



ENHANCING
THE HEALTH OF
AGRICULTURAL,
FORESTRY AND
FISHING WORKERS



MESSAGE FROM OUR DIRECTOR

Every five years, the Northeast Center (NEC) team takes a step back to examine where we are in our mission to “enhance the health of agricultural, forestry and fishing (AgFF) workers”. This past year has been the culmination of an extended period of self-examination, community input, priority setting and planning that has allowed us to build a solid foundation for developing AgFF solutions in the years to come. While we are eager to showcase the work that has been undertaken in 2022, this report also provides the opportunity to share a few of the innovative initiatives that are yet to come. As you will see from the following short list of NEC project previews, we will be combining new technology, partnerships and strategies in ways that will creatively “move the needle” on key issues in AgFF industries.

Using machine learning to track AgFF traumatic injury trends.

Over the next few years, the NEC will continue its pioneering work on efficient ways to track AgFF injuries, finding the best options for visualizing and sharing injury trend data with the AgFF workforce.

Addressing cardiovascular risk in the logger industry. In the coming years, NEC’s researchers will use wearable technology to collect cardiac, sleep, and physical activity data that will inform a worksite wellbeing program tailored for logging workers.

Improving mental health support for farmers in the Northeast.

The NEC will use photovoice, online community forums and interviews to explore farmer’s access to care, successful coping strategies, cultural factors that influence a farmer’s willingness to seek help and what good mental health looks like from a farmer’s perspective.

Increasing lifejacket access for Northeast fishermen. In the coming years, the NEC will work with Fishing Partnership Support Services to expand the successful Lifejackets for Lobstermen model to other northeast states and fisheries.

Improving worksite safety, by understanding worksite culture. Sometimes improving safety on the job requires more than worker training. In the next few years, NEC researchers will work with farms, fishing boat captains and logging employers to observe workflow, crew relationships and worksite interactions to identify factors that influence whether safety initiatives are adopted or not.

Addressing the looming issue of tick-borne disease in the Northeast. This project will look at a promising solution, Tick Tubes, to assess their potential to effectively and efficiently reduce ticks and tick encounters in agricultural worksites.

These upcoming initiatives will bring together a diverse team of engineers, marketing experts, distributors, industry groups, business owners, anthropologists and researchers to develop workable and innovative solutions for AgFF industries. We hope you enjoy seeing our past year’s accomplishments, as well as this look ahead. As always, we thank you for your input, support and partnership in 2022.



A handwritten signature of Julie Sorensen in white ink on a dark blue background.

Julie Sorensen, PhD

julie.sorensen@bassett.org

Director, NEC

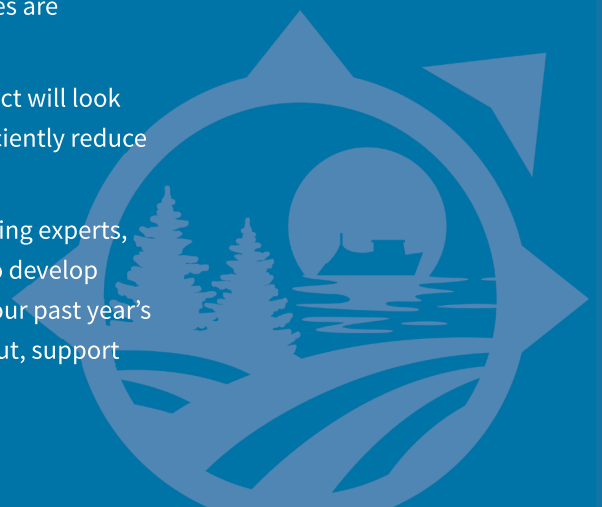


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MISSION

By conducting research, providing education and developing programs, we work to improve the health and safety of commercial farmers, loggers and fishery workers.

CREDITS

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Farmworkers weeding crops in the Black Dirt Region of Orange County, NY

SPECIAL RECOGNITIONS

DIRECTOR HONORED WITH NATIONAL RESEARCH AWARD

Dr. Julie Sorensen, the Director of the New York Center for Agricultural Medicine and Health (NYCAMH) and the Northeast Center was honored with the Safety and Health Researcher Award at the North American Agricultural Safety Summit in Las Vegas in March 2022.

Her ability to combine scholarship with ingenuity, hard work, and lots of input from the “experts”—the workers themselves, is what distinguishes her research, says Dr. John May, founder and former director of NYCAMH and the Northeast Center. “She listens to the workers carefully and then networks—recruiting just the right collaborators to assure a successful outcome,” says May. “She is determined to translate the findings of research into meaningful and practical interventions that will have direct impact upon workers.”

Sorensen successfully balances impactful research focused on improving worker health in the commercial farming, logging and fishing industries with the demands of being the director of two centers

comprised of about 35 staff, working with policymakers and other industry partners, and dedicating much of her free time to community service.

“Not only is she a compassionate leader, but she is a giving mentor, both in terms of her time and knowledge,”

says Dr. Erika Scott, Deputy Director for NYCAMH and the Northeast Center. “She brings her passion for public health and the agriculture industry to everything she does, and this undoubtedly inspires those around her.”



Dr. Sorensen receiving her award from ASHCA Board of Directors' Chairman, Jess McCluer.

LEADING THE WAY

In April, our Agricultural Safety Educator Christina Day graduated from year one of the Lead NY program, a leadership program run out of Cornell University for members of the agriculture, food, and natural resources industries in New York and surrounding states. The first year of the program is known as “Leadership Fundamentals” and participants spend time learning about the local food system, building skills and self-awareness, and exploring the importance of civic engagement. The class traveled to locations near Rochester, Batavia, Syracuse, Albany, NYC/ Long Island, and Binghamton to tour facilities, hear from industry leaders ranging from producers to consumers to legislators, and hold discussion sessions. Christina shares, “I am so thankful to have had the opportunity to be a part of the Lead NY program. Not only have I been able to reflect on and improve the way that I work myself and the way I work with others, I now have a network of other leaders in the industry that I can and do reach out to in my daily work.

The experiences in year one helped me to broaden my worldview of leadership and the agriculture, food, and natural resource systems in our state”. Christina has been part of NYCAMH’s education and outreach team since July 2019, is closely involved with the John May Farm Safety Fund program and specializes in youth agricultural safety. Christina grew up on a dairy farm in Delaware County and studied agricultural science at Cornell University, graduating in 2015.



Christina Day (R) receiving her LEAD NY Year 1 Diploma.

CENTER'S PRESTIGE ATTRACTS INTERNATIONAL FULBRIGHT SCHOLAR

The Northeast Center has the privilege of hosting Conor Hammersley, a Teagasc-Fulbright Awardee, to conduct research into contemporary issues impacting farmers' wellbeing and health. The Fulbright Commission and Teagasc (the Irish Agriculture and Food Development Authority) offer this unique opportunity for an Irish postgraduate student to travel to the U.S. to study or conduct research in the fields of agriculture, food, forestry and environment. As a Fulbright-Teagasc Scholar, Conor will spend time at the Northeast Center where he is researching socio-cultural and economic challenges US farmers face in relation to their health, compared to those encountered by farmers in Ireland. He is undertaking qualitative research through interviews, observations and focus groups with farmers to understand the nature of the factors influencing farmer wellbeing in the United States. This will support the development of strategic health interventions developed in the US, to further inform the development of supports in Ireland.

