JOURNAL OF

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If Rex had washed his hands in our Titan PRO 1 portable sink, maybe — just maybe — he wouldn't be extinct.

` Aourselves, our profession, innovation and

2021 Was Not the Year We Had Hoped

Roy Kroeger, REHS

program. He was dedicated to improving the quality of life for the resident of Tulsa County and the improvements he made in the mosquito control program bene ted all. Meador was also an active member

University, and the University of Akron.

F George Nakamura (September 2021): George Nakamura started his career with the California Department of Public Health in the Food and Drug Branch.

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cation historically have been believed to account for the inhibition of spore-forming pathogens (Breidt & Fleming, 1998). Modeling

ni cant decrease in the count of *E. coli* O157 was observed in sauerkraut fermented at 22 °C.

The inoculum level for both the pathogens was signi cantly different ($p < .05$) from the start of the studies (Arias et al., 2001; Niksic et al., 2005) and the number of pathogens in the following days followed the same pattern until Day 6. On Day 7, the number of pathogens was not significantly different and no pathogens were detected from Day 9, which suggests that despite the number of pathogens

At 7 days, a 5-log reduction was observed in the treatment group and no pathogens were detected after Day 9.

In the sauerkraut inoculated with *E. coli* O157, the inoculum level was 7.88 log CFU/g of sauerkraut (Figure 3). There was a signi - cant decrease in the *E. coli* O157 count from Day 1 until Day 7 ($p < .05$) and a 5-log reduction was observed at Day 7, with no detectable CFU/g after Day 9.

Discussion

The decreasing numbers of *L. monocytogenes* seen in the study are consistent with the study conducted by Niksic et al. (2005) that showed a gradual decrease in *L. monocytogenes* in sauerkraut fermented at 22 °C. Additionally, for the treatment group inoculated with *E. coli* O157, the rate of decrease in the number of pathogens over time was similar to studies by Arias et al. (2001) and Niksic et al. where sig-

To achieve a palatable pickle, the salt must be diluted. Discard approximately 50% of the brine and replace it with water. Verify the new brine pH is ”4.6 and the salt is at 4–5%. Note that dilution with water should not alter the pH. Continue to let contents ferment at ambient temperature, producing more lactic acid and avors. Then repeat the water dilution step, leaving the brine at approximately 2% salt. An optional step is to add spices such as dill and garlic to this nal stage of fermentation. Continue to ferment to the target acidity by monitoring pH. A nished pH of approximately 4.2 is considered half-sour pickles and a pH of approximately 3.3 is considered full sour pickles.

Fermented Cabbage: Sauerkraut and Kimchi

Start with head cabbage for sauerkraut and Napa (also known as Chinese) cabbage for kimchi. Remove the outer leaves and rinse the cabbage in water, then chop or shred it. Add 2–3% salt to vegetables by weight. Press salted cabbage tightly into a food-grade fermentation vessel to expel juice. Juice should cover the vegetable solids. Similar to cucumber pickles above, it is highly recommended to add brine from a recent successful sauerkraut or kimchi fermentation as inoculum to supplement the natural LAB on the cabbage. Submerge cabbage under juice with a food-grade weight. Cover the fermentation vessel and use an airlock to permit fermentation gases from escaping. Ferment sauerkraut at ambient temperature (”25 °C) until the pH reaches ”4.6. Most commercial sauerkrauts are said to have a nished pH of 3.2–3.8.

Kimchi fermentation (lactic acid production) is a temperature-dependent process. Kimchi can be fermented in three ways: a) at low temperature (2–5 °C) using psychrotrophic LAB for 1–2 weeks, b) at 15 °C for approximately 1 week, or c) at 25 °C for 1–3 days. Kimchi with optimum avor is said to have a pH between 4.0 and 4.5, and be characterized by a sour, sweet, and carbonated taste that differs in avor from sauerkraut.

Low-Salt Fermented Vegetable Juice

Rinse vegetables in water. Optionally, fruits and spices can be added. Chop or shred the ingredients as needed and process through a mechanical juicer. Palatable juice fermentations limit salt to 0–0.5%, or no more than the salt avor desired for the end product. Because this fermentation has limited salt, a very active LAB starter culture must be used, such as Lactobacillus plantarum. Ferment juices at ambient temperature to a pH of ”5 within 24 hr and then continue to ”4.6 within 48–72 hr. If acidity does not occur quickly, there is less assurance that pathogens or acid-tolerant pathogens did not grow.

Biological and Chemical Hazards and Their Controls

Various acidic foods such as apple cider, mayonnaise, yogurt (Hsin-Yi & Chou, 2001), and kimchi (Shin et al., 2016) have been implicated in outbreaks of foodborne disease caused by E. coli O157:H7 or related Shiga-toxin producing E. coli strains. Listeria monocytogenes has shown the ability to survive in acidic foods (Gandhi & Chikindas, 2007) and has been associated with outbreaks in acidic foods, including fermented sausages.

Vegetables and vegetable juices are classi ed as time/temperature control for safety

a safe pH level has been reached. As an example, one can create a simple table (Table 2). For each batch, mark the start date (manufacture date) and starting pH, then mark each successive pH measurement until pH " 4.6 or < 4.2. You could optionally continue to measure pH if your avor target is pH < 4.2. Operators will also need to keep a separate pH meter calibration log or include calibration data in Table 2.

Good Fermentation Practices

LAB cultures: Starter cultures are either naturally sourced as part of the ingredient biota or commercially cultured. Traditional vegetable fermentation relies on the slow development of the natural biota. Failure to get a good fermentation started, however, can lead to excessive spoilage and the potential for pathogen growth.

