



2016/2017 Annual Report

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

For More Information

Contact the Southeastern Coastal Center for Agricultural Health and Safety at <http://sccaahs.org>

Suggested Citation

Southeastern Coastal Center for Agricultural Health and Safety. (2017). *2016/2017 Annual Report. SCCAHS2017-04*. Gainesville, FL: University of Florida/Southeastern Coastal Center for Agricultural Health and Safety.

Funding

This document was supported by the Grant 1 U54 OH 011230 - 01, funded by the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention or the Department of Health and Human Services. The entire cost of the development and publication of this document was financed with federal funds. This document was prepared with support from the \$10 million CDC/National Institute for Occupational Safety and Health (NIOSH) grant, which funds the Southeastern Coastal Center for Agricultural Health and Safety (<http://sccaahs.org/>).

Contents

Section I – Who We Are.....	4
Center Summary	4
Goals of the Center	4
Key Personnel	5
Section II – Research Projects	6
Occupational Health and Safety Surveillance of Gulf Seafood Workers.....	6
Extent of Agricultural Pesticide Applications in Florida Using Best Practices.....	7
PISCA: Pesticide & Heat Stress Education for Latino Farmworkers That is Culturally Appropriate8	
Pilot/Feasibility Program.....	10
Emerging Issues Program	11
Section III – Outreach.....	12
Informing Stakeholders about the Center	12
Coordinating Community Stakeholder Advisory Board	13
Developing Educational Materials and Digital/Social Media	13
Researching News Frames Associated with Ag Health and Safety.....	15
Participating in NIOSH Ag Safety Center Educational Campaigns.....	15
Section IV – Evaluation Program.....	15
Impact Logic Models and Process Models	16
Indicators and Data Reporting	17
Needs Assessment.....	17
Communication and Engagement with NIOSH Evaluation Programs.....	18
Evaluation Program Impacts.....	18

Section I – Who We Are

Center Summary

The **Southeastern Coastal Center for Agricultural Health and Safety** 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, Puerto Rico, and the U.S. Virgin Islands.

[University of Florida](#) is the lead institution of this center, partnering with the [University of South Florida](#) (USF), [Florida State University](#) (FSU), [Florida A&M University](#) (FAMU), [Emory University](#), and the [University of the Virgin Islands](#). These universities are working together on a range of interdisciplinary research and educational projects designed to promote occupational health and safety among the 240,000 farms — estimated by [U.S. Department of Agriculture](#) — to be operating in the region, their operators, families, employees, and contractors, as well as those in the forestry and fishery industries.

The centers focus areas and associated research projects include the following:

- **Coastal fishery worker safety and health**
 - Research Project: Occupational health and safety surveillance of Gulf seafood workers.
- **Heat stress**
 - Research Project: Heat stress and biomarkers of renal disease.
- **Pesticide/herbicide exposure**
 - Research Project: Extent of agricultural pesticide applications in Florida using best practices.
- **Innovative approaches to foster research to practice**
 - Research Project: Pesticide and heat stress education for Latino farmworkers through culturally appropriate training.

Goals of the Center

- Provide occupational safety and health education and training to the agriculture, fishing, and forestry workforce.
- Bring evidence-based, safety and health programs, developed through the other NIOSH-funded agricultural centers into the southeastern coastal region.
- When appropriate, translate programs into Spanish, and assist in supporting multilingual training efforts throughout the region.
- Conduct research to practice projects focused on:
 - Evaluating whether safety and education materials produce changes in safety behaviors.
 - Documenting hazards and risks in fishery worker populations; testing training materials aimed at reducing injuries.
 - Utilizing remote sensing technology to map pesticide uses.

- Looking at heat stress tolerance.
- Conduct further research and applied projects based on needs as they arise.

Key Personnel

Center Administration

J. Glenn Morris, Center Director. UF. jgmorris@epi.ufl.edu
Andrew Kane, Co-Director. UF. kane@ufl.edu
Joan Flocks, Emerging Issues Program Director. UF. flocks@law.ufl.edu
Babette Brumback, Biostatistician. UF. brumback@ufl.edu
Keith M. Herndon, Co-Director, Center Administrator. UF. keithherndon@epi.ufl.edu

Planning and Evaluation Core

Glenn Israel, Evaluation Program Director. UF. gdisrael@ufl.edu
David C. Diehl, Co-Investigator Evaluation Core. UF. dcdiehl@ufl.edu
Sebastian Galindo, Co-Investigator Evaluation Core. UF. sgalindo@ufl.edu

Outreach Core

Tracy Irani, Outreach Core Director. UF. irani@ufl.edu
Ricky Telg, Center for Public Issues Education (PIE Center) Director. UF. rwtelg@ufl.edu
Angela Lindsey, Co-Investigator Outreach Core. UF. ablindsey@ufl.edu
Lisa Lundy, Co-Investigator Outreach Core. UF. lisalundy@ufl.edu
Martie Gillen, Co-Investigator Outreach Core. UF. mgillen@ufl.edu

