
Final Report to the Ceres Trust

Mobilizing Iowans and Iowa Organizations to Address Pesticides and Public Health in Iowa

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Our overall goal is to engage rural and urban communities - all Iowans - in the issues surrounding them; to build a shared understanding of the evidence-based, upstream solutions that exist to address environmental health injustices in Iowa; and to communicate these injustices as important to the state's public health. This goal is being addressed through the statewide campaign, [Farming for Public Health](#).

KEY ACTIVITIES

Pesticides & Public Health Working Group

The Pesticides & Public Health Working Group (P&PHWG) is a diverse mix of stakeholders that meets quarterly to develop a shared understanding of public health issues related to pesticide use and works collaboratively to reduce their application in Iowa. Participants represent key groups within the state, including the College of Public Health, Pesticide Action Network, Iowa Farmers Union, Iowa DNR, USGS, The Xerces Society, the Pediatric Environmental Health Specialty Unit, The Iowa Department of Land Stewardship, various University Centers, Iowa Groundwater Association, and others. Additionally, farmers, agronomists, weed scientists, and physicians with an interest in reducing pesticides in the environment join as schedules allow.

Facilitated by Audrey Tran Lam, these meetings focus on shared learning, updates, and action items. It is important to note that a group this diverse discussing the important intersection of pesticides and public health did not exist in Iowa before the support of the Ceres Trust. The P&PHWG has met quarterly since the start of this round of funding, not including meetings with unpublished data. All the recordings and meeting notes can be found [here](#).

Topics explored over the last year include a deep dive into the Global Glyphosate Study (with expert guest, Dr. Daniele Mandrioli, of the Ramazzini Institute), pesticide policy updates (including organizing around the "Failure to Warn" immunity bills introduced in key states during the legislative session), and the threat of overuse of fungicides on pathogen resistance and its impacts on public health (with invited guest speaker, Dr. Melanie Lewis Ivey, of Ohio State University).

Presence at Professional Conferences

As in years past, a key strategy that Farming for Public Health uses to transform the conversation surrounding the connections between human health, environmental health, and farming is being visible at professional conferences and gatherings. Throughout this grant period, CEEE staff have been able to play a major role in sponsoring and/or organizing the conferences listed below, including standalone conference sessions.

Public Health Conference of Iowa | March 26, 2024

In-person: 87 attendees

Iowa Cancer Consortium Staff, Caroline Powell, and CEEE Environmental Health Program Staff, Audrey Tran Lam, co-submitted an abstract that highlighted the multifaceted nature of cancer development and environmental influences that make up cancer risk. The session was very well-attended, and one audience member suggested that the presenters start a podcast covering these topics!

Session title: Meeting Upstream: Fostering Environmental Health Literacy in Cancer Prevention Spaces

Session abstract: Iowa has the 2nd highest cancer incidence rate in the United States. Communities are concerned and confused about the potential role of environmental contaminants in causing these high cancer rates. Cancer coalitions may not focus on environmental issues due to limited knowledge or difficulties with messaging. Increased research translation and easy to understand communications about environmental risk factors may address community concerns, and trainings such as ours may improve risk communication. Using lessons from the interdisciplinary partnerships formed through the Iowa Cancer Consortium's Cancer & the Environment Task Force, this presentation provides tips on how to integrate evidence-based environmental health information into cancer prevention and health promotion. Participants will learn how to better communicate risk, answer questions, and strengthen environmental health literacy in their communities.



Iowa Cancer Consortium's Strategies to Reduce Environmental Cancer Risk Webinar Series | July 23, 2024

Virtual: 41 attendees

Program Staff, Audrey Tran Lam, is a key participant in the Iowa Cancer Consortium’s Cancer and Environment Task Force and provides expertise on environmental contributions to Iowans’ cancer burden. She was asked to participate in an Iowa Cancer Consortium webinar series entitled "Strategies to Reduce Environmental Cancer Risk," driven by the rapidly growing interest in the cancer-environment (agriculture) relationship. Her talk was part two in a four-part series.

- Part 1: Improving Water Quality
- Part 2: Promoting Safer Agriculture
- Part 3: Minimizing Plastic Use
- Part 4: Conducting Exposure Histories

In her talk, Audrey highlighted compelling evidence on alternative cropping systems that have significant impacts to downstream health, including that of cancer development. [A recording of the webinar can be viewed here.](#)

Attendees found the webinar accessible, engaging, and useful in their work to share with colleagues.

