**Ignite the Cancer Conversation:**
**Environmental Edition**

**Q & A**

**Questions for Dr. Catherine Zeman:**

- **Are Iowans at risk for E. coli epidemics from our water? (i.e. cholera, distemper)**

  Iowa's drinking water (public) from the perspective of various bacterial diseases (E. coli, cholera) mentioned is extremely safe as long as the drinking water facilities are well funded and in good working order. The viral disease mentioned (distemper) is a disease associated with dogs and other mammals. Humans can develop a serum reaction to the virus, but do not show the symptoms that other small mammals (like dogs) do. Short answer, yes we are safe, thanks to our DNR, our drinking water Technicians and Facilities and adequate funding to maintain said facilities. These organisms are always in the environment, we say they are endemic to the environment, therefore, if we should loose our infrastructure for any reason, we could experience problems. For example, individuals have contracted infectious E. coli 0157:H7 by ingesting raw water while swimming or tubing because it is endemic to the environment. Private well owners are on their own. They need to test their drinking water, and contract with a reliable well service to have the well maintained and shocked as needed (chlorine or peroxide shocks are used). Your County

  Health Department can provide suggestions for reliable well water services.

- **Do water softeners or things like lime buildup have effects on us in terms of cancer risk and or prevention?**

  Water softeners have not been associated with an increase risk for cancer, but individuals on a low-sodium diet for heart disease should not drink softened water. Hard water (lime) containing calcium and magnesium salts has not been associated with increased risk of cancer. Hard water may pose problems for individuals with calcium based kidney stones. Interestingly, hard water consumers receive a protective effect related to heart disease. This is not

completely understood, but it is believed that the extra calcium and magnesium consumption is beneficial to the heart muscle.

- **What is silica exposure? Where is it found?**

  Silica is the common crystalline form of silicon dioxide found in nature as quartz. It is part of the makeup of limestone rock and thus, cement. Construction workers and quarry workers are often exposed to high concentrations of the dust in their inhaled air. When it is inhaled in high concentration throughout the workday, silicosis of the lung can develop. These are fibrous lesions that form in the lung tissue due to the action of the immune system on the silica dust that deposits in the lung. Scars literally develop within the lung and the tissue can no longer exchange oxygen. Once the process initiates, for some people it can become a progressive response leading to massive scaring and loss of lung function. The individual develops Chronic Obstructive Pulmonary Disease, COPD and often, secondary enlargement of the heart along with pulmonary hypertension. Requiring workers to be trained to use personal protective gear (face masks) and making it the responsibility of the management to see that workers use these devices, saves lives and prevents debilitating disease in older workers. Although regulations are not popular, these save lives and save many thousands of dollars per worker in treatment costs should the condition develop.

- **If a municipality tests for high levels of one of the 87 chemicals tested for in water, what measures does the municipality take and will those measures protect against other chemicals not tested for?**

  It depends on the particular chemical, metal, or biological agent. In some instances, yes, in others no. For example, consider the case of nitrates. Once a municipality is found to consistently (not just an occasional spike) be in excess of nitrate MCLs (maximum allowable contaminant levels), they may have a number of options to meet the MCL. Some municipalities can blend their high nitrate water with water containing no or little nitrate. The blend then falls below the MCL and that is considered acceptable by DNR/EPA. If that is not possible, they will need to remove the nitrate through advanced filtration, ion exchange, or distillation (reverse osmosis, RO is often used). This is considered a tertiary or 3rdlevel of treatment that requires more energy and specialized filtration/treatment systems to achieve a water free of the contaminants. This produces a very high quality water, but the cost must be passed along to the

consumer. Many contaminants are removed by RO units; however, some are not removed (ie. Radioactive gases, solvents, trihalomethanes) and you must know your water, its contaminants, and their levels to get the best treatment approach.

- **Are the fish in IA waters safe to eat?**

  Generally, IA fish are safe for the occasional wild-caught meal. Find a fact sheet here via IA DNR: http://www.iowadnr.gov/Fishing/About-Fishing-inIowa. Young children and pregnant women should consider eating no more than one meal of wild caught fish per week (or tuna from the ocean), especially bottom feeding species (ie catfish) or predator species (ie walleye) because they tend to concentrate solvents and metals in their flesh. Some lakes are under a more stringent advisory and can be found at the website above. It is prudent to check the advisory source before choosing a fishing spot. Consider also that an individual who is critically ill or receiving chemotherapy or radiation treatment may want to follow the children's and pregnant women's guidelines until they have recovered completely.

