

PoultryTech

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Innovative Poultry House Robotic Assistant Moves One Step Closer to Commercialization

After several years of development, researchers in the Georgia Tech Research Institute's (GTRI) Agricultural Technology Research Program (ATRP) believe they are on the verge of commercializing a robotic assistant for broiler-breeder houses that can autonomously locate and pick up floor eggs.

Broiler-breeder houses contain male (rooster) and female (hen) chickens that produce fertilized eggs, which supply broiler (chickens raised for meat) farms. These houses have nests that function as egg collection systems. Typically, the nests are connected to belts and conveyors that are located on elevated slats along the sides of the house. The middle of the house contains a large "scratch" area or floor where the chickens scratch around for feed. However, a unique problem exists — hens laying eggs in the scratch area instead of the nests. And because most farmers are paid by the egg, any egg not laid in a nest is lost revenue.

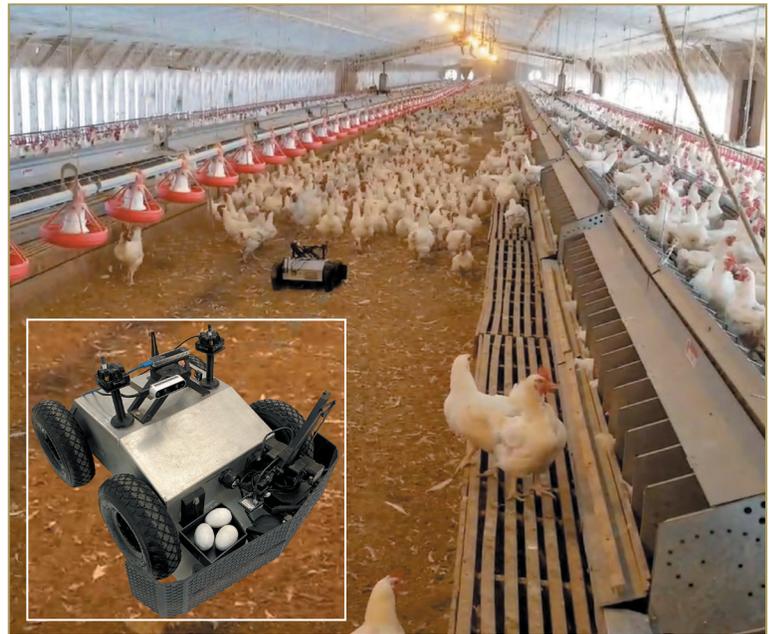
"Floor eggs in broiler-breeder houses are a problem because the farmers don't know exactly when an individual egg was laid since it never made it to the automated collection system attached to the nests. Because of this, floor eggs are typically discarded or downgraded, meaning the farmer does not get compensated for them," explains Colin Usher, GTRI senior research scientist and project director.

In fact, the incidence of floor eggs can quickly become overwhelming.

"When one hen lays an egg on the floor, other hens see it and they also lay an egg, which can create a cascade effect that causes fewer and fewer eggs being laid in the nests. If this is not properly managed, it can be catastrophic to the performance of the house," says Usher.

Well-managed houses have very few floor eggs, but poorly managed houses can have up to as much as 20 percent floor eggs. With a typical house having close to 10,000 hens, each laying one egg per day, even one percent floor eggs is around 100 eggs per day. So, it is not only important to remove these floor eggs, but they must be removed constantly throughout the day, which leads to a significant labor demand.

Here is where GTRI's poultry house robotic assistant comes into play. The third-generation prototype system consists of a combination of several COTS (commercial off the shelf) technologies. A robot chassis houses the electronics and sensor suites that operate the robot. Sensors include 2D/3D imaging cameras, ultrasonic localization devices, and a laser scanner. There is also a small robotic arm and collection bin. A powerful processor enables significant edge computing capabilities for operating the robot's hardware and running artificial intelligence (AI)



GTRI researchers have developed a robotic assistant for broiler-breeder houses that can autonomously locate and pick up floor eggs.