[Industrial Farm Animal Production, the Environment, and Public Health Conference | September 25th-26th](#)

In person: 160 attendees; Virtual: over 1200 unique views each day

Environmental Health Program Staff were asked to participate in the planning committee for the Industrial Farm Animal Production, the Environment, and Public Health conference held at Drake University in Des Moines, IA. The first of its kind, this conference was a collaboration between the Harkin Institute and the Johns Hopkins Center for a Livable Future and examined pertinent topics such as the history, structure, and trends in factory farming industry; water and air pollution; infectious disease health effects; community and social impacts; environmental justice and sustainable agriculture; and the impacts of COVID-19 among meatpacking workers. The CEEE’s role on the planning committee was to ensure sustainable farming topics were well-represented, and to exercise the Center’s vast network of partners to provide recommendations for presenters. More information can be [found here](#).

[Iowa Environmental Health Association Conference | October 9, 2024](#)

In-person: 52 attendees

Program staff, Audrey Tran Lam, facilitated a session at the Iowa Environmental Health Association's annual conference alongside invited expert, Dr. Jesse E. Bell from the University of Nebraska Medical Center. This session explored the mounting evidence linking nitrates in

The flyer features the Iowa Cancer Consortium logo at the top left, with the text "Iowa Cancer Consortium" and "www.canceriowa.org" to its right. Below this is the main heading: "Learn from environmental and occupational health experts during our four-part webinar series!". A paragraph follows, stating: "The Iowa Cancer Consortium's Cancer and the Environment Task Force is hosting a summer webinar series that highlights actions from the individual to the institutional level that can be taken to better understand and reduce environmental and occupational exposures to cancer-causing substances. Registration is open below for all four parts of the series." Below this is the contact information: "Please send any questions to powell@canceriowa.org".

The flyer is divided into four quadrants, each representing a webinar part:

- Part 1: Improving Water Quality** (Tuesday, July 16th, 2PM CT). Presenter: Alicia Vissio, Iowa Program Director, Iowa Environmental Council.
- Part 2: Promoting Safer Agriculture** (Tuesday, July 23rd, 2PM CT). Presenters: Audrey Tran Lam, Iowa Environmental Council; and Beth Guseman, Iowa State University.
- Part 3: Minimizing Plastics Use** (Tuesday, August 6th, 2PM CT). Presenter: Emily Hill, PhD, Postdoctoral Fellow, Pharmacology and Toxicology, The University of Texas at Austin.
- Part 4: Conducting Exposure Histories** (Tuesday, August 13th, 2PM CT). Presenters: Kimberly Hill, Iowa Environmental Council; and Jesse E. Bell, PhD, University of Nebraska Medical Center.

drinking water with negative human health outcomes and provided recommendations to Iowa environmental health professionals.

Session title: Beyond Blue Baby Syndrome: Nitrates & Pediatric Cancer.

Session abstract: Like Iowa, Nebraska’s landscape is dominated by row crop agriculture that relies heavily on synthetic chemical inputs, such as nitrogen fertilizers and pesticides. These chemicals can contaminate surface and groundwater, and their presence in drinking water has been linked to a greater risk for certain health outcomes (Ward et al., 2018). For example, the maximum contaminant level for nitrate, a potential product of nitrogen fertilizer application, is set for 10 milligrams per liter in drinking water – a standard set to protect against methemoglobinemia, also known as blue baby syndrome. Other health outcomes are known to result from exposure to these contaminants. Studies have found an increased risk of certain cancers in areas with higher groundwater concentrations of nitrate and atrazine (Puvvula et al. 2021; Ouattara et al. 2022). Because of the complexity of groundwater contamination, it is unclear if these associations result from a single contaminate or a mixture (Rhoades et al. 2013; Ouattara et al. 2022).

There is a need for more research on understanding the link between groundwater contamination to negative health outcomes. However, enough evidence exists to take action to reduce exposure and educate vulnerable populations. Private well owners are particularly at risk as monitoring and mitigating these contaminants is their responsibility, and they are exempt from meeting the Safe Drinking Water Act standards.

Led by regional experts based at the University of Nebraska Medical Center, this session will explore the mounting evidence linking nitrates in drinking water with negative human health outcomes (most notably pediatric cancer); describe methods to mitigate exposure during sensitive developmental windows; and provide recommendations to Iowa Environmental Health Professionals based on lessons learned in Nebraska.

Iowa Nature Summit | October 9, 2024

In-person: 220 attendees

Audrey Tran Lam was asked to speak at the [Iowa Nature Summit](#) to discuss the environment's relationship to human health, specifically with regards to Iowa’s agricultural environment and its



possible contribution to increased cancer incidence in the state. Because the Iowa Environmental Health Association's annual conference was occurring at the same time, Kamyar Enshayan spoke on her behalf. Dr. Enshayan was able to emphasize the precautionary principle and the need to act on the known evidence of harm of agricultural chemicals. He spoke on a panel of other statewide leaders in raising awareness of the environment's impact on human health.

