

Indoor Air Quality Tools for Schools
5th Annual National Symposium
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Ephrata High School Presentation
Special Achievement Award Winner for Student Involvement

Presenter: Chip Halverson, Ephrata High School Teacher

Thank you Tracy and congratulations to fellow award winners John and Shelley. My name is Chip Halverson and I teach in Ephrata, Washington. It's good to be back in the company of so many educators, administrators, school custodial staff, school board members, parents and designated officials who are concerned about the health of our nation's children.

This is the third EPA Tools for Schools symposium I've attended and it's extra special since I've brought some students with me this year. Or perhaps I should say they have brought me back to D.C.? As a result of their research, journalism, and activism on environmental health issues, we are here to share with you our experience and the benefits to students and our school through their participation in a project focused on Indoor Air Quality.

First, let me tell you a little about our community of Ephrata, so you can have a sense of where we come from and our history. Ephrata, with a population of approximately 7,000, is located in central Washington. Ephrata is the county seat of Grant County and besides many state and federal agencies; the primary employers are the Public Utility District and the school district. Agriculture is at the base of our economy. In fact both of my students speaking here today come from local farm families. Ephrata's growth in population can be traced back to the New Deal Era and the dams that were built. Grand Coulee Dam is not far from Ephrata and once irrigation water was brought to the area in the 50's, the little dust town saw immediate growth. As you can imagine, our schools are central to the culture of our community.

Last spring, several of my students participated in the Youth Network for Healthy Communities (YNHC) project. The statewide project is sponsored by a grant through the National Institute of Environmental Health Sciences Center for Ecogenetics and Environmental Health in collaboration with the University of Washington, Department of Environmental and Occupational Health Sciences. The goal of the YNHC project is to train middle and high school teachers to help students research environmental health issues in their local communities, and then share their findings with peers and professionals. Past projects can be viewed at the YNHC homepage. Projects range from local water contamination, the hazards of pesticides and heavy metals to cancer clusters and tobacco use by adolescents. All projects are selected by students and relate to an issue that is important to their local community.

I first participated with this project in 2000 and was invited back last year for a second time. Teachers from any discipline can be invited to have their classes participate in the project. The students involved choose and research an environmental health issue in their community. Four to six weeks are allowed to complete the research and make ready a presentation of the findings.

Student groups then present their research results during a videoconference attended by the other participating classes and a panel of university scientists and other environmental health professionals.

Students from Ephrata chose indoor air quality (IAQ) as their environmental health issue, focusing on fiberglass as the specific IAQ problem they found in their school along with an overview of other IAQ problems.

The impetus for the project came after a teacher in our school discovered large amounts of fiberglass blowing through our ventilation system and into her classroom and throughout the building. Further research by the school district revealed the source of fiberglass was from deteriorating insulation used to attenuate sound in the HVAC system. Another source of fiberglass was deteriorating ceiling tiles disturbed as a result of an open plenum design coupled with an unbalanced system that, as it vibrated, caused tiles to shed fibers. As a result of my experience with Indoor Air Quality at the time, I was assigned by the

Superintendent of the district to develop an Indoor Environmental Quality Task Force and to work with the involved parties to see that proper remediation was completed in a timely fashion. The remediation continues to this day and we will share some of its success with you and how these students were involved.

These students interviewed teachers, administrators, and the head of maintenance and surveyed their peers. Along with conducting research and practicing their presentation, they developed technology skills and presented their findings by videoconference to several other schools across the state of Washington.

A primary resource for their project came from the EPA's *Indoor Air Quality Tools for Schools* Kit. Other resources included the Washington Education Association and various publications and information from the National Education Association-Health Information Network and the Healthy Schools Network Web site. The project was influenced the school newspaper to run a story about the Indoor Air Quality issues. As a result, the newspaper was recently recognized nationally for its outstanding journalism, receiving a gold medal award from Columbia University.

The student group is now taking steps to form a school environmental health club to monitor the IAQ problem and to create more awareness about environmental health issues.

I thought as in past years that my students would present their research, receive their nice participation certificate from the University of Washington and we would continue on with our social studies curriculum. In fact, I assured the Superintendent of our school district that this would be over in a few weeks, shortly after he received a phone call from my students for an interview. I assured him that the students just wanted to hear his perspective on the situation, learn what was being done in terms of remediation, and discuss the policies and procedures the district had in place to promote good Indoor Air Quality. With the support of the administration my students proceeded with their project.

As with any environmental health topic, the primary goal of the teacher is to expose students to something meaningful. Opportunities like this help move our students' learning beyond the classroom walls, an experience that is critical as they gather skills to survive in their environment.

As a result of this project and the efforts of many, our school district has reinstated a full-time, certified HVAC specialist to monitor our school's indoor environmental health. Ironically, that very person was laid off several years before due to economic reasons (perhaps when his expertise was needed most). The district is also replacing some of the deteriorating and cracked fiberglass ceiling tiles and is considering replacing all ceiling tiles with non-fiberglass tiles.

