

THE NEWSLETTER



Hello,

We welcome you to the first PRD-CAP newsletter. The aim of this newsletter is to give an update of the individual projects in order to facilitate collaboration between investigators. This edition focuses mainly on the highlights of the extension aspects of the project.

PRD-CAP Management

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2nd PRDCAP & NC-1180 Joint Annual Meeting 2016

The 2nd PRD-CAP & NC1180 Joint Annual meeting will be held in conjunction with the USAHA meeting in Greensboro, NC, from October 19-20.

Although there are many overlapping topics between PRD-CAP and NC1180 projects, the PRD- CAP projects will be discussed in an all day- meeting on Wednesday October 19 and the NC1180 projects will be discussed in a morning meeting on Thursday, October 20.

Please visit the USAHA website, <http://www.usaha.org/Meetings/2016AnnualMeeting.asp>, for more information

We hope to see you there.

Grant Competition Awardees 2016

Congratulations to Drs. Jordan, Miller and Gallardo as the recipients of the 2016 SEED grant awards. The proposals were selected by the Advisory Board for having the most innovative extension and outreach activities and highly applied research.

Visit: prdcap.com

Please visit prdcap.com for more information about the projects

Recently Awarded Projects

2016

Grant Competition Awardees



Dr. Rodrigo A. Gallardo
University of California, Davis



Dr. Brian Jordan
University of Georgia

Addressing the Needs of Poultry Stakeholders, How to Target Effective Outreach and Applied Research

PI: Rodrigo Gallardo; Co-PIs: Rüdiger Hauck, Maurice Pitesky, H. L. Shivaprasad, Gabriel Senties Cue

Our main goal is to locate and educate small flock owners. In addition, social network analysis (SNA) will be used to evaluate our outreach effort and understand which is the main source of information for these flocks.

We hypothesize that using our proposed methodology an appropriate outreach strategy will be generated improving disease prevention and boosting applied research. If these strategies prove to be effective they could serve as a model for other states in the U.S.

An intensive lecture-activity training program using experiential learning tools will be offered in the communities with high concentration of small flocks based on a current geo-survey and concentration of 4H volunteers. Using the SNA method we will be able to map the social networks associated with backyard flocks. This analysis tool will allow the identification of connected and disconnected stakeholders and stakeholder groups. By understanding the relationships between the attendees and their poultry contacts we can focus our future outreach toward areas of greatest need. This type of analysis is a good structured step toward reaching out to the myriad backyard poultry stakeholders.

In addition, a pilot project to assess the respiratory disease antibody profile in backyard flocks close and far from commercial poultry premises will be performed. The goal of this project is to understand and train backyard flock owners and to assess the risk that these flocks pose to commercial premises.

Development of an Informational Video Series Detailing How Biosecurity, House Management, and Farm Operations Effect Respiratory Disease in Commercial Poultry

PI: Brian James Jordan; Co-PIs: Brian Fairchild, Michael Czarick, and Casey Ritz

The goal behind this project is to develop digital media content that educates the poultry industry on all the aspects of poultry, not just biosecurity, which can affect the development of respiratory disease in commercial poultry. The approach of this project will be applicable and direct, via a short series of YouTube style videos, that can be distributed worldwide with no cost. Our expected outcome of this project is a set of high quality, informational videos outlining the effects of poultry farm operation on the development of respiratory disease. The videos will cover many topics both directly and indirectly related to respiratory disease, and will provide insight into how operations may be modified or improved to combat these respiratory pathogens. The potential impact of this video series is sizeable. We will now have a digital video media designed for the changing population of the US, allowing us to reach more people than through traditional print media distribution. Furthermore, using a site like YouTube to distribute these videos will also give us data points on how many people are actually watching the videos (number of views). But most importantly, we will be distributing helpful information regarding respiratory disease to the poultry industry in an easily accessible and consumable format.

Recently Awarded Projects

2016

Grant Competition Awardees



Dr. Patti Miller
USDA ARS

Transmission Dynamics of Respiratory Microorganisms in Backyard Chickens

PI: Patti Miller; Co-PIs: Claudio L. Afonso, Andrea L. Ayala and Sonia M. Hernandez

The agricultural wildlife interface is now associated with rising incidences of agriculturally significant pathogens. The recent rise in unregulated backyard poultry possess risks in terms of biosecurity associated with the proximity of wild birds to poultry. Avian pathogens from backyard poultry and adjacent free-ranging birds have potential for bi-directional pathogen spillovers; among those *Mycoplasma gallisepticum*, avian pox viruses, and low and highly pathogenic avian influenza (HPAI). Events, such as the recent H5 and H7 HPAI outbreaks in the United States, have the potential to decimate the agricultural economy through mass depopulation, quarantines, and trade embargos. While separating wild animals and domestic animals is always the goal of good biosecurity, their interaction is commonplace in non-commercial settings. Here we will assess the role of the factors involved in the risk of transmission of live agents between wild birds and backyard poultry. We will study highly abundant, peridomestic, wild, native bird species in order to establish the importance of factors such as access to food, water, and direct contact to each other for the transmission of respiratory microorganisms. We will administer a commercial live LaSota Newcastle disease virus vaccine to chickens as directed by the manufacturer as a model agent and use a recently developed backyard poultry-wild bird interface system to model the process of respiratory virus transmission in a field setting.

