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National Environmental Health Association

SPEAKER ABSTRACTS AND BIOGRAPHIES

NATIONAL ENVIRONMENTAL HEALTH ASSOCIATION
REGION IV CONFERENCE
September 25 – 26, 2019
Omaha, NE

HOSTED BY THE NEBRASKA ENVIRONMENTAL HEALTH
ASSOCIATION

NEHA REGION IV CONFERENCE

SPEAKERS—BIOS & ABSTRACTS

KEYNOTE SPEAKERS

CENTER AND EAST BALLROOM

Carpe Noctem: the Blue Hour is Upon Us

Dr. David Dyjack

Wednesday

8:30 am – 9:30 am

The blue hour is considered by many artists to be the most beautiful part of the day. Our profession is entering an era where our knowledge, skills, and abilities will be increasingly recognized as a prime resource and important contributor to the current public health enterprise. Are we ready?

BIO: David T. Dyjack, Dr.PH, CIH is Executive Director & CEO of the 5,700-member National Environmental Health Association (NEHA), a position he has held since May 2015. Under his leadership, NEHA has established a presence in Washington D.C. in support of efforts to influence national policy, launched a new learning management system and new client relations management system, among other association improvements intended to provide NEHA members world-class service. Dr. Dyjack is Principal Investigator on two recent externally funded awards from the U.S. Centers for Disease Control and Prevention. The first grant serves to increase capacity of the environmental health profession writ-large, while the second is focused on rebuilding essential environmental health services in the U.S. Virgin Islands. Dr. Dyjack earned a doctorate in public health from the University of Michigan, an MSPH from the University of Utah, and is a board-certified industrial hygienist (CIH). ddyjack@neha.org

CDC Global Health: Supporting Partner Countries Across the Globe (subject to change)

Dr. Carl Kinkade—Plenary Lunch Presentation,

Wednesday

11:45 am – 12:55 pm

The US Centers for Disease Control and Prevention (CDC) has a global presence that ranges from environmental health to outbreak response using traditional epidemiological methods to advanced drones. This presentation will provide examples of CDC activities across Asia, Africa, and Central America illustrating these methods and showing the growing footprint of public health professionals who risk their lives and move their families to some of the poorest countries in the world.

BIO: Dr. Kinkade is the Surveillance and Health Information System Advisor in CDC-Liberia office where he has lived for the last three years. In addition to his advisor role, he is a CDC first responder. He deployed to Liberia for Ebola ten times, Haiti after the earthquake, Myanmar have cyclone Nargis, Kenya for Rift Valley Fever, and Saudi Arabia for the H1N1 pandemic. He started his public health career at the Lincoln-Lancaster County Health Department, then worked with Nebraska Health and Human Service System before going to CDC in 2005. He has a doctorate in public health and received his undergraduate and graduate degrees from the University of Nebraska-Lincoln. In addition to his public health work, he was in the US Peace Corps in the Philippines and the US Army Reserves where he deployed for Desert Storm. mke5@cdc.gov

Environmental Health: A Planet Without Boundaries

Dr. Ali Khan—Keynote

Thursday

8:00 am – 8:50 am

Across the planet, our environment is under stress. Over-exploitation of the earth's natural resources is harming the global environment. We are clearcutting forests; eroding and degrading soils; destroying wetlands; contaminating streams with pharmaceutical and industrial waste; draining aquifers; and polluting the ocean with garbage, microplastics, agricultural run-off, and oil. We are also disrupting the natural climatic cycle by polluting the air with carbon dioxide and other emissions resulting in global climate change and the shifts to extreme weather patterns. None of these changes are limited by borders – especially the precipitous climate change we are witnessing that is unequivocal and largely driven by human activity. All of these activities have profound effect on underlying fish and wildlife habitats and marine life. The effect of climate change magnifies the impact of this habitat destruction resulting in the loss of biodiversity. Human health and well-being is also not immune to these environmental changes. According to the WHO, nearly one out of four deaths each year are directly caused by unhealthy environments. Contaminated water is estimated to cause 485,000 diarrhea deaths each year and 4.2 million people die every year as a result of exposure to outdoor air population.

Dr Khan’s presentation will be focused on the pressing environmental health issues of our day including the contribution to climate change from air pollution and deforestation, loss of biodiversity, water pollution, soil erosion and degradation, and their current and projected impact on state, national and global public health outcomes.

BIO: Ali S. Khan, MD, MPH, MBA, is Dean of the College of Public Health at the University of Nebraska Medical Center (UNMC) and a former Assistant Surgeon General with the US Public Health Service. Dr. Khan’s professional career has focused on health security, global health, and emerging infectious diseases. He completed a 23-year career as a senior director at the Centers for Disease Control and Prevention (CDC), which he joined as a disease detective, and where he led and responded to numerous high profile domestic and international public health emergencies. Dr. Khan was one of the main architects of CDC’s national health security program and continues this work at UNMC, which has been nationally-designated to prepare the American healthcare system to respond to outbreaks of high hazard pathogens. He also continues to actively support global outbreak responses such as the response for the West Africa Ebola outbreak in Sierra Leone and the Rohingya refugee crisis in Bangladesh as a member of World Health Organization (WHO) Global Outbreak Alert and Response Network (GOARN).

As Dean of the UNMC College of Public Health, his focus is on health system and community based health transformations. His vision is for the College to play an integral role in creating the next generation of Public Health Guardians and devising innovative solutions and new interventions to address public health challenges. The College is committed to education with a purpose measured by the impact in our communities starting with making Nebraska the healthiest and most equitable state in the Union as a national and global model for wellness.

Dr. Khan received his medical degree from the State University of New York Downstate Medical Center in Brooklyn, and completed his pediatrics and internal medicine training at the University of Michigan. Dr. Khan has a Master of Public Health from Emory University’s Rollins School of Public Health, and a Master of Business Administration from the University of Nebraska at Omaha. He has authored numerous papers and publications and has consulted extensively for multiple US organizations, ministries of health, and the World Health Organization where he serves on the steering committee for GOARN. Dr. Khan is the author of *The Next Pandemic: On the Front Lines Against Humankind’s Gravest Dangers*. ali.khan@unmc.edu

WEDNESDAY-- SEPTEMBER 25, 2019

FOOD SAFETY TRACK WEST BALLROOM

Foodborne Illness Risks in Iowa Agritourism 2014-2018

Brianna Gabel, IA

Food Safety

Wednesday

9:55 am – 10:45 am

This pilot study developed a methodology for examining the patterns of foodborne illness risk factor violations in Iowa regulated retail agritourism establishments and used that methodology to compare the violations with all other regulated retail establishments in Iowa for the period 2014-2018. Agritourism in the U.S. can be defined as “activities that include visiting a working farm or any agricultural, horticultural or agribusiness operation to enjoy the rural setting, be educated, or be involved in a special activity.” (Agritourism Profile, 2018). This study created the first database of Iowa regulated retail agritourism establishments; analyzed the 2014-2018 inspection records for these establishments and compared them with all other Iowa retail food establishments; reviewed the methodology and the initial findings with a focus group of Iowa food safety regulators with experience in agritourism inspections; and interviewed two out-of-state experts for their opinions about the methodology and findings. The study concluded that the methodology appears accurate and reliable. Although the agritourism establishments in this pilot study appeared to have a pattern of violations similar to those of all regulated retail establishments statewide, the 2014-2018 period contained insufficient data to reach a firm conclusion regarding the difference between the two groups. The study recommended that the methodology be repeated in alternate years; to improve the data pool by conducting agritourism inspections at the best available time in order to observe critical processes; and that educational outreach efforts to agritourism establishments be guided by the violation patterns found in this study.

BIO: I am an Environmental Health Specialist with Linn County Public Health in Iowa. Primary responsibilities include food and lodging inspections and education outreach in a two-county area. This role includes assessing risks, interpreting and applying regulations, and seeking corrective action as needed. An important part of the job is coordination and relationship building with state and community partners. Additional responsibilities include serving several groups such as the Linn County Food Safety Advisory Council, Strategic Plan Committee, and Epidemiology Team, as well as engaging in various public speaking opportunities. Accomplishments include review and drafting of policies

and documents that were adopted by the agency, participating in quality assurance projects, and assisting with food waste reduction efforts. I am currently researching foodborne illness risk factor trends in retail food agritourism establishments across Iowa. Upon completion of my research, the findings will be published in the Association of Food and Drug Officials (AFDO) Journal and presented at the 2019 AFDO Conference in Atlanta, Georgia. This fellowship also provides three weeks of in person training that focus on professional communication, program management, and applied leadership. Brianna.Gabel@linncounty.org

An Innovative Food Establishment Rating System

Justin Daniel, LLCHD Food Safety Wednesday 10:55 am – 11:45 AM

The Lincoln-Lancaster County Health Department has been using an Innovative and Unique Ratings System that scores food establishments by comparing them to similar type establishments. This scoring system uses the “Bell Curve” to establish a Below Average, Average, and Above Average score. In addition, this rating system scores the most recent inspection and also provides a score for the past three years of inspection history.