**Questions for Dr. Kamyar Enshayan:**

- **You briefly mentioned the Des Moines Water Works regarding nitrates from upstream counties... a recent U of MN study shows fertilizers form lawns and pets are dominant sources, can you comment?**

  Some lawn fertilizers and pesticides do end up in urban streams, that's for sure. And that is preventable. The scale of corn farming and therefore fertilizer use in IA and the Midwest is 1000s of time larger than anything happening in urban areas, there is simply no comparison. The nitrate you see in people's wells and Des Moines drinking water is primarily form corn fertilizer.

- **Are there any study about cancer cluster among farmers in Iowa? If so, is there an issue?**

  Dr. Brandi Jannsen at U of I would know all about such studies, as she runs a Center at U of I all about agricultural health studies among farmers and others.

  Contact: brandi-jannsen@uiowa.edu

- **Is there a website with the research stats related to cancer and pesticides?**

  There are so many studies out there... we have complied some that related to household and turf pesticides, and they will soon be at

  www.goodneighboriowa.org

- **Can farmers feed the world without pesticides? Yields go down. Land value go up. Farmers lose their land. What is the solution.**

  Well, I do not THE solution, but here is what is known from evidence and years of agronomy research: A) Long term studies in at ISU have shown that a diverse crop rotation i.e. 3-4 year crop rotation of corn bean, small grain and legumes uses 88% less herbicides, 90% less synthetic fertilizer, 50% less energy, AND the corn & bean yields ARE HIGHER. Prof. Matt Liebman and colleagues have done the work.

  Contact: mliebman@iastate.edu

  In addition, studies from around the world have shown heavy reliance on agrichemicals have been only trouble, and farms that use the least but are managed based on ecological principles yield more.

  Of course the trick here is that ecological farming is not subsidized by federal government and global corporations who set the federal farm policy. They simply want to sell more seed, more chemicals, more grain for now. Feeding the world is not the goal. Feeding ethanol plant is and right now nearly 50% or Iowa's corn feed ethanol plants... Way beyond what we are trying to do to encourage people not to spray their lawns!

- **What arguments can we use to help educate those who won't stop spraying? What can people do to have a basic healthy lawn. What beneficial plants can people use to improve their grass?**

  I would say general evidence of harm, which will be at

  http://goodneighboriowa.org very soon. And we will have basic practice of lawn care in there as well.

- **Where is a good place to start to make changes in any pollution problem, i.e. pesticides with private groups and individuals or contact regulators?**

  In the case of lawn pesticides, it is totally up to a school or park manager to manage the grounds with or without pesticides. "Washington" did not make us to this, it is entirely our own doing. So, we really need people approaching school officials and park officials and start the conversations and learn the current practices and help them make the healthy decisions.

  We are not starting with private entities, we are starting with people who are publicly accountable and are managing public areas, where all of us and kids are: schools, parks, and to some extent childcare centers, churches, and other large areas of lawns.

  Yes, the larger issue is that we have a very weak chemical regulatory process, which allows many harmful chemicals to stay on the market because of financial influence of their manufacturers on elected officials.

**<u>Questions for Gail Orcutt:</u>**

- **If someone discovers that they have been living with a high radon exposure, what additional measures can they take to prevent cancer (outside of removing the radon threat)? Or has the "damage already been done" in their case?**

  I am not an expert to really answer this, but as I understand it, simply living with a high level of radon does not mean you will definitely get lung damage. It means your risk for lung damage has been increased. Personally, after mitigating the house, I would be sure to mention it to my family physician and stay vigilant. That said, I certainly wouldn't live in constant fear that "the damage had already been done." Researchers are still exploring why some people get lung cancer from radon while others do not.

- **What should we ask our legislators to do about radon?**

  1. Ask them to require our schools to have a plan for testing and mitigating radon. Schools should be tested at a minimum of every five years. (Maybe if schools are required to test, parents will understand that they also need to test their homes.)

2. Ask them to require a certified radon test to be conducted within two years of the sale of a residential home.
3. Landlords should be required to test any residential rental properties every two years, mitigate of necessary, and make the results available to renters.
4. Ask lawmakers to offer a tax credit to home owners (and landlords) who have their homes mitigated by a certified, licensed mitigator; $500 or 1/3 the total cost - whichever is lower.

- **Do you know if Iowa intends to require by statute a radon test before a home ownership changes? (Required by California and Nevada.)**

  Actually there are no states that require this now. Montgomery County in Massachusetts is the only place where it is currently required. I live in hope of this being policy in Iowa. According to the EPA, the entire state is Zone 1. This means all county averages are above 4.0 pCi/L and are urged to mitigate. PLEASE contact your state senator and representative and urge them to require a certified radon test before the closing of a residential home sale. Our government is supposed to protect us, and too many Iowans still don't even know about radon and the risk involved with living with unacceptable levels.