We will determine the extent of bidirectional microorganism transfer utilizing Next Generation Sequencing (NGS) of nucleic acids extracted from oral and cloacal swab samples. We will quantitatively measure specific species interactions with backyard poultry and their feed and water sources using radio frequency identification readers, while also measuring the amount of virus shed from the chickens and transmitted to each wild bird species. Besides identifying the presence and amount of LaSota strain in the chickens and passerines, the NGS may also allow for the identification of other microorganisms not present at the onset of the experiment, but present in both the wild birds and chickens after they have interacted. We expect to determine if gregarious, ground foraging species such as sparrows (Emberizidae family) exhibit a proportionately increased level of contact with both chickens, feed and water stations over other species. We hypothesize that the foraging patterns of sparrows may translate to increased contact with chickens and may influence their exposure to avian and environmental sources of virus.

Visit:

[http://www.prdcap.com/grant_ awardees_ 2016/](http://www.prdcap.com/grant_awardees_2016/) for more information regarding the scope of work for each project

Extension Project Update from UDel & UMD

Dr. Eric Benson (PD, UDel), Dr. Jon Moyle (UMD), and Mr. Robert Alphin (UDel)

Mission Accomplished: Biosecurity?

The worst animal health disaster in US history has a way of changing plans. Our group, including Dr. Jonathan Moyle (University of Maryland), Robert Alphin (University of Delaware), and myself originally planned to use Year 1 of our coordinated agricultural project to organize, Year 2 to implement training, and Year 3 to begin multiday training programs. Need trumped plans and we responded with much needed biosecurity training for the Delmarva region.

The good news is that the region has reached a level of awareness about biosecurity. The bad news is ... I don't think they want to hear about biosecurity any time soon. A concern is that as the disease outbreak fades, we can get lulled into a mission accomplished sense of complacency. The Virginia Farm Bureau Federation recently lifted heightened biosecurity measures that had been in place for a number of months. Biosecurity, however, remains one of our most effective tools for prevention and control of avian diseases. The 2014 – 2015 outbreak of highly pathogenic avian influenza was the single worst animal health disaster in US history. Movement of wild birds is likely to have been a factor for the wide spread outbreaks in the Pacific and Mississippi flyways. Most likely, however, movement of personnel and equipment contributed to the extensive localized spread within Minnesota, Iowa, and other states. Biosecurity, and unfortunately, biosecurity breaks, were a factor in the continued spread and persistence of the outbreak.

The primary response measures for avian influenza are surveillance, biosecurity, quarantine, depopulation, disposal, cleaning and disinfection. Of the six primary response measures currently available, biosecurity is the only step that can be used preventively. Prevention, while expensive, is ultimately cheaper than responding and rebuilding. Biosecurity can be summarized as isolation. From a biosecurity standpoint, the best place to locate a farm would be on a deserted tropical island. While this sounds idyllic, it's obviously impractical. Even if it was impractical, I'm sure the environmental folks would probably not appreciate a ten house broiler complex located on their deserted tropical island.

Biosecurity depends on us doing it right, every time. The one time we let things slide, we place ourselves and ultimately our industry at risk. In our tropical island example, an example of biosecurity is controlling the traffic onto the island. We want to know who is coming and where they have been. With an island, it's probably easier to track who comes to visit, however, knowing where they have been is a bit tougher.

For many years, the paradigm was that we were concerned about our neighbor and the farm border. We would try to keep the threat away from our farm as best we could. No matter what type of fence we put in or how many guard cats we employed, there were limits to what could be achieved at the farm border. An example of this would be the role of wild birds in transporting highly pathogenic avian influenza between flyways. We can't really control whether wild birds land on our farm and most farms have a pretty porous border unless we can find a vacant tropical island. Today, we realize that we have to manage biosecurity at the barn door. While we can't control what happens outside of our farm, we can control the activity on the farm and leading our buildings. We can't control the ducks landing on our pond or around our island, but what we can control is how we clean people stepping into our houses to ensure the maximum biosecurity practical.