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MANAGER'S CORNER



Two important goals of the Agricultural Technology Research Program (ATRP) are to drive transformational innovation and to transition those technologies from the laboratory to the marketplace. In this issue of *PoultryTech*, we highlight one of these technologies in the front-page article on the Poultry House Robotic Assistant. We also provide a brief snapshot of recent exploratory research projects and three additional novel technologies that are primed for commercialization.

Our exploratory research projects are higher risk, smaller scope efforts that seek to develop concepts and ideas for later transition into full-scale projects. From the growout farm to the processing plant, these projects seek to reimagine current poultry production and processing, with the ultimate goal of presenting a transformational vision of the future of poultry production (see page 4 to learn more).

Our technology transfer projects represent novel technologies that are transitioning from laboratory prototypes to pilot systems that undergo extensive testing with the ultimate goal of commercialization. These projects are the

result of prior full-scale projects that address critical issues facing the poultry industry, including water reuse/recycling, wastewater treatment, and intelligent automation (see page 5 to learn more).

It goes without saying that ATRP's success would not be possible without the ongoing support of many industry and academic partners. On behalf of our research teams and support staff, I would like to express our sincere appreciation to all of you! ♥

Doug Britton, Ph.D.
ATRP Program Manager

Innovative Poultry House Robotic Assistant Moves One Step Closer to Commercialization

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algorithms. Equipped with a large LiPo battery, the robot has upwards of 10 hours a day of operating power.

During operation, the robot traverses the entire house by mapping the floor area and generating smart paths to find and then pick up the eggs with its robotic arm and place them in the onboard collection bin. Once the bin is full, the robot travels to a predefined drop-off location, removes the eggs from the bin, and resumes searching the house for more eggs to pick up, all while remembering areas where it has already been.

Field tests are underway to characterize the egg picking capabilities and possible benefits of operating the robot in broiler-breeder houses. Preliminary results show the robot has a greater than 90 percent egg detection and pick success rate (closer to 100 percent on subsequent attempts if the robot fails to pick up the egg on the first attempt). During recent tests, the average time to pick per egg from detection to picking is under one minute.

“Presumably, removing the eggs on the floor consistently throughout the day will result in fewer eggs being laid on the floor over time,” says Usher. “Since the robot can operate upwards of 6 to 10 hours per charge, it can theoretically remove eggs consistently throughout the day, not just at one or two times a day as is the norm with farmhand labor.”

As field testing continues, the team is attempting to better characterize the economic and labor reduction benefits of automated removal of floor eggs. There are also plans to examine other difficult to quantify benefits.

“There are potential auxiliary benefits that can be realized via better management through data. Environmental sensors on the robot in addition to the 2D/3D cameras and AI capabilities provide a rich set of data for the farmers to better understand the environment and ensure the needs of the chickens are being met,” says Usher.

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POULTRY HOUSE ROBOT DEVELOPMENT TIMELINE

2013

- Formed concept of poultry house robotics
- Tested remote control ground and aerial robots in a broiler house
- Determined robot operation was not detrimental to animal well-being [1]

2015

- Developed first fully autonomous navigation capability
- Added 3D sensor and artificial intelligence (AI) capability
- Leveraged natural behaviors of the chickens as part of the robot plan

2016

- Demonstrated automated navigation capability in broiler house field tests
- Shifted focus to broiler-breeder farms
- Identified floor egg issue as something the robot could manage

2017-2020

- Added robot arm with suction end-effector capable of picking up eggs
- Developed AI algorithms for egg detection
- Developed robot control capability for locating and picking up floor eggs [2]

2021

- Demonstrated egg picking capabilities (accuracy greater than 90 percent) in small-scale facility
- Field tested third-generation prototype robot
- Began discussing commercialization options

[1] Usher, Colin T., et al. “Signal processing for animal behavior detection.” 2014 IEEE Global Conference on Signal and Information Processing (GlobalSIP). IEEE, 2014.

[2] Joffe, Benjamin P., and Colin T. Usher. “Autonomous robotic system for picking up floor eggs in poultry houses.” 2017 ASABE Annual International Meeting. American Society of Agricultural and Biological Engineers, 2017.

