikari**. Funding requested: **\$35,000**. Outcome: **Funded**. *Type: Industry, general MOA*.

January 2023, **Biomatrix**. “ Outcome: **Funded**. *Type: Industry, general MOA*.

November 2022, **CJ Bio**. “ Outcome: **Funded**. *Type: Specific memorandum of Agreement (SMOA) External Grant*

July 2022, **Tanager Holdings, LLC**. “Effect of supplementation of feed additive in mitigating CO2 and ammonia gas emissions and total minerals in excreta of laying hens”. MSU PI: K. Wamsley, Collaborators: **P. Adhikari** and D. Chesser. Funding requested: **\$6,500**. Adhikari’s split: **\$3,000**. Outcome: **Funded**. *Type: Industry, general MOA*

May 2022, **D-BASF**. “Effect of supplementation of prebiotics and essential oil blends in mitigating *Salmonella* Enteritis in laying hens.” MSU PI: **P. Adhikari**. Funding requested: **\$50,000**. Outcome: **Funded**. *Type: Industry, general MOA*

May 2022, **CALS/MAFES Undergraduate Research Scholars Program (MSU)**. “Prevalence of E. coli and other bacteria in cage-free floor type housing”. MSU PI: P. Adhikari. Funding requested: **\$3,000**. Outcome: **Funded**. (Undergraduate Research). *Type: CALS Internal*

May 2022, **Manitoba Egg Farmers and University of Manitoba**. “Novel bioactives of yeast: enzymatic release, identification and their prebiotic effects” PI: **P. Adhikari**, Co-PI: A. Rogiewich and B. Slominski (University of Manitoba sub-contract). Funding Requested: **\$32,000**. Outcome: **Funded**. *Type: Specific memorandum of Agreement (SMOA) External Grant*

April 2022, **US Poultry and Egg Association**. “Understanding the influence of branch-chain amino acid interaction on performance, feather quality, egg quality and mRNA gene expression of peak and post-peak laying hens,” PI: **P. Adhikari**, Co-PI: M. Elliot. Funding requested: **\$80,000**. Outcome: **Funded**. *Type: External Grant*

April 2022, **DSM Nutritional Products**. “Use of proteases and novel prebiotics on performance, nitrogen digestibility and ammonia production in laying hens,” PI: **P. Adhikari**. Funding requested: **\$ 66,704**. Outcome: **Funded**. *Type: Industry, general MOA*

March 2022, **DSM Nutritional Products**. “Use of novel prebiotics in mitigating *Salmonella* Enteriditis in W-36 hens,” PI: **Pratima Adhikari**. Funding requested: **\$30,000**. Outcome: **Funded**. *Type: Industry, general MOA*

August 2021, **Almond Board of California (ABC)**. “Impact of multi-carbohydrase enzymes supplementation on performance parameters, intestinal health and the economic returns in pullet and laying hens fed almond hulls,” PI: **P. Adhikari**. Funding requested: **\$174,147**. Outcome: **Funded**. *Type: External Grant*

## Biographical Sketch

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- May 2021, **CALS/MAFES Undergraduate Research Scholars Program (MSU)**. “Detail assessment of hen behavior using a video-camera system in cage-free floor pen system,” PI: P. Adhikari. Funding requested: **\$3,000**. Outcome: **Funded**. (Undergraduate Research). *Type: CALS Internal*
- April 2021, **BioMatrix International, MN**. “Use of prebiotics and probiotics blend on mitigation of Salmonella,” PI: **P. Adhikari**. Funding requested: **\$14,000**. Outcome: **Funded**. *Type: Industry, general MOA*
- March 2021, **US Poultry and Egg Association**. “Role of ratios of limestone particle size and phytase to support late lay in single cycled laying hens – focus on eggshell quality and bone quality,” PI: **P. Adhikari**. Funding requested: **\$78,805**. Outcome: **Funded**. *Type: External Grant*
- January 2021, **National Science Foundation MRI**. “Accelerating proteomics and metabolomics research through the acquisition of an Orbitrap Eclipse mass spectrometer.” PI: Daniel Peterson, Co-PI: **P. Adhikari** and other 17 faculties from MSU. Funding requested: **\$1.4 M**. Outcome: **Funded**. *Type: Federal Grant*
- December 2020, **MAFES-Special Research Initiative grant, MSU**. “Development of a challenge model of avian *E. coli* infection in laying hen,” PI: **P. Adhikari**, Co-PI: A. Kiess. Funding requested: **\$49,926**. Outcome: **Funded**. *Type: Internal*
- August 2020, **CALS/MAFES Undergraduate Research Scholars Program (MSU)**. “Assessment of perching material (wood vs. metal) in Hy-Line W-36 laying hens,” PI: **P. Adhikari**. Funding requested: **\$3,000**. Outcome: **Funded**. (Undergraduate Research). *Type: Internal*
- August 2020, **Kerry Group Inc**. “Evaluation intestinal health in poultry through histology and immune cytokine analysis. PI: **P. Adhikari**. Funding requested: **\$22,000**. Outcome: **Funded**. *Type: Industry, general MOA*
- January 2020, **US Poultry and Egg Association**. “Use of comparative genomics and an in vitro screening approach to identify vaccine candidates for the food-borne pathogen *Campylobacter jejuni*,” PI: Li Zhang, Co-PI: **P. Adhikari** and A. Kiess. Funding requested: **\$55,000**. Outcome: **Funded**. *Type: Specific memorandum of Agreement (SMOA) External Grant*
- December 2019, **MAFES-Special Research Initiative grant, MSU**. “Investigation of novel lighting technology on egg production, melatonin-mediated immune functions, behavior and welfare in laying hens,” PI: **P. Adhikari**. Funding requested: **\$48,250**. Outcome: **Funded**. *Type: Internal*
- July 2019, **H2O Elite**, Assessment of novel water treatment equipment (H2Oelite) on production performance and mineral digestibility in broilers”, PI: K. Wamsley, Co-PI: **P. Adhikari** and T. Tabler. Funding Requested: **\$28,041**. Outcome: **Funded**. *Type: Industry, general MOA*
- August 2019, **US Poultry and Egg Association**. “Effect of protease enzyme on corn & soybean meal-based laying hen diet to reduce feed cost, improve egg quality & egg solids in post-peak & late lay,” PI: **P. Adhikari**. Funding requested: **\$ 62,250**. Outcome: **Funded**. *Type: External Grant*
- August 2019, **CALS/MAFES Undergraduate Research Scholars Program (MSU)**. “Evaluating the perch height preference on Hy-Line W-36 hens”, PI: **P. Adhikari**. Funding requested: **\$3,000**. Outcome: **Funded**. (Undergraduate Research). *Type: Internal*
- December 2018, **MAFES-Special Research Initiative grant, MSU**. “Effect of split feeding of calcium in laying hen eggshell strength, egg quality and calcium gene transporters,” PI: **P. Adhikari**. Funding requested: **\$ 49,750**. Outcome: **Funded**. *Type: Internal*
- August 2018, **CALS/MAFES Undergraduate Research Scholars Program (MSU)**. “Effect of split-feeding of calcium in laying hens,” PI: **P. Adhikari**. Funding requested: **\$3,000**. Outcome: **Funded**. *Type: Internal*