BIO: Justin Daniel has been with the Lincoln-Lancaster County Health Department (LLCHD) for 20 years. He conducted food and childcare inspections for 16 years and currently supervises LLCHD’s Disease Prevention Section which includes Food Safety, Children’s Environmental Health, and Body Art programs. Justin holds the Registered Environmental Health Specialist and the Certified Professional in Food Safety Credentials from the National Environmental Health Association. jdaniel@lincoln.ne.gov

Stopping the next case of Viral illness

Dr. Angela Anandappa, Food Safety Wednesday 1:00 pm – 1:50 pm
Alliance for Food Sanitation, UNL

Recent cases of viral illness have demonstrated a gap in the management of viral contamination. The prevalence of these cases sheds insights into identifying potential methods of transfer early and taking measures to limit the exposure of consumers to contaminated food and water.

BIO: Dr. Anandappa is the Founding Director for the Alliance for Advanced Sanitation, and a Research Assistant Professor, Department of Food Science and Technology at the University of Nebraska-Lincoln. She currently leads the scientific and strategic direction of the Alliance for Advanced Sanitation an organization dedicated to improving food safety with a focus on sanitation. She works with companies to improve their food safety practices and plans, especially focusing on sanitation. The scope of sanitation ranges from facility design and material science to microbiology and chemistry. Prior to joining the Alliance Dr. Anandappa was attached to Kraft Foods, and led supplier and co-manufacturer food safety program. Angela.anandappa@unl.edu <http://sanitationalliance.org>

2017 Hurricane Deployments

Cindy Kunkel, FDA Food Safety Wednesday 2:00 pm – 2:50 pm

During the 2017 Hurricane Season the U. S. Public Health Service deployed many officers in response to Hurricanes Harvey, Irma and Maria. These officers deployed as part of teams, both large and small, on a variety of different missions over the course of several months. The Rapid Deployment Force teams, treat people who have medical needs and have been displaced by the hurricanes.

BIO: Captain Cindy Kunkel received her bachelor's degree in Biology from Drury University. After graduation, she worked for the Tulsa Health Department as a Sanitarian. While in Tulsa, she received her Master of Public Health from the University of Oklahoma with a major in Environmental Health. Shortly afterward, she was commissioned as an Environmental Health Officer in the U.S. Public Health Service and assigned to the U. S. Food and Drug Administration (FDA) as a Regional Food Specialist in Kansas City. As a Regional Food Specialist she has worked with state, tribal and local food regulatory agencies throughout the country. Since joining PHS and FDA, she has deployed in response to the 1993 Mid-West Floods and several hurricanes including Hurricanes Katrina, Harvey, Irma and Maria and worked at several National Special Security Events including two Olympics and several national political conventions. She has served as an instructor for CDC's Environmental Health Training in Emergency Response (EHTER) presenting the Food Safety module and FDA's Investigating Foodborne Outbreaks course. CAPT Kunkel served aboard the Navy hospital ship USNS Comfort during Operation Continuing Promise 2007 as an environmental health officer. In addition to her FDA duties she serves as Commander of Rapid Deployment Force -5 for the U. S. Public Health Service.

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FDA's Retail Food Risk Factor Study

Cindy Kunkel, FDA

Food Safety

Wednesday

3:25 pm – 4:15 pm

Newly released information from FDA's 2013-2014 Restaurant Data Collection Period, a survey conducted every four years, will be shared.

BIO: see above

Cooling: Beyond the Code

Nick Koreen & Logan Ebeling, MN Food Safety

Wednesday

4:25 pm – 5:15 pm

18% of all foodborne outbreaks in the state of Minnesota are caused by spore formers known to be associated with improper cooling such as clostridium perfringens among others. FDA food code outlines 7 methods for rapid cooling of cooked foods, but does not rank the strength of each technique. Inspectors at the City of Minneapolis realized that while 'Cooling' was the 2nd least observed risk factor, it was called 'in violation' most of times it was observed. Cooling is hard to observe during a retail inspection because the inspection occurs during a single point in time. Minneapolis inspectors standardized a procedure to measure the whole cooling window using temperature data loggers. Preliminary results from this study will be presented.

BIOs: Food became Nick's passion at a young age and he still maintains that passion cooking for friends and family whenever he gets the chance. From the beginning Nick has spent his professional career working in restaurants. He spent the first 8 years working hourly positions and the next 6 years managing restaurants. At the end of his management tenure he focused his efforts on improving quality assurance standards within his stores. Nick eventually found his way into a college classroom completing his Bachelor's degree combining biology and management. Working as a Health Inspector specializing in food safety Nick has spent time with both the Minnesota Department of Health and his current employer, the City of Minneapolis Health Department. nicklaus.koreen@minneapolismn.gov

Logan is a graduate of the University of Illinois at Urbana-Champaign and has a background in natural resources and environmental sciences. As a recent transplant to the Twin Cities area, working as a Health Inspector for the City of Minneapolis has been a challenging and exciting beginning to his career. While maintaining an inspection queue at the City, Logan has found his niche on Minneapolis Environmental Health's team working on data analysis and visualization. logan.ebeling@minneapolismn.gov

WEDNESDAY-- SEPTEMBER 25, 2019

VECTORS/PESTS

CLARK

Managing German Cockroaches in Multi-Family Housing

Dr. Jody Green, UNL

Vectors/Pests

Wednesday

9:55 am – 10:45 am

The presence of cockroaches in is associated with low-income, multi-family housing and poor sanitation conditions. In the last 25 years, it has become widely known that children growing up in cockroach-infested homes suffer health impacts, particularly asthma morbidity. Entomologist and researcher, Dini Miller has found a way to deal with cockroach-infested apartments in HUD communities with a protocol that she calls assessment-based pest management, which relies on pre-trapping and measuring the extent of the infestation in order to accurately and effectively reduce populations with bait treatments. A recent experiment in New Orleans showed that a single-intervention of an application of cockroach bait, reduced asthma symptoms in children living with asthma. This presentation will discuss review current research dealing with managing German cockroaches in order to decrease health impacts for families living in urban communities.

BIO: Jody Green is an Extension educator with Nebraska Extension in Lancaster County, with a specialty in urban entomology. Jody earned her MS ('04) and PhD ('08) in Entomology from Purdue University and is a board certified entomologist (ESA '08) with a specialty in Urban/Industrial Entomology. She has practical experience in the field of pest management through employment as pesticide applicator, termite inspector, pest consultant, correspondence course author, and trainer/presenter for various urban pest programs/workshops. Her primary focus is developing educational programs related to structural and health-related arthropod pests for communities in Nebraska. jgreen17@unl.edu

Is it getting warm here? Potential effects of climate change on the occurrence of vector-borne disease in the Midwest.

Dr. Roberto Cortinas, UNL Vectors/Pests Wednesday 10:55 am – 11:45 am

The consequences of human activities, such as land use change, the introduction of invasive species, the management of domesticated and wild animals, and climate change, can have substantial impacts on community and ecosystem structure and function. Indeed, these effects are impacting species richness and diversity throughout many ecosystems. Parasites are an integral component of ecological communities; anthropogenic activities, through direct and indirect modifications of biotic and abiotic determinants, influence parasite occurrence and density. In this presentation I will be discussing how climate change may be impacting arthropod vector distribution and phenology in the Midwest, with special reference to tick-borne and Chagas' disease systems.

BIO: Roberto Cortiñas received a D.V.M. from Colorado State University and a Ph.D. from the University of Illinois at Urbana-Champaign where he studied the establishment of the blacklegged tick ("deer tick") along the Illinois River. In 2005, he began working at the University of Minnesota Parasitology Laboratory as a Post-Doctoral Associate and Senior Scientist. He joined UNL in 2008 when the UNL- Iowa State Professional Program in Veterinary Medicine was established. Cortiñas teaches veterinary parasitology, Spanish for veterinarians, and general biology at UNL and his research focuses on ticks and vector-borne disease ecology as well as alternative approaches to parasite control. rcortinas@unl.edu

Parasites as Little Known Zoonotic Pathogens in the Middle of the Continent: How Museum Collections Can Inform Public Health Programs

Dr. Scott Gardner, UNL Vectors/Pests Wednesday 1:00 pm – 1:50 pm

Adult stages of tapeworms of the genus *Echinococcus* infect wild canids such as foxes, coyotes, wolves, and dogs throughout the North American continent. In the central USA little is known of the distribution of this tapeworm because of a lack of a monitoring program. We recently proposed a new program called DAMA to solve this problem by implementing Documentation, Assessment, Monitoring, and Action. To understand the distribution of *Echinococcus multilocularis* and to know whether this species is expanding or contracting its range in the central USA due to climate change we need DAMA and the Manter Laboratory museum collections are central to this program. However; to partially alleviate this lack of on-the-ground knowledge, we have recently proposed using a new kind of Ecological Niche Modeling where we include not only the normal abiotic variables, but also biotic variables such as host data. *Echinococcus multilocularis* is a tapeworm that I classify, when it infects humans, as one of the most extreme human pathogens known, causing up to 95% mortality in untreated or undiagnosed cases. Is it expanding in Nebraska? That is the question we are working to answer.