Increased biosecurity can help with the big diseases such as avian influenza, exotic Newcastle disease virus or similar and with the more mundane, daily diseases as well. While avian influenza is not the threat within the United States that it was in 2015, globally, there is concern about the expansion of H5N1 into Africa and what this means for the international poultry community. While there is no 'good' place for avian influenza, the further away, the better. Biosecurity remains one of the ways to keep it that way.

The project team is currently planning for multiday respiratory disease training programs for 2017 as part of the project. We are currently seeking project team members who have new information that needs to be shared with the industry so that this can be incorporated into the next program. If you are interested in participating or have new information that we should include, contact Dr. Eric Benson (ebenson@udel.edu).



Dr. Eric Benson
University of Delaware

Extension Project Update from OSU

Dr. Mohamed M. El-Gazzar

Poultry Industry Preparedness and Networking in Ohio

Multiple Highly Pathogenic Avian Influenza (HPAI) outbreaks affected the US poultry industry in 2015 and 2016. Perhaps the most notable, is the large outbreak in 2015 that was considered the largest foreign animal disease outbreak in US history. The spread of the disease in 2015 with such a quick pace, particularly in the Midwest, was forced to question the readiness of the poultry industry when faced with such a scale of disease outbreak. Addressing this concern in Ohio was the focus of our Extension efforts in 2015 & 2016. Our goal was to get the poultry industry, including technical service personnel and poultry growers, ready to respond in case of an outbreak. In the outbreak situation the speed of response including the initial sampling, initial diagnosis, and in case of positive diagnosis, the speed of depopulation and disposal can make the difference between controlling the outbreak and allowing it to spread like wild fire.

Poultry Disease Network is part of the multidisciplinary project and the HPAI outbreaks provided an opportunity for collaboration across multiple organizations in order to develop this network. In collaboration with Ohio Poultry Emergency Disease Committee (EMD) and the Ohio Poultry Association, multiple meetings with the poultry industry have been organized. The main message in these meetings, in addition to biosecurity message, is to be prepared for the response starting from taking initial samples, to depopulation and disposal. It is ultimately the poultry producer's responsibility to prevent the disease from getting into their operation, but also to control the disease spread in case they have a positive case.

In this spirit, multiple training sessions have been held with individual companies to train them on sampling techniques. Additionally, two short videos has been produced in collaboration with Ohio Department of Agriculture to make sampling training available to the as many individuals as possible https://www.youtube.com/watch?v=B77_ZvLn_nk&feature=youtu.be <https://www.youtube.com/watch?v=ubUBLR2B7oU&feature=youtu.be>. Depopulation and disposal methods have been discussed and producers are encouraged to prepare for their depopulation and disposal method of choice, each according to their situation.

Noncommercial Poultry Outreach

In addition to the commercial poultry industry, our outreach efforts continue to noncommercial poultry owners. A brochure is produced in collaboration with the EMD, <https://vet.osu.edu/sites/vet.osu.edu/files/documents/extension/Noncommercial%20Poultry%20Trifold%20Final%20Website%20July%202016.pdf>. The brochure contains information about the HPAI 2015 & 2016 outbreak, but the main message is for poultry owners to report any high mortality. The goal is to increase the chance of detecting any potential outbreak in noncommercial poultry. This brochure has been distributed throughout the state of Ohio using the structure of OSU Extension being represented in each county throughout the state. This brochure has reached all 88 counties of Ohio, it has reached each of 9,000 plus 4-H students with poultry projects. Through the Extension offices the brochure is being distributed to feed stores, agriculture supply stores, poultry shops, shows, swab meets and any place that is significant in the noncommercial poultry activity. Through this distribution system we are hoping to reach as many poultry owners and encourage them to report high mortality.

Poultry Medicine Workshop

Another aspect of our Extension as a part of multidisciplinary project is the Poultry Medicine Workshop <https://vet.osu.edu/extension/conferences-and-workshops/poultry-medicine-workshops>, offered to non-poultry veterinarians. Targeting small animal and mixed animal veterinarians, three separate workshops will be held in the first week of October, in 3 different Ohio cities. Multi-speaker comprehensive program designed to introduce veterinary practitioners in small animal and mixed animal practice to poultry medicine. The goal is to provide veterinarians with the necessary knowledge and skills to accept poultry clients. Noncommercial and urban backyard poultry producers are a growing and underserved population that will require more veterinary involvement, especially when the Veterinary Feed Directive (VFD) takes effect in 2017.

Final Goal

Our final goal for this project is to build a commercial network for poultry disease control. In addition we aim to create a front line of veterinarians that can serve the noncommercial poultry. This frontline represents an opportunity to collect poultry disease data from what is typically hard to reach population. Eventually the data from the commercial network and the data from noncommercial poultry could be combined in one comprehensive data base to represent the poultry disease status in the state of Ohio.