Research Core

Andrew Kane, Research Project P.I. UF. kane@ufl.edu
Melvin Myers, Consultant. Emory University. melvinmyers@charter.net
Robert Durborow, Consultant. KSU. Robert durburow@kysu.edu
Gregory Glass, Research Project P.I. UF. gglass@ufl.edu
Jane Southworth, Co-Investigator. UF. jsouthwo@geog.ufl.edu
Joseph Grzywacz, Research Project P.I. FSU. jgrzywacz@fsu.edu
Antonio Tovar-Aguilar, Co-I.. FL Farmworkers Assoc. tonytovar@hotmail.com
Melinda Gonzales-Backen, Co-Investigator. FSU. mgonzalesbacken@fsu.edu
Thomas E. Bernard, Research Project P.I. USF. tbernard@health.usf.edu
Linda McCauley, Research Project P.I. Emory University. linda.mccauley@emory.edu
Vicki Hertzberg, Co-Investigator. Emory University. vhertz@emory.edu
Christopher Vulpe, Research Project P.I. UF. cvulpe@ufl.edu
Fritz Roka, Research Project P.I. UF. fmroka@ufl.edu
Nancy D. Denslow, Co-Investigator. UF. ndenslow@ufl.edu
Paul Monaghan, Co-Investigator. UF. paulf@ufl.edu
Stephen Roberts, Co-Investigator. UF. smroberts@ufl.edu
Volker Mai, Co-Investigator. UF. vmmai@epi.ufl.edu
Maria Morera, Co-Investigator. UF. mmorera@ufl.edu

Section II – Research Projects

Occupational Health and Safety Surveillance of Gulf Seafood Workers

Project PI: Andy Kane, Principle Investigator, UF Environmental and Global Health

Melvin Myers, Consultant, Emory University

Robert Durborow, Consultant, Kentucky State University

Commercial fishing is one the most dangerous work sectors in the world.

Occupational fatalities and injuries in the fishing sector occur at rates much higher than national averages for all occupational fatalities and injuries. In the southeastern US, Florida has the highest fatality rate for seafood workers, ranked third nationally only to Alaska and Massachusetts. Non-fatal, work-related injuries and negative health outcomes are, unfortunately, common in many of the highly productive fishery sectors in the Southeast US, including traumatic injuries and fractures, trunk and lower back strains; sprains; skin cancers; infections due to cuts, bites, punctures, entanglement; and thermal exposure. Frequency of injuries, illnesses and specific risk factors, however, are largely undocumented.



Observational workplace data collected from clam harvesters in response to reported high prevalence of lower back pain. Heavy lifting (upper and lower left images), deep bending (upper and lower right images), and repetitive movements – often on unstable work platforms – are common causes of chronic musculoskeletal pain, some of which can limit the ability to engage in workplace tasks

This community-based research project aims to support the safety and well-being of our regional fishery workforce through collaborative engagement with coastal seafood harvesters using a translational research-to-practice approach. This 5-year project is conducting surveillance using in-person survey interviews, and workplace observations on boats to discern hazards and risk factors associated with inshore occupational injury and health outcomes for regional shrimp, fish, and crab, oyster and clam harvesters. Data will be shared with fishers, community partners

and extension engineers to support a culture of safety within these heritage fisheries, and provide valued interventions to keep this workforce safe and on the water. Efforts in this first project year focused on community engagement and strengthening partnerships, survey development and piloting, and regional outreach, networking, and presentations at the NIOSH State-of-the-Art conference in Aurora, CO and at the APHA meeting in Atlanta.

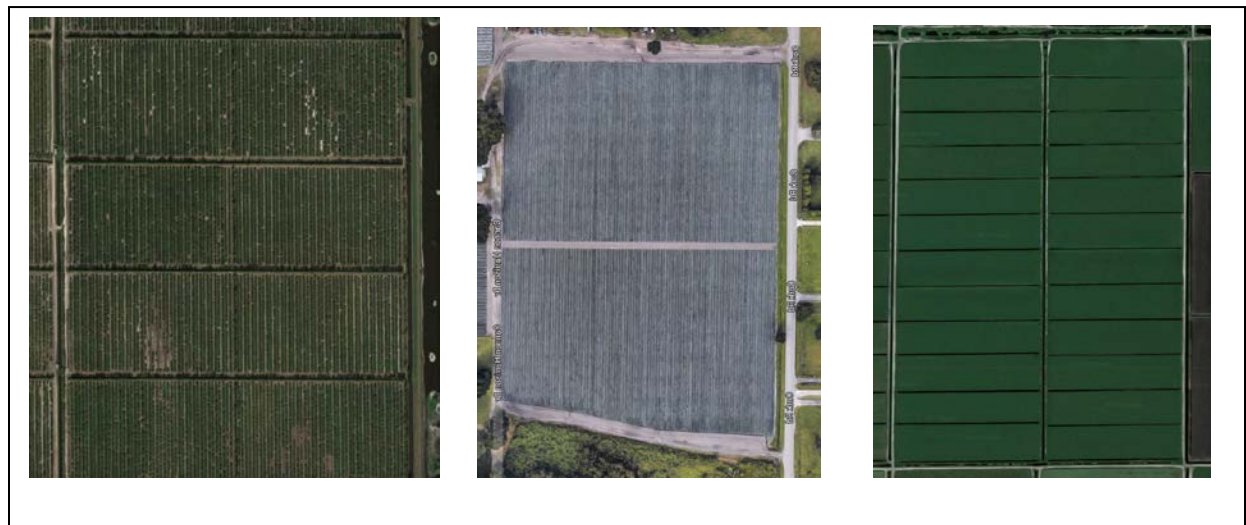
Extent of Agricultural Pesticide Applications in Florida Using Best Practices