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January 2018, **Biovet SA company, Spain**. “Effect of feeding Alquerat Nebsui L in egg production, egg quality and gut health of Hy-Line W-36 hens”, PI: **P. Adhikari**. Funding requested: **\$ 45,000**. Outcome: **Funded**. Type: *Industry, general MOA*

December 2017, **MAFES-Special Research Initiative grant, MSU**. “Effect of housing systems on egg safety, environment, hen health and well-being, gut health and overall performance of White Leghorns and Hy-Line Brown hens,” PI: **P. Adhikari**, Co-PI: A. Kiess. Funding requested: **\$ 48,600**. Outcome: **Funded**. Type: *Internal*

### **Grants, Contracts (Submitted/Pending):**

June 2023. **USDA-NIFA**. “Interaction of leucine and isoleucine on performance, gut microbiome, bone health, welfare and sustainability of laying hen production.”. MSU PI: **P. Adhikari**. Collaborators: B. Oakley (Western University) and S. Weimer (University of Arkansas). Funding requested: **\$460,000**. Outcome: **Submitted/Pending**.

February 2023. **United Soybean Board Association**. “Branched chain amino acids (BCAA) in soybean meal is more balanced than other protein source such as corn distillers dried grains with soluble (cDDGS) fed to laying hens”. MSU PI: **P. Adhikari**. Funding requested: **\$104,000**. Outcome: **Submitted/Pending**.

### **Grants, Contracts (Not Funded):**

January 2023, **US Poultry and Egg Association**. “Role of phytase dosage and reduced dietary mineral levels in pullet performance and egg production in laying hens – focus on bone development and eggshell quality”. MSU PI: **P. Adhikari**. Collaborators: C. Rude (Devenish Nutrition) and D. Neves (Zinpro). Funding requested: **\$79,945**. Outcome: **Not Funded**.

August 2022, **Foundation for Food and Agriculture Research (FFAR)**. “Multifaceted approach (Genetics, metabolomics, engineering, nutrition, physiology, and management) to improve keel bone health in laying hens.” PI: W. K. Kim (University of Georgia), Collaborators: **P. Adhikari** and others from University of Georgia, NC State University, University of Arkansas, Penn State University, USDA-ARS. Funding requested: **\$3,000,000**. Adhikari’s split: **\$90,000**. Outcome: **Not Funded**.

August 2022, **USDA-NIFA**. “Identification of novel antigens to facilitate the development of a universal vaccine for preventing avian colibacillosis.” PI: L. Zhang (MSU), Collaborators: **P. Adhikari** and others from MSU, Auburn University and USDA, ARS. Funding requested: **\$650,000**. Outcome: **Not Funded**.

May 2022, **USDA-NIFA-AFRI**. “Enhance the sustainability of poultry industry by upcycling food waste into value-added, nutrient-rich feed additives.” PI: Y. Zheng (Kansas State University), Collaborators: **P. Adhikari** and other from NC State University, Iowa State University, University of Kentucky and Dodge City community college. Funding requested: **\$10,000,000**. Outcome: **Not Funded**.

April 2022, **ORED Advancing Collaborative Research Program (ACR), MSU**. “Multispectral machine vision technology with artificial intelligence for behavioral quantification and tracking of group-housed laying hens,” MSU PI: Y. Li, Collaborators: **P. Adhikari** and J. Chen. Funding requested: **\$65,000**. Outcome: **Not Funded**.

March 2022, **USAID**. “Partnership to enhance agriculture and forestry education, research, and outreach in Nepal: Higher education for leadership, innovation, and exchange (HELIX)”. PI: L. Rathbun (NC State University), Collaborators: **P. Adhikari** and others from NC State and MSU. Funding requested: **\$4.9M**. Type: Federal Grant. Outcome: **Not Funded**.

## Biographical Sketch

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- March 2022, **Addisseo France**. “Incubation and 14 d Grow-out feasibility trial with flavor compound”, PI: K. Wamsley, Collaborator: **P. Adhikari**. Funding requested: **\$114,995**. Outcome: **Not Funded**.
- December 2021, **Egg Industry Center**. “Multispectral machine vision technology with artificial intelligence for behavioral quantification and tracking of group-housed laying hens”, PI: Y. Li, Collaborator: **P. Adhikari** and J. Chen Funding requested: **\$87,000**. Outcome: **Not Funded**.
- November 2021. **US Poultry and Egg Association**. Role of phytase dosage and reduced dietary mineral levels in pullet performance and egg production in laying hens – focus on bone development and eggshell quality. MSU PI: **P. Adhikari**, Co-PI: C. Rude (Devenish) and, D. Neves (Zinpro). Outcome: Funding Requested: **\$70,000**. **Preproposal Accepted and Proposal Not Funded**.
- November 2021. **US Poultry and Egg Association**. Understanding the effects of Prebiotic and Probiotic supplementation on *Salmonella* translocation in feces, internal organs, and gut health of vaccinated and unvaccinated laying hens. MSU PI: **P. Adhikari**, Co-PI: I. Poudel (Ph.D. Student, Adhikari). Funding Requested: **\$80,000**. Outcome: **Preproposal Accepted and Proposal Not Funded**.
- October 2021, **MAFES-Special Research Initiative grant, MSU**. “Effects of oral *Salmonella* Enteritidis challenge and use of dietary additive on fecal shedding and organ translocation in laying hen,” MSU PI: **P. Adhikari**. Funding requested: **\$50,000**. Outcome: **Not Funded**.
- March 2021, **InstaPro**. “Supplementation of extruded corn and partially defatted soybean meal in peak-age laying hens,” MSU PI: **P. Adhikari**. Funding requested: **\$60,053**. Outcome: **Not Funded**.
- February 2021, **Nutrinae LLC**. “Determine the efficacy of Oregano Oil (Ecodiar) on performance and health status of pullets and laying hens,” MSU PI: **P. Adhikari**. Funding requested: **\$85,000**. Outcome: **Not Funded**.
- February 2021, **ORFFA**. “Efficacy of Allin Plus against multiple bacterial strains, MIC values, synergistic effects and stability,” MSU PI: **P. Adhikari**. Co-PI: A. Kiess. Funding requested: **\$10,000**. Outcome: **Not Funded**.
- November 2020, **Phosphea Inc**. Impact of CalSEAGrow on performance and egg quality of laying hens. MSU PI: **P. Adhikari**. Funding Requested: **\$111,757**. Outcome: **Not Funded**.
- May 2020. **US Poultry and Egg Association**. Determine the epidemiology and pathogenesis of FDN in layer flocks. MSU PI: **P. Adhikari**, Collaborator: A. Kiess (MSU) and D. Wilson (Wilson Veterinary Co.) Outcome: Funding Requested: **\$60,000**. **Preproposal Accepted and Proposal Not Funded**.
- February 2020, **H2O Elite**. “Assessment of novel water treatment equipment (H2Oelite) on production performance and mineral digestibility in laying hens in post-peak phase”, MSU PI: **P. Adhikari**, Collaborator: K. Wamsley and T. Tabler. Funding Requested: **\$64,000**. Outcome: **Not Funded**.
- November 2019. **US Poultry and Egg Association**. Evaluation of lesions in focal duodenal necrosis (FDN) infected laying hen flocks by use of ultrasound and comparing with the serology and microbiology of respective hens. MSU PI: **P. Adhikari**, Collaborator: D. Wilson. Funding Requested: **\$50,000**. Outcome: **Preproposal Accepted and Proposal Not Funded**.
- November 2019, **Egg industry center (EIC)**. Monitoring behavioral and feeding pattern in free-range laying hen system to adopt precision feeding”, MSU PI: **P. Adhikari**, Co-PI: Y. Zhao. Funding Requested = **\$100,000**. Outcome: **Not Funded**.
- September 2019, **Egg industry center (EIC)**. “Assessment of dust concentration on behavioral and physiological responses in laying hens,” MSU PI: **P. Adhikari**, Co-PI: Y. Zhao. Funding Requested = **\$100,000**, Outcome: **Not Funded**.
- July 2019, **Delacon**, “Effect of feeding organic acid in laying hens feed,” MSU PI: **P. Adhikari**. Funding Requested: **\$80,000**. Outcome: **Not Funded**.