[Option 1: It is highly recommended to enrich the LAB culture. Enrichment consists of simply fermenting a mini-batch (usually 5 10% of the size of the fermentation). Allow the enrichment to ferment at the same temperature as planned for the larger batch. Use the enriched culture to inoculate the main batch when the pH is close to 4.6.

[Option 2: LAB culture manufacturers offer vegetable fermentation strains that have been freeze-dried in most cases. It is also acceptable to use probiotic tablets or capsules. The capsules contain very high numbers of LAB cultures, as indicated on their labels. For example, L. plantarum is found as probiotic capsules. Freeze-dried cultures usually activate quickly within several hours once rehydrated and can be either used directly or enriched as described in option 1.

[Option 3: Use approximately 5% of a previous successful fermentation brine to inoculate a new batch. The previous batch should be fresh, have a pH level between 4 and 4.6, and still be active. Acidity levels below 4 will begin to kill off LAB cultures that are not highly acid tolerant.

LAB fermentation conditions: Vegetable LAB fermentations are most successful at 50 70 °F. Psychrotrophic fermentations can be successful at 4 10 °F. Fermenting at temperatures >70 °F usually results in spoilage or undesirable avors. Salt at 2 12% will select for salt-tolerant LAB. In all cases, LAB fermentations are anaerobic. Oxygen offers no

TABLE 1

Lactic Acid Fermented Vegetables: Hazard Analysis

Step	Description	Hazards Created, Eliminated, or Reduced	Control Measure	Critical Control Point
1	Receive vegetables	Vegetative and spore-forming bacterial pathogens present		
	Receive salt and/or spices	None for salt; spices may contain pathogenic strain spores and Salmonella	Consider adding spices (except salt) after an active fermentation has been established	
	Water	Potable water should be free of hazards		
2	Store	Vegetative and spore-forming bacterial pathogens present and may grow with temperature abuse	Refrigerate perishable ingredients	
3	Rinse	Biological and chemical hazards reduced	Rinsing reduces soils and water-soluble chemical hazards	
4	Chop or shred	Cross-contamination from food contact surfaces	Sanitation and hygiene	
5	Salting	Biological hazards reduced or growth slowed	Salt at ≥2% reduces the growth of some food pathogens. Salt at ≥10% greatly reduces the growth of all pathogens.	
6	Inoculation and acidification	Vegetative and spore-forming bacterial pathogens present and can grow unless inhibited by an active fermentation culture	Ensure using an active culture or natural biota. Ferment as rapidly as possible to achieve a pH ≤ 4.6 to prevent Clostridium botulinum growth.	Yes
7	Fermentation (aging)	Biological hazards reduced and possibly eliminated	Continued fermentation will produce more lactic acid, further reducing pathogen growth or survival	
8A	Option 1: Cold holding	Vegetative and spore-forming bacterial pathogen growth prevented	Refrigeration at ≤41 °F and pH ≤ 5 will prevent the growth of all bacterial pathogens including Listeria monocytogenes and psychrotrophic C. botulinum	Yes
8B	Option 2: Ambient holding	Vegetative and spore-forming bacterial pathogen growth prevented	Ferment to pH ≤ 4.2, resulting in a non-TCS fermented food. Cold hold for quality.	Yes
8C	Option 3: Thermal process for ambient storage	Vegetative bacterial pathogens destroyed by heat (e.g., pasteurization)	Fill jars with fermented food and brine ≥180 °F. Cap and invert for 3 min. Place jars right side up and allow to cool.	Yes

Note. TCS = time/temperature control for safety.

bene t, so the presence of oxygen should be minimized by any acceptable means.

LAB culture health claims: Some live LAB fermentation cultures are considered probiotics. In order for operators to make probiotic claims, however, the culture must be a known probiotic culture and there should be at least 1,000,000 probiotic cells/g alive and active in the food. Operators are discouraged from mar keting or labeling health claims such as eating or drinking will “cure” any speci c ailments.

Good Retail Practices

Controls and preventive measures that do not meet the threshold of being classi ed as critical and are not directly related to fermentations—but nonetheless are needed to ensure safety—often are contained in good retail practices. Many are prescriptive in the Food Code itself:

1. Use only clean and sanitary equipment and

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enhanced through both policy creation and increased funding.

Our early evaluation presents the unique skills and knowledge base of EHPs as well as lessons that can be learned from EHP engagement in public health protection. This article provides an inventory for countries to assess their own utilization of the competent, multiskilled environmental workforce.

Methods

We followed methods described in an earlier article examining the role of EHPs during the pandemic (Rodrigues et al., 2021). In summary, to collate and assess the skills and activities of EHPs around the world, a community of practice (CoP) made up of environmental health academics and practitioners from the U.S., UK, Portugal, and Australia was formed. Recruitment to the CoP was undertaken using exponential nondiscriminative snowball sampling through our existing contacts (Etikan et al., 2016; Goodman, 1961). To identify this information, members of CoP consulted with other practitioners, professional associations, reports, gray and formal literature, and media articles published in their respective countries. Further details can be found in Rodrigues et al. (2021).

Results and Discussion

There were two dominant themes that arose from the CoP discussions:

1. The local nature of environmental health.
2. The development of new roles with the environmental health profession and the transferability of skills.

Lessons for the future were explored and are presented in this article.