Machine Learning-Based Characterization in Poultry Processing

BY BENJAMIN JOFFE

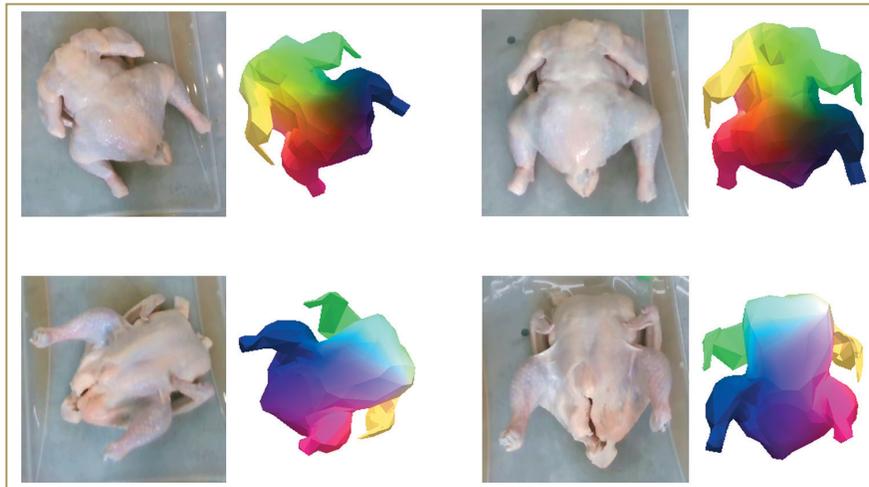
Machine Learning (ML) has been rapidly deployed across many products and services that we commonly use. While it is only starting to be integrated into poultry processing operations, it lays at the core of many next-generation technologies being developed as part of the Georgia Tech Research Institute's (GTRI) Agricultural Technology Research Program (ATRP).

The power of ML is in its ability to learn statistical models directly from data, uncovering patterns and complex interrelations between inputs in order to make predictions. Rich high-dimensional sensor modalities such as images and 3D point clouds are among those that have benefited most from ML advancements in recent years. These sensor modalities are also the most useful sources for machine-based perception and object characterization and identification in poultry processing.

Conceptually, applying a modern ML method is fairly simple. Let's take the robotic grasping of product such as front halves or whole WOGs (processed chicken without giblets) from a bin as an example. To perform the grasping, the robot needs to receive the 3D coordinates for a point on a bird where the gripper should interact and grasp the bird. In order to train an ML model, we collect WOG images (inputs) and manually annotate the desired grasping points (outputs) on those images. After an appropriate kind of ML model is chosen and the training parameters are set, the goal of the ML model is to learn and build the mapping between the input images and the output grasping points on the WOG as closely as possible.

The grasping point allows us to characterize attributes related to the physical geometry of a specific bird. Those characterizations enable robotic

manipulation. A good characterization technique generalizes well and gives consistent predictions through a wide variety of possible presentations, orientations, and perspectives. A more complex characterization example is the sequence of 3D points inside a bird that defines a cutting trajectory to maximize yield. A final example, and one of the hardest to achieve from the ML perspective, is the prediction of a pose of the chicken, which includes both the 3D position and 3D orientation of the bird. Knowing the orientation of the bird is necessary to place it on a cone or hang it on a shackle. But in order to predict the pose, the ML algorithm needs to implicitly learn the parts that make up an object, in this case a WOG, and how the spatial relationships between these parts define the orientation of the whole object.



Four pairs of input validation images and predicted canonical mappings: the pose of the 3D model and the colorization on the right are predicted based on the color image on the left. The same colorization implies the same morphological point.

All the characterization examples above (resulting from past and present ATRP projects) were very successful, but have a limitation in that they have to be developed for a very specific application in mind. The more ambitious goal is to develop a generic task-agnostic bird characterization technique. Researchers working on ATRP's Canonical Manipulation project aim to achieve just that.