BIO: Scott L. Gardner, Ph.D. received his Master's degree from the University of Northern Colorado, working with Gerald D. Schmidt. He received his doctorate from the University of New Mexico, where he worked on problems in coevolution and first began his work on pathogens during his National Science Foundation funded survey of the parasites of mammals of Bolivia. He has authored over 150 peer reviewed publications and is Director and Curator of the Manter Laboratory of Parasitology in the University of Nebraska State Museum in Lincoln. Current work includes, among many other projects, a survey of the pathogenic fox tapeworm, *Echinococcus multilocularis* in North America and co-editing and co-authoring an open educational resource on animal parasitology. slg@unl.edu

Discovery and development of natural product-based technologies against blood-sucking insects

Dr. Jerry Zhu, USDA Vectors/Pests Wednesday 2:00 pm – 2:50 pm

Plant derivatives and botanical insecticides have been used against arthropods in agricultural and urban settings for at least two millennia in ancient world. For instance, use of botanical repellents has become one of the most efficient ways to prevent disease transmission and the discomfort of insect bites for both human and animals. For this presentation I will briefly introduce several newly discovered food-grade or folk-remedy types of natural product repellents that can provide repellency lasting up to 2 weeks. These repellents can not only deter the blood-feeding from biting flies, ticks, mosquitoes and bed bugs, but also act as a bio pesticide inhibit their larval growth. The strength of repellency from those natural products is even stronger than the golden standard, universal insect repellent, DEET (N,N-Diethyl-3-methyl-benzamide). Easy-used formulations developed for practical applications will also be discussed.

BIO: Dr. Jerry (Junwei) Zhu is a Research Chemical Ecologist/Entomologist at USDA-ARS. He is also an ADJ Professor of Entomology at the University of Nebraska. He received his PhD in Chemical Ecology with Prof. Christer Löfstedt at Lund University, Sweden. Since 1995 he has worked in various universities, Industry and Research Institutes in US and Europe.

His research focuses on semiochemical-based pest management (particularly in discovering novel natural repellent/attractant compounds and technology transfer). He has published over 100 scientific papers, with 7 US patents and several developed commercial products from his inventions. He served as a guest editor of Journal of Chemical Ecology for the special issue titled, "Semiochemicals in Pest Management: Development, Regulation Applications". He is also a subject Editor of ESA journal "Journal of Insect Science" and joined editorial boards of several international journals. Currently, he is the President-Elect of the International Society of Chemical Ecology and the Past-Presidents of Asia-Pacific Association of Chemical Ecologists and the Overseas Chinese Entomologists of America.

Jerry.Zhu@ARS.USDA.GOV

Harnessing the Power of Viruses for Use as Medicine

Dr. Eric Weaver, UNL Vectors/Pests Wednesday 3:25 pm – 4:15 pm

The study of viruses has resulted in an unrivaled impact on how we view biology, science, and human health. Studies of tumor-associated viruses opened the world's eyes into the cell cycle, gene regulation and cancer biology. Here we will explore how scientists are exploiting the evolutionary success of viruses in ways that have a direct impact on human health. Through attenuation and molecular biology vaccines have been made that have a huge impact on our quality of life and economic successes. Viruses are being used to treat genetic disorders giving independent lives back to patients with diseases like hemophilia and blindness. Clinicians and scientists have reversed the roles of viruses and are now exploring new ways to use viruses to treat cancer. There is an elegant beauty in taking advantage of the natural evolution of viruses and alter them for our own benefit. This seminar will discuss several examples of how viruses are being used as medicine to treat and cure diseases.

BIO: Eric Weaver joined the School of Biological Sciences (SBS) and Nebraska Center for Virology (NCV) at the University of Nebraska, Lincoln (UNL) in 2015. Dr. Weaver received his BS and MS from Texas State University. He obtained his PhD in Genetics from Texas A&M University. In 2003, he was awarded a NIH T32 training fellowship at Duke University in the Human Vaccine Institute. Afterwards Dr. Weaver pursued a second postdoctoral position at Baylor College of Medicine. In 2006, Dr. Weaver joined the Mayo Clinic and was awarded a junior faculty position as Assistant Professor in 2007. Dr. Weaver's research focuses on the design and development of vaccines using bioinformatics, genetics and molecular biology combined with pathogenesis and immunology to create and modify prophylactic and therapeutic vaccines. He uses alpha, pox and adenoviral vector vaccine delivery platforms. Currently his research is focused on the creation and testing of foundation immunogens for use as universal influenza vaccines and a novel Zika virus vaccine. In addition, Dr. Weaver is actively engaged in undergraduate research activities through the Undergraduate Creative Activities and Research Experiences and the Undergraduate Summer Research in Virology programs at UNL.

eweaver2@unl.edu

One Health approaches to understanding zoonotic disease transmission

Dr. Liz VanWormer, UNL Vectors/Pests Wednesday 4:25 pm – 5:15 pm

Throughout the world, humans share habitat and interact with diverse domestic and wild animals. These animals play a critical role in human well-being, food security, and sustainable livelihoods, but can also serve as reservoirs for viruses, bacteria, and parasites with the potential to spill over to people. The majority of human pathogens are zoonotic (shared with animals), and largescale outbreaks of zoonotic viral diseases including Ebola and Avian Influenza have raised concern about emerging global zoonotic disease challenges. Routes of transmission among domestic animals, wildlife, and people vary, ranging from direct contact among these groups to vector-borne disease transmission and contact of pathogens in shared environments. Environmental change, including climate change and land-use change, shapes animal and human disease transmission in ways that are challenging to anticipate and assess, and there is a critical need to incorporate environmental and social sciences into zoonotic disease research and management. One Health is a collaborative, solutions-focused approach that brings together diverse disciplines and stakeholders to address these complex health challenges at the interface of people, animals, and the environment.

BIO: Liz is currently an assistant professor and One Health coordinator at the University of Nebraska-Lincoln. She focuses on health at the interface of humans, animals (both domestic and wild), and the environment in the U.S. and internationally. Using a One Health approach, Liz works with students, interdisciplinary researchers, and local stakeholders, linking diverse tools and perspectives to address complex health challenges. After studying veterinary medicine at Michigan State University and epidemiology at the University of California, Davis, Liz lived and worked on One Health projects in Tanzania. liz.vanwormer@unl.edu

WEDNESDAY -- SEPTEMBER 25, 2019

WATER QUALITY and RAD
WINNEBAGO

Using Direct-Push, Aerated, Slow-Release Oxidant Candles to Treat Contaminated Groundwater: Field Site Demonstrations

Dr. Steve Comfort, UNL Water Quality Wednesday 9:55 am – 10:45 am

Aerated, slow-release oxidant candles are a relatively new technology for treating contaminated aquifers. Research initially conducted on slow-release oxidant candles at the University of Nebraska (UNL) was patented by UNL's NUTech Ventures and is now being commercially offered by AirLift Environmental. This presentation will highlight improvements to the technology over the last few years and present field results from a number of case studies. Oxidant candle treatment with aeration prevents density driven flow and short circuiting, allowing the oxidant to reach zones of low permeability. Aeration also creates a circulation flow pattern around the drive points to increase the radius of influence. The patented technology allows for easy replacement of oxidant candles as needed (6 months – 2 years), thus providing a stationary, sustainable, and long-lasting solution to halt migrating plumes or treatment of contaminant source zones. Decreases in contaminant concentrations of 50 to >90% in down gradient and up gradient monitoring wells are typically observed within 6 to 9 months after installation. Field scale results from a number of sites will be presented to document the efficacy of the technology.

BIO: Steve Comfort has been a Professor of Soil and Water Chemistry at the University of Nebraska (UNL) for 27 years. He is also co-founder of AirLift Environmental. His research is devoted to developing innovative remediation techniques for contaminated soil and water. During his tenure at UNL, Steve has built and run an environmental chemistry laboratory and successfully supervised numerous graduate and undergraduate students through their degree programs. Dr. Comfort has co-authored more than 70 publications, served on environmental editorial boards and is recognized by his peers for his ability to conduct both laboratory and field-scale research to solve environmental problems. Dr. Comfort also coordinates the Environmental Restoration Science undergraduate major at UNL, which is dedicated to training future environmental scientists. scomfort1@unl.edu

From Rat Studies to Community Dynamics: Addressing PFAS in Wisconsin

Dr. Mark Werner/Doug Voegeli, WI Water Quality Wednesday 10:55 am – 11:45 am

Per- and polyfluorinated alkyl substances – or PFAS – have emerged as a significant environmental public health concern in recent years. PFAS has been implicated as contributing to health effects ranging from cancer to thyroid issues to reduced vaccine efficacy. As these chemicals started to appear in environmental media with increasing frequency, there has been increased testing at suspected waste and use sites along with private and public water supplies. The City of Madison Water Utility began testing for PFAS in 2015 and found low levels on subsequent testing in 2017. The Water Utility notified the public of these low levels as soon as possible and began an educational effort with the Public Health Department to assure the public that the levels were below the threshold where a health impact would be expected. The probable source of the contamination is a civilian/military airfield near the well. Government at all levels are working together to investigate and clean up the site, establish a regulatory standard and provide health impact messaging to all community members impacted by PFAS in the well. In this case, environmental advocacy and community politics are serving as significant barriers to clear, consistent health messaging.