The Local Nature of Environmental Health

The environmental health workforce represents a signi cant portion of the human capital that comprises the public health workforce. While global workforce numbers are unclear, the National Association of County and City Health Of cials (NACCHO, 2019) routinely assesses workforce composition within the U.S. government. The nursing profession is the largest professional component (18%) of the U.S. public health workforce, while environmental health is the second largest (12%). In the authors' experience, this ratio approximates workforce distributions in many countries throughout the world. In Portugal, EHPs make up the largest portion of the human capital in the public health workforce (Ministério da Saúde, 2017). In England, EHPs make up the third-largest 2021).

were being faced by EHPs responding to the pandemic in all areas of environmental health. In the UK, an Environmental Health Together register of EHPs was formed to collect details

services, practitioners of public and environmental health have long recognized that clinical care is not the primary determinant of health. Callahan and Jennings (2002) noted that the "health of populations is a function more of good public health measures and socioeconomic conditions than of biomedical advances, a neglected truth by most outside the eld." The COVID-19 pandemic disproportionally affected disadvantaged communities, even in countries with good national healthcare (Burström & Tao, 2020; Mikolai et al., 2020; Patel et al., 2020).

It is not possible to separate environmental health funding from public health funding in most countries, but as noted by Rodrigues et al. (2021), public health funding in most developed countries has decreased signi cantly over the past decades. In Portugal, for example, legislation decrees 1 EHP per 15,000 people (Diário da Repblica, 2009), a ratio that is far from being achieved. Maani and Galea (2020) showed clearly that underfunding in public health in the U.S. made it "uniquely susceptible to the illness." In the UK, central government austerity measures have seen the national health service funding prioritized over local authority public health grants for over one decade, leading to a real-terms cut in funding to a point where an additional £1 billion (approximately US$1.4 billion [USD]) annual public health grant would be required to keep pace with population growth and in ation (Buck, 2020). In the UK, environmental health services can be delivered for an average of £7.82 (approximately $10 USD) per person served (Chartered Institute of Environmental Health, 2015).

Cost bene t analyses of environmental health work have demonstrated the savings that EHP activity provides for healthcare costs and the societal burden of factors EHPs seek to address. For example, in the UK, improvements to housing have an average 6-month repayment period when compared with savings to society. Improving warmth in vulner able housing saves £4 ($5.50 USD) of healthcare treatment costs for every £1 ($1.35 USD) spent on heating and insulation. Home adaptations carried out by EHPs can generate £7.50 ($10 USD) of health and social care costs for every £1 ($1.35 USD) spent (Watson et al., 2019). It has been estimated that in the UK, an additional £1 billion ($1.4 billion USD) of public health funding is required to keep pace with population growth and in ation (Buck, 2020). We must advocate for better public health policies and a return to substantial funding of public and environmental health.

Quantifying the economic value—speci cally, the return on investment—of environmental health is a valuable exercise and its replication across different areas of the profession and in different countries would help in advocating for a profession whose success is often de ned by the absence of something rather than its presence. A safe, healthy environment

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We can trace the origins of today's modern practice of interdisciplinary environmental health to the Great Sanitary Awakening and the twin developments of 1) densely populated urban environments and 2) the emergence of specialized professional practice as sanitarians, engineers, nurses, and others protecting health and promoting wellness among individuals, families, communities, and the pub-

ment Goals (SDGs) from the United Nations (2015). The 17 SDGs were formally adopted by the United Nations General Assembly and began in force in 2015 to guide global efforts at sustainable development through 2030. Goal 6 (Clean Water and Sanitation) is clearly within the scope of practice of environmental health. In addition, I propose that sanitarians, engineers, nurses, and others have an important role to play in multiple goals. For example, Goal 3 (Good Health and Well-Being) and Goal 11 (Sustainable Cities and Communities) clearly bene t from the work of EHPs (Squires et al., 2019).

Throughout most of 2020 and ongoing even today, the world is dealing with the consequences of adapting to a new normal in the aftermath of the COVID-19 pandemic (Oerther & Klopper, 2021). As described by Rodrigues et al. (2021), the COVID-19 pandemic has shown where the practice of environmental health has strained under the demands placed on it during the pandemic. For example, in many local jurisdictions EHPs were redeployed to use their expertise assisting with test and trace as part of controlling the spread of transmission. While this example highlights the exibility of EHPs to pivot their daily activities, it also brought to light a lack of redundancy and cross-coverage among EHPs. For example, vital surveillance or intervention activities such as inspections and enforcement may not have been performed with the typical due diligence normally afforded as resources were redeployed to deal with COVID-19.

Collectively, these four observations that EHPs share—an origin story, a common conceptual framework undergirding local practice, a global world view provided by the SDGs, and strained systems due to a lack of redundancy and cross-coverage—all point toward an urgent need to improve coordination among the practitioners that all share claim to the title of EHP.

In the practice of healthcare, it has long been recognized that physicians, nurses, pharmacists, social workers, and other members of the healthcare team bene t from coeducational training and continuing professional development that creates an esprit de corps at the clinical bedside. This approach is known as interprofessional education (IPE) (Buring et al., 2009; Oerther & Oerther, 2021). A parallel approach to IPE is lacking among the professions of environmental health.

In my opinion, this lack of a clear approach to interdisciplinary collaboration impedes the ability of environmental health to meet its

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[Is the document written mostly in active voice (except for methods sections or other special circumstances described in the user guide)?

A score below 80 points means that a document needs further revision before it is ready for distribution to the public. For example, perhaps the author did not score a point for the use of active voice. Or they did not score a point for the question that asks, "Did you use pronouns like 'you' and 'we' to connect with the reader and make the tone more conversational?"

The following is a sample sentence that can be improved to address both of those omissions:

Original: It is uncertain whether the immune and developmental effects observed in rodents would manifest in humans. Some differences exist between how humans excrete PFAS compared to rodents.

Revised: We do not know if the immune and developmental effects seen in rodents exposed to PFAS would occur in humans. Humans and rodents differ to some extent in how they excrete PFAS.