Project PI: Gregory Glass

Co-PI: Jane Southworth

Drs. Gregory Glass and Jane Southworth, Co-Investigators for Project 2 have recruited and hired the TBN Graduate Student position for the project. Mr. Tyler Schaper, a Master's level student, in the Department of Geography is evaluating several remotely sensed imagery platforms for selected crops in the state of Florida.

We have identified spatially explicit, classified crop data sets for Florida derived from moderate resolution remotely sensed imagery (Landsat 30 m resolution). These data sets are annualized from 2008 through 2016 the primary periods proposed for the project. These initial data will be used to establish a level of accuracy for current strategies of crop classification. Additionally, we have reached a collaborative agreement with a commercial company specializing in high-resolution earth systems monitoring. They have donated substantial imagery resources providing us with minimal cost, historical imagery for targeted regions of the state that substantially improve the spatial resolution of Landsat (approximately 25 fold).



Satellite imagery of (left to right) citrus, strawberry and sugar cane fields in 2016.

We have established collaborative relationships with several Institute for Food and Agricultural Sciences Research and Education Centers, and their partners. These relationships provide critical information on the timing of agricultural activities such as herbicide/pesticide applications whose impacts we will attempt to monitor by remote sensing.

The final data acquisition steps involved gathering detailed spatial resolution of meteorological conditions throughout the study region to estimate the likely timing of planting, treating and harvesting of selected crops. These data have been accessed and generated at daily time steps.

We have identified crops to evaluate for our study. They include; citrus, strawberries, cotton, peanuts and sugar cane. Our analyses show there was a substantial reduction in the reported coverage (acreage) between 2008 (baseline) and 2016. Most of this loss (96.8%) has been in decreased area of orange cultivation.

Our project has documented the substantial reduction in commercial agricultural land use/cover within the state during the nine years of study. The loss is predominantly within a single industry while other crops have begun to appear, they nowhere near replace this reduction. There is a substantial difference between the official reported coverage of commercial crops and estimates from remotely sensed images. These differences could be due to various challenges of using remotely sensed data and we are exploring several working hypotheses for the discrepancies.

We have evaluated current remote sensing algorithms for individual, target crops. Results indicate a fairly substantial (up to 20%) misclassification rate, that may explain, in part, the differences between estimated and reported coverages.

We have developed collaboration with researchers involved in estimating coverage of peanut production in Florida. Apparently, accurate measures of acreage are not available but are viewed and important to the growers. We have acquired imagery for the most recent growing season and are generating a product for them to evaluate during the upcoming season.

Future efforts will be to generate, for each commercial crop the timing and extent of application of selected herbicides under current best practices using a degree-day and precipitation model. These will be aggregated by commercial acreage of selected crops to estimate the timing and amount of herbicides applied throughout the state.

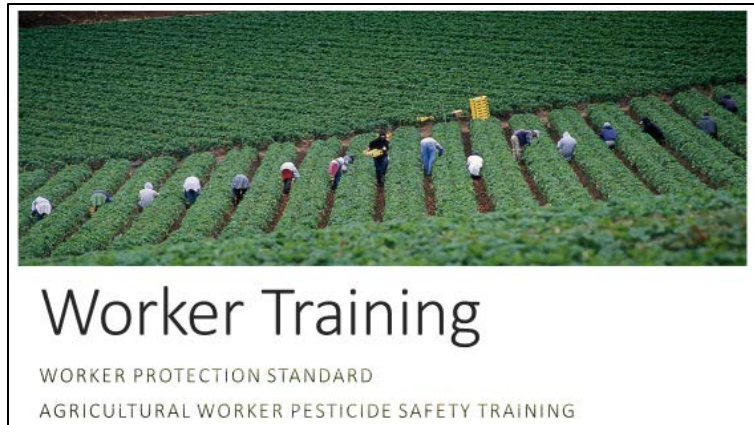
PISCA: Pesticide & Heat Stress Education for Latino Farmworkers That is Culturally Appropriate

PD/PI: Joseph Grzywacz

Co-PD/PI: Antonio Tovar-Aguilar

The PISCA project has had a productive first year. The primary objective of the first year was to build the foundation for our 5-year project. The necessary foundation included creating a culturally- and contextually appropriate curriculum that conformed with the revised Worker Protection Standard. We also needed to create a Heat Stress curriculum, assemble instruments to assess the effectiveness of these curricula, and build a presence in Northern Florida/Southern Georgia catchment area of the project. We were successful on all accounts.