First, researchers create a 3D model of a whole bird, constructed either in 3D

Benjamin Joffe is a GTRI research scientist II.



mechanical design software or by scanning a real bird. That 3D model is used as a reference chicken model and is thus called a canonical model. In order to train an ML model, the algorithm takes a few dozen 2D chicken images and starts predicting the correspondence between the pixels on the images and the 3D points in the canonical model. The optimization of this algorithm is based on a cycle of geometric consistency: the predicted 3D point is projected back onto the image and the resulting location is

compared to the original pixel location. The training continues until the original and reprojected pixels start to match closely. At this point, the parts of a chicken on different images, while having different pixel locations, will be matched to the same 3D point on a canonical model.

This technique is able to identify every meaningful morphological point on the surface of a bird, describe its pose, but also

the pose of individual parts, while handling appearance variations, articulations, and deformations. Crucially, it allows going in the opposite direction: defining an optimal manipulation (e.g., a cutting trajectory) just once on a canonical model and then adapting it to a specific bird being imaged.

Perception was traditionally a bottleneck in robotic applications, but thanks to novel ML-based approaches, it enables previously unattainable levels of flexible and adaptable robotic manipulation. ♥

Envisioning the Future of Poultry Production

Each year the Agricultural Technology Research Program (ATRP) funds a number of small-scale research projects. These “exploratory” projects investigate unconventional ideas that, if successful, could lead to significant improvements over current systems and/or processes. As such, the projects seek to tackle the challenge of envisioning the future of poultry production. Five exploratory projects were funded in FY 2021, which ended June 30. The following briefs highlight research results.

On-Farm Processing and Transport (FPaT)

Researchers continued to evaluate the suitability, effects on processing, and economic feasibility of using a proof-of-concept shackle system for on-farm bird harvesting and transport tasks. The project reimagines the process of transporting live chickens to processing plants and instead explores processing at the farm. This eliminates live haul transport, minimizes weight loss, and eliminates mortality risks.

During FY 2021, the team field tested on-farm harvesting using traditional stunning methods and the FPaT system followed by transport. All carcasses were examined for physical damage (broken limbs), defeathering quality, and meat quality parameters such as pH, cook loss, lean color, and texture. No significant differences were observed between a control group and carcasses processed and transported via the FPaT system. Researchers believe the system has the potential to alleviate bird welfare concerns while producing economic benefits by reducing manual labor requirements and transportation costs.

Advanced Intelligent Cutting

Researchers evaluated the automation of poultry deboning by designing knife trajectories based on learning from expert demonstration. Manual chicken carcass deboning is one of poultry processing’s most laborious tasks. The team’s approach incorporates learning from demonstration (LfD) methods to allow expert practitioners (human deboners in this case) to inform/optimize robot knife paths that achieve maximal yield while avoiding bone chips.

During FY 2021, data was collected from human deboners using an instrumented knife to sever the shoulder joint of a bird carcass. This resulted in implicit expert-based optimized knife path functions that were then extracted using machine learning. These preliminary real-time knife/cutting paths were translated to an experimental robot that successfully performed similar cutting operations. Researchers believe the approach holds promise for advancing the incorporation of more robotic solutions for manual poultry processing tasks.

Dual Arm Robotics

Researchers investigated the feasibility of using two robotic arms and a coordinated vision system to automatically place chicken carcasses onto a shackle line after chilling operations, commonly known as rehang. Currently performed manually, the task involves a repeated lifting motion that is physically demanding for operators. The team’s solution employs a robot

with a passive gripper that captures and holds the carcasses’ legs and transfers them to a shackle line. The incorporated vision system determines placement of the leg joint (hocks) in a 3D environment.

During FY 2021 laboratory testing, researchers successfully performed a single leg rehang with a single robot arm. However, due to communication difficulties between multiple robotic devices, the dual arm robotic approach was limited to simulation only. Hardware improvements are planned for FY 2022, and researchers believe the approach shows promise as an automated solution for manual handling tasks like rehang.

Virtual Reality for Robotics System Control and Development

Researchers explored virtual reality (VR) systems for aiding the development and deployment of robotic systems in processing environments. During FY 2021, the team developed and tested an “expert-in-the-loop” robotics solution that allows human operators to provide key information to robot systems enabling their operation. This is performed by using cameras and 3D sensors to capture real-world information and pipe it into a virtual environment. Essentially, the human is performing the sensing task, and telling the robot what to do, all from a VR environment.