Why Use a Plain Language Thesaurus?

When working in environmental health, we practitioners learn a vocabulary that is specific to our profession. We use terminology that is critical to our practice and that, over time, has become secondhand knowledge. It is easy to forget that words we often use are not accessible to the general public. This phenomenon is sometimes referred to as the "curse of knowledge" or the "curse of expertise" in social science literature (Newton, 1990).

Writing for the public requires that we describe concepts with language that is available to those without our specialized education or experience. To aid public health communicators in overcoming this challenge, NCEH/ATSDR created an Environmental Health Thesaurus. This online tool offers plain language alternatives for environmental health terms (e.g., biomarker, risk factor).

The following is an example of a sentence including scientific terminology that can be rephrased with everyday language.

Original: Ingesting bug repellent aerosols can lead to adverse health effects.

Revised: Some chemicals are sprayed into the air to kill bugs. Breathing in these chemicals can be harmful.

The improved sentence does away with the term "aerosols," which many people may not be able to define and instead describes it as "chemicals sprayed in the air."

Use These Free Tools

Writing for the public can challenge the communication habits we have developed as environmental health researchers and practitioners. Fortunately, there are concrete steps we can take to craft and revise documents according to clear communication principles. The heuristics developed by

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environment, and healthcare) and consideration for disproportionately impacted communities (i.e., those who bear an unequal burden of risk, exposure, or impact), such as low income, minority, and tribal communities, and for vulnerable populations (i.e., those who are most susceptible to impacts from harmful environmental exposures), such as children and older adults.

- Built environment pertains to developed indoor and outdoor environments on which the public depends for daily life, including transportation systems, infrastructure, green spaces, urban development, office spaces, homes, schools,

Tools and Resources From the Of of Research and Development (ORD) Within the U.S. Environmental Protection Agency (U.S. EPA) to Help Public Health Practitioners Address the Six Common Environmental Areas of Concern

Tool	Environmental Health Uses	Intended Users
Climate change		
Environmental justice and equity		
Built environment		
Natural environment		
Occupational environment		
Researchdata, and implementation		

tions build and foster trusted relationships and networks that can be leveraged when public health emergencies arise.

Future Opportunities

Continuing cross-sector and cross-disciplinary conversations on environmental health priorities will enable more information and stakeholders to be engaged when developing solutions to current and future challenges. Opportunities for collaboration include incorporating environmental health in training and workforce development; utilizing workshops, professional meetings, and other platforms to foster cross-disciplinary dialogue; and coordinating across sectors on risk communication.

Environmental health issues of mutual concern could also be used to inform outreach strategies, research directions, and issues for future targeted discussions and collaborations across disciplines. By working together, the environmental health community can develop more impactful and holistic actions to protect and improve our nation's environmental health.

EH CALENDAR

UPCOMING NATIONAL ENVIRONMENTAL HEALTH ASSOCIATION (NEHA) CONFERENCE

June 28–July 1, 2022: NEHA 2022 Annual Educational Conference & Exhibition—Now a Hybrid Event, Spokane, WA, https://www.neha.org/aec

NEHA AFFILIATE AND REGIONAL LISTINGS

Iowa
May 3–4, 2022: Public Health Conference of Iowa, Iowa Environmental Health and Public Health Associations, Ames, IA, https://www.ieha.net/PHCI2022

Kentucky

CAREER OPPORTUNITIES

Assistant Professor of Health Science (Environmental Health/Epidemiology)

California State University, Long Beach (CSULB)

Apply Now: https://bit.ly/3CFJWKO

Job Number: 501179

Work Type: Instructional Faculty—Tenured/Tenure-Track

Categories: Unit 3 - CFA- California Faculty Association, Tenured/Tenure-Track, Full Time, Faculty - Health Sciences

Position: Assistant Professor of Health Science (Environmental Health/Epidemiology)

Effective Date: August 17, 2022 (Fall Semester)

Salary Range: Commensurate with quali cations and experience

Required Quali cations

[MD, PhD, or DrPH in public health or a closely related eld including, but not limited to, program tracks/concentrations related to environmental health, epidemiology, or a closely related discipline. [If doctoral degree is not in public health, must be formally trained in public health (e.g., MPH) or have at least 2 years of public health experience.] Degree at time of application or of cial noti cation of completion of the doctoral degree by August 1, 2022.

[Demonstrated potential for teaching courses in the health science major (e.g., environmental health, epidemiology, environmental and climate justice, and/or related courses).