Session title: Nature -- Public Health -- and Iowa's Environment

Moderator: Prof. Jennifer Zwagerman, director, Agricultural Law Center, Drake University.

Panelists:

- Dr. David Cwiertny, director for Center for Health Effects of Environmental Contamination, University of Iowa
- Dr. Richard Deming, Mercy Medical Center, Above and Beyond
- Prof. Kamyar Enshayan, director, Center for Energy and Environmental Education, University of Northern Iowa
- Sen. Janet Petersen, Co-Founder, Healthy Birth Day, Inc.



Iowa Cancer Summit | October 15, 2024

In-person: 260 attendees; Virtual: 40 attendees

Session title: A Deeper Look into Agriculture and Cancer: What do we know, what's left to learn, and what can we do?

Iowa Cancer Consortium staff approached the CEEE's Environmental Health Program staff to sponsor and moderate the closing plenary session at the Iowa Cancer Summit this year. Dr. Laura Beane Freeman of the National Cancer Institute, and director of the Agricultural Health Study (AHS), shared key takeaways of the AHS -- specifically highlighting pesticide exposure and concerning cancer endpoints. Dr. Sandra Steingraber, ecologist; author; and cancer survivor, shared the stage with Dr. Beane Freeman to recount her own experience as a Midwestern cancer survivor, to question the culture around acceptance of agricultural pollution in Iowa, and uplift precautionary thinking in cancer prevention.



Midwest Rural Agricultural Safety and Health Conference | November 8, 2024

In-person: 100 attendees

Based on the success of the presentation given at the Public Health Conference of Iowa, Iowa Cancer Consortium staff, Caroline Powell, and CEEE Program Staff, Audrey Tran Lam, submitted the following abstract as breakout session, but were extraordinarily surprised when the organizers requested the presentation instead serve as the opening plenary session for the second day of the conference!

Session Title: Mixed Messaging About Mixed Exposures: How to Communicate Agricultural Exposures and Cancer Risk Effectively

Session Abstract: According to the Iowa Cancer Registry, Iowa has the 2nd highest cancer incidence rate in the United States. National and international agricultural cohort studies supported by the National Institutes of Health have shown that cancer overall occurs less in agricultural workers than the general population, but this group experiences higher rates of some cancers, including leukemia, non-Hodgkin lymphoma, multiple myeloma, skin cancer, and prostate cancer. Health and safety professionals may not focus on environmental factors that influence cancer risk due to the complexity surrounding messaging. Increased research translation and clear communications about environmental cancer risk factors, specifically in agricultural settings, can help address these cancer disparities. In a joint presentation, Audrey Tran Lam, Environmental Health Program Manager at the University of Northern Iowa's Center for Energy and Environmental Education, and Caroline Powell, Environmental and Occupational Health Coordinator at the Iowa Cancer Consortium, will provide tips on how to acknowledge the health-promoting, cancer-preventing behaviors that agricultural workers already practice, while also highlighting the unique and mixed exposures that may be increasing their risk of certain cancers. Participants will leave this session with examples of research and outreach that they can consider when creating health communications targeting agricultural communities.

On-Farm Field Days

During the summer of 2024, Farming for Public Health partnered with Practical Farmers of Iowa to support four on-farm field days that highlight the upstream, land-based solutions in practice today by innovative Iowa farmers. These field days are a critical tool in emphasizing the role farmers play as public health practitioners in the state, as well as to increase overall understanding that these practices are practical and profitable. (Photo courtesy of Practical Farmers of Iowa.)




- June 26: [Building Soil Health Through Relay-Cropping, Extended Rotations and Reduced Tillage](#), 50 attendees
- July 2: [Nutrient Management Using Intercropping in an Organic Operation](#), 35 attendees
- July 20: [Growing Food for Habitat: Supporting Pollinators and Beneficial Insects in a Community Garden](#): 23 attendees
- August 10: [Honing Pasture Management With Rotational Grazing + Cover Crops](#): 65 attendees

Other Accomplishments

In addition to the activities listed above, program staff have been working on several fronts to increase awareness of the impacts of pesticide (and, more broadly, toxic chemicals) on human health.