Conor, a native of Clonoulty, Co. Tipperary, is otherwise based at the National Centre for Men's Health at the South East Technological University (SETU), Carlow campus, where he is pursuing his PhD. His research project 'On Feirm Ground' explores modern-day barriers encountered by farmers in relation to their health, and seeks to support the development of a national farmers' health training program targeted at agricultural advisors to effectively engage farmers on health issues. His research also looks to inform intervention strategies

to support farmer wellbeing.

Conor's PhD is co-supervised by Dr. David Meredith, Teagasc and Dr. Noel Richardson, SETU.

Conor, who was a member of the 2019 All-Ireland winning Tipperary Hurling squad, is a former graduate of the Munster University of Technology having obtained a Master of Science (Research) in 2018 and Bachelor of Business in Sport & Exercise in 2016. His family are small-scale livestock farmers, while his father also runs a family business in the village of Clonoulty.



Dr. Julie Sorensen, Director of the Northeast Center, and Conor Hammersley, Teagasc-Fulbright Awardee.

2022 HIGHLIGHTS

MAN THERAPY

Commercial fishing is a very dangerous occupation, wrought with both physical and mental stressors. Depression, anxiety, and thoughts of suicide are not uncommon in the fishing industry as fishermen deal with changing regulations, severe weather, and financial stressors, among others. A recent NEC survey screening for PTSD found that male fishermen had a higher rate of probable PTSD (12%) than the general male population (4%). Culturally appropriate mental health services are not readily available for those in the fishing industry, and the stigmatization of mental health may prevent some workers from seeking help.

The Northeast Center and the Maine Coast Fishermen's Association (MCFA) have teamed up to de-stigmatize mental health and help-



MEN REPRESENT
78%
OF ALL U.S. SUICIDES

seeking behaviors. We are working with Man Therapy, which provides men with a mental health resource to help them with problems that life sends their way, like substance use, depression and suicide, anxiety, anger, sleep, relationships and sex, grief, trauma, etc. The ultimate goal of Man Therapy is to provide culturally appropriate coping strategies for men. The Northeast Center, MCFA and Man Therapy are working to develop resources tailored specifically to commercial fishermen.



mantherapy.org
Therapy. The way a man does it.



Corey Hawkes, Gary Hawkes Sr. and Gary Hawkes Jr., lobstermen from Cundy's Harbor, Maine.

PARTNERSHIPS FOR EVALUATING OCCUPATIONAL SAFETY AND HEALTH

Much work is put into developing occupational safety and health (OSH) programs and services. To ensure that we are making the most of our efforts, Northeast Center Research Scientist Pam Milkovich, PhD works to answer questions about what works (or doesn't) and why in OSH research, outreach, and training. These evaluations help the Northeast Center and its partners develop, refine, and sustain highly effective programs.

Of note, Dr. Milkovich is working with colleagues within the Northeast Center and at the Pacific Northwest Center for Agricultural Safety and Health (PNASH) to expand the Northeast Center-developed Lifejackets for Lobstermen program to both new regions and new fisheries. A significant portion of this effort is aimed at evaluating the process each team undergoes to understand what is needed to expand successful safety programs. Dr. Milkovich and colleagues will assess aspects of the local context, partner involvement, and other criteria in order to more quickly expand this and other programs.

Additionally, Dr. Milkovich is working with the Harvard University Education and Research Center (ERC) to develop and implement an evaluation plan to document the Center's important contributions to both OSH and training the next generation of OSH professionals.



Dr. Pam Milkovich

RESEARCH RECOGNIZED FOR INDUSTRY COMMITMENT

The Northeast Center was grateful to be honored with the Professional Logging Contractors of Maine (PLC) supporting member of the year award for demonstrating an "unprecedented commitment to logging contractors in Maine." Thank you PLC!

Northeast Center
Deputy Director
Dr. Scott with PLC
Executive Director
Dana Doran at
PLC's 25th annual
meeting.



2022 HIGHLIGHTS

JOHN MAY FARM SAFETY FUND

Safety as a State of Mind

A recipient of two John May Farm Safety Fund (JMFSF) grants, Robert Kalbfliesh of Brier Hill Farm wrote: “Not only are the funds helpful to make projects affordable, they help you plan your business to move forward but with safety in mind. For our farm that is so very important.” A farmer for more than 50 years, Kalbfliesh first got help from the JMFSF in 2017 to purchase a squeeze chute and panels to manage his 35 beef cows more safely. In 2021, now with 52 head, he applied again to upgrade the electrical wiring in his barn.

A Truly Sweet Harvest

On Tim Reeves’ fruit and vegetable farm, the routine tasks of picking, weeding, and planting were taking a toll, and he was having a hard time hiring people to do the work. In 2021, Tim used part of his JMFSF award to purchase a self-propelled harvesting unit, which included a canopy to reduce heat stress and risk of skin cancer. “Saved a lot of back-breaking work for the strawberry harvest,” he wrote.

Making safety affordable to small and mid-sized farms is the mission of the JMFSF program, which provides up to \$5,000 in matching financial assistance to farmers making safety improvements. As of August 2022, the program has awarded more than \$730,000 in grants to 184 farms in 48 counties (average award of \$4,000). More than 66% of the projects are related to animal handling safety for cattle, sheep and other livestock, 14% focus on electrical hazards, and 12% address general farm safety.

This past year, the pace of applications increased dramatically. Between September 2021 and August 2022, 48 applications were awarded grants totaling \$203,000, compared to 34 applications totaling \$133,700 the previous year. In addition to paid advertising and attending trade shows, referrals from JMFSF alums and partner organizations like the Farm Bureau and Cornell Cooperative Extension have helped get the word out to New York farmers.

Since launching JMFSF in 2016 with a grant from a local foundation, we have worked to ensure financial stability for the program. In 2022, JMFSF achieved a major sustainability milestone with the award of \$100,000 from the New York State Department of Agriculture and Markets. Looking toward the eighth year of operation in 2023, JMFSF has raised over \$950,000.

“Not only are the funds helpful to make projects affordable, they help you plan your business to move forward but with safety in mind. For our farm that is so very important.”

Robert Kalbfliesh of Brier Hill Farm



This fund covers a variety of safety needs. Shown are animal handling, electrical upgrades, and ergonomic harvesting equipment.



PROVEN NEC TRACTOR SAFETY PROGRAM EXPANDED NATIONALLY

The National ROPS Rebate Program (NRRP), a longstanding program developed by Northeast Center researchers, provides rebates for approximately 70% of the cost to purchase and install a ROPS (Rollover Protective Structure; rollbar) kit. Not only does the NRRP offer life-saving rollover protection to farmers, it has also been proven to save money. In New York alone, close to \$4 million was saved over the first decade of the Program, with additional savings projected in the years to come. To date, more than 3,200 farmers have taken advantage of the NRRP. In the past year, nearly 150 farmers installed ROPS through the Program, many residing in the Northeast.