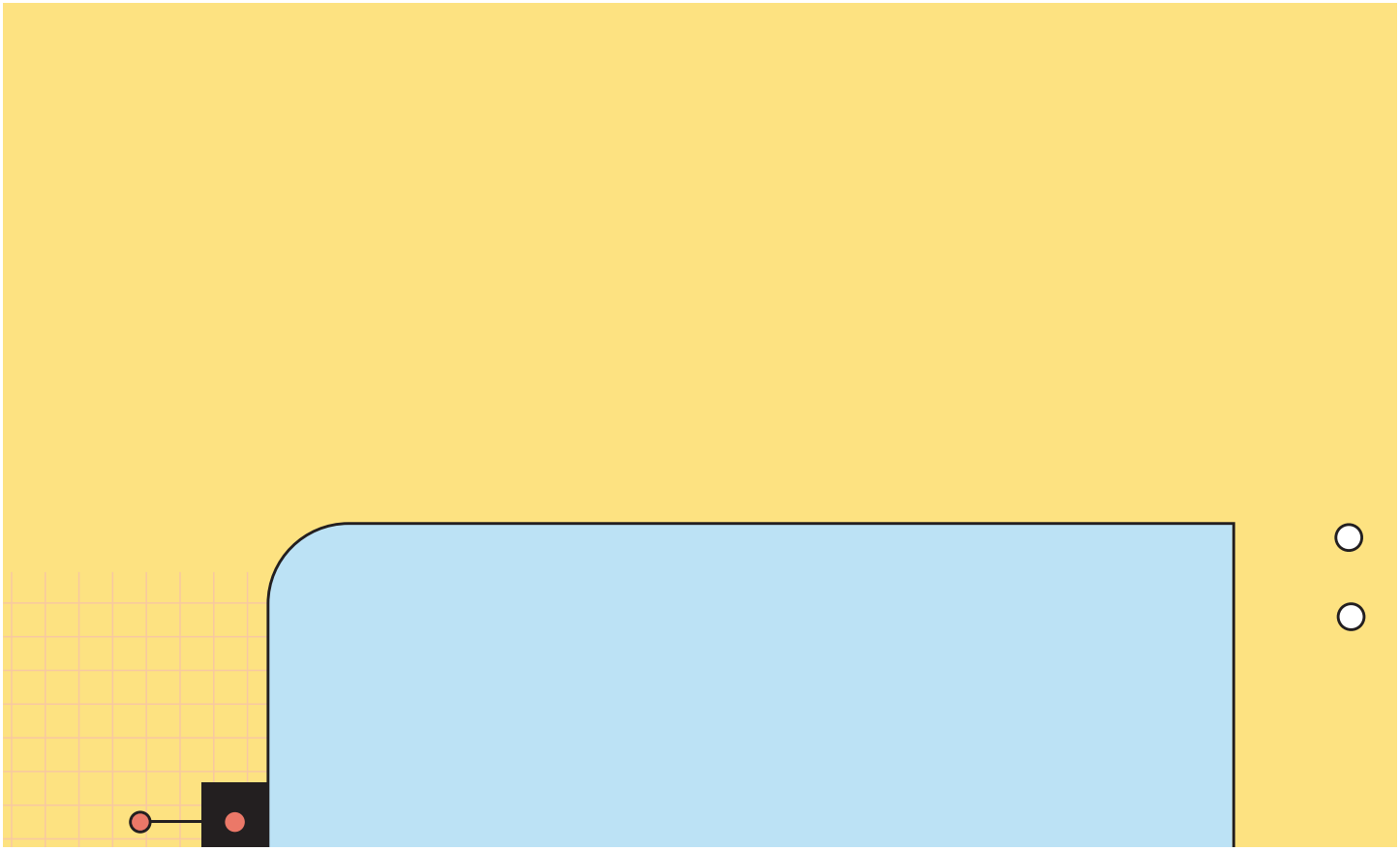
[Demonstrated potential for conducting research, scholarly, and-cre ative activities.

[Demonstrated commitment to working successfully with a diverse student population.

Preferred Quali cations

[

Resource Corner highlights different resources the National Environmental Health Association (NEHA) has available to meet your education and training needs. These resources provide you with information



JEH QUIZ

FEATURED ARTICLE QUIZ #3

1. Foodborne pathogens such as __ have been implicated in foodborne illness in several fermented and acidic foods.
   a. E. coli O157:H7
   b. Listeria monocytogenes
   c. all the above
   d. none of the above

2. Fermentation is considered a special process where a food additive is used to make a potentially hazardous food into a nonpotentially hazardous food.
   a. True.
   b. False.

3. Foodborne pathogens of concern are present in the farm environment and can contaminate raw cabbage via
   a. water irrigation.
   b. unhygienic human handling.
   c. fertilizers that aremade from animal feces.
   d. all the above.
   e. none of the above.

4. Historically, __ have been believed to account for the inhibition of spore-forming pathogens.
   a. salt
   b. extreme heat
   c. rapid acidi cation
   d. a and c
   e. all the above

5. L. monocytogenes has been found to survive in both the fermentation stage at room temperature as well as in the refrigeration stage in home-fermented refrigerator dill pickles for up to __ days.
   a. 51
   b. 71
   c. 91
   d. 121

6. The generally accepted bacterial pathogenic hazard control factor(s) in sauerkraut fermentations include:
   a. salt.
   b. competitive lactic acid bacteria (LAB) cultures.
   c. rapid production of lactic acid and other acids.
   d. b and c.
   e. all the above.

7. The control and treatment groups in this

SPECIAL LISTING

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The Journal of Environmental Health (JEH) thanks and honors the individuals listed below whose contributions as peer reviewers are vital to our effort to advance, educate, and promote the science and profession of environmental health. We sincerely appreciate their hard work, devotion to the environmental health profession, and willingness to share their wealth of knowledge and expertise.

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IN MEMORIAM

Boyd T. Marsh

The National Environmental Health Association (NEHA) was saddened to learn that Boyd T. Marsh passed away September 1, 2021. Marsh served as president of NEHA from 1981–1982. This time period was tumultuous for NEHA due to financial difficulties and a decline in membership. From his "The President's Message" in the September/October 1981 *Journal of Environmental Health*, he stated, "We must strike out to establish a role and place for our association—an association where all of us can contribute our talents and where our association and profession can benefit from our collective contributions." Marsh certainly contributed his talents to moving NEHA into the future. His leadership and that of others during this time period helped to ensure that NEHA exists today.

