

# STATE OF THE SCIENCE MEETING

2020

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**GLOBAL PANDEMICS AND THE AGRICULTURAL WORKFORCE:  
RESEARCH AND POLICY IMPLICATIONS**



Southeastern  
Coastal Center

for Agricultural Health and Safety

**The Southeastern Coastal Center for Agricultural Health and Safety (SCCAHS) is part of a Centers for Disease Control and Prevention (CDC) / National Institute for Occupational Safety and Health (NIOSH) Agricultural Health and Safety Initiative. SCCAHS explores and addresses the occupational safety and health needs of people working in agriculture, fishing, and forestry in Alabama, Florida, Georgia, Mississippi, North Carolina, South Carolina, the U.S. Virgin Islands, and Puerto Rico. The Center brings together investigators from six partnering institutions: the University of Florida, University of South Florida, Florida State University, Florida A&M University, Emory University, and the University of the Virgin Islands.**

The purpose of this State of the Science meeting is to feature researchers and scientists from various fields from across the United States, who will present their findings on COVID-19 and its impact on agricultural workers and farmers and pave the way for future research collaborations that can address the long-lasting effects this pandemic will have on the industry.

## LETTER FROM OUR DIRECTOR



The Southeastern Coastal Center for Agricultural Health and Safety is no stranger to researching and addressing the impact disasters have in our region. However, coming from an unanticipated direction, the current pandemic has posed unexpected new threats to the agricultural and fisheries sectors and the people employed by these sectors.

COVID-19 has shown us how imperative it is for our network of researchers, scientists, growers, commodity groups, and farmers to discuss these issues and propose new solutions.

Agricultural workers who work, travel and live in confined conditions are at an increased risk of being exposed to and contracting COVID-19, according to the Centers for Disease Control and Prevention.

For our third annual State of the Science meeting, we have assembled a slate of outstanding presenters on the topic of **Global Pandemics and the Agricultural Workforce: Research and Policy Implications**. Our goal is to provide a forum for researchers from a variety of backgrounds to discuss current findings, paving the way for the development of appropriate responses, and further stimulating interdisciplinary research collaborations on this important and timely topic.

We extend our thanks the National Institute of Occupational Safety and Health and the Centers for Disease Control and Prevention for providing the fiscal resources necessary for us to learn from the industries we serve and to work with our partners to determine how to best fill in the gaps and address needs in the areas of agricultural health and safety throughout the coastal Southeast.

In addition, we thank our community and stakeholder partners and hope that through our work, we can assist these industries by enhancing their understanding of and capacity to respond to current and future health and safety issues. It is our hope that this work continues to be responsive to unique needs in our region, providing support to the workers in our agriculture, fishing, and forestry industries.

A handwritten signature in black ink that reads "Glenn Morris". The signature is fluid and cursive.

Glenn Morris  
Director

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**CENTER  
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# 11 SEPTEMBER

11-11:15 a.m.

## Welcome

Scott Angle, Vice President of Agriculture and Natural Resources at University of Florida's Institute of Food and Agricultural Sciences

**MEETING LINK:** <https://ufl.zoom.us/j/92751034913?pwd=OU5PUjIURHhNMURDYmh1OzB5dkc1UT09>

11:15 a.m.-12 p.m.

## Session 1: Opening Keynote by Southeastern Coastal Center for Agricultural Health and Safety Director

*SARS-CoV-2: Transmission and Human Health* presented by J. Glenn Morris, Jr., MD, MPH&TM, from University of Florida's Emerging Pathogens Institute and the Southeastern Coastal Center for Agricultural Health and Safety

12:10-12:50 p.m.

## Session 2: Risk Assessment and Mitigation e-tools: Modeling Physical Distancing and Exposure Control

*Development and Deployment of Farmworker Housing Simulator for COVID-19 Risk Mitigation* presented by Leigh McCue, Ph.D., from George Mason University, Department of Mechanical Engineering

*Facilitating Pandemic Preparedness in Agricultural Industry via COVID-19 Hazard Assessment and Mitigation Plan (CHAMP) e-tool* presented by Melissa Millerick-May, Ph.D., MSC from Michigan State University, Department of Medicine, Extension, Environmental Health and Safety

1-1:45 p.m.

## Session 3: Poster Presentations, Networking and Moderated Discussion

**SESSION LINK:** <https://ufl.zoom.us/j/94888815066?pwd=azBva0JBbXZHMfhLUGJHeFNyMWFldz09>

1:50-2 p.m.

## Closing Remarks

# 18 SEPTEMBER

11-11:35 a.m.

## Session 4: Best Practices for Personal Protective Equipment

*Sterilization technology* presented by Ying (Sarah) Zhong, Ph.D., from University of South Florida, Department of Mechanical Engineering

*Fit Testing in Agricultural Respirator Communities: Helping Fight the Enemy We Cannot See* presented by Charlotte Halverson, BSN, COHN-S from AgriSafe Network

**MEETING LINK:** <https://ufl.zoom.us/j/91728128896?pwd=TW5HYmN4NFFfamlyakV6aTkWTEM4Zz09>

11:40 a.m.-12:15 a.m.

## Session 5: Communicating Science Resources

*Communication during COVID-19: Trust in Science, Vaccine Adoption and Cultural Implications* presented by Lauri M. Baker, Ph.D., from University of Florida's Center for Public Issues Education in Agriculture and Natural Resources (PIE Center)

*Farm To You: Necessity as the mother of invention* presented by Danielle Andrews from the Florida Department of Agriculture and Consumer Services

12:20-12:55 p.m.