BIOs: Doug Voegeli is the Director of Environmental Health for Public Health Madison and Dane County. He oversees the licensed establishment, well and septic and laboratory programs for the Department. Doug started working in the Environmental Health field in Noble/Rock Counties in Minnesota. He also worked at the State of Wisconsin – Bureau of Public Health as an evaluation and training officer. He has been with PHMDC for 19 years. He was also the Commanding Officer for the 180th Medical Detachment (Preventive Medicine) in Beloit, Wisconsin. He has worked in the military and civilian environmental health field for 27 years. Doug has a BS in Environmental Science from Mankato State University in Mankato, Minnesota and is a certified preventive medicine specialist. Doug has had the opportunity to work all over the world in many different missions to provide environmental health services to civilian and military populations. DVoegeli@publichealthmdc.com

Dr. Mark Werner is the Director of the Wisconsin Bureau of Environmental and Occupational Health (BEOH). In this role, he provides senior leadership on a range of programs including lead and asbestos surveillance and certification, monitoring and inspection of radiation sources, chemical hazard and radiological emergency response, climate and

health, asthma control, and environmental epidemiology and public health surveillance. He has worked at the state health department since 1997. He received his doctoral degree in environmental health from the University of Minnesota, and completed a postdoctoral fellowship in occupational respiratory disease epidemiology at the National Institute for Occupational Safety and Health's Division of Respiratory Disease Studies. He holds adjunct faculty appointments at the University of Wisconsin – Madison's School of Medicine and Public Health and the University of Wisconsin – Milwaukee's Zilber School of Public Health. Mark.Werner@dhs.wisconsin.gov

Lincoln-Lancaster County Health Department's Property Transfer and Water Well Inspection Programs

Chris Schroeder **Water Quality** **Wednesday** **1:00 – 1:50 pm**

The Lincoln-Lancaster County Health Department's (LLCHD) Property Transfer and Water Well Inspection Programs. The LLCHD's Property Transfer Program seeks to protect the public's health and the environment through requiring inspections of onsite wastewater treatment systems and onsite water supply systems prior to the transfer or sale of properties in Lancaster County. These inspections focus on identifying existing permitted systems that are not in substantial compliance with applicable regulations. LLCHD staff will review inspection reports and issue a determination letter with an approval or denial status to the property owner. The LLCHD's Water Quality Program also annually permits water wells located within Lincoln's city limits and issues water well construction permits prior to the installation of water wells in Lincoln's city limits and the three mile limit. The purpose of our water well inspection program is to protect the public's health and groundwater through inspections verifying compliance with water construction standards and water well sampling leading to testing for nitrates and bacteria.

BIO: Chris has a Bachelor of Science- Environmental Studies degree and a Master's in Community and Regional Planning from UNL. He has over 20 years of experience in Environmental Public Health working in Air Quality and now serving as the Lincoln-Lancaster County Health Department's Water Quality Program Supervisor. cschroeder@lincoln.ne.gov

~~CANCELLED--Iowa Nitrate and health, private wells and other emerging topics at the interface of water quality and health~~

~~**Dr. Darrin Thompson, UI** **Water Quality** **Wednesday** **2:00 pm – 2:50 pm**~~

~~Nearly 45 million Americans rely on private groundwater wells for drinking water. The Safe Drinking Water Act and the National Primary Drinking Water Regulations provide a mandate for regular testing of public water systems, but no similar mandate exists for private wells. The Center for Health Effects of Environmental Contamination located at the University of Iowa conducts research to identify, measure, and study adverse health outcomes related to exposure to environmental toxins. This presentation will discuss current studies to assess private well water quality and describe linkages between contaminants like nitrate and arsenic, which have been associated with adverse health effects, such as cancer and birth defects.~~

~~**BIO:** Darrin is the Associate Director of the Center for Health Effects of Environmental Contamination at the University of Iowa. He received his MPH from Loma Linda University, and is a PhD candidate in Occupational and Environmental Health at the University of Iowa. darrin-thompson-1@uiowa.edu~~

In place of Dr. Darrin Thompson:

Mike Archer, Public Beach Monitoring Program - Harmful Algal Blooms in Nebraska.

My presentation will touch on NDEE's effort to monitor Nebraska's public beaches as well as our agencies adoption of the new recreational standard for microcystin recommended by the EPA.

BIO: Mike Archer is the State Lakes Coordinator for the Nebraska Department of Environment and Energy. He received a Bachelor's Degree in Biology from the University of Nebraska Kearney and a Masters Degree in Aquatic Ecology from the University of Nebraska Lincoln. Mike has worked for NDEE since 2012 where he works with numerous projects including the Public Beach Monitoring Program, Ambient Lake Monitoring Program, as well as numerous lake rehabilitation and construction projects as part of the agency's non-point source pollution program.

mike.archer@nebraska.gov

The Manhattan Project – A Radiation Exposure Assessment in St. Louis

Erin Evans, ATSDR **RAD** **Wednesday** **3:25 – 4:15 pm**

In 1942, the Manhattan Engineering District (MED) achieved the first self-sustained nuclear chain reaction and later contracted with Mallinckrodt Chemical Works to process uranium for nuclear weapons. Between 1942-1957, more than 50,000 tons of uranium was processed at the Mallinckrodt facility in downtown St. Louis. The resulting wastes were

trucked to a 21.7-acre tract of land near the St. Louis Airport and accumulated in open pits and piles. Over time wastes eroded into nearby Coldwater Creek. In 1989, EPA placed the St. Louis Airport Site and nearby properties, including Coldwater Creek, on the National Priorities List. Radioactive wastes contaminated these properties, and area residents, workers, and visitors were exposed for decades. Residents concerned with growing death and disease rates founded a community group to collect and share information about cancer incidence. Because of this community activism, the Missouri Department of Health and Senior Services (MDHSS) investigated, and eventually reported, statistically significant elevated cancer incidence in zip codes adjacent to Coldwater Creek. MDHSS requested assistance from the Agency for Toxic Substances and Disease Registry (ATSDR) to determine if environmental radiation exposures could be impacting public health. ATSDR worked closely with the community to better understand their environmental public health concerns, and built and maintained partnerships with the community, federal regulatory authorities, state environmental health agencies, and elected officials. This session details the history of the Manhattan Project in St. Louis, the project's environmental legacy, and ATSDR's work to evaluate exposures and protect public health.

BIO: LCDR Erin Evans, MPH, REHS/RS is the Regional Director for the Agency for Toxic Substances and Disease Registry (ATSDR) Region 7. LCDR Evans received her bachelor's degree in Environmental Health from Eastern Kentucky University, a Master of Public Health with an emphasis on Environmental Health and Toxicology from the University of Alabama at Birmingham, and a Graduate certificate in Radiation Physics from the Illinois Institute of Technology Chicago. LCDR Evans was first commissioned in the United States Public Health Service (USPHS) as an Environmental Health Officer in 2005. She began her career with the Indian Health Service (IHS) in Albuquerque, New Mexico and later with IHS in Fairbanks, Alaska at the Tanana Chiefs Conference. LCDR Evans transferred to ATSDR in 2009 where she served 10 years as a Regional Representative. She serves as a Safety Officer for USPHS Rapid Deployment Force 5 (RDF-5) and has deployed in support of various public health emergencies including Zika virus and various Hurricane responses. At ATSDR her primary role is to advise federal and state regulatory agencies on actions necessary to protect public health from harmful environmental exposures. isb5@cdc.gov

Using citizen science to measure nitrates in water in Nebraska

Dr. Shannon Bartelt-Hunt, UNL **Water Quality** **Wednesday** **4:25 – 5:15 pm**

One potential health disparity facing rural families is their reliance on private wells for their drinking water supply as water quality testing is typically not required for private groundwater wells. One potential risk to groundwater supplies in rural areas is nutrients from fertilizer application. In this project, we used community-based participatory research or 'citizen science' to identify areas of elevated nitrate in private groundwater wells used for drinking water. Data will be presented from a two-year study across 20 counties in eastern Nebraska.