The beta-version of our curriculum covers all the necessary points of the revised Worker Protection Standard (see Figure 1 for title slide). Our team worked with academic and advocacy experts in pesticide exposure training, including the Migrant Clinician's Network and the Farmworker Association of Florida. Indeed, several of our team members including Dr. Antonio Aguilar Tovar, Mr. Tony Marin, Ms. Jeannie Economos and Ms. Amy Liebman have been



recruited by the Pesticide Educational Resources Collaborative (PERC), organized by the Environmental Protection Agency, to offer consultation on the national curricula.

From March through August of 2017, the PISCA field team recruited over 125 migrant and seasonal farmworkers to participate in occupational safety and health training. Trainings were randomly selected to deliver either the pesticide safety training or heat stress training (an attention placebo). As expected, individuals in groups randomly assigned into the pesticide safety training show greater improvements in knowledge about pesticides and pesticide safety, than individuals in groups randomly assigned into the heat stress training. The foundational goal was therefore met: we were able to develop a curriculum that effectively improves pesticide safety knowledge among immigrant Latino workers.



The PISCA team has also been busy building community capacity in the study area. Given ongoing concerns about immigration, many farmworkers try to stay out of the spotlight. Therefore, to achieve our study goals, we need to have a level of trust in the community.



To build this trust our team has worked with community partners to offer services to children in neighborhoods comprised primarily of farmworker families, and coordinating fairs to showcase healthcare, childcare, and legal services available to farmworkers and their families.

Pilot/Feasibility Program

*J. Glenn Morris, Jr.
Keith Herndon*

The Pilot/Feasibility Program is a key component of the Southeastern Coastal Center for Agricultural Health and Safety (SCCAHS). This program will provide seed funds to stimulate original projects relevant to health and safety in the agricultural, forestry, and fishery (AFF) industries. Projects may include basic/etiologic research, translational research, intervention studies, and/or surveillance. Our goal is to provide early pilot/feasibility support to projects that ask innovative and important questions, and which lay the groundwork for subsequent research grant submissions or interventions, including outreach or extension projects. Some of the projects we select will be “high risk, high reward:” novel ideas and approaches, with limited preliminary data, but with the potential for having a major impact on AFF health and safety. While in some instances funding will be sufficient to fully answer a question or address an issue, we anticipate that most projects will provide preliminary/feasibility data for subsequent, larger proposals and projects.

In our first year, the **Southeastern Coastal Center for Agricultural Health and Safety** awarded more than \$56,000 to three pilot research projects to improve the safety and health of agricultural workers.

Scientists will use mobile app monitoring to prevent heat-related symptoms among Hispanic farmworkers; research mental, physical and occupational health issues among Haitian and Mexican migrant farmworkers; and identify work and movements to alleviate chronic lower back pain in seafood workers.

- John Luque, assistant professor of public health sciences at the Medical University of South Carolina, will receive \$20,000 to test a mobile phone app to monitor whether Hispanic farmworkers report taking more breaks in the shade, wearing hats, avoiding sugar-sweetened beverages and increasing water intake after receiving heat-related illness education.
- Gulcan Onel, assistant professor of food and resource economics at the University of Florida, will receive \$16,000 to investigate the extent to which migrant farmworkers with different ethnic backgrounds and social networks face higher risks of mental, physical and occupational health issues.
- Kim Dunleavy, an associate clinical professor in UF’s department of physical therapy, will receive \$20,441 to conduct research on chronic low back pain in seafood workers. She will research clam workers in Cedar Key, Florida, to identify work-related movements and positions that aggravate or contribute to low back pain.

SCCAHS has just announced its second round of pilot project requests for funding. The Pilot/Feasibility Program will provide seed funds to stimulate original projects relevant to health and safety in the agricultural, forestry, and fishery (AFF) industries.

Projects may include basic/etiologic research, translational research, intervention studies and/or surveillance. The program's goal is to provide early pilot/feasibility support to projects that ask innovative and important questions, and which lay the groundwork for subsequent research grant submissions or interventions.

Emerging Issues Program

Joan Flocks, MA, JD

The Emerging Issues Program (EIP) works within the center, maintaining connections with all projects, cores, advisory boards and other stakeholders in an effort to identify, prioritize, and address urgent issues that appear during the life of the center.