## Biographical Sketch

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- April 2019, **Foundation for Food and Agriculture Research (FFAR)**, “Assessment of cage-free laying hen housing system – the interrelationship between microbiome and behavior,” MSU PI: **P. Adhikari**, Collaborator: Y. Zhao. Funding Requested = \$ **400,000**. Outcome: **Not Funded**.
- October 2018, **Adisseo**, “Supplementation of NSPase-Phytase on performance and egg quality in peak age laying hens,” MSU PI: **P. Adhikari**. Funding Requested: **\$97,000**. Outcome: **Not Funded**.
- June 2018, **US Poultry and Egg Association**, “In-feed supplementation of bacteriophage for reducing *Escherichia coli* in broilers,” MSU PI: **P. Adhikari**, Co-PI: A. Kiess. Funding Requested: **\$48,207**. Outcome: **Not Funded**.
- June 2018, **US Poultry and Egg Association**, “Effect of supplementing dietary methionine and linoleic acid to optimize egg size in hens at their later stage of production,” MSU PI: **P. Adhikari**. Funding Requested: **\$54,500**. Outcome: **Not Funded**.
- June 2018, **US Poultry and Egg Association**, “Role of calcium (Ca) source and particle size to support extended lay in laying hens,” MSU PI: **P. Adhikari**. Funding Requested: **\$50,733**. Outcome: **Not Funded**.
- June 2018, **US Poultry and Egg Association**, “Investigation of epidemiology and pathogenesis of focal duodenal necrosis (FDN) in different FDN infected laying hen flocks,” MSU PI : **P. Adhikari**. Funding Requested: **\$54,901**. Outcome: **Not Funded**.
- April 2018, **Origination O2D Inc.**, “Evaluation of Smizyme phytase on calcium, phosphorus digestibility and bone ash in commercial laying hens,” MSU PI: **P. Adhikari**. Funding Requested: **\$58,692**. Outcome: **Not Funded**.
- March 2018, **Novus International Inc.**, “Effect of feeding Sporulin to commercial laying hen pullets challenged with *Salmonella enterica* serovar Enteritidis on *Salmonella* numbers and performance,” MSU PI: **P. Adhikari**. Funding Requested: **\$38,324**. Outcome: **Not Funded**.
- February 2018, **US Poultry and Egg Association**, “In-feed supplementation of bacteriophage for reduction of *E. coli* in poultry,” MSU PI: **P. Adhikari**, Collaborator: A. Kiess. Funding Requested: \$ **69,559**. Outcome: **Not Funded**.
- February 2018, **US Poultry and Egg Association**, “Dietary interventions (probiotics, prebiotics, and botanical products) and their impact on gut health to reduce focal duodenal necrosis (FDN) in laying hens”, MSU PI: **P. Adhikari**, Collaborator: A. Kiess. Funding Requested = \$ **67,277**. Outcome: **Not Funded**.

### ***Pre-proposals Rejected:***

- November 2021. **US Poultry and Egg Association**. Understanding the effects of Prebiotic and Probiotic supplementation on *Salmonella* translocation in feces, internal organs, and gut health of vaccinated and unvaccinated laying hens.
- May 2020. **US Poultry and Egg Association**. Determine the epidemiology and pathogenesis of FDN in layer flock. Co-PI: A. Kiess, MSU and D. Wilson, Wilson Veterinary Co.
- November 2019. **US Poultry and Egg Association**. Evaluation of lesions in focal duodenal necrosis (FDN) infected laying hen flocks by use of ultrasound and comparing with the serology and microbiology of respective hens.
- May 2019. **Foundation for Food and Agriculture Research (FFAR)**. Use of radio frequency identification tags (RFID) in non-cage laying hen system – leverage on nutrition, health and welfare. Co-PI: Y. Zhao, MSU.
- December 2018. **Egg Industry Center**. Impact of access to outdoor vegetation and cover on welfare, health, environment, production performance, economic efficiency and utilization of indoor/ outdoor spaces.

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- November 2018. **US Poultry and Egg Association.** Investigation of epidemiology and pathogenesis of focal duodenal necrosis (FDN) in FDN infected laying hen flocks..
- November 2018. **US Poultry and Egg Association.** Evaluation of metabolizable energy (AME) value of corn distillers dried grains with solubles (DDGS) by substitution method in three different phases of laying hen.
- May 2018. **US Poultry and Egg Association.** Devise nutrition management (calcium, protein and Vit. D) programs to support extended lay in laying hens.
- May 2018. **US Poultry and Egg Association.** Supplementation of butyric acid in reduction of *Salmonella* (*S.*) Newport, Heidelberg, and Kentucky colonizing pullets and laying hens.
- May 2018. **US Poultry and Egg Association.** In-feed supplementation of bacteriophage for reduction of *E. coli* in poultry.
- December 2017. **Egg Industry Center.** Comparative investigation of health, welfare, environmental impact and egg safety in three hen production systems [conventional cage; CC, enriched colony cage; EC and floor pen; FP].
- December 2017. **Egg Industry Center.** Management strategy to prevent *Salmonella* and *Eimeria* in cage-free housing system (floor pen and free-range system).
- November 2017. **US Poultry and Egg Association.** Evaluating the amount of crude protein (CP) and amino acids (AA) in laying hens diet to reduce ammonia (NH<sub>3</sub>) emission. Co-PI: T. Tabler, MSU.
- November 2017. **US Poultry and Egg Association.** Dietary strategies (energy and balanced protein concentration) to prevent the production of excessively large eggs, especially in molted flocks.
- November 2017. **US Poultry and Egg Association.** Evaluating the source and levels of dietary fibers to reduce ammonia (NH<sub>3</sub>) emission in laying hens. Co-PI: T. Tabler, MSU.
- November 2017. **US Poultry and Egg Association.** Dietary interventions (probiotics, prebiotics, and botanical products) and their impact on gut health to reduce focal duodenal necrosis (FDN) in laying hens.