Successful implementation could alter poultry processing tasks like loading chicken front halves on cones for deboning by removing workers from harsh environments and repetitive tasks.

Spatiotemporal Modeling and Simulation of Poultry Processing Plant

In response to the coronavirus pandemic, researchers completed a project specifically targeted at helping the poultry industry identify architectural and operational parameters that potentially affect transmission of diseases like COVID-19.

The team developed a comprehensive model that combines an agent-based spatiotemporal model of processing plant common spaces (hallways, break rooms, etc.), airflow, people pathways/interactions, and design layout that can be used to pinpoint potential hot spots in both existing and new facilities. Researchers believe the model can provide the industry alternative options for managing personnel interactions that could reduce the risk of infection. ❤️

TECHNOLOGY TRANSFER PROJECTS

Transitioning From Laboratory Prototypes to Pilot Systems

During FY 2021, three ATRP research projects transitioned from laboratory prototypes to pilot systems. In-plant trials were held to evaluate real-world performance and discuss potential commercialization of the technologies.

Magnetic Nanoparticle Separation Technology

Researchers tested and evaluated the use of an innovative magnetic nanoparticle-based (MNP) method for poultry processing wastewater treatment applications. Environmental regulations require poultry processing wastewater be treated to remove contaminants before discharge. Most poultry processing operations use a multi-step process to treat the wastewater. In particular, a metal salts-based removal method known as chemical precipitation is used to remove phosphorus species. However, it is rather expensive and produces sludge that must be disposed of, further adding to treatment costs.

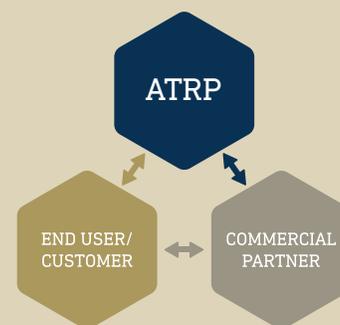
The team's single-step MNP-based method has proven to be significantly better at removing phosphorus species from wastewater samples compared to industry methods like dissolved air flotation. The reusability of the MNPs also lowers overall treatment costs. In fact, a cost analysis found the MNP-based treatment cost is less than \$1 per 1,000 gallons compared to \$1.50 per 1,000 gallons found with the

current practice. Commercialization discussions are ongoing.

Dynamic Filtration Technology Trials

Researchers conducted in-plant trials of a Dynamic Filtration System. During the trials, the patented filtration technology (U.S. Patent 10,646,828) was licensed for poultry processing by a start-up company, Watson Agriculture and Food. The in-plant trials confirmed the system's feasibility for processing poultry liquid streams through a 100-micron screen and identified a better means of delivering a throughput of 100 gallons per minute. The system is designed to improve water recycling and byproduct recovery for poultry processing operations. The Dynamic Filtration System aims to ensure particles are stopped before the filter and removed as quickly and cost-effectively as possible.

Developed with sanitation in mind, the system will meet U.S. Food Safety and Inspection Service (FSIS) compliance guidelines for water reuse applications that achieve needed physical, chemical, or microbiological improvements in the reuse water.



Intelligent Cutting Technology Trials

Researchers conducted in-plant trials of an Intelligent Cutting System. The robotic system is designed to perform deboning of chicken carcass front halves. While there are a handful of fixed automation solutions in today's poultry processing plants, such systems are no match for human deboners in terms of their ability to extract the maximum amount of yield in meat.

The distinctiveness of the Intelligent Cutting System is that it automates the process by intelligently adjusting to the natural variability of carcasses, thus enabling it to potentially achieve in-plant performance on par with human deboners. Commercialization discussions are ongoing. 🐔

RESEARCHER PROFILE

Christopher Heist

Job title: Research Scientist II

Education:

Ph.D., Analytical Chemistry, Oregon State University
M.S., Analytical Chemistry, Bucknell University
B.S., Chemistry, Lycoming College

Areas of research expertise: Gas Chromatography Mass Spectrometry (GC/MS and GCxGC/MS), Microfluidics/ MEMS Devices, Sensor Development (Colorimetric and Gas), Analytical Chemistry

List of any poultry industry projects you're working on and your role: Egg VOCs for Fertility and Sex Determination – Experimental planning, GCxGC/MS method development and sample analysis, as well as data analysis

Multifunction Sensory System – Ammonia sensing film development, fabrication, and testing

What I find most rewarding about working on poultry industry projects: The potential impact they can have on the overall supply chain from animal welfare down to the individual customer



A talent I wish I had: I wish I were more artistic; my sister definitely has that talent in the family.