In Year 1, the EIP developed a system of monitoring the region for new AFF health and safety issues in the program region through the following ongoing activities:

1. **Summary sheets:** The EIP program director and research assistant are researching and compiling a series of summary sheets with general and health and safety related data for each AFF industry in the states covered by the program.
2. **Internal/external meetings:** The EIP director and research assistant attend all internal Outreach and Internal Operating Committee meetings and several external meetings such as the monthly Agricultural Center Directors conference calls, the NIOSH State of the Science conference, and NORA sector conference calls to continuously monitor reporting of emerging issues and ensure the SCCAHS personnel are reminded of their ability to report issues to the EIP. They also attended several AgriSafe training on issues directly related to emerging issues they became aware of such as heat stress, respirator training, forestry worker safety, and natural disaster issues.
3. **Consultation:** The EIP director consults regularly at internal meetings and other occasions with SCCAHS PIs, community organizations, and other stakeholders about emerging issues arising in their respective sectors.
4. **Monitoring log:** The EIP director keeps a log of meetings recording attendance, relevant points for the EIP, and follow up tasks.
5. **Media monitoring:** The EIP director and research assistant regularly monitor industry media to identify potential regional emerging issues.

Through these activities an, the EIP identified and addressed several emerging issues during Year 1. These included:

1. Compiling an annotated bibliography of current academic articles related to regional heat-related illness research for the Outreach Core to use during its heat stress campaign.
2. Organizing a conference call with Florida extension agents and other stakeholders to discuss needs related to the revised Worker Protection Standard regulations on respirator use in agriculture. Compiling a directory, based on stakeholder recommendations, of health care providers in Florida counties and other relevant trainings that could serve as a resource for small and medium sized employers in addressing the revised regulations.

3. Funding our community partner, the Farmworker Association of Florida, to conduct focus groups with farmworkers to evaluate a new pesticide safety poster incorporating the revised Worker Protection Standard regulations.
4. Following up on a PI request to find a resource for North Florida/South Georgia farmworker communities concerned about current immigration policy. This resulted in the formation of a relationship between the Mexican Consulate in Atlanta and PISCA project personnel.
5. Researching post-hurricane Irma farmworker housing needs to lay the foundation for a needs assessment.

Section III – Outreach

Project PI: Tracy Irani

Lisa K. Lundy

Angela B. Lindsey

Martie Gillen

Ricky Telg

Paul Monaghan

In the first year of the **Southeastern Coastal Center for Agricultural Health and Safety (SCCAHS)**, the **Outreach Core** focused its efforts in the following areas: informing stakeholder organizations and individuals about the center, coordinating the Community Stakeholder Advisory Board, developing educational materials and digital/social about the center, researching news frames associated with agriculture health and safety, and participating in NIOSH Ag Safety Centers' educational campaigns.

Informing Stakeholders about the Center

A series of presentations were created and presented to potential stakeholder groups in Florida – including the Florida Nursery, Growers, and Landscape Association; Florida Forestry Association; Florida Cattlemen's Association; Florida Fruit and Vegetable Association; and Florida Farm Bureau.

Project PIs were contacted prior to the development of the presentations to receive input about their projects, and this information was integrated into the presentations.

In June, the project PIs were contacted to receive information for an informational campaign, consisting of a news release, fact sheet, social media, and a webinar. Project PIs provided statistical information for “infographics” used on the fact sheet and in social media posts. A webinar, highlighting what has been done and what will be done, was conducted with the project PI. The project PI and Outreach Core PI also participated in a call-in radio program to explain the purpose of the center.



Meeting with Florida Forestry Association's executive director



Meeting with Florida Nursery, Growers, and Landscape Association's board

The center worked with a Communications Campaign Strategies course at the University of Florida during the fall 2017 semester to analyze messages from the center and other similar agriculture safety centers to develop ideas for future campaigns. The UF Department of Agricultural Education and Communication's fall 2017 seminar series highlighted several center programs.

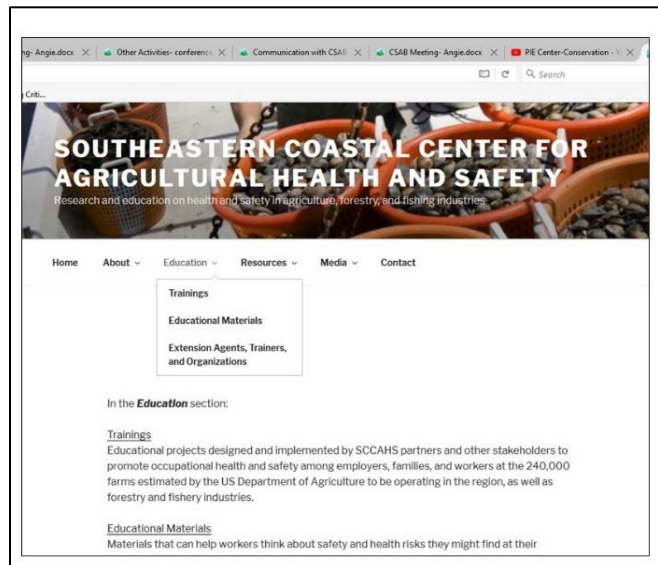
Coordinating Community Stakeholder Advisory Board

The Outreach Core met with stakeholder groups during the preliminary stages of the project. UF Extension agents, industry leaders, and SCCAHS team members were asked to recommend suggestions for community stakeholder advisory board (CSAB) members. A list of more than 50 potential CSAB members was compiled. The inaugural CSAB meeting took place October 24, 2017, after being rescheduled due to impacts from Hurricane Irma.