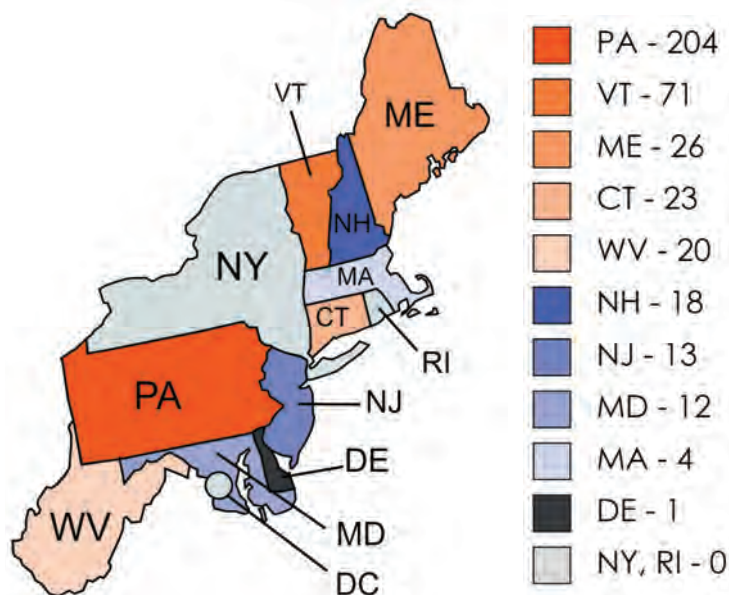
NRRP staff continue to work with partners in Kansas, Iowa and Missouri – three states with high tractor rollover fatality rates - to create media campaigns. These campaigns are designed to raise awareness of the Program and its benefits while encouraging decision makers to provide funding for ROPS rebates, adding to the list of states that already do so. The teams have been hard at work developing ads, articles, and connections with members of the farm community who are willing to share their stories. Campaigns were launched in September 2022.

In addition to state-based efforts, program staff are in discussions with the American Farm Bureau Federation and the Association of Equipment Manufacturers. These two organizations recognize the importance of the NRRP to farmers across the country and the value of federal support for rebate funding. As part of this effort, NRRP staff are encouraging farmers to reach out to their local Farm Bureau representatives to ask them to lend their voices to the discussion.

The NRRP's administration is funded by NIOSH and facilitated by the Northeast Center. Program administration is available at no cost for states that wish to provide rebates to their farmers.



NRRP WAITLIST IN NORTHEAST STATES



There are currently
1,602 farmers
waiting for ROPS
in **48** States



GRAIN BIN SAFETY: RE-ENGINEERING THE OLD, IN WITH THE NEW

On average, 35 people die each year in grain bin fatalities. The majority of these engulfment incidents happen when a person is inside a grain bin and grain unloading equipment is running. A person may enter the grain bin to loosen crusted, spoiled, or frozen grain. Out-of-condition corn is a major factor in the entrapments. Approximately one in five grain entrapments involve children. As of 2018, the ANSI/ASABE S624 – Grain Bin Access Design Safety standard recommends that newly built bins be equipped with a bin entry lifeline system. This raised the question what can be done about older bins without such systems?

Through a research grant from the Northeast Center for Occupational Health and Safety, Penn State University combined computer modeling and experimental measurements to examine safe use of anchor points on older grain bins. Based on their research, the project team recommends that the suitability of any bin to safely accommodate a lifeline and anchor point system needs to be verified on a case-by-case basis by manufacturer consultation or a structural engineering evaluation. The research team developed inspection guidelines for professional engineers to assist in the determination whether a grain bin can safely accommodate a lifeline and anchor point system.

Educational efforts have focused on technologies and best practices that can reduce the need for grain bin entry. These have been disseminated to the farming community through outreach events, direct contact with grain bin supply companies and safety specialists, and through peer-reviewed research publications.



35

people lose their
lives each year in
grain bin fatalities



Grain bin safety information at outreach events across Pennsylvania.





NORTHEAST AGRICULTURAL SAFETY AND HEALTH COALITION CONFERENCE: SAFETY DEMONSTRATIONS

With a plan to increase reach, and track usage data, the Northeast Agricultural Safety and Health Coalition supplied eight states with three brand new safety demonstrations and lesson plans at the annual Spring Meeting. Included was:

- A grain bin demo that shows the dangers of flowing grain and how a rescue can be accomplished
- A mousetrap (risk analysis) demo that starts a conversation on hazards and risks, risk vs. benefit analysis, and complacency
- A safety wheel with color coded index cards with safety question and answers on a variety of topics with separate questions for adults and children. This was a big hit with children (and adults) who enjoyed giving the wheel a spin!

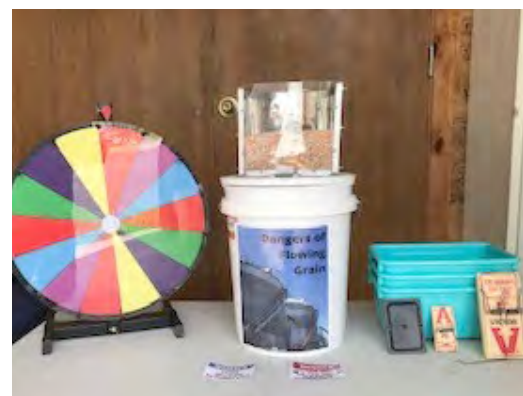
Listed on the lesson plans is a QR code for the ag educator.

At each use, they simply scan the code and answer three quick questions; which demo is being used, zip code, and

approximate number of trainees. Collecting data can show extended reach and how often the demo is being used.

In addition, there were presentations on high visibility clothing, ergonomics, maple operation safety, and mental health and wellness; demonstrations

from various members, such as the PTO time simulator from Pennsylvania and a tractor rollover demo from Maine; and participation in roundtable discussion groups where training successes and challenges were shared.



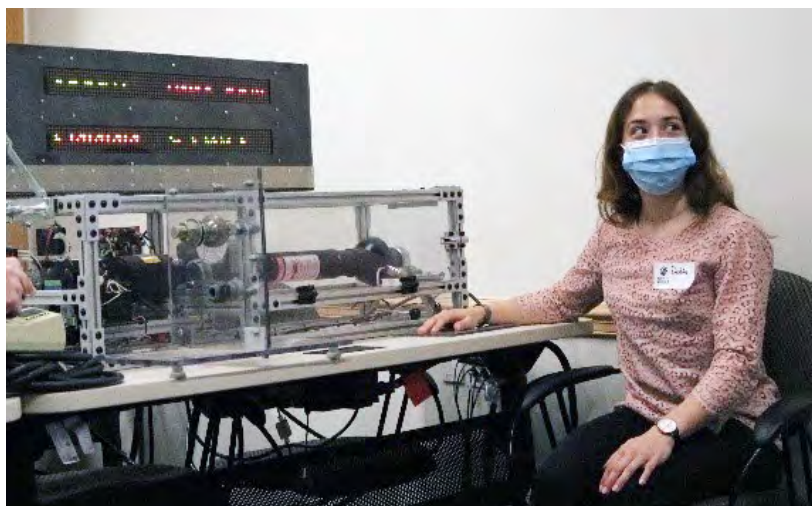
We even had time to squeeze in some fun, as the group toured the Farmers Museum in Cooperstown, NY and hopped on the carousel for a relaxing ride.