## REFEREED JOURNAL ARTICLES

1. Poudel, I., V. Williams, K. Wamsley, K. Roberson and **P. Adhikari.** Effects of protease addition on varying levels of CP/AA on performance, egg parameters and apparent amino acid digestibility in 50-70 wk old Hy-Line W-36 laying hens. *Poult. Sci.* **Submitted.**
2. Ovi, F., L. Zhang, H. Nabors, L. Jia and **P. Adhikari.** 2022. A compilation of virulence-associated genes with uniquely high prevalence in avian pathogenic *Escherichia coli* (APEC) to be used as a genetic marker of colibacillosis. Review Paper. *J. Appl. Micro.* Review paper. **Accepted.**
3. Poudel, I., V. Williams, K. Wamsley, K. Roberson and **P. Adhikari.** 2022. Effects of varying protein/amino acid level of diets with or without protease on 30-50 wk layer performance and egg production parameters. *Poult. Sci.* **Accepted.**
4. **Adhikari, P.,** W. K. Kim, A. Rogiewicz and B. Slominski. 2022. Effect of yeast-derived product on *Salmonella* Enteritidis colonization in different organs (liver-gall bladder, spleen, ovary, and ceca) of laying hens. *J. Appl. Poult. Res.* **Accepted.**
5. Self, R., Turnipseed, A. A. McIntyre, I. Poudel and **P. Adhikari.** Effect of perch height and perching material on performance and behavior of laying hens. *J. Appl. Poult. Res.* **Submitted.**
6. I. Poudel., A. Calvert, and **P. Adhikari.** *In-Vitro* digestive assay to understand the effect of probiotics, prebiotics, and essential oil combination on *Salmonella* Enteritidis. *J. Microbiol.* **Submitted.**

## Biographical Sketch

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7. **Adhikari, P.**, F. L. Castro, G. Liu and W. K. Kim. 2022. Effects of total sulfur amino acids on growth performance, immunity, and meat yield in broilers fed diets with and without antibiotics. *Front. Vet. Sci.* 9:903901.
8. Poudel, S., T. Li, M. A. Arick, C-Y, Hsu, A. Thrash, A. T. Sukumaran, **P. Adhikari**, A. Kiess and L. Zhang. 2022. Complete Genome Sequences of Four *Campylobacter jejuni* Strains Isolated from Retail Chicken Meat and Broiler Feces. *Microbiol. Resour. Announc.* DOI: [10.1128/mra.00898-22](https://doi.org/10.1128/mra.00898-22).
9. Poudel, I., A. S. Kiess, M. M. Beck, **P. Adhikari**. 2022. The effect of blue and red LED light on the growth, egg production, egg quality, behavior, and hormone concentration of Hy-Line W-36 laying hens. *J. Appl. Poult. Res.* 31(2):100248.
10. Poudel, I., C. D. McDaniel, M. W. Schilling, D. Pflugrath and **P. Adhikari**. 2022. Role of conventional and split feeding of various limestone particle size ratios on the performance and egg quality of Hy-Line W-36 in the late production phase. *Anim. Feed Sci. Technol.* 283: 115-153.
11. Sharma, M. K., A. S. Kiess, B. Loar and **P. Adhikari**. 2021. Effect of housing environment and hen strain on egg production and egg quality as well as cloacal and eggshell microbiology in laying hens. *Poult. Sci.* 101 (2):101595.
12. Sharma, M. K., D. White, C. Chen, W. K. Kim, and **P. Adhikari**. 2021. Effects of housing environment and laying hen strain on tibia and femur bone properties of different laying phases of Hy-Line hens. *Poult. Sci.* 100 (3):100933
13. Adhikari, B., S. R. Jun, Y. M. Kwon, A. S. Kiess, and **P. Adhikari**. 2020. Effects of housing types on cecal microbiota of two different strains of laying hens during the late production stage. *Front. Vet. Sci.* 7. 331.
14. Sharma, M. K., T. Dinh and **P. Adhikari**. 2020. Production performance, egg quality, and small intestine histomorphology of the laying hens supplemented with phytogetic feed additive. *J. Appl. Poult. Res.* 29 (2):362-371.
15. **Adhikari, P.**, A. Kiess, R. Adhikari and R. Jha. 2020. An approach to alternative strategies to control avian coccidiosis and necrotic enteritis. *J. Appl. Poult. Res.* 29 (2): 515-534. **This article was the most cited (39 citations) in the last 3 years as of 5/3/2022. It was also one of the most downloaded articles (top 5) in JAPR in the last 90 days (as of 5/3/2022).**
16. Fancher, C., L. Zhang, A. S. Kiess, **P. Adhikari**, T. N. Dinh and A. T. Sukumaran. 2020. Avian Pathogenic *Escherichia coli* and *Clostridium perfringens*: Challenges in no antibiotics ever broiler production and potential solutions. *Microorganisms* 8, 1533.
17. **Adhikari, P.**, S. Yadav, D. Cosby, N. Cox, J. Jendza and W. Kim. 2019. Effect of organic acid mixture on growth performance and *Salmonella* Typhimurium colonization in broiler chickens. *Poult. Sci.* 99 (5): 2645-2649.
18. Kumar, S., **P. Adhikari**, B. Oakley and W. K. Kim. 2019. Changes in cecum microbial community in response to total sulfur amino acid (TSAA: DL-methionine) in antibiotic-free and supplemented poultry birds. *Poult. Sci.* 98(11):5809-5819.
19. **Adhikari, P.**, C. H. Lee, D. E. Cosby, N. A. Cox and W. K. Kim. 2019. Effect of probiotics on fecal excretion, colonization in internal organs and immune gene expression in the ileum of laying hens challenged with *Salmonella* Enteritidis. *Poult. Sci.* 98 (3): 1235-1242.