Another occupation I'd like to try: Pilot

My first job: Receiving at Bon-Ton, a now defunct department store chain in the Northeast

If I could meet someone famous, who would it be and why: Nick Offerman. He is a funny person who shares many of the same hobbies and viewpoints on life as I do.

One thing people may not know about me: I was a radio DJ in college.

My day would not be complete without: Coffee

The last book I read: *Midnight in Chernobyl*

The last movie I saw: *Ghostbusters: Afterlife*

My favorite song: "Radio Ga Ga" by Queen

My motto: Don't sweat the small stuff.

My hobbies: Camping, hiking, fishing, BBQing, woodworking, and homebrewing

Georgia Tech's Georgia Manufacturing Extension Partnership (GaMEP) Expands Services to the Food and Beverage Industry

BY WENDY WHITE, INDUSTRY MANAGER, GEORGIA MANUFACTURING EXTENSION PARTNERSHIP AT GEORGIA TECH

The Georgia Manufacturing Extension Partnership (GaMEP) has been a mainstay of Georgia Tech's Enterprise Innovation Institute (EI²) for over 60 years. GaMEP's mission is to provide expertise and connections to help Georgia manufacturers improve their competitiveness in the global market through organizational growth strategies and operational excellence practices. The food and beverage industry is the largest manufacturing sector in the state in terms of total employment, average employee size per company, and millions of dollars in output. It employs 63,000 people in more than 800 companies across the state and is home to a third of America's Top 100 Food Manufacturing Companies.

In the last five years, GaMEP has actively expanded its outreach to this sector by creating trainings and services, specially tailored to food and beverage. These focus on key challenges such as: regulatory compliance, building food safety HACCP systems, third-party audits (ISO 9001, 14001, GFSI, BRC, SQF, etc.), front-line leadership training, internal auditor training, Lean/6-Sigma, supplier/vendor scouting, equipment design/layout, marketing services, and energy and operational efficiency (e.g., reducing start-up and change-over time).

My extensive background in food safety (B.S. in Biology, M.S. in Food Microbiology, an ASQ Certified Quality Auditor, and 17 years in the food manufacturing and distribution industry) has given me the experience to help our clients as GaMEP's Industry Manager for Food and Beverage. I lead most of our food safety classes as both a FSPCA PCQI Human Foods Lead Instructor and an International HACCP

Alliance Lead Instructor. My services include regulatory compliance, HACCP Food Safety Plan support, and preparatory aid for third-party audit certifications.

My partner, Rodger Weyant, is our Quality Project Manager and has a B.S. in Biology, an MBA, is a FSPCA PCQI Human Foods Lead Instructor, and is a ASQ Certified Manager of Quality/Organizational Excellence. Rodger provides ISO and internal auditor training, audit support, and coaching to help organizations improve their processes and meet customer, statutory, and legal requirements. His expertise is in quality systems, integrated management systems, and problem solving that comes from his background as a Quality Engineer for one of the largest food companies in the world.

In addition to on-site projects and consultations, GaMEP also offers several open enrollment trainings specific to food industry topics.