## Session 6: Economic Implications of Pandemics

*COVID-19 and Resilience in Food Supply Chains* presented by David Abler, Ph.D., from Pennsylvania State University, Department of Economics, Sociology and Education

*Impact of COVID-19 of Florida's Agriculture and Marine Industries* presented by Christa Court, Ph.D., from University of Florida, Department of Food and Resources Economics

1-1:45 p.m.

## Session 7: Agricultural Centers Roundtable - Impacts of COVID-19 on Extension Agents

*Sebastian Galindo*, Ph.D., Southeastern Coastal Center for Agricultural Health and Safety

*Athena Ramos*, Ph.D., Central States Center for Agricultural Safety and Health  
*Shannon Sampson*, Ph.D., Southeast Center for Agricultural Health and Injury Prevention (SCAHIP)

**SESSION LINK:** <https://ufl.zoom.us/j/99617721579?pwd=b1lZVYxV2IzUzFCOXd6MVJRvWw3QT09>

1:50-2 p.m.

## Closing Remarks

# MEET THE SPEAKERS



**LEIGH MCCUE**  
Ph.D.



**MELISSA MILLERICK-MAY**  
Ph.D.



**GLENN MORRIS**  
MD, MPH&TM



**DAVID ABLER**  
Ph.D.



**Danielle Andrews**



**SCOTT ANGLE**  
Ph.D.



**YING (SARAH) ZHONG**  
Ph.D.

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## AGRICULTURAL CENTERS ROUNDTABLE SPEAKERS



**LAURI BAKER**  
Ph.D.



**CHRISTA COURT**  
Ph.D.



**CHARLOTTE HALVERSON**  
BSN, COHN-S



**SEBASTIAN GALINDO**  
Ph.D.



**ATHENA RAMOS**  
Ph.D.



**SHANNON SAMPSON**  
Ph.D.



**DAVID ABLER**  
**Professor**  
**Pennsylvania State University**  
**Department of Economics, Sociology and Education**  
**Agribusiness Management Program Coordinator**

Dr. David Abler is a professor of agricultural, environmental and regional economics and demography at Pennsylvania State University. Dr. Abler's research interests and areas of expertise include the economic and environmental sustainability of agriculture, global food

and agricultural markets, natural resource economics, and climate change adaptation and mitigation.



**DANIELLE ANDREWS**  
**Director of Diversity and Inclusion**  
**Office of the Commissioner**  
**Florida Department of Agriculture and Consumer Services**

Danielle Andrews was born in Pittsburgh, PA, but raised in Largo, Florida. She earned a Bachelor's in Political Science from the University of Central Florida, a Masters of Science in Education Policy and Evaluation, and an Education Specialist Degree in Education Leadership from Arkansas State University. Danielle worked as a Middle School Social Studies Teacher for

four years prior to starting at the Florida Department of Agriculture and Consumer Services. In 2018, she began as a Training Specialist. One year later she was appointed as the Director of Diversity and Inclusion by Commissioner Nicole "Nikki" Fried. At FDACS, she works to implement equitable practices in the department and champion inclusive initiatives in Florida's agriculture industry.



**SCOTT ANGLE**  
**Vice President of Agriculture and Natural Resources**  
**University of Florida**  
**Institute of Food and Agricultural Sciences**

Dr. J. Scott Angle joined the University of Florida in July 2020 as Vice President of Agriculture and Natural Sciences at the Institute of Food and Agricultural Sciences. Before joining UF, he served as the Director of the National Institute of Food and Agriculture.

Dr. Angle received both his Bachelor of Science and Master of Science at the University of Maryland in Agronomy and Soil Science, respectively. He obtained his Ph.D., from the University of Missouri with an emphasis on Soil Microbiology. Dr. Angle worked for 24 years as a Professor of Soil Science and administrator (Director of the Maryland Agricultural Experiment Station and Maryland Cooperative Extension) at the University of Maryland.



**LAURI BAKER**  
**Associate Professor**  
**University of Florida**  
**Department of Agricultural Education and Communication**  
**Center for Public Issues Education in Agriculture and Natural Resources (PIE)**

Dr. Lauri Baker is an associate professor of agricultural communication in the Department of Agricultural Education and Communication (AEC) at the University of Florida. Baker earned her bachelor's degree in agricultural communications from Texas Tech University in 2003. Following her

graduation, she served as Vice President and Director of Communication for the Texas Wheat Producers Board and Association. After four years in the industry, Baker returned to school to pursue a master's degree in agricultural communication, this time at the University of Florida. She stayed to obtain her doctorate from the same department, graduating with her degrees in 2009 and 2011, respectively. Baker was faculty at Kansas State University for eight years before coming back to Gainesville. While at Kansas, she earned tenure and co-created the Center for Rural Enterprise Engagement (CREE), a faculty-driven interdisciplinary research center that serves as a generator and source of knowledge about new-media marketing in an effort to enable rural and agriculture-based businesses to flourish in ever-changing environments. She continues her work with CREE integrates that work with her research appointment in the UF/IFAS Center for Public Issues Education. Throughout her experiences, Baker has developed a research line that is inclusive of communication preferences and impacts on local economies, new-media technologies, strategic communication and audience analysis, Extension communication, and climate change and disaster communication, among others.



**CHRISTA COURT**  
**Assistant Professor**  
**University of Florida**  
**Department of Food and Resources Economics**

Dr. Christa D. Court is an Assistant Professor in the Food & Resource Economics Department at the University of Florida (UF), Institute of Food & Agricultural Sciences (IFAS). She also serves as Director of the UF/IFAS Economic Impact Analysis Program, which conducts regional economic analyses for funded research

projects, industry organizations, and government agencies, analyzing a wide range of activities and industries. She holds affiliate faculty status with Florida Sea Grant, UF School of Natural Resources and Environment, the UF Water Institute, the UF/IFAS Institute for Sustainable Food Systems, and the Regional Research Institute at West Virginia University. Her research interests include regional economic modeling, disaster impact analysis, and connections in human and natural systems. Dr. Court has been involved in numerous funded projects involving regional economic modeling over the last decade and has a growing list of related publications. She holds undergraduate degrees in Economics and Spanish from Middle Tennessee State University and a Master's and Ph.D. in Economics from West Virginia University.