BIO: Dr. Shannon Bartelt-Hunt is a professor in the Department of Civil Engineering at the University of Nebraska. Her research focuses on contaminant fate and transport in agroecosystems. sbartelt@unl.edu

WEDNESDAY -- SEPTEMBER 25, 2019

EMERGING ISSUES/CLIMATE

DAKOTA

Our Climate Future: A look at regional impacts to our changing climate

Dr. Martha Shulski, UNL **Emerging Issues/Climate** **Wednesday** **9:55 am – 10:45 am**

The federally-mandated Fourth National Climate Assessment, Volume II was released in November 2018 and provides a summary of the state of the science on anticipated climate change impacts in the United States. The overarching message is the need to significantly mitigate anthropogenic climate change through emissions reductions to reduce severe risk to communities and the environment. The report outlines climate change impacts and adaptation strategies for various sectors and geographic regions. In general, the impacts will result in an overall warming, the amount of which depends on global-scale greenhouse gas mitigation efforts, more extreme heat, shifting precipitation patterns by season, more heavy precipitation events and increased drought frequency. Stressors will be evident on water resources, human and animal health, natural and managed ecosystems, infrastructure and communities. This presentation will cover salient national and regional highlights from the climate assessment along with local research on engaging communities on the topic of climate change.

BIO: Martha Shulski serves as the State Climatologist for Nebraska and is an Associate Professor in the School of Natural Resources at the University of Nebraska Lincoln. She directs the Nebraska State Climate Office, which operates the Nebraska Mesonet – a state weather monitoring program. Martha has degrees in Meteorology (B.S.), Agricultural

Meteorology (M.S.) and Soil Science/Climatology (Ph.D.). She joined UNL in 2009 as Director of the High Plains Regional Climate Center and moved to her current position as State Climatologist in 2016. Martha's current work is in the areas of applied climatology, weather and climate monitoring, impact assessment and stakeholder engagement. She speaks to many different groups on the topic of climate change and associated impacts and teaches an introductory level course on climate change. Martha was one of the Contributing Authors on the Northern Great Plains chapter of the Fourth National Climate Assessment. mshulski3@unl.edu

Drought and All-cause Mortality in All Age Groups in the United States from 1980 to 2014

Dr. Azar Abadi, UNMC

Emerging Issues/Climate

Wednesday

10:55 am – 11:45 am

Drought, as labeled by United Nations, is the most far-reaching of all natural hazards and has likely caused more deaths internationally than any other climate-related event. Unlike other well-studied hazards, such as hurricanes and heatwaves, the health outcomes from drought are typically better understood for regions outside the United States. Drought's slow-evolving nature and delayed impacts make health studies more challenging, as the health outcomes are delayed or indirect. To better understand these relationships, our study aims at a better understanding of the association between drought and all-cause mortality in the United States. Drought exposure was measured by an annual drought severity score developed based on 1, 6, 12-month Evaporative Demand Drought Index (EDDI) to cover short and long-term drought types including meteorological, agricultural and hydrological droughts on a county-level from 1980 to 2014. The mortality data was extracted from the United States Centers for Disease Control and Prevention's (CDC) mortality counts within each year. Interval-censored negative binomial regression model will be used to model missing mortality counts for each combined age-race-sex stratum. Using fixed effects meta-regression, then we will further investigate the associations between age, race, sex and region with the drought-mortality regression coefficient. The results of this study will help to identify regions and populations that are most vulnerable to drought, so appropriate messaging can be developed to mitigate such negative health impacts.

BIO: Azar Abadi is a postdoctoral research associate working with Dr. Jesse Bell at the University of Nebraska Medical Center to study climate change and climate variability impacts on human health at local and global scales. Azar received her B.Sc. in Physics and her M.Sc. in Atmospheric Sciences from the University of Tehran, Iran. In 2013, she started her Ph.D. work in the Earth and Atmospheric Sciences Dept. at the University of Nebraska-Lincoln focusing on climate change assessment in South America. In her current project, Azar applies statistical modeling to understand the linkage between drought and health impacts, so a proper messaging system can be developed to help prepare the population for such a climate-related disaster. She is also involved in projects studying the health impacts of extreme heat events, dust storms, and change in the vector habitat due to climate change. azar.abadi@unmc.edu

The impacts of changing climate on bee health

Dr. Judy Wu-Smart, UNL

Emerging Issues/Climate

Wednesday

1:00 pm – 1:50 pm

Pollinators play a key role in providing vital ecosystem services that maintain biodiversity in fragile, diminishing, or degraded natural landscapes. In fact, approximately 80% of wild plants rely on insect pollination most of which is provided by wild and managed bees. Additionally, managed honey bees provide critical pollination services to over 100 agricultural crops that contribute roughly \$19 billion in added crop value for US agriculture. Many of these crops include our most nutritious foods: fruits, vegetables, and nuts. However, wild bee populations are in decline globally and US beekeepers have reported consistent losses (30-70%) of honey bee colonies over the last decade. Thus, the decline in bee health and the beekeeping industry represents a serious global threat to food security, agricultural productivity, and trade. The causes of increased mortality are still unclear, however, a number of abiotic and biotic factors, including malnutrition due to poor habitats, land use and climate change, pesticide exposure, and pests and pathogens, have been implicated in the decline of bee health. This lecture will provide information about the role bees play in sustaining our ecosystem and introduce factors affecting bee health with particular focus on the impacts of climate change.

BIO: Judy Wu-Smart received her BS in Zoology at Humboldt State University, Arcata, California. She received her MS in Entomology at Washington State University under the advisement of Drs. Walter Sheppard and Carol Anelli. Her MS research examined the effects of pesticide residue accumulation in brood comb on honey bee health. She continued onto a PhD program with Dr. Marla Spivak at the University of Minnesota where she examined the effects of systemic neonicotinoid insecticides on honey bee and bumble bee queens and colony development. She's currently an Assistant Professor and Extension Specialist at the University of Nebraska-Lincoln (UNL). In her role at UNL, Judy is developing a pollinator health program to help understand the underlying stressors in bee health and their interactions with environmental toxicants. Her research program explores different ways to promote sustainability and resilience in pollinator ecosystems. She also dedicates much of her time with outreach and extension programs to educate about the importance of conservation and biodiversity, to promote land management practices that support healthy bee communities in agroecosystems, and to improve beekeeping practices. Her goal is to integrate her research, extension, and outreach efforts with policy to inform the regulatory-decision making process by identifying risk mitigation opportunities and best management practices that will better protect beneficial pollinators in agricultural and urban landscapes. jwu-smart@unl.edu

Predicting years and counties with weather-related increased risk of West Nile Virus in humans

Kelly Smith, UNL

Emerging Issues/Climate

Wednesday

2:00 pm – 2:50 pm

The U.S. Great Plains, including Nebraska, have a relatively high per-capita rate of West Nile Virus infection in humans. Although mosquitoes breed in water, experience suggests that the rate of human WNV infection is higher in drought years, possibly due to mosquitoes and birds clustering around scarce water. We did a regression analysis to look at the effects of drought and temperature over time, and found that drier years and warmer winters contribute to higher human infection rates. More than half of the observations of cases per county per year from 2002 to 2018 were zero, and it's likely that only the most extreme cases, when people seek medical attention, get reported. We contrasted the performance of our modeled predictions based on temperature and drought with the assumption that the infection rate in each county would be the same as the previous year's (the naïve model). Using lagged monthly observations of standardized mean-centered temperature, and lagged monthly observations of the Standardized Precipitation and Evapotranspiration Index (SPEI), our predictions for which counties would have cases of WNV consistently outperformed the naïve model. Authors: Smith, Tyre, Hamik, Hayes

BIO: Kelly Helm Smith was one of the original employees of the National Drought Mitigation Center when it was established in 1995, contributing experience in journalism, PR and environmental communication. The center's mission is to help decision-makers in all contexts reduce vulnerability to drought, by understanding drought impacts, implementing monitoring, and planning. Smith helped launch the center's original award-winning website back when the web was new. She took a leave of absence from the drought center in 2000 to earn a master's degree in Community and Regional Planning and to work with African refugees on behalf of various faith-based and non-profit organizations in Lincoln. Smith returned to the drought center in 2006. In addition to communication, she has focused on drought impacts and on drought planning. She is also "ABD," working toward a PhD in Natural Resources, examining methods for detecting drought's effects in a variety of contexts, including human health. ksmith2@unl.edu

The Science of Belief and Decision Making

Dr. Jeffrey Stevens, UNL

Emerging Issues

Wednesday

3:25 pm – 4:15 pm

Although we may think that we build our beliefs about the world based on careful considerations of our life experiences, in fact the world that we experience depends on what beliefs we already hold. People with different beliefs literally see the world differently. This notion is important for changing minds, because it helps us understand what kinds of strategies will be more or less effective in changing behavior. I will review several concepts from the psychology of decision making that can help us understand how people make decisions, which can hopefully be used as a guide for improving environmental decision making.