Future plans include continuing to supply each state with at least one new demo each year, and expanding membership. The coalition is currently seeking representatives from Connecticut, Delaware, and Rhode Island. If you or someone you know may be interested in joining the Northeast Safety and Health Coalition, please email info@necenter.org for more information.

The Northeast Ag Safety and Health Coalition is a group of agricultural educators across the northeast that network and share ideas to better serve our agricultural communities. The coalition is led through a partnership between the Northeast Center and Penn State University.



Sharing best practices at the Coalition meeting.



Research Assistant, Dahlia Sheehan-Yassin, tests out a power take-off simulator provided by coalition members from Penn State Extension.



FISHING RESEARCH

THE FISHING FORWARD PODCAST

As Northeast Center staff talked with commercial fishermen across the country, we realized that fishermen wanted health and safety information tailored to their lifestyle and profession. The Fishing Forward Podcast was inspired from these conversations and came to life in January 2022 in partnership with the Coastal Routes Radio team from the University of Guelph (Guelph, ON) and Dalhousie University (Halifax, NS).

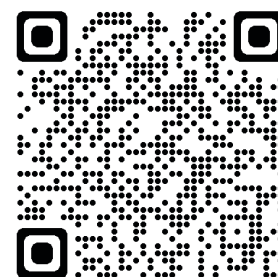
The podcast is centered on the theme of the commercial fisherman as a professional fishing athlete and just as a professional athlete needs to maintain a healthy lifestyle, so do fishermen if they want to have a successful, long career. In addition, fishermen have a significantly more dangerous workplace than professional athletes, so staying safe at sea is covered too. Overall, topics included diet, nutrition, hydration, sleep, stimulants, trauma, pain, stress, anxiety, aging, noise and safety.

Over nine months, eighteen different episodes were produced, each one featuring fishermen from North America and subject matter experts (SMEs) from around the world. In all, twenty SMEs participated in the episodes. Eighteen different fishermen shared their experiences in the podcast, including a few fishermen's spouses; their health is just as important! In addition, each episode was hosted by Dr. Hannah Harrison and Dr. Philip Loring, the Coastal Routes Radio team, who tied the pieces together and highlighted priority fisheries issues.



As of October 2022, the podcast series had over 3,700 listens across 22 countries, though the US and Canada were the most common. The most popular episode remains the first, The Professional Fishing Athlete, with 374 listens. Right behind is Episode 12, Pain and Disorder, with 257 listens. Unfortunately this is not surprising, given some of the initial findings from our commercial fishing sleep and health project; only 28% of the fishermen answering our health survey said pain didn't affect their sleep in any way, and only 40% said pain didn't affect their work.

To listen to the podcast, search for "Fishing Forward" on your favorite podcast app or click or scan the QR code to go directly to the podcast's webpage where you will also find show transcripts and links to the resources mentioned in each episode.



Scan QR code to listen now

BOAT HACKS FOR BETTER BACKS

Commercial fishermen are at high risk of developing musculoskeletal disorders. Lobstermen in the Northeast handle tools and equipment that require forceful movements, repetitive motions, and awkward postures associated with pain and injury. One such task is the repetitive motion of hauling in lobster traps. Previous research suggests that simple ergonomic changes could literally ease the pain.

Scott Fulmer, PhD, a researcher in the Biomedical Engineering Department of University of Massachusetts Lowell, recently completed several participatory ergonomics cycles with a variety of lobstermen. Through an iterative process, the lobstermen identified top health and safety issues and worked to create a solution, guided by Dr. Fulmer's extensive knowledge of ergonomics and body mechanics.

For one boat, this meant major improvements in day-to-day work. The captain and sternman identified back pain as a major issue, and it became apparent that the height of the washboard (side of the boat rail where traps are placed) necessitated bending frequently when handling the traps. The crew, supported by Dr. Fulmer's expertise, raised the washboard height by eight inches. This increased height meant less bending to handle the traps, and less pain at the end of a long workday.

Ergonomic solutions, including the one described above, were turned into a series of videos so ideas could spread throughout the fishing community.



Dr. Scott Fulmer (L), screenshot highlighting ergonomic changes to the boat's washboard height, and Scott meeting with fishermen during the participatory ergonomics process.



See the videos at
necenter.org/portfolio/boat-hacks-for-better-backs/



UNDERSTANDING THE IMPACT OF SLEEP DEPRIVATION IN COMMERCIAL FISHERIES

It has been long understood that health risks come with poor sleep, and for the commercial fisherman, poor sleep is often part of the job. Yet, this issue had hardly been explored in commercial fisheries. This year we completed our work on “Assessments of Sleep Deprivation and Associated Health and Cognitive Impacts in Commercial Fishermen”, a grant funded by the National Institute for Occupational Safety and Health and the US Coast Guard.

Once the specific fisheries were selected, the project team used publically available license lists to randomly recruit fishermen by phone and conduct a health and sleep survey. Spacing the calls out over different times of day and days of the week, the team made over 2,000 phone calls, eventually reaching about 160 fishermen.

Of those 160 fishermen, 85 were available and interested in the

in-person health exams, which wasn't enough to be able to compare between the different fisheries. Consequently the team used alternative recruitment methods. The teams posted flyers at businesses fishermen frequented, ran ads on public radio, approached fishermen on the docks and in restaurants, bars and hotels, and sent out calls for volunteers via fishing non-profits and trade associations.

In the end, 162 free health exams were provided to fishermen with the team conducting 31 clinic days across ten locations in three states. The health exams included a musculoskeletal exam,



Dr. Roome testing the cholesterol and glucose levels of Peter Farland Sr., commercial fisherman in New Bedford, MA.

162

free health exams
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31

clinic days across
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Previously we reported on our efforts to track sleep on board vessels using wearable devices. This year we were able to survey commercial fishermen about their sleep and health patterns and follow up with in-person health exams.

Participants were selected from four different fisheries in an attempt to identify different sleep schedules. The groups were in-shore Massachusetts lobstermen (who typically don't sleep on their boat), Northeast scallopers, Oregon Dungeness crabbers and Alaskan salmon gillnetters.

blood and urine tests, heart and lung screenings and other assessments directly relevant to a commercial fisherman. The exam information, combined with 262 complete health surveys is, as far as we know, the most complete data set on sleep and health for commercial fishermen.

Analysis of the data is just starting, so look forward to next year's report to see what we've found!

PROJECT TEAM



Alaska research team (L to R): Kayla Johnson, Judy Graham, RN, and Dr. Brian Quinn.



Alaska research team (L to R): Jessica Salerno, MSN, FNP-C, Dr. Julie Sorensen, and Dr. Mandy Roome.



Massachusetts research team (L to R): Jessica Salerno, MSN, FNP-C, Dr. Mandy Roome, and Andy Demma.



Massachusetts research team (L to R): Dr. Mandy Roome, Rebecca Weil, and Dr. Mike Levenstein.



Oregon research team (L to R): Kayla Johnson, Dr. John May, Judy Graham, RN, Dr. Laurel Kincl, and Amelia Vaughan.

The health assessments took place in Alaska, Oregon, and Massachusetts.