**SEBASTIAN GALINDO**  
**Research Associate Professor**  
**University of Florida**  
**Department of Agricultural Education and Communication**

Dr. Sebastian Galindo is a research associate professor in the Department of Agricultural Education and Communication (AEC) at the University of Florida. With over 10 years of experience as an evaluator, he has served as an evaluator in almost 40 externally-funded projects. Dr. Galindo leads the Evaluation Program of the Southeastern Coastal Center for Agricultural

Health and Safety (SCCAHS). In addition to his roles with the department and SCCAHS, Galindo also serves as Technical Monitoring and Evaluation Supervisor for the Feed the Future Innovation Lab for Livestock Systems, faculty affiliate for the Center for Public Issues Education (PIE Center), Florida Climate Institute, Florida Water Institute, Tropical Conservation and Development Program, Master of Sustainable Development Program, and as coordinator of the Qualitative and Mixed Methods Research Community at UF.

Dr. Galindo currently focuses his research on the use of mixed methods for the evaluation of research, teaching, and extension initiatives. He also teaches graduate courses on program evaluation, mixed methods, qualitative methods, statistical thinking, and methodology of planned change.



**CHARLOTTE HALVERSON**  
**Occupational Health Nurse**  
**AgriSafe Network**

Charlotte Halverson, BSN, COHN-S, is an occupational health nurse for the AgriSafe Network and serves as the network's clinical director. In that capacity, she researches, develops resources, and presents webinar and in person educational sessions on a variety of health and safety topics specific to the agricultural workforce.

Charlotte is an invited speaker at the local, state, and national level with a focus on education for healthcare providers and the development of safety and health programs for farm and ranch families and the agricultural business community. Her work in the rural and agricultural health arena began in 1986 in crisis outreach program development and transitioned into an occupational safety and health focus following completion of an occupational medicine specialized course through the University of Iowa in 1990. As the clinical services manager for seventeen years at the National Education for Agricultural Safety, she developed and implemented agricultural-related health care programs and services for farmers and their families.



**LEIGH MCCUE**  
**Associate Professor**  
**George Mason University**  
**Department of Mechanical Engineering**

Dr. Leigh McCue is an Associate Professor at George Mason University in the Department of Mechanical Engineering. From June 2015 - December 2018, she was the executive director of the American Society of Naval Engineers. Prior to that, from December of 2004 through May of 2015, she was an Assistant, then Associate Professor in Virginia Tech's Department

of Aerospace and Ocean Engineering. Her research interests are in nonlinear and chaotic vessel dynamics and computational fluid dynamics. This work has been supported by ONR, NSF, NASA, the USCG, CSC, QinetiQ, and the Northeast Center for Occupational Safety and Health (NEC). Additionally, Dr. McCue has participated in the ASEE-ONR Summer Faculty Research Program to continue her work in collaboration with researchers at the Carderock Division of the Naval Surface Warfare Center and was on sabbatical for the 2011-2012 academic year with the Combatant Craft Division of the Naval Surface Warfare Center, Carderock. She is passionate about getting research into the hands of operators as evidenced by her two iOS-based, fishing vessel safety apps SCraMP and FVdrills.

Dr. McCue received her BSE degree in Mechanical and Aerospace Engineering in 2000 from Princeton University. She earned her graduate degrees from the University of Michigan in Aerospace Engineering (MSE 2001) and Naval Architecture and Marine Engineering (MSE 2002, PhD 2004). McCue is a past recipient of an NSF Faculty Early Career Development (CAREER) grant, an ONR Young Investigator Program (YIP) grant, and a Presidential Early Career Award for Scientists and Engineers (PECASE).



**MELISSA MILLERICK-MAY**  
**Assistant Professor**  
**Michigan State University**  
**Department of Medicine, Extension, Environmental Health and Safety**

Dr. Melissa Millerick-May has over 20 years of practical experience as a toxicologist, industrial hygienist, and epidemiologist in both the automotive industry and now in an academic setting. Her goal is to leverage her expertise as an exposure scientist to conduct field-based research centered

on occupational and environmental exposures related to disease development – both human and animal. Her current research is focused on the determination of prior occupational exposures related to the development of cancer, as well as the identification of sentinel event and subsequent environmental/occupational exposures relevant to development of disease in individuals with hypersensitivity pneumonitis. Recently, and amidst concerns over transport of highly pathogenic microorganisms such as enteropathogenic viruses and influenza affecting food animal production, Dr. Millerick-May has been collaborating with colleagues in extension, animal science and veterinary medicine to identify risk factors for disease transmission with an aim to create a paradigm shift toward implementation of source-based control strategies rather than those currently focused at the level of the receiver.



**GLENN MORRIS**  
**Professor of Medicine**  
**University of Florida**  
**Director of Emerging Pathogens Institute**  
**Director of Southeastern Coastal Center for Agricultural Health and Safety**

Dr. Glenn Morris is the director of the Emerging Pathogens Institute, a professor of infectious diseases at the University of Florida College of Medicine, and the Director of the Southeastern Coastal Center for Agricultural Health and Safety.

Dr. Morris has worked in public health and pathogen-related fields for more than 30 years, and has had a continuing fascination with emerging pathogens. At EPI, Morris has helped to shape the creative vision behind a web of campus-wide projects to anticipate, understand and control the emergence of new, disease-causing microorganisms.