- Program staff, Audrey Tran Lam, worked with the Johnson County Board of Health to author a position paper on pesticide reduction in urban spaces, [which can be found here](#).
- An Environmental Health Program Associate, Brittany Latch, MS, was hired in May 2024 to oversee daily operations of Good Neighbor Iowa. She supervises a new team of Good Neighbor Iowa Student Fellows and an AmeriCorps Service Member to conduct outreach and education efforts concerning pesticide use in public spaces and its impacts on children's environmental health. Among her duties are to engage the UNI campus community on issues of environmental health. In particular, she is creating curricular opportunities for faculty and students to critically examine the intersection of human health in a Midwestern, agriculturally-dominant environment.
- The Environmental Health Program has been pleased to be able to provide up to 100 scholarships to Iowa Child Care Providers to take the [EcoHealth Child Care e-learning course](#) for continuing education credits. Developed by the [Children's Environmental Health Network](#), this course instructs on common environmental hazards that impact children's health (including pesticides) and increases awareness of environmental health issues (and how to remediate them) in child care centers.
- After the Iowa Cancer Summit, the CEEE's Environmental Health program, in partnership with the School of Health & Human Sciences, the College of Social & Behavioral Sciences, and the College of Humanities, Arts & Sciences, hosted Dr. Sandra Steingraber to give a lecture on UNI's Campus. This talk explored the involuntary cancer risks posed by exposures to agricultural chemicals in the Midwestern Corn Belt, based on the latest findings from epidemiological and toxicological studies, as well as examined the promises of agroecology as an alternative to industrial agriculture. Dr. Steingraber also shared her lived experience as a young biologist diagnosed with cancer in rural Illinois and provided a human rights approach to the idea that "behind every data point in the cancer registry there is a human life." Sandra also stayed for a book signing, conducted a radio interview in preparation of her visit, and a TV interview while she was in Iowa. Her visit stirred much interest in the links between chemical contamination and cancer rates in Iowa.
- Program staff, [Audrey Tran Lam](#), and Center Director, [Kamyar Enshayan](#), were both featured on the Iowa Climate Podcast! Audrey was also featured on [Food Sleuth Radio](#) (an actual dream come true for her). In addition to these podcast appearances, program staff have been

Contaminated Without Consent
CANCER, AGRICULTURAL CHEMICALS & HUMAN RIGHTS

 presented by biologist & writer
SANDRA STEINGRABER, PhD

WEDNESDAY, OCT. 16
6 p.m. | **SABIN HALL 002**
LECTURE: 6 - 6:45 p.m. | Q&A: 6:45 - 7 p.m.
BOOK SIGNING: to follow | **FREE & OPEN TO THE PUBLIC!**

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interviewed by investigative journalists on the topics of agriculture in Iowa and the links to downstream human health impacts, upstream solutions to these issues, and helped connect these reporters to other experts in the field.

- Audrey assisted Dr. Elizabeth Freidman, Director of EPA Region 7's Pediatric Environmental Health Speciality Unit, prepare a presentation for a pediatric Grand Rounds in Iowa City, IA on October 18th, 2024. Dr. Friedman spoke on pesticides and public health, and how physicians, medical students, and residents can advocate against the Pesticide Immunity bills being introduced around the country.
- As a part of her ongoing work with the Cancer Free Economy Network and the Iowa Cancer Consortium, Audrey Tran Lam provided input for the creation of a toolkit to support the inclusion of prevention goals and strategies related to environmental risk factors for cancer in statewide comprehensive cancer control plans, as commissioned by the National Association of Chronic Disease Directors (NACDD). The completed toolkit was released in September 2024 and is designed as an online resource and written to support chronic disease programs and their cancer coalitions with useful scientific evidence resources, evidence-based intervention strategy examples, partnership engagement opportunities, and communication resources. [It can be found here.](#)
- Throughout the grant period, CEEE staff have acted as a resource to partners, connecting researchers with farmers, literature, and experts as needed.
- Finally, it is difficult to measure the impact the Farming for Public Health platform has had on the language that is used around pesticides, environment, health, and -- most relevantly as of late-- cancer in Iowa. However, language from presentations program staff have given to public health professionals over the past two years has been used (sometimes verbatim!) by highly recognized experts across Iowa. We are extremely gratified to see our messaging being used by influential experts in Iowa!



Conclusion

It is with indescribable gratitude that we submit this final report. As emphasized repeatedly in past reports to the Trust, we have never experienced a more open and trusting relationship from any other foundation. The flexibility, open communication, and understanding of the ever-evolving strategies that this work sometimes requires has allowed program staff to stay agile in novel approaches to uplift the evidence that things *must* change in the Midwest. The Center for Energy & Environmental Education's Environmental Health Program's capacity, influence, and recognition as a leader in these topics was built from the support of the Ceres Trust. We are exceedingly proud of the work that we have done in partnership with Ceres over the past six years, and we hope you share this pride.