In addition to his national impact, Marsh was a strong environmental health leader in his home state of Ohio. He began his career in 1966 as a staff sanitarian for the Summit County Health Department. He went on to serve as the director of environmental health for both the Summit County General Health District and the Cleveland Department of Public Health. He retired as health commissioner of the Summit County General Health District in 2000. Marsh also served as president of the Ohio Environmental Health Association (OEHA) in 1972. He was the first chairman of the Ohio Board of Sanitarian Registration and taught environmental health classes as an adjunct faculty member for Cleveland State University, Bowling Green State University, and the University of Akron.

Marsh was honored with the Walter F. Snyder Award in 1989 from NSF International and NEHA. He was described in the Snyder Award announcement as a person of "wisdom and accomplishment" whose contributions to environmental health "can be seen in the programs and publications which have grown from his wisdom." A copy of the award announcement can be viewed at https://bit.ly/31vLbyL. He was honored as Outstanding Sanitarian in 1979 and Outstanding Environmentalist in 1980 by OEHA. He was also named a diplomate of the American Academy of Sanitarians (AAS) in 1974.

Marsh

Nakamura grew up in Watsonville, California. He earned his bachelor of science degree in public health from the University of California, Los Angeles (UCLA) School of Public Health. He went on to earn his master's in public administration from California State University, East Bay. Nakamura started his career in 1975 within San Mateo County Environmental Health as a consumer protection specialist. He started working at Contra Costa County in 1992 as a supervising environmental health specialist and retired as a program manager in 2006. His supervising experience encompassed nearly every environmental health program in Contra Costa and San Mateo Counties.

The passion Nakamura had for the profession was evidenced through his involvement in NEHA, CEHA, AAS, and numerous committees and advisory councils for organizations such as Underwriters Laboratories, NSF International, and the National Automatic Merchandising Association. He volunteered his time to NEHA as section cochair for food safety and protection (1997–2008) and technical advisor for workforce development,

IN MEMORIAM

sionals. When we worked together, his morning greeting might include an individually wrapped candy or a chotchke collected from a recent conference. He loved good food, especially our of ce potlucks with international air. Long ago, I was able to share my mom's homemade tamales with George. For years he would ask if I had been to visit her lately and most importantly, did I bring any of her homemade tamales! Our conversations in recent years were about his grandsons. It was a treat to watch his face light up when he spoke about his family. He had the best sense of humor and was a true and treasured friend. George has a special place in my heart and will miss him dearly," Alicia Collins, NEHA past president.

"I started working with George at Contra Costa County Environmental Health in 2001. He was always respectful, kind, and very funny. He joked often with the staff but he was a steadfast supporter of his team. He later became a NEHA mentor for me, providing me with introductions to his environmental health colleagues and friends and to the NEHA board and past presidents. I worked with him on a few NEHA projects over the years and always enjoyed our conversations and continuous banter. I will miss George!" Michele R. DiMaggio, NEHA Region 2 vice-president.

"George was a dear friend, a great colleague, and a star in our profession. I rst met George as my student in environmental health at UCLA. His term paper on Salmonella in eggs was the best written paper submitted to me during my tenure and I gave him a well-deserved "A." I never tired of telling George about that over the years and equally, he was never tired of hearing it. He always rewarded me with his wonderful laugh. George was a person of good character and honorable service," Dr. Amer El-Ahraf, NEHA past president.

"George had a long history of service to CEHA and NEHA. He was one of my rst contacts with the CEHA Northern Chapter in the early 1970s. Most recently he represented NEHA for several years on the CIFOR project and he was an active advocate for expanded industry outreach and participation," Mel Knight, NEHA past president.

"I met George at the very rst AEC I attended in Alaska in 2004. Because of him I have made connections with other professionals at these conferences. And of course, he always liked the macadamia nut candies that I had," John Nakashima, Food Safety Services Hawaii, LLC.

"George and I were tightly connected through NEHA over the past 20 years. He welcomed me to my rst NEHA conference in Atlanta in 2001. Since that time we worked side-by-side on developing the food safety sections for the NEHA conference, advising on the Food Safe Schools project, Epi-Ready, CIFOR, NSF, Conference for Food Protection, National Registry for Food Safety Professionals, and AAS. We shared a love of Disney and it was my joy to gift him Mickey ties (and on one occasion, socks). It was even more of a joy to see him wear them at subsequent meetings. George and NEHA were synonymous to me just joined the NEHA staff and was looking forward to letting George know where his mentoring and support landed me. Sadly, I won't have the joy of his reaction. He made an impact in many lives and was greatly loved," Michéle Samarya-Timm, NEHA staff.

"George provided me with mentoring and encouragement as I 'moved up the ranks,' both in the work environment and in CEHA and NEHA. I remember the times we competed against each another at the CEHA Northern Chapter softball tournaments in the early 1990s. I got to see rsthand just how competitive George was. Balance that competitive spirit with his passion for the environmental health profession and to me, that was George Nakamura," Ronald J. Torres.

NEHA extends its deepest sympathies to the families, friends, and colleagues of Boyd T. Marsh and George Nakamura. Each had a profound impact on our profession and the people around them. Both will be greatly missed.

Editor's Note: If you would like to share information about the passing of an environmental health professional to be mentioned in a future In Memoriam, please contact Kristen Ruby-Cisneros at kruby@neha.org. The Journal will publish the In Memoriam section twice a year in the June and December issues, or in other issues as determined appropriate.

Did You Know?

NEHA's A Day in the Life of an EH Professional Blog contains a wide variety of posts from NEHA members, committees, and staff. The posts cover a broad spectrum of environmental health topics—food safety, preparedness, vector control, climate change, water quality, and air quality, to name a few. You can also find posts on NEHA activities, latest news, and member spotlights. Check them out at www.neha.org/membership-communities/get-involved/day-in-life.