**SHANNON SAMPSON**  
**University of Kentucky**  
**Department of Education Policy Studies and Evaluation & Southeast Center for Agricultural Health and Injury Prevention (SCAHIP)**

Dr. Shannon Sampson is Director of the Evaluation Center and assistant professor in the Department of Educational Policy Studies and Evaluation at the University of Kentucky. Her background is in educational measurement related to language acquisition, but in her work with program evaluation,

she now applies measurement principles within an array of disciplines including education, engineering, agricultural safety and health, and medicine. She has worked as an evaluator on projects funded by National Science Foundation, U.S. Department of Education, National Institute of Occupational Safety and Health, Department of Defense in Education, and the Health Resources and Services Administration. Dr. Sampson leads the evaluation team for the Southeast Center for Agricultural Health and Injury Prevention located at the University of Kentucky.



**ATHENA RAMOS**  
**Assistant Professor**  
**University of Nebraska Medical Center**  
**Department of Health Promotion**  
**Central States Center for Agricultural Safety and Health**

Dr. Athena Ramos is an Assistant Professor in the Department of Health Promotion and is affiliated with the Central States Center for Agricultural Safety and Health (CS-CASH) and the Center for Reducing Health Disparities at the University of Nebraska Medical Center (UNMC) in Omaha,

Nebraska. She leads a Latino outreach and engagement team and serves as principal investigator for a number of community-based health and social research and education initiatives in such areas as agricultural health and safety, immigrant integration, and community well-being. Currently, she has been leading studies related to vulnerable workers throughout the agrifood system in the Midwest region. Dr. Ramos serves on the Board of Directors for the International Society for Agricultural Safety & Health (ISASH).



**YING (SARAH) ZHONG**  
**Assistant Professor**  
**University of South Florida**  
**Department of Mechanical Engineering**

Dr. Ying (Sarah) Zhong joined the University of South Florida in August 2019 and leads the GREEN Lab – Green Research for Energy-Efficient Innovations. Current research she is overseeing at the Lab includes ultra-insulating technology and energy solutions, smart health improvement

and energy management, as well as sterilization technology for personal protective equipment to combat COVID-19. Dr. Zhong was a postdoctoral research scholar at the University of California in San Diego from 2017-2019.

# PRESENTATION ABSTRACTS

## **COVID-19 and Resilience in Food Supply Chains presented by David Abler, Ph.D. from Pennsylvania State University, Department of Economics, Sociology and Education**

COVID-19 has dramatically disrupted food supply chains around the world at all stages from production to retail. On the supply side, food processing plants have closed after employees tested positive for COVID-19. Workers at other stages of food supply chains, including farm and grocery store workers, have tested positive. Travel disruptions have created problems for farms that depend on migrant workers to plant and harvest crops. On the demand side, restaurant, hotel, and school closings have led to a collapse in demand for dairy and meat products. At the same time, demands for staple foods at grocery stores and other retail outlets have surged.

These disruptions have exposed weak links and a lack of resilience in the food supply chains that until now were unknown. Food distributors and retailers have focused in recent years on increasing the efficiency of supply chains. They have been largely successful but at a cost of reduced resiliency that has been exposed by COVID-19. This presentation will cover ongoing research at Penn State using a spatially-explicit, multilayer network model to characterize U.S. food supply chains to identify weak links, tipping points, bottlenecks, and other problems affecting food system response to supply and demand shocks.

<https://agsci.psu.edu/safes/research/initiatives-projects/covid-19>

## **Communication during COVID-19: Trust in Science, Vaccine Adoption and Cultural Implications presented by Lauri M. Baker, Ph.D. from University of Florida's Center for Public Issues Education in Agriculture and Natural Resources (PIE Center)**

University of Florida's Center for Public Issues Education in Agriculture and Natural Resources (PIE Center) researchers collected data from a sample of ~1500 different Americans three times at different intervals via the online survey tool Qualtrics. The samples were recruited to be representative of the U.S. population based on income, ethnicity, gender, and socioeconomic status. Agricultural and natural resources leaders (n = 250) were also asked questions in a separate survey about unique implications to their businesses.

Data were specifically captured related to health concerns for individuals and their loved ones; perceptions of a COVID-19 vaccine; willingness and ability to comply with social distancing; economic impacts at individual, local, state, and national levels; availability of accurate information, preparedness for the pandemic at individual, local, state, and national levels; trust in science during the pandemic, and cultural implications of the pandemic. This presentation will cover how this data can be applied when framing messages related to COVID-19 and allow scientists and others communicating with the public during this and future pandemics to determine the needs and concerns of U.S. general and agriculture populations.

<https://piecenter.com/covid-19/>

## **Farm To You: Necessity as the mother of invention presented by Danielle Andrews from the Florida Department of Agriculture and Consumer Services**

With restaurants and foodservice businesses in various stages of closure due to COVID-19, agricultural producers across the country have struggled to sell perishable products like fruits and vegetables. To support Florida's farmers during COVID-19 the Florida Department of Agriculture and Consumer Services (FDACS) created a state "Florida Farm to You" commodities list posted on the FDACS website. Our Florida Farm To You commodities list connects buyers and consumers with producers of Florida-grown commodities like fresh produce, seafood, poultry, and more. The Florida Farm to You commodities list is updated daily.

Designed to connect farmers with buyers, consumers, and food banks during COVID-19, the page features an interactive map and transportation search capabilities as part of the #KeepFloridaGrowing effort launched by FDACS. This presentation will cover how the FDACS is sharing the Farm To You list with constituents throughout the state to help support Florida-grown commodities.