Developing Educational Materials and Digital/Social Media

The following products were created to inform various publics about SCCAHS: an information card; a PowerPoint presentation template, which was used during the presentations to stakeholders; three news releases; a visually appealing fact sheet; and several infographics.

SCCAHS created a website in early 2017 (<http://sccaahs.org>). The website describes the center's goals and research projects, provides a link to project PIs and partners, and details the process for establishing an advisory board. The website also provides links to educational materials; Extension agents who are engaged in agriculture, fishing, or forestry safety; publications about these topics; a list of current and future trainings focused on safety; and various news media products, including news releases, a fact sheet, and infographics.



Web page from SCCAHS website (sccaahs.org)



Facebook page (facebook.com/sccAgSafety)

The Outreach Core began SCCAHS' social media presence in May 2017 with the creation of a Center Facebook page, Instagram page, and Twitter profile. Discussion in Year 1 yielded a consensus that during the initial phases of center outreach and communication, SCCAHS will use social media to communicate messages with stakeholders in the agriculture, fisheries, and forestry sectors in the Southeast. Facebook and Twitter are valuable tools for sharing information with SCCAHS stakeholders, and for providing stakeholders with resources to share with their clients in turn.

The Outreach Core used information gathered during the Stakeholder Needs Assessment to seek out potential stakeholder organizations through Facebook, including non-profits, academic departments and institutions, Extension and Sea Grant offices, public agencies, and regulatory agencies. The SCCAHS Facebook page likes 64 of these organizations, and interacts with their social media pages through liking, commenting on and sharing posts pertaining to agricultural health and safety.

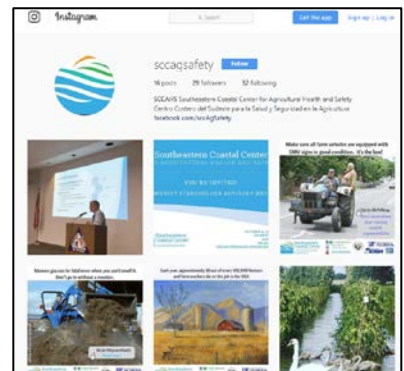


Twitter: twitter.com/sccAgSafety



Front page of SCCAHS information card

Through the SCCAHS Facebook page, the Outreach Core shared posts relevant to stakeholders in Florida and in the Southeast, including upcoming webinars, news articles, and emergency information during Hurricane Irma. SCCAHS' Facebook following started from the ground up, and increased from zero followers to 128 followers by September 2017. Over the course of Year 1, 10,987 people saw, liked, or shared SCCAHS Facebook posts, and individual posts were shared 75 times.



Instagram: Instagram.com/sccAgSafety

The Outreach Core also participated with the other AFF Centers in the NIOSH/CDC Beat the Heat Summer Campaign (June-August 2017) by contributing social media posts. Evaluation is currently underway to measure the national impact of the Beat the Heat Campaign.



Researching News Frames Associated with Ag Health and Safety

Using a key word search, some of the center's social science researchers used Access World News to search for articles in the state of Florida during 2016 from such sources as newswires, newspapers, web sources, and college news publications. The analysis focused on identifying four commonly used news frames: conflict, human interest, responsibility and economic consequences. In this study, the most prominent frame was the human interest frame. This underscores the important of communicating how agricultural and health safety issues impact individual people.

Participating in NIOSH Ag Safety Center Educational Campaigns

SCCAHS participated in the national Agricultural Safety Awareness Program by hosting and facilitating two national webinars in March 2017. One had 24 attendees, and the other had 19 attendees. SCCAHS also participated in the Beat the Heat campaign, and created or adapted the national messages for a Southeastern coastal state audience.

The PISCA project incorporated information from the NIOSH Beat the Heat 2017 campaign into the heat-related illness training PISCA facilitates for farmworkers in North Florida and South Georgia. These trainings are an integral facet of one of the SCCAHS research projects funded by NIOSH.