The school is paying more attention to air quality now, and the awareness is greater. Our situation has been shared with many other school districts in our state. In fact, our experience has helped solve some similar situations where fiberglass was the culprit and not mold or misused chemicals as previously thought.

These students are actively pursuing future plans and projects (besides the possibility of an Environmental Health Club), which include a student Web page devoted to environmental health issues affecting students, a national environmental health essay contest, and, of course, follow up journalism on the issue. Recently, both Mary and Carly were selected to serve as student representatives for all Washington students on the State Board of Health School Environmental Health Advisory Committee. They will be working with many other stakeholders in education to review practices and policies and make recommendations, as needed. They may also offer public testimony during the next legislative session as it relates to school environmental health. I'm encouraged to see these students continue to pursue this topic on their own.

Before I introduce these students, I want to publicly thank all of the students involved in this project for the work they have done as it relates to indoor air quality in our school, state, and nation. Professionally they have been an inspiration to me as an educator and a constant reminder of why we all need to work together on Indoor Air Quality issues. As a parent, I'd like to think their

contributions will make schools healthier for my three young children. Often, as an educator, we teach the plight of the likes of Gandhi, Dr. King, or Caesar Chavez while students are both inspired and disturbed by the injustice of that time. Seldom do they get to examine a relevant topic that is so close to home for them in an environment where they spend a third of their waking hours.

Carly LaPlant, a freshman at the time, was one of the project leaders who oversaw the interviews and the logistics of the presentation. She is an artist and contributed this talent to some of the visuals you see in the slides. Carly is very intuitive and was good at analyzing the dynamics of the issue and all the parties involved. Mary Senn, equally gifted, was a sophomore at the time and was instrumental in covering the story and project as a journalist for our nationally recognized newspaper "The Eye of the Tiger". I want to make sure I don't get in trouble with either of them, so I'm going to point out that they are now a sophomore and junior respectively.

I should also add that Mary who is now the editor-in-chief of our school newspaper asked me something I still can't completely answer today, several months before the project was even discussed. She said, "Mr. Halverson why can't we hang posters from the ceiling"? I told her it's because all teachers have recently received a memo indicating that tacks and paper clips can disturb the fiberglass in the tiles and can cause several health problems for students and staff. She asked me, "Why do they use fiberglass in ceiling tiles in the first place"? At the time I simply replied, "That's a really good question Mary," as I didn't have a good answer to offer her at the time. Instead, I asked her why she thought they used fiberglass tiles. Of course, Mary came up with some possible answers and just shook her head as if none of them could be justified.

Along with Carly and Mary, three other students from the group will be joining us later this evening, as they all will be recognized during the award ceremony. I encourage you to meet them.

We are also fortunate to have a member from our school board attending the symposium, along with her daughter who also participated in the student project.

Carly and Mary will now share their experiences, what they have learned from this project, and why it is important that students participate in Indoor Air Quality Management.

Please help me welcome our second student speaker, Ms. Carly LaPlant.

YNHC Website:

<http://whs.wsd.wednet.edu/Faculty/Young/YNHC/ynhchome.htm>

Healthy Schools Network Website: <http://www.healthyschools.org>

EPA Website: <http://www.epa.gov/iaq/schools>

Washington Education Association: <http://www.washingtonea.org>

National Education Association-Health Information Network: <http://www.nea.org>

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Presenter: Carly La Plant, Ephrata High School Sophomore

Thank you Mr. Halverson.

When our project started out being a classroom assignment, I didn't realize it would turn into so much more. During the course of the project, we became familiar with the issues relating to school air quality, beginning right in our own learning environment. Interviews were scheduled with the Superintendent, the head of maintenance, and with a school staff member. The teacher we interviewed shared her personal story and how she had been one of the first to discover the problem with our ventilation system. This discovery led to the knowledge about the high levels of glass fibers in the air. Fortunately, the complication had been found, but it was too late for this teacher's health. Difficulties breathing, irregular heartbeat, and burning facial skin are just some of the things she experienced, and goes through even now. She is currently teaching in an Annex building away from the main building in hopes that her condition will improve. But it is uncertain if she will ever be the same.

We continued our research by taking a look at EPA's *IAQ Tools for Schools* Kit that was used to investigate our school's air problem. Through diagrams, we were able to understand where our HVAC system had gone wrong. The kit also provided us with information on asthma triggers that are commonly found in schools such, as animal and dust allergens, mold, and second hand smoke exposure. Because the airways of children are smaller, a pollutant that produces only slight irritation in an adult, will narrow the airways of a child, making children far more vulnerable to toxins than adults. Through further research, my group became familiar with websites like www.healthyschools.org which provided us with case studies from schools around the nation.