Food & Beverage Live Trainings:

- HACCP Certificate Training (International HACCP Alliance)
- PCQI Human Food Certificate Training (FSPCA)
- SQF Practitioner & Internal Auditor
- BRC Practitioner & Internal Auditor

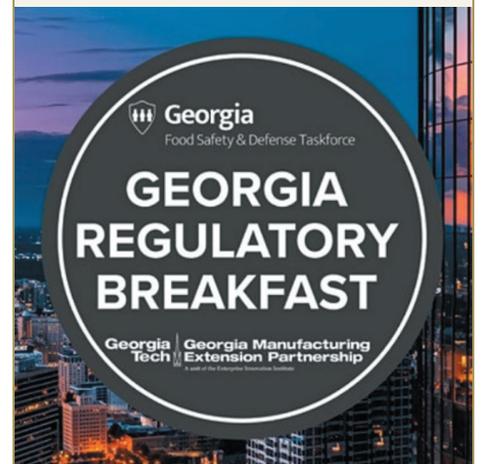
Food & Beverage On-Demand Classes:

- Good Manufacturing Practices (available now)
- Food Allergen Control (coming in 2022)
- Sanitation & Environmental Monitoring (coming in 2022)
- Food Recalls & Crisis Management (coming in 2022)

- Food Microbiology (coming in 2022)
- Introduction to GFSI Audit Certification (coming in 2022)

If you are interested in any of GaMEP's food trainings, services, or events, please contact Wendy White at wwhite@gatech.edu or visit gamep.org/industry-focus-areas/food-beverage. ♥

SAVE THE DATE



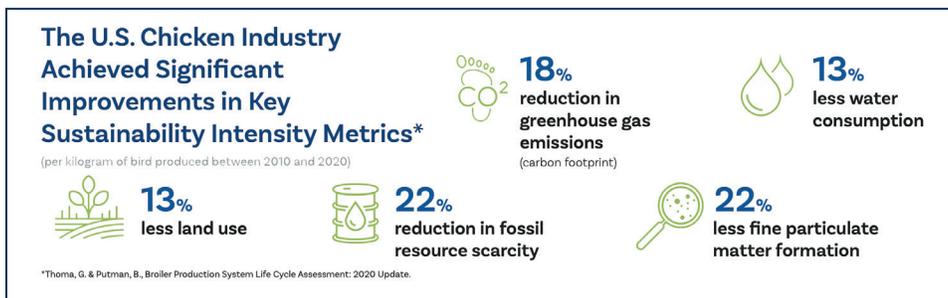
GaMEP partners with the Georgia Food Safety & Defense Taskforce to host the annual Georgia Regulatory Breakfast each year, featuring regulatory updates and networking opportunities with USDA-FSIS, FDA, GDA, and CDC.

Be sure to mark your calendars for the 2022 Georgia Regulatory Breakfast Event, which will be held in Atlanta, Georgia, on November 9, 2022, from 9 a.m.-12 p.m. ET.

National Chicken Council Releases First-Ever Industry Sustainability Report

The National Chicken Council (NCC) released its inaugural sustainability report on September 15, 2021. The report provides a comprehensive overview of U.S. chickens raised for meat, known as “broilers,” and the industry’s collective progress in its environmental, broiler welfare, and social impact journey, as well as efforts to build a more sustainable food system.

The 2020 U.S. Broiler Chicken Industry Sustainability Report was submitted to the Scientific Group of the U.N. Food Systems Summit, ahead of its September 23 meeting in New York City. Guided and inspired by the call to action in the U.N. Sustainable Development Goals (SDGs), the report is also intended to complement the important work being done by the U.S. Roundtable for Sustainable Poultry & Eggs, which is developing a framework for collecting data to further innovation, drive improvements, and support communication about the measured and verified sustainability of U.S. chicken.



In addition to environmental data, the report highlights the voices and stories of NCC members, chicken farmers, and industry stakeholders, to demonstrate their unique sustainability successes and commitments.

“The U.S. chicken industry is committed to environmentally and socially sustainable production practices to ensure a healthier planet. This report is the culmination of that commitment, but it is also the starting point for many more years of collective effort by the U.S. chicken industry to continuously improve and build a more sustainable food system,” said Mike Brown, NCC president. “This past year, we faced COVID-19, extreme weather events, biosecurity issues, and cybersecurity breaches. The U.S. chicken industry stood up to all of these challenges, and we remain even

more committed to the sustainable production of America’s No. 1 protein.”

The report also features the U.S. chicken industry’s collective

Six essential industry topics are addressed in NCC’s report, including: air, land, and water; broiler health and welfare; employee safety and well-being; food and consumer safety; community support; and food security. The report features new broiler life cycle assessment (LCA) data commissioned by NCC.