LOGGING RESEARCH

STUDY TEAM BRINGS RESEARCH FINDINGS BACK TO MAINE LOGGING COMMUNITY

Historically, the logging profession is one of the most dangerous professions in the United States. The industry has become significantly safer over the past few decades, as logging shifts from traditional chainsaw methods to modern mechanized tree felling. Despite this general increase in worksite safety, new hazards have cropped up, namely cardiovascular disease (CVD) and related chronic illnesses.



The Northeast Center looked into the health of Maine loggers through in-person health assessments and a series of research surveys. We have gained

a deep understanding of the many factors that contribute to logger health and safety. We had an opportunity to share these findings with nearly 700 loggers across Maine through a series of in-person safety trainings with the Professional Logging Contractors of Maine (PLC) in the spring of 2022.

The training, “Healthy Living for Loggers”, was tailored to share findings and advice for improving sleep hygiene, nutrition, movement, and ergonomics. Drawing similarities between health and things loggers deal with every day, such as hydraulic systems and the cardiovascular system, for example, were particularly helpful. NEC also discussed ways of improving individual health given tight time

constraints and a lack of access to healthy food choices. Study highlights included 1) the high rates of musculoskeletal pain (roughly 40%), 2) elevated blood pressure (30% in Stage I Hypertension and 50% in Stage II) and 3) sleep deprivation, among others.



Not Quite Out of the Woods

Overall health and chronic disease risk factors among Maine logging workers

The following information is based on a five-year study in which 393 loggers participated in quarterly health surveys, with 75 of them completing an in-person health exam with a medical practitioner trained in evaluating work-related health issues.



**NORTHEAST
CENTER**
FOR OCCUPATIONAL
HEALTH AND SAFETY



Under Pressure



8 out of 10 loggers in the study had high blood pressure

Work-Related Injury



Only half of loggers had normal high-frequency hearing

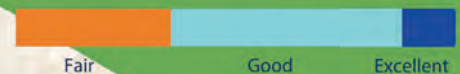


Nearly half of loggers experience joint aches and pains



7 out of 10 loggers reported having a nutritious diet

Lifestyle Choices



Cheers!

Most loggers drink in moderation or don't drink at all



Great News!

Most loggers don't smoke



Logger training evaluations indicated that the classes were useful or very useful to most attendees, and we have since been invited back to participate in the 2023 trainings. We continue to strengthen relationships in the logging industry and future opportunities for outreach are already in the works. With the success of these events, we look forward to future



collaborations and are thankful for the opportunity to continue working with the logging community to increase worker health and well-being.

(Opposite page and near left, respectively: Kevin Luschen and Dr. Scott teaching the Healthy Living for Loggers Class. Below, screenshots of the specialized curriculum.

Machine or Man?

Notice Any Similarities?



LOGGER STUDY FEATURED ON THE MEMIC SAFETY EXPERTS PODCAST

MEMIC Safety Experts podcast host Peter Koch interviewed Erika Scott, PhD about why the Northeast Center is focused on improving the safety, health and wellbeing of Maine Loggers.

Covering a variety of topics throughout the episode, Dr. Scott said, “The types of logging differ so much across the country depending on where you’re working, and for our center in the Northeast,

there hadn’t been much exploration into the root causes of injury. Not just in terms of fatalities, but also the everyday experience. Whether it’s injury, the work organization, safety practices, and health...”



Hear the entire episode at

memic.com/workplace-safety/safety-experts-podcast/0080--logging-safety---the-hazards-are-closer-than-you-think---erika-scott

SURVEILLANCE RESEARCH

MAKING INJURY SURVEILLANCE MORE COST-EFFECTIVE

Occupational injury surveillance systems have increasingly begun to rely on computer learning methods to get the job done. These programs have enabled surveillance systems across the country to more accurately identify work-related injuries in industries such as agriculture and forestry. Injuries in these industries are historically undercounted, however, we have developed machine-learning algorithms to more precisely capture these statistics.

Though the efficacy of this machine-learning algorithm has been demonstrated in previous years, we wanted to further streamline the process by removing redundant elements. To this point, we analyzed the necessity of dual-coding of occupational injury records. Kappa scores and percent agreement were used to evaluate coder reliability among 1,259 agricultural and forestry injuries, using the Occupational Injury and Illness Classification System (OIICS) and Farm and Agriculture Injury Classification (FAIC) to standardize responses.

The analysis supported removal of the dual-coding process, as single coders had a high level of accuracy. This evidence-based decision making is crucial for the continued reduction of surveillance costs, while simultaneously sustaining a high level of data quality. Further, the lessons learned are applicable to any surveillance system which relies on visual inspection and human decisions. It is important, however, that future projects undergo analysis to evaluate the quality of coding before moving to single-coder protocols, particularly when something as open to interpretation as free-text narratives are involved.



Dr. Erika Scott

AGRICULTURAL FATALITY REPORT SHOWS NEED FOR CONTINUED SAFETY IMPROVEMENTS

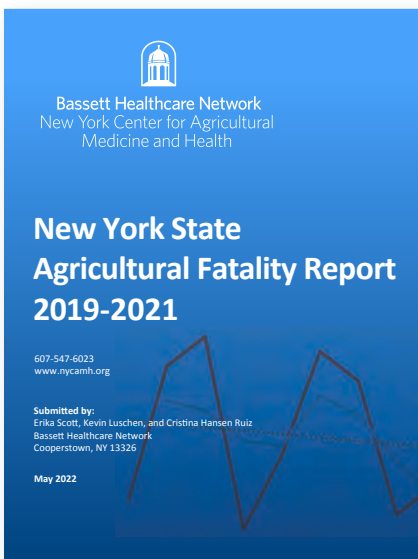
In addition to machine learning methods, our team also makes use of more traditional methods of data collection. In early 2022 we released the New York State Agricultural Fatality Report. This

information was gleaned from a variety of sources. Working with newspaper clipping services, we gather the details of agricultural fatalities throughout the Northeastern U.S. Once identified, these incidents are visually verified by an information specialist, then uploaded to our database. From there, incidents are coded in much the same way as the machine learning data, through use of the OIICS and FAIC classification systems. We also look at other injury data collection services, such as the AgInjuryNews database and the New York State Census of Fatal Occupational Injuries (CFOI).

Once data was collected, our team developed descriptive statistics based on age, gender, event type, injury source, and other factors. The results followed historical trends, with tractor roll-overs being the top cause of agricultural fatalities in the state, followed closely by incidents involving contact with farm equipment, particularly, power take-offs (PTO). Further, at five

times the average rate of traditional motor vehicle fatalities, agricultural truck and auto incidents are significantly more fatal than non-agricultural incidents.

One particularly concerning aspect of this report was the high level of childhood fatalities. More than half of all machinery-related fatalities involved minors, with half of those (1/4 of all machinery-related fatalities) involving minors under the age of ten.



SPOTLIGHT ON NATIONAL SURVEILLANCE

A lack of information concerning the burden of occupational injury has been recognized as a critical obstacle for the adequate prioritization of health and safety needs among US workers. This is especially true for the agricultural industry. To help address this gap Dr. Erika Scott's research, funded by a Mentored Research Scientist Development Award (K01), is identifying variables associated not only with injury and cost, but also the non-financial externalities such as grief, pain and suffering experienced by a worker, their family, business and community.