The truth is, our school isn't the only one to experience poor air quality. We discovered in our research that, each day, one in five Americans occupies a school building. 19,000 of these buildings suffer from some type of air quality problem. A place that should seem safe, really isn't when you consider these statistics. I know it opened my eyes, wondering where the codes of standards

were that should be preventing this high number of toxic schools. Should the EPA staff educate schools and their communities about children's special vulnerabilities and could strong encouragement motivate system-wide reforms?

What can be done? To start off, we need participation. Sometimes it is easier to stay uninformed because the amount of money that it takes to do any kind of repairing is overwhelming. But, what we've got to understand it that there are two kinds of costs: the financial cost and the human cost. In the long run, when it comes down to the health of our teachers and students, which is more important? We often take for granted our good health until it is lost, and then it's too late. This is the reason that it is essential for students to be aware of the air quality condition in their school. Get them involved by brainstorming ideas. An Environmental Health Club and a student website devoted to healthy schools are a few of the activities my group has been exploring and hope to pursue in the future. It is important that students realize the effect that they have through involvement. From awareness, we can create proactive decisions that will contribute to healthier schools around the country. I'm convinced our voices and involvement won't go unnoticed.

And now Mary will present her view from a journalistic perspective.

Presenter: Mary Senn, Ephrata High School Junior

When I first signed up to write an article updating the air quality situation at my school, I never imagined that I could make such a difference. As a young child, you are always told that you can change the world, but it's not until you actually accomplish something noticeable, that you realize you've made a difference. It's the subjects you know nothing about that suddenly grab hold of you and become a huge part of your life. That's what the air quality at my school and around the nation is now for me.

When I started researching for my article I realized that air quality was a bigger problem at my school than I had thought. Sitting in a classroom, underneath a vent blowing fiberglass particles into my lungs wasn't something I had worried about. Chemistry tests and journalism deadlines were more my speed. But after reading reports of the air and tape tests conducted at my school over the past year, I understood that this was something I needed to be involved in as a journalist. After interviewing a teacher, suffering from chronic symptoms due to fiberglass exposure, I started to worry about my peers', as well as my own, health. My mother has the breast cancer gene and developed breast cancer five years ago. I have high enough risks without having to worry about whether the air I'm breathing at school is going to increase my chances of getting cancer in the future. This is a serious problem that needs to be dealt with at the national level. I have seen first-hand the effects fiberglass can have on someone's health, and I don't want to see it happen to anyone else. There needs to be stringent standards. Making guidelines that are vague and allow for multiple interpretations won't help anyone. It's like saying that children and school staff are expendable. Even if only a small population is affected, those people are important. If I went to my counselor and told them that I was being harassed by a student, do you think they would tell me that since I'm in the minority of students having that experience that I don't count? That somehow I don't matter as much. Of course not. It's the same with indoor air quality. We can't sit back and allow students and staff to be exposed to chemicals and air particulates that could potentially harm

them in the future. And some people are being affected right now. Standards are a key to allowing children to remain healthy while attending public school. One of the best ways to achieve this goal is to create indoor air quality teams comprised of administrators, teachers, students, maintenance, personnel, and parents, who create meaningful standards that can be mandated across the nation as part of the No Child Left Behind act. Evidence suggests that there's a connection between academic achievement and environment, so this problem is definitely something affecting the youth of today. This is not something that should be delayed. It's a problem. We know it's a problem, or we wouldn't be here today. It needs to be dealt with, and the time to act is now.

I have learned a lot from being involved in indoor air quality. I have found that as a journalist, I have the responsibility to inform others of important subjects that are going on around them. Although others may not see it as relevant, I know that this is something citizens need to know about. I have gained a better understanding of health issues at my school and around the country, and strive to ensure that the problems are fixed.

But I also feel it's crucial that students and not just adults are involved and know about air quality at their school. Since we are the ones being affected adversely, shouldn't we be involved in managing the problem. An idea for your school is to have an environmental health club that could allow students to get involved and help with alleviating the problem. Before investigating the air at my school, I had no idea that a problem existed. I didn't know that my health was in jeopardy. Part of the problem is secrecy within the school, compounded by our society's litigious nature. Possible health problems shouldn't be something hidden from the affected population. Instead there should be awareness in schools, and parents and students should be involved. You'd be surprised how many innovative ideas you can get when teenagers get together. Not to mention the fastest paced conversation you've ever heard. Students want to make a difference, so get them involved in any way you can.

From a journalist's stand-point, I found I was able to discover more than I might have as just a student. The press has the right and duty to inform the

public of subjects that are important. Going into an interview with the superintendent and head of maintenance, I was nervous, but not weak. I knew what I wanted to ask them and stayed strong until I got the answers I needed. My involvement in the process of improving the air at my school makes me feel that I made a difference. If you're looking for ideas on how to involve students at your school, try getting them interested in journalism. It definitely makes for a great story. Ask them for ideas or help, and maybe, just maybe, they'll surprise you with something you hadn't thought of.