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20. **Adhikari, P.**, D. E. Cosby, N. A. Cox and W. K. Kim. 2018. Effect of dietary fructooligosaccharide supplementation on internal organs *Salmonella* colonization, immune response, ileal morphology, and ileal immunohistochemistry in laying hens challenged with *Salmonella* Enteritidis. *Poult. Sci.* 97(7):2525-2533.
21. **Adhikari, P.**, D. E. Cosby, N. A. Cox and W. K. Kim. 2017. Effect of supplementation of nitrocompounds in ceca, liver with gall bladder and ovary as well as ileal immune gene expression in laying hens challenged with *Salmonella* Enteritidis. *Poult. Sci.* 96 (12) 4280-4286.
22. **Adhikari P.** and W. K. Kim. 2017. Overview of prebiotics and probiotics: focus on performance, gut health and immunity-a review. *Annals of Animal Science.* 17:949-966.
23. **Adhikari, P.**, D. E. Cosby, N. A. Cox, J. H. Lee and W. K. Kim. 2017. Effect of dietary bacteriophage supplementation on internal organs, fecal excretion and ileal immune response in laying hens challenged by *Salmonella* Enteritidis. *Poult. Sci.* 96:3264-3271.
24. **Adhikari, P.**, D. E. Cosby, N. A. Cox and W. K. Kim. 2017. Colonization of mature laying hens with *Salmonella* Enteritidis by oral or intracloacal inoculation. *J. Appl. Poult. Res.* 00:1-9.
25. **Adhikari, P.**, J. M. Heo and C. M. Nyachoti. 2016. Standardized total tract digestibility of phosphorus in camelina (*Camelina sativa*) meal fed to growing pigs without or phytase supplementation. *Anim. Feed Sci. Technol.* 214:104-109.
26. **Adhikari, P.**, J. M. Heo and C. M. Nyachoti. 2016. High dose of phytase on apparent and standardized total tract digestibility of phosphorus and apparent total tract digestibility of calcium in canola meals from *Brassica napus* black and *Brassica juncea* yellow fed to growing pigs. *Can. J. Anim. Sci.* 96:121-127.
27. **Adhikari, P.**, J. M. Heo and C. M. Nyachoti. 2015. True and standardized total tract phosphorus digestibility in canola meals from *Brassica napus* black and *Brassica juncea* yellow in growing pigs. *J. Anim. Sci.* 93:209-216.

### MANUSCRIPTS IN PREPARATION FOR SUBMISSION

1. Waters, C., K. Wamsley, C. Wyatt, M. Bedford, M. Elliot and **P. Adhikari**. Role of ratios of limestone particle size and phytase to support the eggshell and bone quality in 40–60-week-old single cycled laying hens. *J. Appl. Poult. Res.* *In Preparation*.
2. Waters, C., K. Wamsley, C. Wyatt, M. Bedford, M. Elliot and **P. Adhikari**. Role of ratios of limestone particle size and phytase to support the eggshell and bone quality in 60–80-week-old single cycled laying hens. *J. Appl. Poult. Res.* *In Preparation*.
3. Self, G. Jr., K. Wamsley, D. Chesser, A. O. Sokale, and **P. Adhikari**. Effects of monoglycerides of butyric, caprylic, and capric fatty acids on the performance of pullets vaccinated with a commercial coccidiosis vaccine. *Poult. Sci.* *In Preparation*.
4. Poudel, I., L. Zhang, M. Pulido-Landinez, A. Kiess and **P. Adhikari**. Mechanism of action of various mitigation strategy of *Salmonella* Enteritidis in vaccinated and unvaccinated laying hens. Review Paper. *Front. Vet. Sci.* *In Preparation*.
5. Poudel, I., F. Gonzalez, M. Umar-Faruk, A. Kiess. and **P. Adhikari**. Supplementation of novel prebiotic product on *Salmonella* Enteritidis population in laying hens. *Poult. Sci.* *In Preparation*.
6. Poudel, I., A. Rogiewicz, B. Slominski and **P. Adhikari**. Use of yeast compounds on mitigating *Salmonella* Enteritidis in laying hens. *J. Appl. Poult. Res.* *In Preparation*.

## Biographical Sketch

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7. Ovi, F., L. Jia, L. Zhang, and **P. Adhikari**. Whole-genome sequencing of multi-drug resistant avian pathogenic *E. coli* isolated from field strains of laying hens. *J. Appl. Env. And Microbiol. In Preparation*.
8. Poudel, I., L. Zhang and **P. Adhikari**. Characterizing microbiome population in *Salmonella* vaccinated and unvaccinated laying hens. *J. Appl. Micro. In Preparation*.
9. Cribillero, N., M. Bedford, C. Wyatt and **P. Adhikari**. Dietary evaluation of almond hulls in pullet phase of LSL-lite laying hens. *J. Appl. Poult. Res. In Preparation*.

## STUDENTS THESISES / DISSERTATIONS

Self, G. R. 08/1/2023. Impact of a feeding strategy and management practices on the health and welfare of pullets and laying hens. (MS Thesis)

Poudel, I. 08/01/2023. Nutritional strategies to reduce *Salmonella* Enteritidis infections in laying hens: Prebiotic, probiotic, and precision biotics. (PhD Dissertation)

Waters. C. 3/22/2023. Effect of limestone ratios and phytase levels on performance, bone health and eggshell quality in laying hens. (MS Thesis)

Poudel, I. 11/25/2020. Effect of housing environment and laying hen strain on production performance, egg quality and bone properties, and cloacal and eggshell microbiology. (MS Thesis)

Sharma, M. K. 5/1/2020. The effect of light-emitting diode light on the growth, egg production, egg quality, hormone concentration and health of Hy-Line W-36 laying hens. (MS Thesis)

## INVITED TALKS AND PRESENTATIONS

1. April 11-13, 2023, Minneapolis, MN. **Invited Speaker** for PEAK Meeting organized by Midwest Federation. Title 'Prebiotics, probiotics and synergistic effects in layers and broilers'.
2. February 24, 2023. **Invited Speaker** for Cargill Nutrition. Title 'Effect of limestone particle size ratios and phytase superdosing on performance and shell quality in W-36 laying hens'.
3. January 27, 2022, Atlanta, GA. **Invited Speaker** for *Tech Talks* at International Poultry Processing Expo. Organized by USPOULTRY. Title 'Effect of feeding varying levels of amino acids supplemented with protease enzyme in laying hens'.
4. September 21-23, 2021, Mankato, MN. **Invited Speaker** for *Minnesota Nutrition Conference*. Title 'Assessment of feeding protease in laying hens'.
5. September 18, 2018, Raleigh, NC. **Invited Speaker** for *Biovet Symposium for America*. Organized by Biovet SA. Title 'Improvement of egg quality by using Alquerat nebsui L in layers'.
6. May 10, 2018, Jackson, MS. **Invited Speaker** for *Mississippi Poultry Association Health, and disease seminar*. Title 'Dietary interventions against *Salmonella* Enteritidis in laying hens'.