Section IV – Evaluation Program

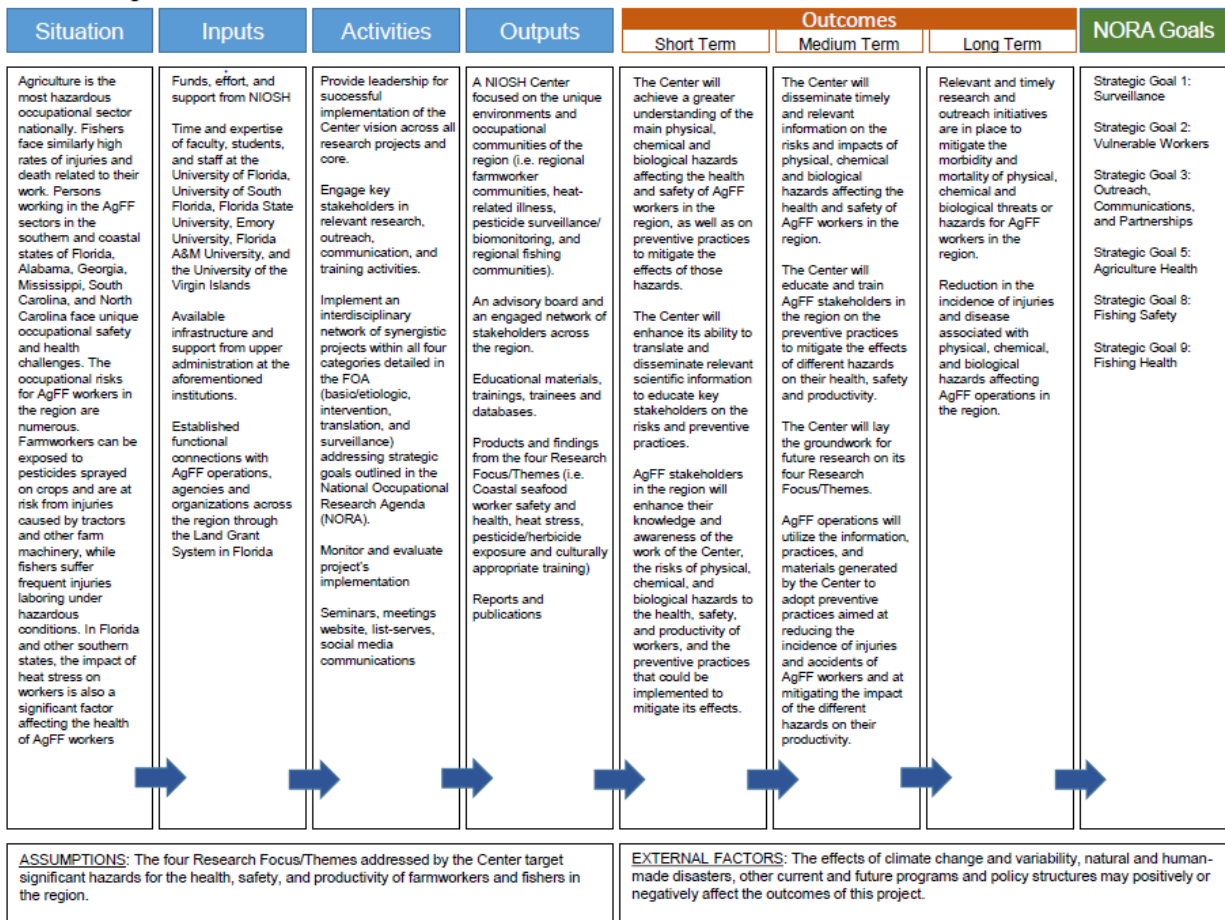
In January 2017, the Evaluation Program (EP) welcomed its newest team member, Evaluation Coordinator Claire Mitchell. The EP has worked to accomplish the activities planned for the SCCAHS grant, which include: engage key stakeholders to maintain a responsive and focused evaluation program; collect relevant monitoring and evaluation data from the center as a whole, its Cores and individual research projects; analyze and interpret data to establish the quality, effectiveness, and impact of the Center as a whole, its cores, and the individual research projects; maintain an open line of communication and engagement with the Evaluation Programs of other Ag Centers across the country. In Year 1, the EP presented at the SCCAHS kick-off meeting to communicate the focus of the EP, and to facilitate the creation of a Center-wide culture that recognizes the importance and benefits of evaluation. To further that aim, evaluation program Director Glenn Israel participates in Internal Operations Committee meetings to provide updates on EP progress, and offer an evaluation-focused perspective in center steering activities and decisions.

Impact Logic Models and Process Models

The EP met with the investigators of the three funded center research projects to discuss research goals, data reporting strategies, and how the work of the EP can benefit the individual research projects. The EP has also met with the Emerging Issues Program (EIP) to clarify that program's tasks and responsibilities, as well as methods to establish effective communication strategies within and outside the center to best monitor emerging and emergency issues. Lastly, the EP worked with the Outreach Core to frame how dissemination, translation and messaging activities result in products and outcomes.

Based on these discussions, the EP developed impact logic models for the three research projects, the EIP and the Outreach Core. The logic models provide direct links from project inputs, activities, outputs and outcomes to the National Occupational Research Agenda (NORA) agriculture, fisheries and forestry (AFF) goals. The EP also created logic model narratives to succinctly describe the aims and strategies of each project and core. Both the logic models and narratives were posted to the SCCAHS project management website, and were published to the SCCAHS website.