Farm To You Lists:

Businesses and Consumers: <https://ffarmtoyou.fdacs.gov/consumers.aspx>

Growers: <https://ffarmtoyou.fdacs.gov/>

Available Transportation Services:

<https://fdacs.maps.arcgis.com/home/webmap/viewer.html?webmap=f0683d0da7c547e58e1dc56b6cdc107f>

Submit your Transportation Service:

<https://fdacs.maps.arcgis.com/apps/GeoForm/index.html?appid=e99006bb52de437c9103b53a4a5270bf>

## **Impact of COVID-19 of Florida's Agriculture and Marine Industries presented by Christa Court, Ph.D. from University of Florida, Department of Food and Resources Economics**

Concerns about the infection rate and severity of COVID-19 led government officials around the world to enact restrictive public health measures to mitigate its spread. As is the case with other types of disasters, timely provision of credible estimates of agricultural losses is a critical component in the processes of official disaster declaration and disaster relief and recovery. Florida's Cooperative Extension system is recognized as a reliable and unbiased source for this information in the wake of natural disasters but the tools developed for assessing the impacts of events such as hurricanes and hard freezes were inadequate for assessing the impacts of a global pandemic.

While natural disasters can result in lost revenues from damaged or destroyed crops, injured or lost livestock, or damage to farm infrastructures such as farm homes, fencing, and irrigation systems, the COVID-19 pandemic presented an entirely different set of challenges. This presentation will cover how Cooperative Extension faculty used past experience and anecdotal information to design and implement an online survey instrument that could harmonize the data collection process for agriculture and marine operations in the State of Florida and garner a more complete picture of impacts to the food system as a result of the pandemic.

<https://fred.ifas.ufl.edu/economicimpactanalysis/Disasterimpactanalysis/>

**Fit Testing in Agricultural Respirator Communities: Helping Fight the Enemy We Cannot See presented by Charlotte Halverson, BSN, COHN-S from AgriSafe Network**

Respiratory personal protective equipment (PPE) fit testing helps assure the best protection against dangerous airborne particles. Agricultural workers face a myriad of challenges in obtaining a proper fit test and who can provide this service. Additionally, there are gray areas of misunderstanding about the fit testing mandates in certain agricultural populations. The COVID-19 pandemic has added another layer of concern, as protective equipment and fit testing tools are in short supply. This impacts the ability to comply with Worker Protection and OSHA standards for agricultural producers. This presentation will address evidence-based and practice-based research related to respirator fit testing and fit checks in the agricultural industry.

<http://www.cdc.gov/niosh/twh/totalhealth.html>

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134AppA>

**Development and Deployment of Farmworker Housing Simulator for COVID-19 Risk Mitigation presented by Leigh McCue, Ph.D., Associate Professor at George Mason University, Department of Mechanical Engineering**

In an effort to provide farm owners and farmworkers tools to assess and mitigate risks associated with COVID-19 in dormitory-style housing environments, the presenter, in partnership with the Northeast Center for Occupational Health and Safety (NEC) developed a 'Farmworker Housing Simulator.' The modeling utilized in the simulator is a blended approach based on the physical proximity of bed locations for risk assessment while sleeping, and a modified S-I-R model for viral spread during daytime interactions. The stochastic simulation tool seeks to highlight how intervention strategies can reduce the risk to the farmworker population, thus serving both modeling and educational purposes. The presentation will discuss the computational model and website deployment.

<https://vesseldynamics.com/research/farmworker-housing-simulator/>

**Facilitating Pandemic Preparedness in Agricultural Industry via COVID-19 Hazard Assessment and Mitigation Plan (CHAMP) e-tool presented by Melissa Millerick- May, Ph.D., MSC at Michigan State University, Department of Medicine, Extension, Environmental Health and Safety**

The COVID-19 Hazard Assessment and Mitigation Plan (CHAMP) e-tool was developed to assist the Michigan agriculture community in assessing risk for spread of COVID-19 in their operations, to help identify and implement appropriate and meaningful exposure control strategies to protect workers and the public (customers) consistent with business operations, and to comply with state requirements for essential and open businesses. This presentation will cover how information and guidance was adapted and compiled directly from federal, state, local and other sources and packaged in a way that guides users to not only

understand what is required as part of a pandemic preparedness plan, but more importantly, 'how' to think about conducting a hazard assessment using a stepwise approach based on the established and requisite OSHA framework using examples that are readily recognizable by commodity group.

<https://www.canr.msu.edu/news/michigan-state-university-extension-releases-covid-19-hazard-assessment-and-mitigation-program-champ-e-tool-to-support-the-agriculture-industry>

**SARS-CoV-2: Transmission and Human Health presented by J. Glenn Morris, Jr., Southeastern Coastal Center for Agricultural Health and Safety Director, Professor of Medicine (Infectious Diseases) and Emerging Pathogens Institute Director from the University of Florida**

SARS-CoV-2 is a highly contagious virus that has spread rapidly in pandemic form across the globe. What are the key characteristics of COVID-19, the infection caused by this virus, and how is the virus transmitted? At the agricultural level, what are the risks posed by the virus? While the risk to food products is limited, substantial problems have arisen with regard to transmission among agricultural workers. Areas of particular concern include worker transportation and lodging, as well as identification and management of illness among workers.

**Sterilization technology presented by Ying (Sarah) Zhong, Ph.D., Assistant Professor at University of South Florida**

This presentation will talk about a portable sterilization technique to be safely and effectively used for sterilization and recharge of used face masks, N95 respirators, and PPEs. Our technology can efficiently and rapidly sterilize various PPEs to help resolve the massive shortage problem upon outbreaks of public health emergencies, and offer an efficient sterilization solution for shared surfaces, confined spaces, and possibly open air to prevent COVID-19 spread. This would drastically mitigate the PPE shortage at hospitals, and allow citizens to have safe access to masks, which will help to flatten the curve of SARS-CoV-2 infection and support economic recovery. The presentation will bring awareness to public on the potential risk of reusing masks without static charges, which reduces the filtration effect.