BIO: Dr. Jeffrey Stevens studies the cognitive mechanisms of decision making in humans and other animals. He received his Ph.D. in Ecology, Evolution, and Behavior from University of Minnesota and then completed a postdoctoral fellowship in the Department of Psychology at Harvard University. He was a research scientist at the Max Planck Institute for Human Development in Berlin, Germany before taking a faculty position in the Department of Psychology and the Center for Brain, Biology and Behavior at the University of Nebraska-Lincoln, where he directs the Adaptive Decision Making Lab and the Canine Cognition and Human Interaction Lab. His research explores how to help people make more cooperative and future-oriented decisions. jeffrey.r.stevens@gmail.com

Techniques for inspiring behavior change

Dr. Lisa Pennisi, UNL

Emerging Issues

Wednesday

4:25 pm – 5:15 pm

Have you ever thought, "If people just knew the facts, they would change their behavior?" "If I can get people to listen, they will change." Sadly, this is, for the most part, another "if only" misconception. A fairy tale. Or in our case, a public service worker's dream. Now it is true that people armed with knowledge change their behaviors; but it often isn't the information that spurred the behavior change. Social scientists have studied how to motivate behavior change in numerous contexts for decades. In healthcare we want to know how to get people to eat right, exercise and not smoke. In counseling psychology, we want people to seek mental health services, manage their anger and impulses, and maintain high self-esteem. In conservation work, we want people to be connected to nature and reduce their ecological footprint. You can imagine both the importance and the difficulty of these tasks. If behavior change is this complex, what do we do? Social scientists conclude the best way to plan a behavior change campaign is to start with research. Researching the barriers and needs, as well as the area and services, for both your particular population and the target behavior will yield the best results for any behavior change effort. However, if you cannot do the research or you don't have the money to hire an evaluator, you can still make much more effective campaigns by understanding and following

some basic principles and methods. We will discuss these methods and the research behind them in this presentation to enable you to lead more effective behavior change campaigns.

BIO: Lisa Pennisi is a human dimensions specialist in the School of Natural Resources at UNL. She uses social science to research ways to reduce human impacts on natural resources, and to improve natural resource management. Whether through survey research, environmental education, communications, or nature-based tourism and recreation, she measures and explores how to influence conservation behavior through knowledge, attitudes, values, and connection to nature. In terms of environmentally responsible behavior, Lisa is particularly interested in developing social marketing campaigns, educational programs and communication messages that will successfully lead to desired behaviors. Encouraging desired behaviors such as water conservation, defensible space for fire management, and habitat management can be more effective when studying and applying successful communication and education techniques.

lpennisi2@unl.edu

THURSDAY -- SEPTEMBER 26, 2019

GENERAL ENVIRONMENTAL HEALTH WEST BALLROOM

Improving the Quality of Life in our Neighborhoods: A Systematic Approach

Capt. Michon Morrow, LPD

Gen Env Health

Thursday

9:00 am— 9:50 am

The City of Lincoln's Problem Resolution Team is a multi-agency task force, including Police, Building and Safety, and Health (including Animal Control within Health), along with several other agencies, created to address the most complicated and problematic properties that affect the overall quality of life in our neighborhoods. This presentation will discuss the history, structure and process of how each case is worked, highlighting success stories.

BIO: Captain Michon Morrow has been a member of the Lincoln Police Department since 1995. She started her career in the Victim/Witness Unit before becoming a commissioned officer in December 1997. She holds a Master's Degree in Forensic Science, Behavioral Studies, from Nebraska Wesleyan University. During her tenure, she has served as Field Training Officer, Domestic Violence Investigator, Sergeant and Duty Commander. Captain Morrow is currently the commanding officer of the Southwest Team, a rapidly growing, active and vital part of the city. She is the coordinator and a facilitator for the IACP Leadership in Police Organizations Program for 16 agencies in Eastern Nebraska. She has also chaired the Problem Resolution Team for the City of Lincoln for the past 6 years as well as serving on the Mayor's Livable Neighborhoods Task Force and the South of Downtown Affordable Housing Committee.

LPD1143@cjs.lincoln.ne.gov

The Who, What, When, Where and WHY of Vector-borne Diseases and Repellents

Sharon Sims, DEET Education Program

Gen Env Health

Thursday

10:20 am – 11:10 am

Sharon Sims brings her years of experience in communicating about vector borne diseases to this presentation to help public health, vector control and environmental health professionals educate themselves and all those with whom they interact who need to know about symptoms, the need for immediate treatment, and prevention strategies. (This is especially important in those areas where vector-control strategies are compromised by lack of funding, manpower, and other issues.) She will address cultural and other issues that hamper communications with key audiences, decision-makers, and healthcare professionals, as well as the general public. She provides late breaking news on the VBD front, including the most recent details emerging diseases as well as invasive tick species in the U.S. that may have serious implications for potential disease transmission to humans. Prevention strategies include little known/misunderstood information about EPA-registered active ingredients used in insect repellents, proper use, urban legends, and important considerations associated with repellent use on children.

BIO: Sharon Sims consults with The National DEET Education Program for community outreach and education. Sharon also consults as the WNV Coordinator for activities such as community education, research and support for WNV patients through a private grant with Dr. Art Leis and Methodist Rehabilitation Center. She previously worked at The Mississippi State Department of Health since the West Nile virus outbreak in 2002. In response to the Mississippi outbreak, Sharon started the first West Nile virus support group in the nation in February of 2003. This group still meets in Jackson and in Hattiesburg, MS quarterly. Since October 2017, these meetings have been broadcasted through a live

webinar nationally. Sharon consults with Clarke Mosquito Control as a health educator in AL, AR and MS. Sharon has been involved in several grants between the state health department and the Centers for Disease Control and Prevention, which focus on patients with West Nile virus and the lasting effects of the disease. Sharon developed the WNV Children's campaign that has reached over 42,000 children in Mississippi. In addition, Sharon sits on the advisory committee for the American Mosquito Control Association's "I'm One" campaign and serves on the Board of Directors for the Mississippi Mosquito and Vector Control Association. She serves as Lead for an ongoing project through the Patient Centered Outcome Research Institute (PCORI) which focuses on patient centered outcomes for Mosquito borne illness patients. Sharon is the founder and President of the Mosquito Illness Alliance which is a Non-profit 501(c)3. Sharon is a member of the Alabama Vector Control Society, the Louisiana Mosquito and Vector Control Association and is currently working with the Arkansas Department of Health developing their Association. Sharon holds numerous certifications including Master Vector-Borne Disease Management (CDC), Integrated Mosquito Management (AMCA) and Packaging and Shipping: Division 6.2 Materials (APHL) judia@kroegerpr.com>

The Indoor Environment and Children's Health: What We Know

Kevin Kennedy

Gen Env Health

Thursday

11:20 am – 12:10 pm

You've all heard it before. Children spend 90% of their time indoors. In the US this means they spend 90% of their time directly exposed to whatever materials, particles, and chemicals the building is made of, managed by, and oozing with. Chronic diseases in children have been increasing for decades and the connection to exposure to things in their homes and schools has become clearer with improved knowledge and better research. Now, what are we going to do about it. In this session, we'll discuss what we know about indoor environmental exposure in homes and the known health impacts in children. We'll also discuss effective interventions to reduce or eliminate exposure to contaminants in order to improve their health.

BIO: Mr. Kennedy is the Director of the Environmental Health Program at Children's Mercy Hospitals and Clinics in Kansas City. The program provides patient families, childcares, and schools with resources to assist them in identifying and reducing indoor environmental exposures that may result in health problems. They perform research on indoor environmental health issues focusing on home interventions, exposure assessment, and recently on geospatial analysis of housing and health issues. Mr. Kennedy has been involved in environmental health science, research, and professional training for 19 years and environmental consulting and analytical chemistry for over 25 years. He received his Master's Degree in Public Health from the Kansas University Medical Center, and his Bachelor's Degree in Natural History and Environmental Science from the University of Kansas, where he also received teaching certification in secondary science. He has served on a variety of committees including the Environmental Health Committee for ASHRAE, and the Environmental Assessment Workgroup for the Joint Task Force of the AAAAI, and the ACAAI. He teaches courses in environmental health assessment and investigations, healthy homes, environmental measurement and sampling, and building science. In a previous life he worked as a restoration carpenter and woodworkers focusing on older homes. kkennedy@cmh.edu

Healthy Homes Workshop

Kevin Kennedy—Healthy Homes Workshop

Thursday 1:30 pm— 3:30pm

Room: CLARK

If you visit homes or provide health, education, or services of any kind, you will benefit from the "Healthy Home Principles" workshop. This post-conference workshop will use interactive and hands-on exercises to introduce you to essential knowledge of the eight healthy home principles and how to apply these important concepts when assessing health and safety risks in homes. The workshop will cover the latest information about moisture and microbial agents, basic ventilation, cleaning practices, integrated pest management, information on common home contaminants, home safety, and common visual clues to look for when visiting homes. This workshop will include some information on the best practices for environmental management of asthma. The Environmental Health Program at Children's Mercy Hospitals and Clinics (CMH-EHP) has been performing home environmental health assessments for the last 20 years. CMH-EHP, 2015 winner of the HUD Secretary's Award for Healthy Homes, has assessed over 1500 homes for health and safety concerns and worked with more than a hundred community partners to address housing hazards. Join us for this interesting discussion and how you can apply the healthy home principles in the work you perform.