In addition, Dr. Scott was recently appointed to the CDC National Institute of Occupational Health and Safety Intergovernmental Personnel Act (IPA) working with the Office of Agricultural Safety and Health on surveillance initiatives. According to the U.S. Office of Personnel Management, the Intergovernmental Personnel Act (IPA) Mobility Program provides for the temporary assignment of personnel between the Federal Government and state and local governments, colleges and universities, Indian tribal governments, federally funded research and development centers, and other eligible organizations.

Dr. Scott will assist in developing and promoting a coordinated approach to disease and injury surveillance for the whole AgFF sector that will be of great benefit not just to NIOSH, but also to partnering agencies, NIOSH grantees, policymakers, industry associations, and other safety and health organizations. As the AgFF sector faces unique challenges in collecting injury and illness data (injury reporting exemptions, rural and remote workspaces, immigrant and migrant populations, high rates of self-employment, etc.), there is a particular need for coordinated, quality national surveillance data which is currently lacking, especially in a nationally accessible and standardized format.



W O R K E R S A F E T Y





FARM SERVICES

The Northeast Center's farm services and educational programming staff work with hundreds of farm businesses every year. These connections keep us in touch with Northeast agriculture so that our offerings stay relevant and responsive to real needs.

Our outreach services and programs are typically provided at no cost. We offer them at the worksite or at a convenient central location for participants.

We have farm safety specialists located in multiple states for on-farm visits and trainings as well as for consultations by phone or video conferencing. They offer an array of safety trainings related to on-the-job safety for farm employees as well as for owners, managers, and youth.

Many of our trainings have been adapted for videoconferencing. We continue to build our video collection of safety demonstrations and social media posts.

While we can help a farm comply with regulatory standards, the Northeast Center is not a regulatory organization.

FARM SAFETY SURVEYS

53 sessions

68 owner/managers served

During an on-farm safety survey, a Northeast Center safety specialist tours the farm operation with the owner or a manager to identify specific safety hazards. The safety specialist provides verbal and written recommendations for how to eliminate, fix or mitigate these hazards. These safety surveys provide farm owners and managers one-on-one consultation time to ask questions and receive advice on improving safety and complying with regulatory standards. In 2021 we tested using a GoPro camera for the farmer to film his farm as part of our survey, thus reducing staff travel and time. This has worked so well we recently added a second camera.



SAFETY TRAINING IN SPANISH

124 sessions

1,715 people trained

All of our training topics can be provided in Spanish. Some of the most requested topics include milking parlor safety and fruit & vegetable production/harvest safety. Other topics include skid steer, chemical, sun, heat safety and worker protection standards.



SAFETY TRAINING IN ENGLISH

69 sessions

893 workers trained

We offer a broad range of topics from animal handling to zoonotic disease, and continue to develop new modules to cover emerging issues. All training sessions are customized to fit the farms need at that time.



FARM EMERGENCY RESPONSE PROGRAM

30 sessions

273 people trained

Farm Emergency Response Program trainings help farm workers and farm families learn what to do in an emergency without putting themselves at risk. They include CPR, First Aid, fire safety and fire extinguisher use. Our educators deliver many American Heart Association courses to farms, as third-party food safety audits may require CPR and first aid certification for key workers.



YOUTH TRAININGS

16 sessions

247 youth served

Using a combination of discussions, visuals, and hands-on activities, we have safety trainings geared towards grade school, high school and college level students. We use many demonstration units to make the trainings fun, interesting and visually impactful. An example is our Mr. Good Egg demo, which uses a toy tractor, and egg (with a face painted on) and Velcro to teach tractor safety and roll over protection.



TECHNICAL ASSISTANCE

181 farm consultations

Our trainers regularly respond to farms' technical questions related to farm safety and regulatory compliance. Requests are received by phone, email, and in person at trade exhibitions and other outreach events.

LOGGING SAFETY TRAININGS

17 classes

184 people trained

Partnering with nationally accredited Game of Logging trainers, we are able to offer a hands on experience in chainsaw safety to our farming and rural communities. Indicated by our current wait list, of over 200 people, chainsaw safety is an important topic.





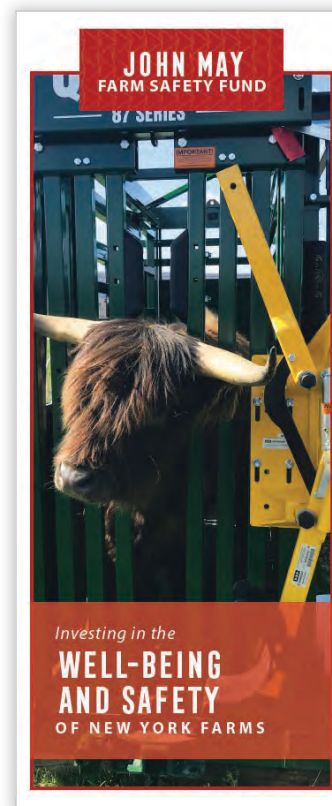
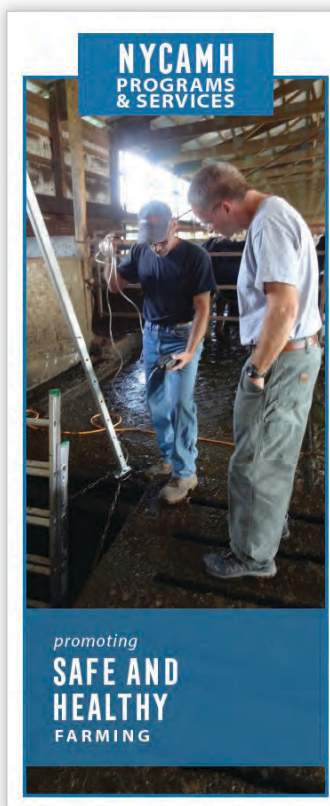
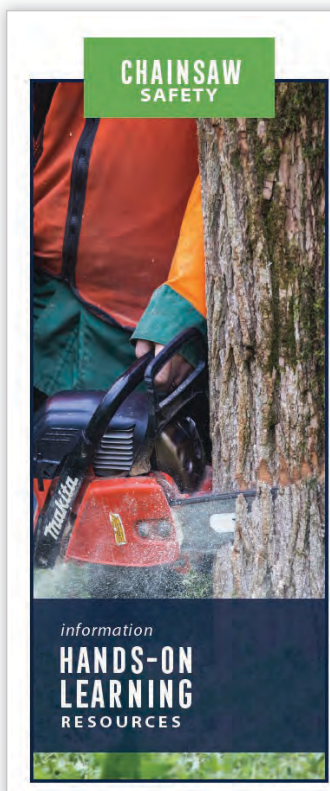
FARM SERVICES

NEW SAFETY MATERIALS AND VIDEO LIBRARY

In keeping up with the times, our outreach department has redesigned and updated several brochures to create a recognizable image that contains the most current safety recommendations. These brochures are taken to outreach events, direct trainings, and mailed per farmers' request. In addition, we have expanded our video library with eighteen new videos, all of which reinforce safety messages. Some are videos of our safety demonstrations that can be used as a training tool for farm workers, youth, and new agricultural safety educators. Peer organizations have also used our videos in their trainings. We also have a series of social media videos to get safety messages out there on widely used platforms. These videos are meant to be quick, interesting, and with direct messages to keep people thinking about safety.