<https://www.usfgreen.com/>

**Impacts of COVID-19 on Extension Agents - Agricultural Health and Safety Centers Roundtable**

In response to the COVID-19 pandemic, the Evaluation Program team at the Southeastern Coastal Center for Agricultural Health and Safety (SCCAHS) initiated a collaborative group that brings together evaluation experts from each of the 11 NIOSH Agricultural Health and Safety Centers across the U.S. Led by SCCAHS, this group developed and distributed an online survey to identify the different impacts that COVID-19 has had on the lives, health, and work of Extension professionals. This presentation will provide an overview of the key findings from the survey and the initial steps taken in response to this evidence. The presenters aim to establish an open- dialogue with the audience to discuss further implications and recommendations.

# POSTER SESSION

To view a participant's posters, click on the photo of their poster.

## Poster 1:

Ashley McLeod-Morin, University of Florida: A Public Relations Perspective of the COVID-19 Pandemic: Exploring the Organization-Public Relationship Indicators of the CDC

**A Public Relations Perspective of the COVID-19 Pandemic: Exploring the Organization-Public Relationship Indicators of the CDC**

Ashley McLeod-Morin, Lauri M. Baker, Lisa Lundy, Angela B. Lindsey, & Ricky Telg

**INTRODUCTION**

Excellent public relations move an organization toward its overall mission and build strong relationships between the organization and the public (Grung, 1992). Individuals and communities will be more likely to follow the guidance and recommendations established by organizations with a shared two-way relationship. The purpose of this study was to explore the organizational-public relationship of the Centers for Disease Control and Prevention (CDC) during the COVID-19 pandemic to determine what relationship indicators have been best promoted through messaging (Horn & Grung, 1999).

**METHODS**

A quantitative survey was conducted with 1,500 residents in the United States to address the purpose of this study. Data were collected between April 23 - May 7, 2020 using Qualtrics. The instrument used in this study was adapted from Horn and Grung's (1999) OPR instrument. Descriptive data analysis was conducted using SPSS. The purpose of this study was part of a larger study that explored the perceptions of COVID-19.

**CONCLUSIONS & RECOMMENDATIONS**

Results from the study reveal strong public perceptions of commitment, trust, and satisfaction of the CDC. By applying this novel approach to the communication of science and health organizations, findings from this study can be applied to position strategic communication efforts to address areas of improvement, such as exchange relationships and control mutuality, through partnerships with grassroots organizations, such as local Extension, farmworker advocacy groups, and healthcare workers. Future research should explore how these OPR indicators might have been impacted throughout the COVID-19 pandemic.

**TRUST**  
degree of confidence and openness the public has with the CDC (M = 3.838, SD = .932)

**SATISFACTION**  
level of favorability the public has towards the CDC (M = 3.764, SD = .958)

**COMMUNAL RELATIONSHIP**  
benefits exchanged by the CDC out of concern for the public's wellbeing, as perceived by the public (M = 3.778, SD = 1.0)

**COMMITMENT**  
extent to which the public believes and feels that the relationship with the CDC is worth spending energy to maintain and promote (M = 3.660, SD = 1.070)

**CONTROL MUTUALITY**  
level of agreement from the public on who has the influential power on one another (M = 3.469, SD = .830)

**EXCHANGE RELATIONSHIP**  
the public's perception that the CDC providing benefits to the public with the only reason in mind that the other group has previously contributed benefits or is anticipated to provide benefits in the future (M = 2.521, SD = 1.187)

\*Main effects are based on a 5-point scale

## Poster 2:

Michaela Kandzer, University of Florida: Public Perceptions of Food Purchasing Habits and Food Safety Behaviors as they Relate to the COVID-19 Pandemic

**Public Perceptions of Food Purchasing Habits and Food Safety Behaviors as they Relate to the COVID-19 Pandemic**

Michaela Kandzer\*, Ricky Telg, Lauri M. Baker, Lisa Lundy

**PURPOSE:**

The purpose of this study was to describe Americans' food purchasing habits and food safety behaviors as they relate to the COVID-19 pandemic.

**METHODS:**

- Quantitative descriptive survey design  
- Sample was recruited to be representative of the U.S. population based on income, ethnicity, gender, and socioeconomic status, -1500 respondents  
- Data were collected from July 24, 2020-August 8, 2020

**CONCLUSIONS:**

This preliminary research suggests that respondents' food purchasing habits and food safety behaviors were impacted by COVID-19.

**RESULTS:**

**Due to the impacts of COVID-19:**

- 86% of respondents have experienced an increase in food prices
- 77% of respondents have looked for information related to food safety
- 75% of respondents have some level of concern about food safety
- 72% of respondents have purchased local foods in the past month

**Due to the impact of COVID-19, in the past month, I have:**

- washed my hands before preparing food 93.7%
- washed my hands before consuming food 93.2%
- made sure my fresh fruits and vegetables are rinsed before I eat them 90.3%
- washed my fruits and vegetables with soap, bleach, sanitizer, alcohol, or disinfectants\* 47.1%

\*Note: Washing fruits and vegetables with soap, bleach, sanitizer, alcohol, or disinfectants is NOT recommended by the CDC.

**When given the following characteristics of local food, respondents ranked them in this order of importance during COVID-19:**

- Price - 33.8%
- Safer for my family - 27.1%
- Freshness - 13.4%
- Availability - 9.0%
- Supporting the local economy - 5.9%
- Taste - 5.7%
- Convenience - 5.1%

\*Note: Percentages represent respondents who ranked each option first in order of importance.