EMERGING ISSUES & LEAD
WINNEBAGO

Nature abhors wastes, and so should we

Dale Gubbels, Lincoln **Emerging Issues** **Thursday** **9:00 am – 9:50 am**

Resource management and how it has broader implications for health, safety and society in general.

BIO: Dale Gubbels is president and CEO of First Star Recycling, which is in its 22nd year of business. A Nebraska native and alum of the state’s journalism school, he jokes that the path from editing a newspaper to recycling it in the state’s largest recycling operation in Omaha makes “perfect sense, both are struggling industries.” The 120 plus employee company processes and markets annually over 100,000 tons of a variety of scrap material drawn from residential and commercial generators from throughout the Midwest. In October 2016 Omaha and surrounding communities and First Star became the country’s first material recovery facility (MRF) to permanently adopt the Hefty® EnergyBag® program that diverts hard-to-recycle plastics from landfills. Residential and commercial generators participate in the program by purchasing the special orange bags to collect a wide range of not-readily recyclable plastics, e.g., chip and snack bags, foam fast food containers and cups and plastic tooth paste tubes in the Hefty® EnergyBag® orange bags. To date the program has enabled First Star to divert over 30 tons of flexible plastic packaging from area landfills, by instead sending the filled orange bags to be used as a feedstock for plastic lumber or as an alternative fuel source, and as a heat source for making cement. The Hefty® EnergyBag® program has since grown to other communities including Boise, ID and area, and was recently launched in Cobb County, GA. Mr. Gubbels hopes attendees will take away from his presentation an appreciation that our modern society, given suitable will, is ingenious enough to emulate the natural world’s unparalleled capability to not let anything go to waste. dgubbels@firststarfiber.com

“Emerging Trends in Food Safety: Automation and Public Health”

Kaylyn Brunskole, MPH, CHES **Emerging Issues-Food** **Thursday** **10:20 am – 11:10 am**
NSF International

The traditional foodservice equipment landscape is evolving. Emerging foodservice equipment automation is slowly shifting food production tasks from human to machine – from robots flipping burgers to fully integrated robotic kitchens. While the look and feel may be changing, the equipment sanitation requirements remain the same. Ensuring equipment is hygienically designed to be easily cleaned and that materials used are FDA compliant and non-toxic, is essential to maintaining a high level of food safety in retail establishments. This presentation will discuss these emerging trends and how NSF International is continuing our mission to protect public health.

BIO: Kaylyn Brunskole, MPH, CHES is a Senior Technical Reviewer within the commercial food equipment division at NSF International in Ann Arbor MI, a position held since 2014. In this role she conducts field audits and inspections of commercial food equipment at manufacturing facilities and food establishments throughout the United States. As an expert in NSF’s equipment standards, she delivers local and regional technical training’s at manufacturing sites and regulatory conferences. She began her public health career as part of the Training and Education division at NSF, developing and implementing food safety trainings for customers across the food supply chain. She received her undergraduate degree in Health Policy from the University of Michigan-Dearborn, graduate degree in Public Health from Michigan State University and is a Certified Health Education Specialist. kbrunskole@nsf.org

Lead poisoning trends and local prevention strategies across Nebraska: From the Omaha Superfund Site to the Panhandle

Naudia McCracken & Derry Stover **Lead** **Thursday** **11:20 am – 12:10 pm**
Douglas Co Health & NDHHS

Lead poisoning is one of the most preventable environmental diseases among young children. Lead hazards are found throughout urban and rural areas across Nebraska. Douglas County, Nebraska is home to the largest residential lead superfund site in the United States. This lead superfund site is located in Omaha, Nebraska, and was established in 1999 by the Environmental Protection Agency (EPA) to address high levels of lead that were found in soil (above 400 ppm). During this time, lead poisoning rates among children under the age of 7 years old were very high, where approximately 33% of children tested had blood lead levels of 10 ug/dL or above. There are approximately 13,100

properties that were tested and remediated for high soil lead levels as of October 2015. In other areas of the state, deteriorating lead-based paint in older homes continues to be a significant risk factor for lead exposure. Nebraska has some of the oldest housing stock in the country, and more than one-third of homes are estimated to contain lead paint. During this presentation we will be exploring trends over time at both the state and local level (specifically from 1999-2018), services/partnerships which have evolved over time, emerging sources of exposure due to a diverse population, and ways to improve health equity regarding lead poisoning.

BIO's: Naudia McCracken is an Acting Supervisor at the Douglas County Health Department, working in the Childhood Lead Poisoning Prevention Program. Ms. McCracken supervises education and outreach, investigations and inspections to residents in Douglas County. She has been with the Health Department for 4 and 1/2 years. Naudia has a Master's of Public Health in Biostatistics from the University of Nebraska Medical Center. Naudia J. McCracken (DCHD)

naudia.mccracken@douglascounty-ne.gov

Derry Stover is an Epidemiologist at the Nebraska Department of Health and Human Services, Division of Public Health. Mr. Stover has 10 years of experience working in public health and with epidemiology surveillance programs. In his current role, Derry oversees programs for environmental and occupational health surveillance. Derry received his a Master's of Public Health in Environmental and Occupational Health from the University of Nebraska Medical Center in 2010. Derry.Stover@nebraska.gov

THURSDAY – SEPTEMBER 26, 2019

EMERGENCY RESPONSE & AIR QUALITY DAKOTA

Mother Nature Always Wins” DR-4420-NE March 2019 an overview

Earl Imler, NEMA Emergency Response Thursday 9:00 am – 9:50 am

An overview of the conditions that led up to a 500 year flood event in March 2019, the approximate month long activation of the State Emergency Operations Center to respond to the event, and recovery efforts that will continue for several years.

BIO:

Earl Imler's chosen career out of college was law enforcement spanning 25 years with three different agencies. During his career Mr. Imler held positions in task force operations and investigations, as well as training officer, armorer, field training officer as well as tactics and patrol procedures instructor. In 1997 Mr. Imler was inducted into the Police Officers' Association of Nebraska Hall of Fame. In 2007 he medically retired from law enforcement.

Mr. Imler came to work for NEMA on May 1st, 2007. He is currently serving as the State Coordinating Officer for DR-4420-NE. His day to day position is the Operations Section Manager for the Nebraska Emergency Management Agency (NEMA). During his time with NEMA he has held positions with hazard mitigation, public assistance, Public Assistance Officer and Response and Recover Section Manager. earl.imler@nebraska.gov

Nebraska Air Quality and Prescribed Burning

Tracy Wharton, NE Dept of Environment & Energy Air Quality Thursday 10:20 am – 11:10 am

Each spring, prescribed burning in the region presents the potential for air quality impacts in Nebraska. Over the past three years, the Nebraska Department of Environmental Quality has expanded its coordination and collaboration with federal, state, and local agencies to respond to air quality impacts from prescribed fires. These efforts have resulted in an improved communication strategy with the public, and an increase in the general awareness of air quality issues in Nebraska. As the agency builds on these efforts, the involvement of the public health community is key to informing the public and mounting a proactive response to air quality impacts from prescribed fires.

BIO: Tracy Wharton is the Air Quality State Implementation Plan coordinator for the Nebraska Department of Environmental and Energy. She received her degree in Biological Sciences from the University of Nebraska, and served 26 years in the Nebraska National Guard. Her background includes work in the fields of laboratory analysis, public health and safety, and air quality planning. In her current position, Tracy monitors air quality conditions related to fires and coordinates communications between agencies during the spring prescribed burning season.

tracy.wharton@nebraska.gov

Evaluation of Landfill Gas Dispersion through an Intermediate or Final Cover with Innovative Geomembranes

Dr. Jongwan Eun, UNL

Air Quality

Thursday 11:20 am – 12:10 pm

Landfill gas (LFG) is not only the third largest source of Greenhouse gas in the U.S., but also includes hazardous and strongly odorous gas to often upset landfill neighbors, resulting in strained relationships with the community, regulatory actions, and, in some cases, costly litigation. As a solution, innovative co-extruded geomembranes (GMs) with an Ethylene Vinyl-alcohol (EVOH) layer sandwiched between two polyethylene (PE) layers have been introduced to reduce the flux of organic contaminants in barrier systems. However, there are still latent and critical issues such as the applicability and validation of the effectiveness of using co-extruded EVOH GM for an interim cover at field site and the impact related to multiple stakeholders and regional community. In this study, the transmitted LFG will be collected through a gas flux chamber system to monitor LFG emission through a composite interim cover. In addition, gas dispersion modeling near a regional landfill was performed to evaluate environmental impact of LFG on the residence. From this study, the effectiveness of installation of interim covers with the co-extruded EVOH GM can be assessed.