## Biographical Sketch

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### REFEREED CONFERENCE ABSTRACTS

1. Waters, C., K. Wamsley, M. Elliot, M. Bedford, C. Wyatt, and **P. Adhikari**. Role of phytase and limestone particle size ratios on performance, egg breaking strength and gizzard pH and inositol levels of late-lay phase of single cycled laying hens. 2023. *Poult. Sci. (E.-Suppl. 1): Accepted. The presenting author, a graduate student, won a Student Research Certificate of Participation in International Poultry Scientific Forum.*
2. Cribillero, N. G., C. Wyatt, K. G. Wamsley, T. Boltz, K. McCafferty, and **P. Adhikari**. Impact of a cellulase-xylanase enzyme supplementation on performance and intestinal health in pullets fed almond hulls. 2023. *Poult. Sci. (E.-Suppl. 1): Accepted.*
3. Self, Jr, G. R., A. O. Sokale, M. Elliot, D. Chesser, K. G. Wamsley, **P. Adhikari**. Effects of monoglycerides of butyric, caprylic, and capric fatty acids on the performance of pullets vaccinated with a commercial coccidiosis vaccine. 2023. *Poult. Sci. (E.-Suppl. 1): Accepted.*
4. Poudel, I., M. U. Faruk, F. Cisneros-Gonzalez, A. S. Kiess, and **P. Adhikari** Effect of microbial metabolic modulators on fecal shedding and tissue translocation of *Salmonella* Enteritidis in laying hen. 2023. *Poult. Sci. (E.-Suppl. 1): Accepted.*
5. Joseph, J., L. Jia, L. Zhang, **P. Adhikari** and R. Ramachandran. Evaluation of virulence characteristics of avian pathogenic *Escherichia coli* isolates from broiler breeders. 2023. *Poult. Sci. (E.-Suppl. 1): Accepted.*
6. Poudel, S., L. Jia, C-Yu Hsu, W-H Cheng, P. Adhikari, A. S. Kiess, Li Zhang. **Expression analysis of *Campylobacter jejuni*-induced cytokine responses in avian cell line infection study.** 2023. *Poult. Sci. (E.-Suppl. 1): Accepted.*
7. Ovi, F., K. E. C. Elliott, D. Wilson, L. Zhang and **P. Adhikari**. Evaluating the accuracy of five virulent genes in predicting the virulence of an *Escherichia coli* isolates using embryo lethality assay. World Poultry Congress, Paris, France. August 7-10, 2022. *Accepted. The presenting author, a graduate student was awarded a Young Scholar Award to present their research in World Poultry Congress Meeting in Paris, France.*
8. Poudel, I., A. S. Kiess, and **P. Adhikari**. Colonization of *Salmonella* Enteritidis in vaccinated and unvaccinated laying hen using oral inoculation. World Poultry Congress, Paris, France. August 7-10, 2022. *Accepted. The presenting author, a graduate student was awarded a Young Scholar Award to present their research in World Poultry Congress Meeting in Paris, France.*
9. Self, R., I. Poudel and **P. Adhikari**. Behavior, welfare, and production effects of late-stage cage raised laying hens in a cage-free environment. 2022. *Poult. Sci. (E.-Suppl. 1): Accepted. The presenting author, an undergraduate student won a Student Research Certificate of Participation in Poultry Science Annual Meeting, 2022.*
10. Waters, C., K. Wamsley, M. Elliot, M. Bedford, C. Wyatt, and **P. Adhikari**. Effect of limestone ratios and phytase levels on egg quality and bone quality of 40-60 weeks single cycle Hy-Line W-36 laying hens. 2022. *Poult. Sci. (E.-Suppl. 1): Accepted. The presenting author won a Student Research Certificate of Participation in Poultry Science Annual Meeting, 2022.*

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11. Jia, L., M. A. Arick II, C-Yu Hsu, D. G. Peterson, J. D. Evans, A. T. Sukumaran, R. Ramachandran, **P. Adhikari**, L. Zhang. High-throughput avian pathogenic *Escherichia coli* (APEC) multilocus sequence typing (MLST) using Oxford Nanopore Technologies. 2022. Poult. Sci. (E.-Suppl. 1): *Accepted*.
12. Ovi, F., L. Zhang, R. Ramachandran and **P. Adhikari** Evaluation of antimicrobial and heavy-metal resistance patterns of avian pathogenic *Escherichia coli* associated with colibacillosis and symptom-free laying hen tissue samples. 2022. Poult. Sci. (E.-Suppl. 1): *Accepted*.
13. Duong, T., R. Adhikari, **P. Adhikari**, I. Poudel, B. Lumpkins and S. Liams-Moya. Administration of a postbiotic mitigated experimental subclinical necrotic enteritis in broiler chickens. 2022. Poult. Sci. (E.-Suppl. 1): *Accepted*.
14. Poudel, S., L. Jia, C-Y. Hsu, **P. Adhikari**, A. S. Kiess and L. Zhang. In-vitro expression of novel vaccine candidate genes of *Campylobacter jejuni*. 2022. Poult. Sci. (E.-Suppl. 1): *Accepted*.
15. Joseph, J., C. Magee, L. Jia, L. Zhang, **P. Adhikari** and R. Ramachandran. Phenotypic virulence characterization of avian pathogenic *Escherichia coli* isolates from broiler breeders with colibacillosis in Mississippi. 2022. Poult. Sci. (E.-Suppl. 1): *Accepted*.
16. Devkota, P., S. Poudel, L. Zia, X. Zhang, A. T. Sukumaran, A. S. Kiess, J. Evans, **P. Adhikari** and L. Zhang. Investigation of virulence factors in avian pathogenic *Escherichia coli* isolated from asymptomatic and diseased broilers. 2022. Poult. Sci. (E.-Suppl. 1): *Accepted*.
17. Nabors, H., L. Jia, X. Zhang, R. Ramachandran, **P. Adhikari** and L. Zhang. Effect of commercially available water acidifiers on the inhibition of avian pathogenic *Escherichia coli*. 2022. Poult. Sci. (E.-Suppl. 1): *Accepted*.
18. Alvarenga, M. J., **P. Adhikari**, J. S. Moritz and K. G. S. Wamsley. Carryover effects of breeder flock age (pullet or late) and feeding strategy (choice or no choice) as it influences 14-61d bird beak capacity, performance and processing. 2022. Poult. Sci. (E.-Suppl. 1): *Accepted*.
19. Ovi, F., L. Zhang and **P. Adhikari**. Evaluating the accuracy of virulent genes model in predicting the source of extraintestinal *Escherichia coli* isolates, collected from colibacillosis infected or healthy layer chicken. 2022. Poult. Sci. (E.-Suppl. 1): *Accepted*.
20. Poudel, I., A. J. Calvert and **P. Adhikari**. *In-vitro* digestive assay to understand the effect of probiotics, prebiotics, and essential oil combination on *Salmonella Enteritidis*. Internatl. Poult. Sci. Forum. 2022. Poult. Sci. (E.-Suppl. 1): *Accepted*.
21. Jennings, M., L. Zhang, **P. Adhikari** and R. Ramachandran. Characterization of virulence-associated genes and phylogenetic groups of Avian Pathogenic *Escherichia coli* isolated from broiler breeders with colibacillosis from Mississippi. 2022. Poult. Sci. (E.-Suppl. 1): *Accepted*. Undergraduate Research.
22. Devkota, P., S. Poudel, X. Zhang, A. T. Sukumaran, **P. Adhikari**, R. Ramachandran, A. Kiess and L. Zhang. Genotypic and phenotypic profiles of antimicrobial resistance characteristics of *Escherichia coli* isolated from asymptomatic and diseased broilers. 2022. Poult. Sci. (E.-Suppl. 1): *Accepted*.
23. Joseph, J., M. Jennings, L. Zhang, **P. Adhikari** and R. Ramachandran. Evaluation of antimicrobial and heavy-metal resistance patterns of avian pathogenic *Escherichia coli* associated with broiler breeder colibacillosis in Mississippi. 2022. Poult. Sci. (E.-Suppl. 1): *Accepted*.