## Poster 3:

Christine Kelly-Begazo, Indian River County Extension/University of Florida: COVID-19 Safety Measures for Fresh Citrus Agricultural Workers and Training Needs in Florida

**A Survey to Discover COVID-19 Safety Measures for Fresh Citrus Agricultural Workers and Training Needs**

C. A. Kelly-Begazo, UF IFAS Extension, Indian River County  
M. A. Blomquist, UF IFAS Indian River Research and Education Center

**Background:** The U.S. has a long history of citrus production. The Indian River growing region produces hundreds of agricultural workers each year in food safety, pesticide application, worker protection, and other areas. Citrus is a high-risk industry for COVID-19. The purpose of this study was to discover what safety measures are being implemented or will be implemented to reduce the spread of COVID-19 among workers.

**Methods/Purpose:**

- Determine the level of concern citrus growers and the industry have about COVID-19.
- Identify what COVID-19 safety measures are being implemented or will be implemented to reduce the spread of COVID-19 among workers.
- Identify what training needs citrus growers and the industry have about COVID-19.

**Results/Conclusions:** Of 100 respondents, 60% were concerned about the possible spread of the virus at their place of work or business. 20% reported that employees at their place of work (including office and field workers) had already had the disease. 60% reported some sort of guidance for workers to get tested from a "list of available tests" to "test our team before we get" and "we should get tested" when appropriate. 10% reported that the availability of hand sanitizer had increased and 10% said that "face coverings were required".

**Next Steps/Directions & Research:**

- Develop a survey to determine the level of concern citrus growers and the industry have about COVID-19.
- Identify what COVID-19 safety measures are being implemented or will be implemented to reduce the spread of COVID-19 among workers.
- Identify what training needs citrus growers and the industry have about COVID-19.

## Poster 4:

Valentina Castano, University of Florida: Public Perceptions Regarding Cultural and Racial Issues Impacted by COVID-19 in the U.S.

**Public perceptions regarding cultural and racial issues impacted by COVID-19 in the U.S.**

Valentina Castano, Lauri M. Baker, Cecilia E. Suarez, Jarred A. Shellhouse | University of Florida

**Stress and Pandemics**

- On January 20th, 2020, the first case of COVID-19 was confirmed in the United States.
- Pandemics are known to cause anxiety among a population, which increases as the number of positive cases rise.<sup>1</sup>
- The financial worry associated with the spread of COVID-19 has led to a significant increase in stress and anxiety in the population.<sup>2</sup>

**Cultural Stressors**

- While COVID-19 spread through the country, several high-profile and controversial events such as the murders of Ahmaud Arbury and Breonna Taylor came into focus.
- Though these were not the first occurrences of their kind, their stories garnered national news coverage and attention in a way that had not happened before.
- As a result of these and subsequent events, protests began to spread throughout the country.

**Percentage of Americans who reported concern that COVID-19 is...**

- 58% Making it harder for underrepresented groups to achieve the American dream.
- 56% Creating a cultural divide in the United States.
- 55%

**Purpose & Methods**

- This research was conducted in order to understand the impact COVID-19 has had on race and cultural issues in the United States.
- A public opinion survey using Qualtrics was conducted from July 23-August 9.
- A quota sample representative of the U.S. Census was used to gather 1,500 respondents for this survey.

**Conclusions & Recommendations**

- Americans are concerned by the impact of the current pandemic on race and cultural relations in the United States. This aligns with previous work highlighting the concern of intersectionality and the interconnected nature of identities that often amplify harm, discrimination and disadvantage in marginalized communities.<sup>3</sup>
- Further research is needed to better understand how global health crises can inhibit underrepresented populations from achieving the American dream and make cultural divides worse, as well as how communication can assist in discussing and practicing knowledge that highlights the multifaceted impact pandemics can have on marginalized communities.

## Poster 5:

Shelli Rampold, Ph.D., University of Florida: Fostering Herd Immunity in a Pandemic: An Early Look at Public Willingness to Receive a Vaccine for COVID-19

**Fostering Herd Health in a Pandemic: A Look at Public Willingness to Receive a Vaccine for COVID-19**

**Background**

Vaccines are critical to the deceleration of widespread outbreaks of preventable diseases (Kilgus, 2014). As such, in pandemic situations like the 2019 novel coronavirus (COVID-19), vaccination hesitancy can be a major barrier to public health and has the potential to make herd immunity unattainable.

Though a COVID-19 vaccine has yet to be made available, the topic has already received considerable and controversial attention from the public, and it is important that the public be informed about the vaccine ahead of time to ensure that it is accepted and used. This poster will explore the public's perceptions of the vaccine and its potential to make herd immunity unattainable.

**Current Study**

This study was conducted to examine the U.S. public's perceptions and experiences during the early stages of the COVID-19 pandemic to inform the development of a COVID-19 vaccine should one become available.

**Results**

The majority of respondents (80.3%) would get a vaccine for COVID-19 if one was available within the next 12 to 18 months.

**Conclusions**

The majority of respondents (80.3%) would get a vaccine for COVID-19 if one was available within the next 12 to 18 months.

**Recommendations**

- As the early stages of a pandemic, communication messages about a new vaccine may be tailored in a fashion similar to those that have been used in the past.
- Such messages should be designed to highlight the importance of vaccination in achieving the COVID-19 health outcomes of the public.
- In the later stages of COVID-19, further research is needed to understand the reasons of public that are not getting the vaccine to receive a COVID-19 vaccine.
- Communication for the companies and other sources of information should also be considered.