Dr. Mohamed El-Gazzar
The Ohio State University



Dr. El Gazzar seminar on AIV
outbreaks and poultry diseases

Extension Project Update from PSU

PIs: R. M. Hulet , E. Wallner-Pendleton; Co-PIs: P. Dunn, P. Clauer, G. Martin



Dr. Michael Hulet
Pennsylvania State University



Dr. Eva Wallner-Pendleton
Pennsylvania State University

- Collaborated with P. Patterson on providing the poultry industry with the Penn State Farm Plan template for developing flock plans for catastrophic events – M. Hulet
- Posters and presentations were presented at the National Poultry Science Association meetings:
 - Hulet, M *et al.* 2016. Educational Program Development in Response to 2014-2015 Avian Influenza Outbreak. Poultry Science 95 (Supl.1) :326P
 - Moyle, J *et al.* 2016. Assessing how poultry growers respond to current biosecurity demands. National Extension Workshop. New Orleans, LA.
- Gave support to the PA Game Commission and PA Game Breeders Assoc. with Biosecurity, Depopulation, Disposal, C&D procedures, Secure Egg Supply, and Flock Plans.
- Gave presentations at the regional PA Game Breeders Association Meeting (Feb. 21 – 23, 2016), State College, PA
 - High Path Avian Influenza – J. Brown
 - Biosecurity: Cleaning and Disinfection – G. Martin
 - Necropsy and Tissue Submission – E. Pendleton
 - Penn State Farm Plan template for developing flock plans for catastrophic events endorsed and utilized by North American Gamebird Association (NAGA)
- Provided NRCS Information on HPAI & Biosecurity for their field staff.
- Farm Plan consultations with industry – Developing flock plans for catastrophic events (i.e. HPAI) – G. Martin
 - Plainville Farms, New Oxford, PA (turkeys)
 - Joe Jurgielewicz and Son, Ltd., Shartlesville, PA (ducks)
 - Kreider Farms, Manheim, PA
 - Clark's Feed Mill, Inc, Shamokin, PA
 - Tyson Foods, New Holland, PA
 - Esbenshade Farms & Mills, Mount Joy, PA
 - JM Hatchery, New Holland, PA
 - Freebird Chicken/Hain Pure Protein Corp., Fredericksburg, PA
 - Coleman Natural, Fredericksburg, PA
 - Farmer's Pride/Bell & Evans, Fredericksburg, PA
 - Empire Kosher Poultry, Inc., Mifflintown, PA
- HPAI presentation to Penn State Poultry Sales and Service Conference (Broiler Session Sept. 17, 2015) – regional industry meeting, University Park, PA – G. Martin
- Poultry biosecurity presentation & IPM related to HPAI (Sept. 25, 2015), Lancaster, PA – G. Martin
- HPAI Update presented to Lancaster County Animal Response Team (CART) (Oct. 1, 2015) – G. Martin
- Presentation to Lancaster County Medical Reserve Corps (Update; emergency management in HPAI break) (Oct. 6, 2015) – G. Martin
 - Tested the foamer for the depopulation system
- Emails sent to Extension offices aimed at 4-Her's to remind them of the HPAI threat and encourage them to participate in bird-less events – P. Clauer
- Participated on the Vaccine Committee for PDA Avian Influenza Task Force, Sept. 2015 – E. Pendleton
- Participated in the (PVMA) Three Rivers Veterinary Conference (Nov. 7-8, 2015). All day program with regards to back-yard poultry and medicine –P. Dunn
 - Delivered four, 1-hour sessions on diseases of backyard poultry and respiratory diseases
- Participated in the PASA Conference in Feb 2016
 - 90-minute presentation on the topic of detecting and preventing diseases. – E. Pendleton, P. Dunn
 - Poster concerning the Respiratory Disease in Poultry – M. Hulet.
- Participated on a panel at PASA Pasture Poultry HPAI meeting held on Oct 15, 2015 in Lancaster; Mar. 19 – 20, 2016, Stone Barns Center, PA - M. Hulet.
- Gave a biosecurity lecture at the 2015 North American Manure Option , July 14, 2015 – G. Martin
- Biosecurity article:
 - Martz, Mike, 2015. Martz's Game Farm F.L. P. Biosecurity Plan for Dealing with Highly Pathogenic Avian Influenza.
- Lancaster ADL Lab report – P. Dunn and E. Pendleton
 - Several calls of high avian mortality – all incidences negative for HPAI
 - \$1.6 million from PSU for equipment – BSL3 facility – fully stocked with new equipment.
- Presentations Ag Progress Days – Warriors Mark, PA
 - Best Management Practice for the Care of Backyard Poultry – P. Clauer
 - Movement of Cage Free Production: Impact on Consumers – G. Martin
 - Avian Influenza and What You Should Do to Protect Your Backyard Poultry Flock – E. Pendleton