SCCAHS Logic Model



The EP also developed a process logic model to help team members in SCCAHS identify the key relationships and transactions between the different elements that make up the center; this results in a more dynamic and productive interaction among the center's cores and programs.

Indicators and Data Reporting

The EP developed indicators based on logic models for each research project, EIP and Outreach Core. Indicators are organized into forms describing activities and products, and are assigned to SCCAHS team members. Quarterly data reporting systems were tailored to each program or core, and were designed to not only help researchers track their own activities and products, but to determine fidelity to project timelines and goals. Once reporting data were collected, the EP summarized the activities and products, and sent them back to project and core leaders. They were then posted on the SCCAHS project management website. The data reporting process facilitates open communication with programs and cores ensures improved efficacy and efficiency in reporting progress to stakeholders and funders.

Needs Assessment

The EP collaborated with the Outreach Core to develop a needs assessment survey to guide the future activities of the Outreach Core. Using a participatory approach, the EP solicited key questions and the identification of main target audiences from research project PIs, as well as the Outreach Core and EIP to serve as the basis for the needs assessment instrument and procedures. The key questions were then compiled, organized and refined in an online needs assessment survey. Feedback about the needs assessment survey was received from all the SCCAHS teams. Topics in the needs assessment include: stakeholder information; industry/employer training preferences; emerging health and safety issues in AFF sectors; AFF health and safety issues; strategies for self-employed workers; professional information sources; sources for news in general; social media use, and communication preferences.

Data were collected in three phases over the course of eight weeks, from May 30, 2017 to July 24, 2017. A list of participants was compiled by the EP, Outreach Core and research project PIs. The last item of the survey asked respondents to recommend a "snowball contact"-- a colleague who they believed should be included as a respondent. Phase 1 included initial contacts; Phase 2 included individuals being considered for participation on the SCCAHS Community Stakeholder Advisory Board, contacts from Puerto Rico, and recommendations from Phase 1; and Phase 3 consisted of snowball contacts from Phase 2. Open responses were organized according to theme and category. They were coded, entered into SPSS statistical software and included in frequency analysis along with quantitative items.

The EP presented results and key findings of the needs assessment in a synthesis report, which offered insights into issues, interventions, obstacles and potential benefits to stakeholders in AFF sectors. The needs assessment report is posted on the SCCAHS website, as well as distributed to invitees to the first Community Stakeholder Advisory Board (CSAB) meeting. SCCAHS' PI, Glenn Morris presented highlights from the needs assessment to the CSAB, which provided a springboard for stakeholders to understand and prioritize the breadth of issues outlined by needs assessment participants and discuss current and future SCCAHS projects.

Communication and Engagement with NIOSH Evaluation Programs

The EP Evaluation Coordinator read the annual reports published by the other ten NIOSH Centers nationwide, and created a summary of the reports that included common topics and themes, overviews of research projects similar to SCCAHS research projects, innovative outreach initiatives, and evaluation strategies. The SCCAHS EP then discussed these issues via conference call with the EPs of nine of the ten other NIOSH Center across the country. Additional topics covered in these calls included data reporting strategies, needs assessment experiences, center-wide evaluation methods, and general recommendations. These calls provided the SCCAHS EP with an understanding of how evaluation methods evolve with the maturing of each NIOSH Center, what kind of monitoring and evaluation data are being tracked, how to best build and maintain relationships with PIs and project leaders to encourage efficient data reporting, and pitfalls to avoid in the evaluation process.

Additionally, the SCCAHS EP participated in ECO Group calls to share information with other NIOSH Evaluation and Outreach Programs. In year 1, the SCCAHS EP has contributed to the AFF Evaluation, Communication and Outreach (ECO) Group, which is a cross-center forum to share program methods and expertise and peer mentoring to new personnel and all eleven AFF centers. Through ECO, AFF Centers share approaches to evaluation and outreach; and collaborate on priorities, challenges and opportunities. From October 2016 to August 2017, evaluation coordinator Claire Mitchell participated in ECO calls, which have featured training sessions on topics including: Altmetrics (Feb 2017), Social Media Analytics (May 2017), Contribution Analysis (June 2017), and Cost Analysis for Evaluation (August 2017).

Evaluation Program Impacts

In Year 1, the EP has taken an active role in facilitating communication between Cores and projects, and has clarified program goals and timelines within SCCAHS. The creation of the impact logic models for the three research projects, Outreach Core, the Emerging Issues Program, and for the Planning and Evaluation Core necessitated meetings with project leaders to prioritize activities and products, and to plan their completion while maintaining a dynamic and reactive timeline. The EP linked logic models with indicators and reporting tools, which led to the development of high quality monitoring and performance data.

Additionally, the EP's leadership role in the needs assessment established initial contacts with stakeholders, resulted in a contact list of over 350 stakeholders in the SCCAHS region. In a center with many moving parts, the EP has played an integral role in helping SCCAHS project components stay on course.