National Food Safety Education Month Wrap-Up

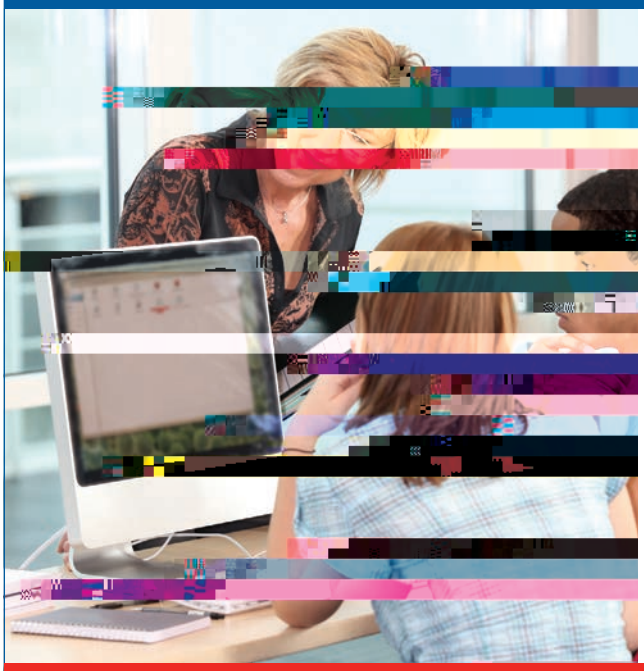
The National Environmental Health Association (NEHA) celebrated National Food Safety Education Month this past September with a 5-part webinar series on emerging food safety trends. The webinar series focused on providing insights, recommendations, and tools to assist attendees in keeping current with the rapidly changing landscape of retail food safety. A panel of subject matter experts from the new NEHA-FDA Retail Flexible Funding Model (RFFM) Grant Program kicked off the month by presenting on how the new NEHA-FDA RFFM Grant Program can offer support regarding education. Throughout the rest of the month, speakers presented on cannabis edibles from both industry and regulatory perspectives, food safety during third-party delivery, using emerging technology to supplement food safety programs, and enhancing virtual training with new technologies.

We are very grateful for our speakers who took time during September to share their knowledge and expertise. Recordings of each webinar are available on the Emerging Trends in Food Safety Webinar Series webpage at www.neha.org/eh-topic/neha-emerging-trends-food-safety-webinar-series.

Throughout the month we also celebrated food safety professionals whose work has had an outsized impact on those around them to express our gratitude for their essential work that protects the public from foodborne illness year-round. Please visit the Food Safety Heroes Blog at www.neha.org/food-safety-heroes.

The NEHA National Food Safety Education Month webpage serves as a repository for our past observances and resources, and can be found at www.neha.org/neha-celebrates-nfsem.

National Environmental Assessment Reporting System Request for Proposals



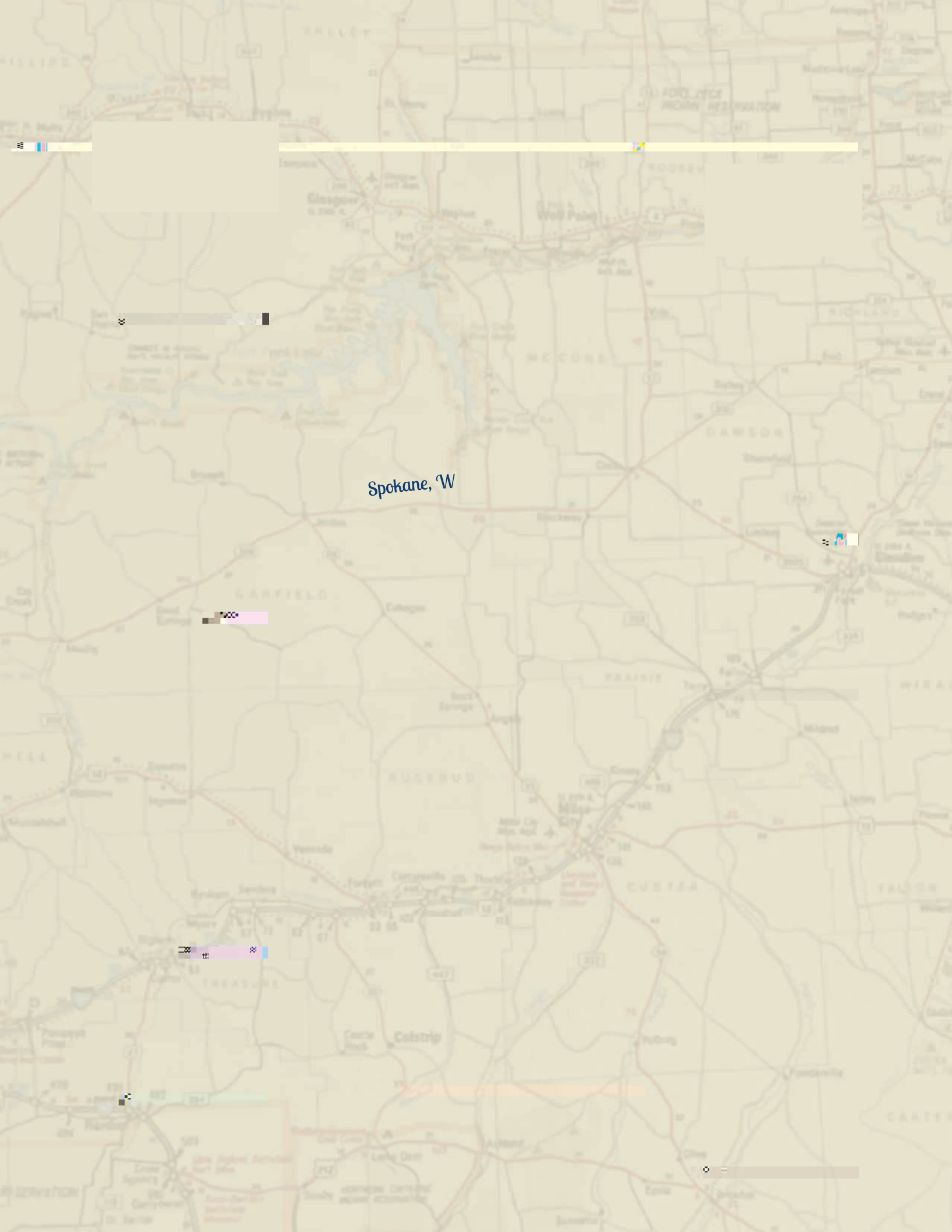
2022 Joe Beck Educational Contribution Award