BIO: Dr. Jongwan Eun is an Assistant Professor in the Department of Civil Engineering at the University of Nebraska-Lincoln (UNL) since 2016. He received his Ph.D. in Civil and Environmental Engineering emphasized on geoenvironmental engineering from the University of Wisconsin-Madison in 2014 and M.S. from University of Texas at Austin in 2010. Dr. Eun has over 15 years of professional and academic experience in geotechnical and geoenvironmental engineering. He worked for Dongmyung E&C Co. for more than 4 years as a field engineer mostly in subway construction site in South Korea. His research interest is focused on design and analysis of advanced contaminant barrier system, unsaturated soil mechanics, and geoenvironmental engineering. His research results have been published in more than 30 national and international journal papers and proceedings. Dr. Eun is a member of three technical committees (geoenvironmental engineering, geosynthetics, and unsaturated soil mechanics) of Geo-Institute, ASCE. Dr. Eun serves as a reviewer for several journals such as the Journal of Geotechnical and Geoenvironmental Engineering, Journal of Testing and Evaluation, and Construction and Building Materials. In addition, Dr. Eun is a member of Nebraska ASCE Geo-Institute committee and Solid Waste Association of North America (SWANA). jeun2@unl.edu

THURSDAY -- SEPTEMBER 26, 2019

GENERAL ENVIRONMENTAL HEALTH/GIS/ANIMAL CONTROL/BODY ART CLARK

Leveraging GIS technology to enhance and improve access to data associated with private sewage disposal systems and waterwells

Shane Dodge & Sue Ellen Hosch, IA

Gen Env Health

Thursday

9:00 am – 9:50 am

Linn County Public Health (LCPH) enforces regulations governing private sewage disposal systems and water wells installed in the county. This includes pre-construction permitting, final construction inspections, water sampling and ongoing maintenance. The resulting documentation from these efforts are largely hardcopies of agency forms and laboratory reports that are scanned and filed electronically under the property address in a file management system. This approach was adequate for creating historical records, but limited the agency's ability to use the data for program development. LCPH partnered with the Linn County GIS Division to identify opportunities to leverage GIS tools that increased program effectiveness and delivered a better customer experience. This resulted in improved quality of final inspection reports, the ability to analyze spatially referenced data, and the development of interactive maps to share information with stakeholders.

BIO: Shane Dodge is the supervisor of the Air & Water Quality Branch for Linn County Public Health. He is an environmental professional with over 24 years of experience in both public and private sectors. Shane holds a Bachelor of Science degree in Environmental Science from the University of Dubuque and a minor in Biology.

Shane.Dodge@linncounty.org

Sue Ellen Hosch is a Senior Environmental Specialist with Linn County Public Health. She has worked in the Water Quality Branch for the past 25 years. Her work involves work in two counties permitting private septic systems and water wells, inspecting public water supply systems and reviewing land-use zoning cases. She holds a B.S. degree in Animal Science from Iowa State University and a M.S. degree in Preventive Medicine and Environmental Health from the University of Iowa. In 2018, she was awarded the IEHA Environmental Health Professional of the Year award.

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The Connection Between People, Pets and Public Health: A Case Study

Steve Beal, Manager, Lincoln Animal Control, LLCHD

Thursday

10:20 am – 11:10 am

There is a strong connection between public health and animals, both domestic and wild. This presentation will look at one case study that involved a local health department, the Nebraska Department of Health and Human Services (DHHS) and a daycare center and included Registered Environmental Health Specialists, Animal Control Officers and DHHS, Environmental Health Unit. In addition to running a daycare center the property owner sold animals out of her residence where the daycare was operating. Sanitation became a significant issue and posed health threats for the family and those children attending daycare. The owner was cited by Lincoln animal control for having too many animals in her home and selling them without required approval of the Health Department. DHHS revoked the license of the home child care provider. The presentation will highlight the collaborative efforts made to correct the situation and help get the owner in compliance with local municipal codes and state home child care requirements.

BIO: Steve is currently the Division Manager of Lincoln Animal Control. He has been employed by the Lincoln Lancaster County Health Department since 1980. He has served as the Assistant Health Director, and Division Manager of Health Promotion and Outreach. He's quick to say that his current job as Manager of Animal Control has been one of the most interesting and challenging jobs over his past 38 years working at a local health department. Steve earned a Master of Public Administration from UNO and Bachelor of Science in Education from UNL. Today he is here to talk about the connection between Public Health and Animals. He will be sharing a case study that highlights how public health touches all of us, and this case both people and pets. sbeal@lincoln.ne.gov

Intro To the Body Art Education Alliance

Matt Bavougian & Jesse Neese

Body Art

Thursday

11:20 am – 12:10 pm

Come find out who we are and what we're doing. The Body Art Education Alliance (BAEA) is a group of like-minded organizations and individuals dedicated to developing resources and programs to educate regulators, body artists, industry members, and the general public on the practices and policies surrounding body art, body art studios, and body art studio inspections in order to protect public health.

WORKSHOP--Inspection Basics of Body Art Establishments

BAEA Inspector Training

Thursday

1:30 pm – 3:30 pm

Room: DAKOTA

This class is geared toward Health Inspectors who inspect body art facilities, but is also useful for those looking to expand their knowledge base. This class is a collaborative effort on the behalf of the Body Art Education Alliance (BAEA), Association of Food and Drug Officials (AFDO), the National Environmental Health Association (NEHA), the Association of Professional Piercers (APP), the Association of Professional Tattooists (APT), and the Society of Permanent Cosmetic Professionals (SPCP). It focuses on how to safely and effectively inspect a body art facility. It covers a wide range of topics including communication, paperwork compliance, storage of equipment, disinfection and sterilization, procedure set up and tear down, as well as other important topics. This class is ever evolving as it is based on current best practices.

BIO's: Matt Bavougian, a native of the Chicago suburbs, has been working in the body piercing field since 1999 when he began his first apprenticeship. During a subsequent apprenticeship in Champaign, Illinois, where Matt attended the University of Illinois, he began his work as a legislative advocate for the industry. Matt relocated to Lincoln, Nebraska in 2008 and shortly after expanded his advocacy work on the Legislation Committee for the APP as a non-member volunteer. In 2013 Matt opened the doors to his own shop, Know Piercing LLC, and became a full APP member in 2015, joining their Legislation and Regulatory Affairs Committee. As his shop rebranded to its current name, Onyx Piercing Studio, in 2016 Matt's committee work expanded to include working on the National Environmental Health Association's (NEHA) Body Art Model Code Workgroup and the Association of Food and Drug Officials' (AFDO) Body Art Committee. Also a consultant and instructor on studio inspection and proper sterilization techniques, Matt has taught his course "Inspection Basics of Body Art Establishments" at conferences for both the NEHA and AFDO. Currently Matt is a National Safety Council Instructor in First-Aid/CPR/AED use and bloodborne and airborne pathogens. He is co-chair and a founding member of the Body Art Education Alliance (BAEA), a group of like-minded organizations and individuals dedicated to developing resources and programs to educate regulators, body artists, industry members and the general public on the practices and policies surrounding body art, studios, and studio inspections in order to protect public health. Matt resides in Lincoln, NE with his wife and two daughters. In his free time, he loves to cook, cure, smoke, pickle and ferment food. m.bavougian@gmail.com

Jesse began his career as a tattoo artist in 1999 after an apprenticeship with a prominent local artist. From 1992 until 2000 Jesse studied all aspects of visual art, art history, theatrical design and faux painting at the University of Nebraska's Omaha campus eventually graduating with degrees in both Studio Art and Dramatic Arts. Performing in an AIDS(HIV) educational play with discussion groups after each performance in 1992 led him to an early understanding of blood borne pathogens issues, and gave a start to speaking to groups about the facts and encouraging safe behavior as well as treating those suffering with sympathy rather than hostility. During his tattoo apprenticeship, his mother (an operating room nurse) passed along important articles about autoclaves, sterilization and clean procedure. He has been a member of the Alliance of Professional Tattooists since 1999 and strongly promotes their ethics of safe and responsible tattooing. After taking their seminar, Prevention of Disease Transmission in Tattooing, annually for many years, he became an instructor in 2010 and enjoys teaching folks in the Midwest and at conventions all over. Jesse currently serves on the Board of Directors of the APT and has been involved with pigment labeling guides, the Body Art Model Code and other great progress that The Association of Food and Drug Officials (AFDO) and NEHA (National Environmental Health Association) are accomplishing. He is looking forward to how the Body Art Education Association (BAEA) will help these groups and others interact and help our ancient profession fit into these modern times.

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