**References**

Kilgus, D. (2014). The importance of vaccination in the control of infectious diseases. *Journal of the American Medical Association, 311*, 1111-1112.

## Poster 6:

Beatrice F. Pierre, University of Florida: Stakeholders' Perceptions about Occupational Health and Safety in the Agricultural Industry

**Southeastern Coastal Center for Agricultural Health and Safety**

Dr. Tracy Irwin & Beatrice Fenton Pierre  
Stakeholders' perceptions about occupational health and safety in the agricultural industry

**Background**

Agriculture is a great industry in our nation's economy (EEO, 2017). However, it is one of the most hazardous occupations worldwide for farm workers as well as managers and supervisors (Bureau of Labor Statistics, 2019). The Bureau of Labor Statistics (BLS) reported in 2017 that up to 17,000 workers were injured each year in agriculture, and approximately half of all farm occupational accidents resulted in lost workdays. In 2016, the Bureau of Labor Statistics (BLS) reported that 17,000 workers were injured each year in agriculture, and approximately half of all farm occupational accidents resulted in lost workdays. In 2016, the Bureau of Labor Statistics (BLS) reported that 17,000 workers were injured each year in agriculture, and approximately half of all farm occupational accidents resulted in lost workdays.

**Preliminary Research Findings**

- The participants think that the CDC COVID-19 guidelines are in the state of things possible despite their inherent challenges. The latter seems to be determined by the size of the business, the type of operation, and the amount of required labor force. The more the larger a company the stronger it is financially and the more capable it is to implement the CDC COVID-19 guidelines. Also, the less labor remains the business is expected to be less challenging. However, besides the previous factors there exist some concerning general barriers.
- Some companies, to some extent, social safety, general, create a stigma which defines one as unskilled. In wearing a mask may symbolize weakness. Therefore, mask wearers seem reluctant not only to wear a mask but also to even admit that they are sick.
- Cost factors:**
  - Less in income/decrease in profitability because of lower production and productivity while all the company's fixed cost remain constant.
  - Transportation: Generally the conditions of the buses which carry the workers and the way the passengers are crowded inside the buses do not help in the implementation of the guidelines. Therefore, investing in additional transportation facilities is a big cost barrier, particularly in the small area. At the same time such an investment is important because the danger in the transportation for workers does not seem to be as much as the workplace but after work, during transportation and at home.
  - Housing: The lack of affordable housing, particularly in Florida, leads workers who rent live in a high level of proximity that in a sense may constitute a vector for the multiplication of the virus. It also generates additional costs to businesses, which are HSA and HSB workers.
- Physical attributes:** Some people are not really concerned about the importance of certain guidelines such as wearing masks for outdoor activities and being to wear masks. Mask wearing might be more convenient for those who have reduced fitness, especially when we consider the quality of the masks used.
- Temperature:** Because of the high temperature it may be uncomfortable for workers to wear masks. Mask wearing might be more convenient for those who have reduced fitness, especially when we consider the quality of the masks used.
- Cost on the workers' side:** The masks are expensive (about \$1 each). The companies do not provide enough for workers to be able to change them as needed. Some community organizations have distributed some but not sufficient supplies to public health officials, besides of their budget.

**Research Methods**

We interviewed eleven people who are well versed in the domain. Five of them were purposively selected and we were informed by key informants which added a snowball sampling approach on top of the purposive sampling method adopted. The respondents included extension agents, farmworker's representatives, a farmworker's representative, a bus and vegetable

# RESEARCH PROJECTS

**Dr. Gregory Glass:** Extent of Agricultural Pesticide Applications in Florida Using Best Practices

**Dr. Andrew Kane:** Occupational Health and Safety Surveillance of Gulf Seafood Workers

**Dr. Joseph Grzywacz:** PISCA: Pesticide & Heat Stress Education for Latino Farmworkers that is Culturally Appropriate

**Dr. Linda McCauley:** Heat Stress and Biomarkers of Renal Disease

**Dr. Paul Monaghan:** Using Social Marketing to Prevent HRI and Improve Productivity Among Farmworkers

## PILOT PROJECTS

**Dr. Kim Dunleavy:** Chronic Low Back Pain in Seafood Workers: A Pilot Intervention Study to Identify Modifiable Work and Movement Solutions

**Dr. Lynn Grattan:** Pilot Study of the Acute Psychological and Health impacts of Hurricane IRMA in UF/IFAS Extension Workers

**Dr. John Luque:** Pilot Study of Mobile App Monitoring to Prevent Heat-Related Symptoms Among Hispanic Farmworkers

**Dr. Gulcan Onel:** Uncovering Patterns of Mental, Physical, and Occupational Health Issues Among Migrant Farmworkers with Different Socio-cultural Networks: A Pilot Study Among Haitian and Mexican Farmworkers in Immokalee, Florida

**Dr. Heidi Radunovich:** Understanding the Scope of the Opioid Epidemic for Agricultural Industries

**Dr. Gregg Stanwood and Dr. Antonio Tovar:** A Novel Approach (sweat patches) to Monitoring Pesticide Exposure in Farmworkers

**Dr. Christopher D. Vulpe:** Heat and Pesticide Stress in the Kidney

# MEET THE HOST COMMITTEE

**The Outreach Core** works within the Southeastern Coastal Center for Agricultural Health and Safety to disseminate relevant research findings and to connect agricultural, fisheries and forestry sectors with health and safety practices. To better connect scientists from diverse disciplines and industry leaders, the SCCAHS Outreach Core facilitated the 2020 State of the Science meeting. Members of the host committee include:

**TRACY IRANI:**

Director, Outreach Core, University of Florida

**RICKY TELG:**

Director, Center for Public Issues Education, University of Florida

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