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24. Alvarenga, M. J., **P. Adhikari**, J. S. Moritz, and K. G. S Wamsley. Effects of breeder flock age (pullet or late) and feeding strategy (choice or no choice) as it influences 0-14 d bird beak capacity, feed particle selection, and 0-14 d performance. 2022. *Poult. Sci. (E.-Suppl. 1): Accepted.*
25. Poudel, S., A. T. Sukumaran, **P. Adhikari**., A. Kiess and L. Zhang. Isolation and characterization of *Campylobacter jejuni* from ‘no antibiotics ever’ raised broiler farms. 2022. *Poult. Sci. (E.-Suppl. 1): Accepted.*
26. Gibson, J. T., H. Mentges, I. Poudel, **P. Adhikari** and J. B. Davis. Eggshell strength in three cavity-nesting ducks in Mississippi. Southeastern Association of Fish and Wildlife Agencies Conference. 2021. Undergraduate Research.
27. Williams, V. R., K. G. S. Wamsley, K. Roberson and **P. Adhikari**. Effects of protease addition on varying levels of CP/AA on performance, egg parameters and apparent amino acid digestibility in 50-70 wk old Hy-Line W36 laying hens. 2021. *Poult. Sci. 100 (E.-Suppl. 1): 143. Accepted.*
28. McIntyre, A., I. Poudel, V. R. Hodge, T. Tabler and **P. Adhikari**. Effect of perch material on performance, perching times and welfare in laying hens. 2021. *Poult. Sci. 100 (E.-Suppl. 1): 20. Accepted.* Undergraduate Research. ***The presenting author, an undergraduate student in Adhikari lab, won a Student Research Certificate of Participation in Poultry Science Annual Meeting.***
29. I. Poudel, C. D. Castañeda, A.S. Kiess, A.J. Calvert, **P. Adhikari**. Effect of prebiotics and essential oil combination on *Salmonella Enteritidis* in-vitro. 2021. *Poult. Sci. 100 (E.-Suppl. 1): 433P. Accepted.*
30. Ovi, F., A. S. Kiess, L. Zhang and **P. Adhikari**. Prevalence of virulence and antimicrobial resistance genes in suspected APEC isolates collected from different extra-intestinal tissue of layer hen. 2021. *Poult. Sci. 100 (E.-Suppl. 1): 432P. Accepted.* ***The presenting author, a graduate student in Adhikari lab, won a Certificate of Excellence for their scientific merit and quality of presentation at Poultry Science Annual Meeting.***
31. Devkota, P., S. Poudel, M. A. Arick, C.Y. Hsu, **P. Adhikari**, A. T. Sukumaran, A. S. Kiess and L. Zhang. Genomic analysis of avian pathogenic *Escherichia coli* (APEC) isolated from broiler chicken. 2021. *Poult. Sci. 100 (E.-Suppl. 1): 71. Accepted.*
32. Williams, V. R., K. G. S. Wamsley, K. Roberson and **P. Adhikari**. Effects of varying protein/amino acid level of diets with or without protease on 30-50 wk layer performance and egg production parameters. 2021. *Poult. Sci. Forum. 100 [E-Suppl.1]:13.* ***The presenting author, a graduate student in Adhikari lab, won a Certificate of Excellence for their scientific merit and quality of presentation at Southern Poultry Science Society’s International Poultry Scientific Forum in Atlanta, GA.***
33. Poudel, I., A.S. Kiess, M.M. Beck, **P. Adhikari**. The effect of monochromatic light on the growth, production, egg quality, behavior, and hormone concentration of Hy-Line® W-36 laying hens. 2021. *Poult. Sci. Forum. 100 [E-Suppl.1]:10.*
34. Poudel, I., N. Nuthalapati, A. T. Sukumaran, L. Zhang, M. Beck, A. S. Kiess and **P. Adhikari**. Prevalence of avian pathogenic *Escherichia coli* in cage-free W-36 pullets reared under monochromatic blue and normal LED lights. 2020. *Poult. Sci. 99 [E-Suppl. 1]:53.*

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35. Poudel, I., C. D. McDaniel, M. W. Schilling, and **P. 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. 2020. Internatl. Poult. Sci. Forum. 99 [E-Suppl. 1]:22.
36. Sharma, M., D. White, W. K. Kim and **P. Adhikari**. Effects of housing environment and laying hen strain on tibia and femur bone properties. 2020. Poult. Sci. Forum. 99 [E-Suppl. 1]: P261. ***The presenting author, a graduate student in Adhikari lab, won a Certificate of Excellence for their scientific merit and quality of presentation at Southern Poultry Science Society's International Poultry Scientific Forum in Atlanta, GA.***
37. Sharma, M., L. Zhang, A. Kiess and **P. 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. 2020. Poult. Sci. Forum. 99 [E-Suppl. 1]:P262.
38. C. E. Rhoads, C.E. Ennis, A. T. Brown, **P. Adhikari**, T. Tabler, H2O Elite personnel, and K. G. S. Wamsley. Assessment of novel water treatment equipment (H2Oelite) on broiler performance, tibia ash and mineral digestibility. 2020. Poult. Sci. Forum. 99 [E-Suppl. 1]. Undergraduate Research.
39. Sharma, M., C. D. McDaniel, A. Kiess and **P. Adhikari**. Housing environment and hen strain alter egg production, egg quality and tibia strength as well as cloacal microbiology in post-peak laying hens. 2019. Poult. Sci. 98 [E-Suppl. 1]:67.
40. Adhikari, B., S. R. Jun, Y. M. Kwon, A. S. Kiess and **P. Adhikari**. Effects of housing types on egg production and cecal microbiota of two different strains of laying hens during the late production stage. 2019. Poult. Sci. 98 [E-Suppl. 1]:67.
41. Kumar, S., **P. Adhikari**, B. Oakley and W. Kim. Variations of total sulfur amino acid (TSAA) in antibiotic-free and supplemented diets changes gut microbial community and functions in broilers. 2019. Poult. Sci. 98 [E-Suppl. 1]:P469.
42. Sharma, M., C. Domenech, J. Pie and **P. Adhikari**. Effect of feeding pronutrient (Alquernat Nebsui L) on hen day egg production, egg quality and small intestine histomorphology of laying hens. 2019. Poult. Sci. Forum 98 [E-Suppl. 1]. P26.
43. Fulton, M., D. Brown, C. McDaniel, and **P. Adhikari**. Effect of house type and strain on hen-day egg production, egg quality and tibial bone breaking strength in commercial egg-laying hens in the late phase of production. 2018. Poult. Sci. 97 [E-Suppl. 1]:14. ***The presenting author, an undergraduate student in Adhikari lab, won a Student Research Certificate of Participation in Poultry Science Annual Meeting. The presenting author also won Jones-Hamilton Co. Undergraduate Student Travel Award at Poultry Science Annual Meeting.***
44. Fulton, M., C. Domenech, A. Kiess, and **P. Adhikari**. Effect of a pronutrient (Alquernat Nebsui L) on feed consumption, egg production, egg quality and total carotenoids in laying hens supplemented via drinking water. 2018. Poult. Sci. 97 [E-Suppl. 1]: P164.
45. Alqhtani, A., K. G. S. Wamsley, T. Tabler, **P. Adhikari**, C. D. McDaniel, and A. S. Kiess. Evaluating alternative litter amendments in an attempt to improve broiler litter quality. 2018. Poult. Sci. 97 [E-Suppl. 1]: 15.
46. **Adhikari, P.**, H. Derakhshani, E. Khafipour and W. K. Kim. Effect of fructooligosaccharides (FOS) on *Salmonella* colonization, immune response and ileal microbiome in laying hens challenged with *Salmonella* Enteritidis. 2017. Poult. Sci. 96 [E-Suppl. 1]: 18.