The Broiler Production System Life Cycle Assessment: 2020 Update reveals the broiler industry achieved significant improvements in key sustainability intensity metrics (environmental footprint per kilogram of bird) between 2010 and 2020:

- Land use: down 13 percent.
- Greenhouse gas emissions (carbon footprint): down 18 percent.
- Water consumption: down 13 percent.
- Fossil resources use: down 22 percent.
- Particulate forming emissions: down 22 percent.

“We are feeding more people and raising each bird with less environmental impact and resources. The Broiler Production System Life Cycle Assessment: 2020 Update confirms the U.S. chicken industry has made meaningful strides in minimizing our environmental impacts with the help of technological advancements and improved broiler welfare practices over the past decade,” said Dr. Ashley Peterson, NCC senior vice president of scientific and regulatory affairs. “The LCA sets the groundwork for the broiler industry’s next steps on the sustainability frontier and brings to light the exact areas in which we need to focus.”

accomplishments, including:

- Decreasing broiler chicken on-farm mortality rates by 72 percent since 1925.
- Defining the essential elements of broiler chicken care with NCC’s Welfare Guidelines.
- Donating more than \$133 million and 22 million meals to local communities at the height of the pandemic in 2020.
- Bolstering global food security with broiler exports totaling 7.4 billion pounds in 2020.
- Providing Americans and people across the world — throughout all life stages — with affordable, nutritious protein.
- Achieving an 86 percent decline in Occupational Safety and Health Administration recordable injuries and illnesses in the poultry processing sector during the past 25 years.

“We take pride in how our chicken gets from farm to table, but we know that sustainability is a journey of collective successes and growth areas. It’s on us as an industry to review our impact and areas of improvement so that we can direct our industry toward a more sustainable future,” Brown said. “We invite all consumers to learn how the U.S. chicken industry is producing safe, nutritious, and sustainable food. This new report is one resource to help shed light on the sustainable practices behind the food on their table.”

To view the 2020 U.S. Broiler Chicken Industry Sustainability Report, visit nationalchickencouncil.org/industry/sustainabilityreport. 🍗

Source: NCC

Innovative Poultry House Robotic Assistant Moves One Step Closer to Commercialization

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The team recently began discussions to outline a path to commercialization for the robot. ATRP is currently soliciting conversations with companies or individuals who might be interested in licensing the technology and developing a commercial product. Alternatively, the team is entertaining the idea of forming a start-up company to develop the robotic technology.

“ATRP is looking forward to partnering with a technology company or group to bring this technology solution to the poultry industry,” says Doug Britton, Ph.D., ATRP program manager.

Overall, Usher says the team feels confident that the system is ready to be commercialized as a robotic assistant for removing floor eggs in broiler-breeder houses.

The robot’s system components can also be tailored for additional capabilities such as automated mortality removal, remote telepresence, animal welfare and environmental monitoring, and early disease detection, all of which Usher believes further add to its commercial appeal. ♥

et cetera

Visit ATRP in Booth C13425 — Exhibit Hall C at the 2022 International Production & Processing Expo

The Agricultural Technology Research Program (ATRP) is excited about its plans to participate in the 2022 International Production & Processing Expo (IPPE), scheduled for January 25-27, 2022, at the Georgia World Congress Center in Atlanta.



ATRP’s exhibit will highlight the program’s research advancements and display prototype systems that seek engineering solutions that enhance process efficiency and product safety in today’s poultry industry. Program researchers will be available to answer questions, and a program video and handouts will describe current projects.

For more information, visit ippexpo.org

Mark Your Calendars for the International Food Automation Networking (IFAN) Conference

The 2022 International Food Automation Networking (IFAN) Conference is scheduled for April 3-5, 2022, at the Georgia Tech Hotel and Conference Center in Atlanta. IFAN Conference 2022 will focus on robotics and automation in the food industry and examine new technology trends, industry challenges, and evolving research. The conference brings together industry leaders from across the globe for two days of education sessions and networking opportunities.

For more information, visit ifan.gtri.gatech.edu

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