View our latest videos at
www.youtube.com/user/nycamh

Demonstrating the proper way to get off a tractor to reduce injury and save your knees.



BE SEEN, BE SAFE IN “HI-VIS” VESTS

Staying safe around farm equipment is an important topic to discuss on farms, with employees and family members. Actions, however, can speak louder than words. A person wearing high-visibility clothing is easier to spot from a distance, when working around large equipment, or at night.

We have developed new training modules as more farms are now implementing hi-vis policies. The worker training, available in English and Spanish, covers the “why” of hi-vis for runover prevention, how to care for garments, and a general review of the hazards of farm equipment such as blind spots and stopping distance. The management training includes more in-depth discussion of garment types, classes of hi-vis, and suggestions for safety policies. These modules can be combined with other topics and are appropriate even for workers who do not operate equipment.

SAFETY TIPS:

- Worker safety, day and night: wear hi-vis vests when in equipment areas or walking on the farm.
- Hosting a tour? Provide hi-vis vests to all visitors so you can easily spot anyone wandering away from the group.
- Train ALL workers, even if they don't operate equipment. Review blind spots and stopping distance – workers who don't drive tractors may put themselves in danger because they are unaware of the hazard.
- Remind equipment operators to be on the lookout for workers on foot.
- Consider a policy for earbuds and phones on your farm – these can be dangerous distractions.

“What do safety vests say? Hey... I'm here! You're important! You're worth investing in. We care about your health and well-being. We want you to get home to your family safe! We do things right around here.”

Rich Stup of Cornell Workforce Development,
presenting at the Northeast Dairy Management Conference



QUALITY OCCUPATIONAL HEALTH SERVICES

Our occupational health services program, **Bassett HealthWorks**, sets us apart from many research entities. The team of specialized health professionals has been delivering high quality occupational health services to the workers of Central New York and beyond, for nearly thirty years. Having research, outreach, and clinical services ‘under one roof’ has many benefits. For example, research health assessment protocols are rooted in HealthWorks practice, informed by our clinical experts, with research, outreach and HealthWorks staff working side by side. Conversely, HealthWorks systems, procedures, and customer service are enhanced by the ethos of questioning the status quo, refinement and incorporation of the latest advancements in occupational health, and meeting patients ‘where they are’, whether physically [e.g. clinic set up in a bus garage] or mentally. The services are cost-effective and we have successfully assisted companies of all sizes: from those with as few as five employees, to multi-national corporations.



HEALTHWORKS SERVICES

September 2021 through August 2022

**NUMBER OF
FIRE COMPANIES SERVED** **95**

EXAMS

Fire Fighter Exams	1225
DOT Physicals	162
Other Physicals (19A, Respiratory, Fit for Duty)	376
	1763

FIT TESTS

Fire Fighter/EMS Fit Tests	854
Industry Fit Tests	595
Farm Fit Tests	283
	1732

DRUG & ALCOHOL TESTING

Urine Drug Collections	1171
Breath Alcohol Tests	31
Hair Drug Tests	94
	1296

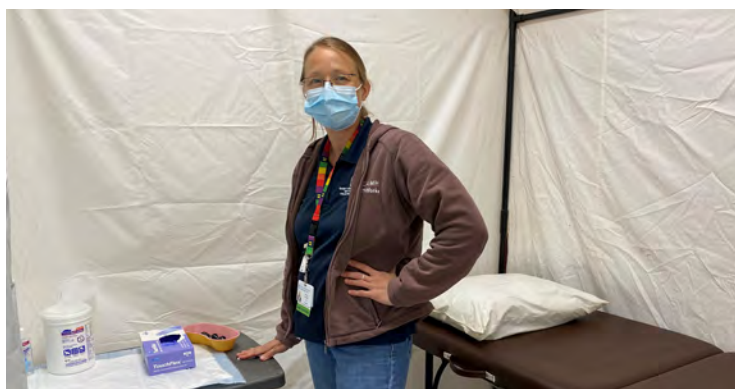
VACCINES

Flu Vaccines	2180
COVID-19 Vaccines	230
MMR/Rabies/Hep B	55
	2465

MISCELLANEOUS

Blood Draws (Titers/Heavy Metals Testing/Etc.)	132
Audiograms	246
Fire Fighter Clearances	1431

HealthWorks staff providing occupational health services such as flu clinics, respirator fit testing, and physical exams.



INNOVATION ON THE HORIZON

NEWLY FUNDED PROJECTS

Several new and exciting projects have been funded over the next five years that strive to improve health and welfare of agriculture, forestry and fishing (AgFF) populations in the Northeast.

The **NEC Outreach Program** will continue to provide a range of occupational health and safety services to improve the safety, health and welfare of AgFF populations, with a long-term goal of supporting research to practice in ways that ensure occupational health solutions have an actual impact on worker safety and health.



L to R: Liane Hirabayashi and Pauline Boyer

The **NEC's Surveillance Project** has a long-term goal of implementing an AgFF injury surveillance system for the Northeast and making improvements to the current system while enhancing the dissemination and utility of injury statistics to relevant stakeholders.



Dr. Erika Scott

The **NEC's Fishing Team** will work on a Personal Flotation Device (PFD) Expansion Project, which is an expansion of the Lifejacket's for Lobstermen Project. The long-term goals of this project are to increase the use of PFDs in Northeast fisheries and to explore what does and does not work in successful translation of evidence-based occupational safety and health solutions.



L to R: Dr. Pam Milkovich and Dr. Julie Sorensen

The **NEC's Tick-Borne Disease Project** will focus on reducing the occupational risk of tick-borne disease among agricultural workers by identifying barriers and/or motivators for adopting prevention strategies and determining the effect that Thermacell Tick Control Tubes have on tick numbers and tick exposure.



Dr. Mandy Roome

The **NEC's Planning and Evaluation Core** will create a comprehensive picture and story of the impact of the Northeast Center on agriculture, forestry and fishing occupational safety and health.

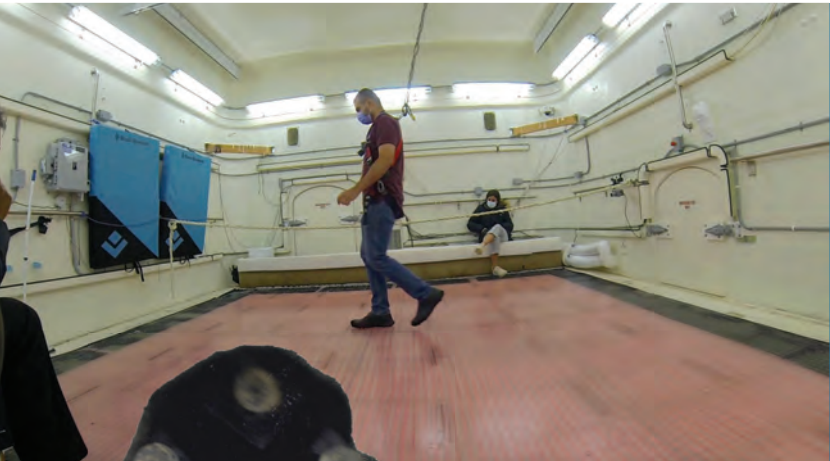


Dr. Pam Milkovich

PILOT GRANTS

FOOTWEAR

Shaghayegh Bagheri, PhD from the Department of Mechanical Engineering at George Mason University and an Affiliate Scientist at Toronto Rehabilitation Institute (Toronto, Canada) has been working on a pilot project aiming to prevent fall-related injuries for workers exposed to outdoor winter conditions. Bagheri is working on developing slip-resistant footwear made of composite materials and optimizing tread pattern design to retain its properties over prolonged use.