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47. **Adhikari, P.**, D. E. Cosby, N. A. Cox and W. K. Kim. Effect of 2- nitroethanol and 2- nitropropanol on the colonization and ileal immune gene expression in White Leghorns after challenge with *Salmonella* Enteritidis. 2017. Poult. Sci. 96 [E. Suppl. 1]: P205.
48. **Adhikari, P.**, J. Jendza, D. E. Cosby, N. A. Cox and W. K. Kim. Effect of AmasilNA on growth performance and *Salmonella* Typhimurium colonization in broilers. 2017. Poult. Sci. 96 [E. Suppl. 1]: P273.
49. **Adhikari, P.** and W. K. Kim. 2016. Dietary interventions to reduce *Salmonella* in internal organs of laying hens. 5-minute lightening presentation, August. Athens, GA.
50. **Adhikari, P.**, D. E. Cosby, N. A. Cox and W. K. Kim. 2016. Effect of fructoligosaccharides on colonization of the ceca, liver-gall bladder and ovary plus fecal shedding and ileum morphology in hens challenged with *Salmonella* Enteritidis. Poult. Sci. 96 [E. Suppl. 1]: 8.
51. **Adhikari, P.**, A. Rogiewicz, W. K. Kim, D. E. Cosby, N. A. Cox, B. A. Slominski. 2016. Effect of yeast-derived products on *Salmonella* Enteritidis shedding and colonization in different organs of laying hens. Poult. Sci. 95 [E-Suppl-1]: 228.
52. **Adhikari, P.**, D. E. Cosby, N. A. Cox and W. K. Kim. Efficacy of 2-Nitropropanol and 2-Nitroethanol to reduce the growth of *Salmonella* Enteritidis, *Salmonella* Heidelberg, *Salmonella* Kentucky and *Salmonella* Typhimurium in vitro. 2015. Internatl. Poult. Sci. Forum 95 [E-Suppl-1]: P250.
53. **Adhikari, P.**, D. E. Cosby, N. A. Cox and W. K. Kim. 2015. Colonization of mature laying hens with *Salmonella* Enteritidis using either oral or intracloacal inoculation. Poult. Sci. 94 [E-Suppl. 1]: 322P.
54. **Adhikari, P.** and W. K. Kim. 2015. Effects of total sulphur amino acids on performance and carcass yield in broilers fed diets with and without an antibiotic growth promoter. Poult. Sci. 94 [E-Suppl. 1]: 99.
55. **Adhikari, P.** and C. M. Nyachoti. 2014. Effect of phytase on standardized total tract digestibility of phosphorus in camelina meal (*Camelina sativa*) fed to growing pigs. J. Anim. Sci. 92 [E-Suppl. 2]: 673.
56. **Adhikari, P.** and W. K. Kim. 2014. Effects of different levels of total sulphur amino acid (TSAA) on performance parameters in broiler chicken fed antibiotics free diets. Poult. Sci. 93 [E-Suppl. 1]: 339P
57. **Adhikari, P.** and W. K. Kim. 2014. Supplementation of antibiotics alternatives (Antaphyt MO, CaPlus ME and PreAcid BA Forte) on the growth performance parameters in broilers. Poult. Sci. 93 [E-Suppl. 1].
58. **Adhikari, P.**, J.M. Heo and C.M. Nyachoti. 2013. Standardized total tract digestibility of phosphorus in *Brassica napus* black and *Brassica juncea* yellow in growing pigs. J. Anim. Sci. [Suppl. 2]: 74.
59. **Adhikari, P.**, J.M. Heo, and C.M. Nyachoti. 2013. Determination of true phosphorus digestibility in *Brassica napus* black and *Brassica juncea* yellow fed to growing pigs using regression analysis. J. Anim. Sci. 91 [Suppl. 2]: 677.
60. **Adhikari, P.**, J. M. Heo, C. M. Nyachoti. 2012. Determination of Phosphorus Digestibility in Canola Meals from black-seeded *Brassica napus* and yellow-seeded *Brassica juncea* Fed to Growing Pigs. 33<sup>rd</sup> Western Nutrition Conference, 22-25<sup>th</sup> August, Winnipeg, Manitoba.

## REFEREED ABSTRACTS (UNDERGRADUATE PRESENTATIONS ONLY)

1. Wallace, R, F. Ovi and **P. Adhikari**. Honors Undergraduate Research Symposium. Mississippi State University. Summer 2023. August 2.
2. Self, R. I. Poudel and **P. Adhikari**. Production effects and welfare aspects of late-stage cage raised laying hens in a cage-free environment. Mississippi Academy of Sciences. Summer 2022. June 8.

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3. Self, R. I. Poudel and **P. Adhikari**. Behavior, welfare, and production effects of late-stage cage raised laying hens in a cage-free environment. Honors Undergraduate Research Symposium. Mississippi State University. Spring 2022. April 13 and 14.
4. Alexis Turnipseed and **P. Adhikari**. Assessment of perch height in Hy-Line W-36 laying hens housed in free-range system. Honors Undergraduate Research Symposium. Mississippi State University. Spring 2020. April 15.
5. Williams, V., M. Sharma and **P. Adhikari**. Effect of house type and strain type on cracked and dirty eggs. Mississippi Academy of Sciences. Summer 2019. July 14.
6. Williams, V., D. Brown, M. Sharma and **P. Adhikari**. Effect of house type and strain type on cracked and dirty eggs. Honors Undergraduate Research Symposium. Mississippi State University. Spring 2019. April 16.
7. D. Brown, T. Fulton, C. D. McDaniel and **P. Adhikari**. Effect of house type and strain type on hen-day egg production and egg quality in commercial laying hens. Honors Undergraduate Research Symposium. Mississippi State University. Spring 2018. April 13.