This award was established to recognize NEHA members, teams, or organizations for an outstanding educational contribution within the eld of environmental health.

Named in honor of the late Professor Joe Beck, this award provides a pathway for the sharing of creative methods and tools to educate one another and the public about environmental health principles and practices. Don't miss this opportunity to submit a nomination to highlight the great work of your colleagues!

Nomination deadline is March 15, 2022.

To access the online application, visit www.neha.org/beck-award.


Spokane, W

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ral. I've lived throughout the U.S. and have never seen anything like it. After DrBrown and I nished our call, Iwent to explore.

Imagine the sight of some old guy rummaging through the shrubberies at a New

the little beast was elusive. As I brushed the leaves and other dead foliage off my clothing, I touched something on my shoulder. It was the insect. I knocked it to the ground and took a photo with my phone camera.

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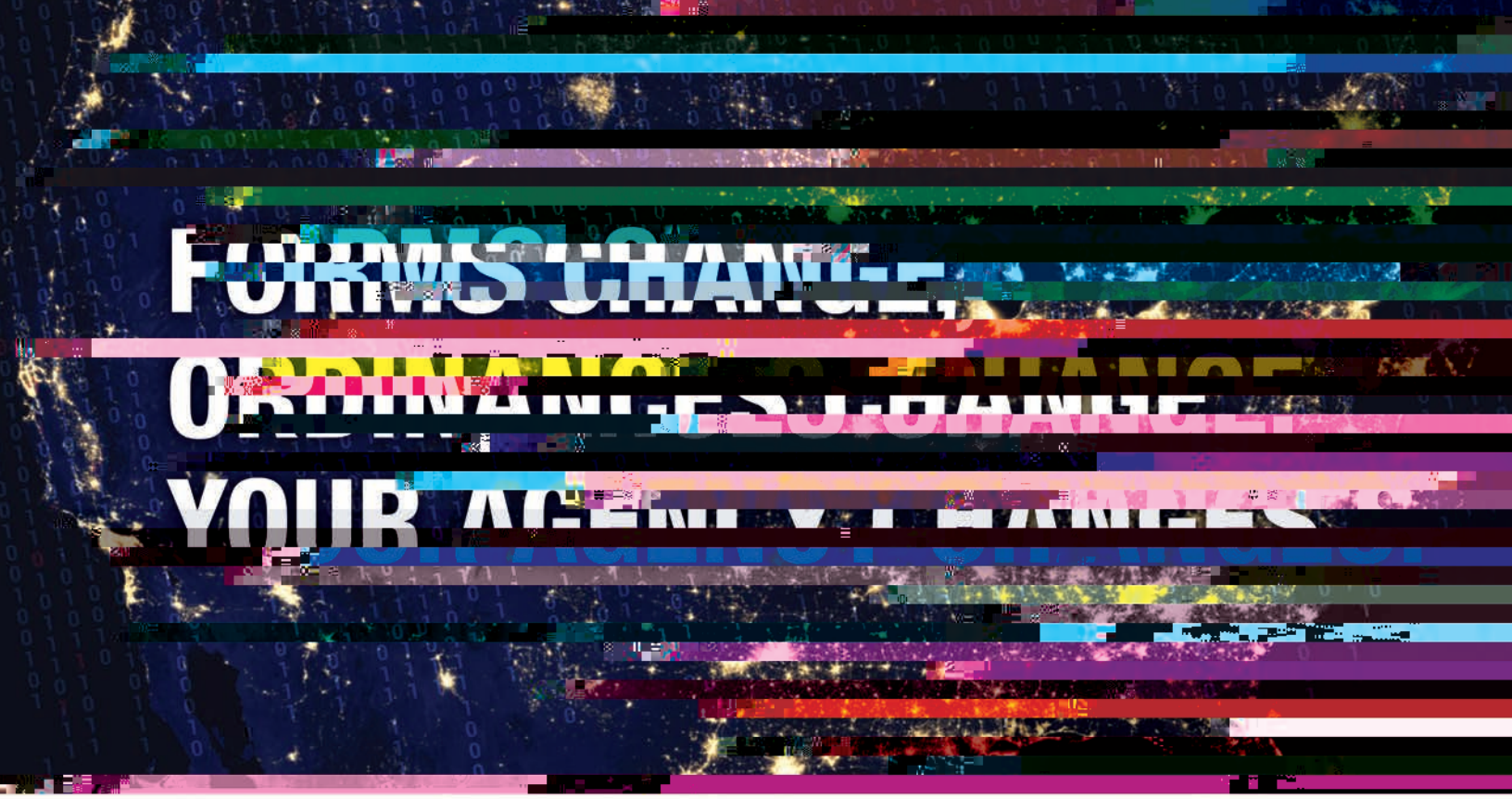

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