Testing a prototype in the Winter Lab at KITE, the research arm of the Toronto Rehabilitation Institute, University Health Network, Toronto, Ontario.



HEAT STRAIN

Houtan Jebelli, PhD from the Department of Architectural Engineering and Director of Construction Robotics, Automation, and Intelligent Sensing Lab at Penn State University has been working on a pilot project to investigate the feasibility of assessing workers' heat stress exposure in advance. This project is using sensory data from environmental sensors and non-intrusive wearable biosensors. This project can help to lessen the risk of heat stress in AgFF populations.



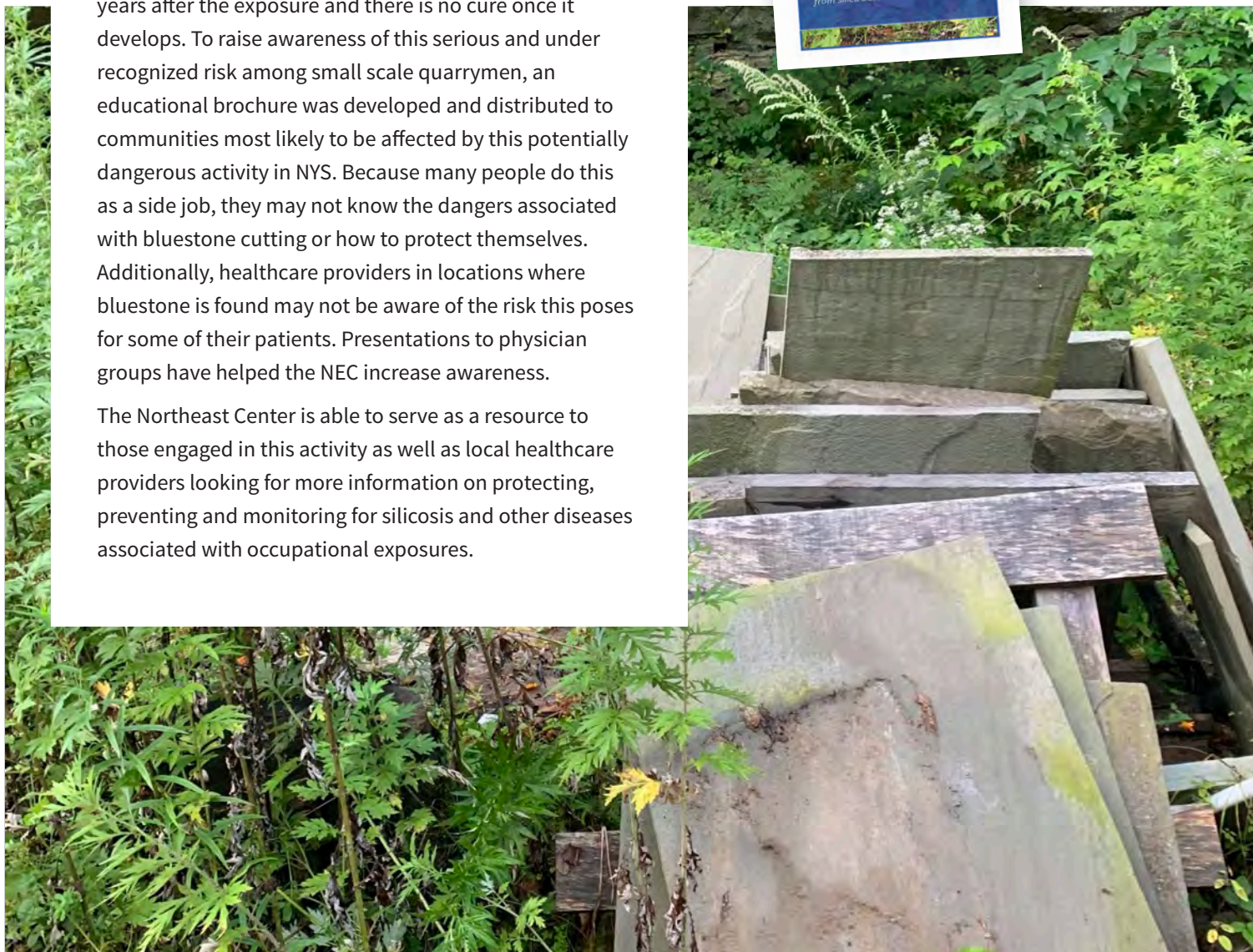
EMERGING ISSUES

REGIONAL OCCUPATIONAL HAZARD PROMPTS OUTREACH

Bluestone is a natural stone found only in Pennsylvania and New York. It is commonly used in landscapes and valued for its beauty and durability. Many of the quarries where bluestone is obtained are small family operations and not subject to OSHA's respiratory protection program. While Bluestone in its natural state does not present any health risk, when grinding or sawing, pulverized tiny airborne particles are created (silica dust) which in high doses, or over time can lead to a serious lung disease known as silicosis.

Symptoms of this disease may not be present for many years after the exposure and there is no cure once it develops. To raise awareness of this serious and under recognized risk among small scale quarrymen, an educational brochure was developed and distributed to communities most likely to be affected by this potentially dangerous activity in NYS. Because many people do this as a side job, they may not know the dangers associated with bluestone cutting or how to protect themselves. Additionally, healthcare providers in locations where bluestone is found may not be aware of the risk this poses for some of their patients. Presentations to physician groups have helped the NEC increase awareness.

The Northeast Center is able to serve as a resource to those engaged in this activity as well as local healthcare providers looking for more information on protecting, preventing and monitoring for silicosis and other diseases associated with occupational exposures.



PUBLICATIONS AND PRESENTATIONS

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Carrabba J. Agricultural Safety Education in Old Order Mennonite Schools in Yates County New York. ISASH Conference. Fort Collins, CO. 13 June 2022.

Driscoll M, Weil R. Extramural Communication Community of Practice (Maryellen Driscoll and Rebecca Weil) Presenting on Fishing Forward Podcast Developments. CDC. 22 Feb 2022.

Gide K, Dutta T. Design of tread patterns for use with novel composite outsole materials for slip-resistant footwear. Oral presentation. Presented In the proceedings of Applied Human Factors and Ergonomics (AHFE 2022), Manhattan, NY, USA. July 2022.

Hirabayashi L. The Impact of COVID-19 on the social connectedness of Maine loggers. APHA Annual Meeting. 27 Oct 2021.

Roome A. Tick-borne illnesses and safe work practices in the woods. Zoom presentation to Peer-Led Logger Group in Vermont. 6 June 2022.

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Scott E. Organizational update 2021-2022. NEON 2022. Presentation-Online. 16 May 2022.

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Sorensen, J. What if ignorance isn't the problem? Nudging workers towards safer work practices. SEGES Migrant Farmworker Project Advisory Board Presentation. Copenhagen, DK. 22 June 2022.

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