



# University of Pittsburgh

*Graduate School of Public Health  
Department of Environmental and Occupational Health  
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May 19, 2010

Law Office of Gary A. Abraham  
170 North Second Street  
Allegheny, NY 14706

Re; Evaluation of Co Physics Report Regarding Suitability of Cuttings Waste Disposal at Chemung County Landfill

Dear Mr. Abraham:

You have asked me to review the April 6, 2010 Co-Physics report regarding the radionuclide content and environmental public health consequences of disposal of cuttings and associated waste from gas drilling sites, which are being landfilled or are slated for landfill at Chemung County Landfill in the State of New York. First let me state clearly that the report is not specific regarding the waste generated being from the Marcellus Shale formation itself. Stated another way, while the report contains language stating that the operator gave the Co-Physics sampling team data on the depth and lateral distance from the well head; there is absolutely no data in the report to indicate the lateral distance within the Marcellus Shale layer itself that samples were taken from or for which portable gamma measurements were taken. As a result I can only conclude that the radionuclide levels reported are from comingled waste and not waste from any particular horizontal distance within the Marcellus Shale layer itself. Additionally, the waste is diluted with water and additives used in the drilling process. The samples collected are thus not

scientifically representative of waste that originates from the horizontal portion of a Marcellus Shale drilling operation, which is known to be enriched in various naturally occurring radionuclides in the uranium-238 decay chain.

My experience observing Marcellus Shale drilling operations as well as extensive experience in human and ecological exposure assessment and fate and transport of radionuclides allows me to comment on this matter as an expert witness. I would be most interested in providing testimony regarding my comments and further analysis in any upcoming proceedings relative to this matter. I have over 30 years experience in occupational-environmental health, and received my initial training in Public and Occupational Health in the Department of Occupational Health at the University of Pittsburgh's, Graduate School of Public Health (GSPH) on a fellowship from the U.S. National Institute for Occupational Safety and Health (NIOSH) where I also received both a Master's and Doctorate degree in Public Health.

I am Principal Investigator and Director of the Center for Healthy Environments and Communities (CHEC) at the GSPH. CHEC has multiple projects related to Marcellus Shale Gas Extraction (MSGE) relating to cation/anion characterization of wastes including produced and flowback water and also documentation of community and behavioral impacts resulting from field development. As a result of these projects I have had the opportunity to observe "on site" MSGE activities at a PA Game Commission site located north and east of State College PA and also observe numerous MSGE activities as an "off-site" observer in an area currently undergoing intensive operations near Hickory PA in Washington County.

My experience in radionuclide contamination is highlighted by being a co-investigator on the Consortium for Risk Evaluation with Stakeholder Involvement (CRESP) II project

commissioned by the Department of Energy, National Nuclear Security Agency. In this project I was project manager for the Amchitka Independent Assessment, a project aimed at determining baseline radionuclide contamination in biota and fresh and marine waters from underground thermonuclear explosions performed in the 1960's and early 70's. I am a named co-author of the report to the DOE/NNSA and also a co-author and first author on numerous peer-reviewed scientific articles relative to this study including radionuclide safety and health. Additionally, in my role as co-investigator on this study, I was part of a team giving advice and technical support to the DOE concerning Risk-Based End State visions for radionuclide and toxic organic contaminant clean-up of former Manhattan project sites throughout the United States; my attached CV also contains peer reviewed scientific articles on this subject. Furthermore as an Assistant Professor in the Department of Environmental and Occupational Health I teach or lecture in numerous courses pertaining to radionuclide issues—these include Environmental and Occupational Exposure Assessment; Fate and Transport of Environmental Contaminants; Environmental Contaminant Risk Assessment; and Environmental Health Preparedness. I was elected to the Omicron Chapter, Delta Omega Honor Society, National Public Health Honor Society in 2006 and recently received the endowed, Dr James Craig Award for Teaching Excellence at GSPH for the year 2008-2009.

The conclusions that are offered below in bulleted format are thus informed by experience, technical training and scientific work done both on MSGE activities and radionuclide contamination safety and health work.

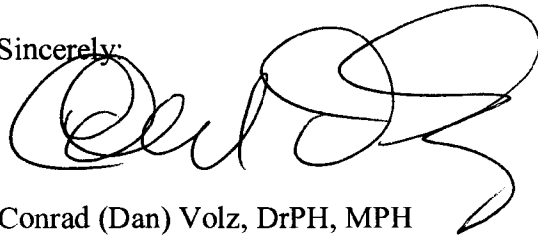
- As outlined in the first paragraph of this letter the report given by Co Physics does not give enough locational information regarding hand held or subsequent in-depth gamma spectroscopy to determine if in fact the reported results are from primarily the Marcellus

Shale layer. Although depths were recorded and accompany findings of activity there is no indication in the report as to the interval in the Marcellus Shale layer itself – specifically the horizontal interval that was sampled. Without separating out a specific interval within the shale layer itself that is a known lateral distance there is no way to evaluate the Co Physics findings relative to cuttings and waste coming from the Marcellus Shale layer itself. From the information I reviewed it is entirely possible that very little of the Marcellus Shale layer itself was included in those samples labeled “Marcellus”. These could have come from vertical drilling into the shale layer and thus would only represent a fraction of the Marcellus Shale waste itself with significant amounts of comingled waste from the general drilling procedure. If this were the case than the samples taken are not representative of the Marcellus Shale layer itself- however there is not enough information provided in the report to make any conclusions relative to exactly what matter was sampled and is not helpful in my view in establishing risk based exposure and therefore health outcomes for workers or the public regarding radionuclide concentrations and activity in the Marcellus Shale portion of the drill waste.

- The Co Physics report focused entirely on gamma analysis and gamma spectroscopy for determining concentrations of Radium 226, Thorium-232 and Potassium-40. While I in no way doubt the accuracy of these measurements and agree that the laboratory is using the appropriate standards for instrument calibration; I am very concerned that radon gas was not measured in a laboratory setting from these drilling waste samples. Radon, a noble gas with no stable isotopes, is directly formed by alpha decay of Radium-226 and radon itself decays by alpha elimination to Polonium-218. Since the fate and transport characteristics of radon (it being a gas) both within the Marcellus Shale formation and in

geological structures nearby differs from these other radionuclides and the fact that it decays by alpha particle formation (not gamma release) a more complete study to inform the decision to accept this waste in the listed landfill would in my opinion include an assessment of radon activity of the cuttings in a closed volume, under equilibrium conditions. Radon has been attributed to causing lung cancer in occupational cohorts and risk based calculations based on those studies shows it to be an important contributor to lung cancer risk to the public in general.

Sincerely,



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Graduate School of Public Health: <http://www.pitt.edu/~cdv5/>  
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Director, Environmental Health Risk Assessment Certificate Program  
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# **Conrad (Dan) Volz, DrPH, MPH**

Assistant Professor, GSPH

Director & Principal Investigator, CHEC

Director, Environmental Health Risk Assessment Certificate Program, GSPH

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## **Biography (Summary)**

Dr. Volz is an Assistant Professor of Environmental & Occupational Health (EOH) at the Graduate School of Public Health (GSPH), Director for the GSPH Environmental Health Risk Assessment Certificate Program & Director for the Center for Healthy Environments & Communities (CHEC) at GSPH, University of Pittsburgh. He also has a secondary appointment as an Assistant Professor in the School of Law & is a technical consultant to the University of Pittsburgh Environmental Law Clinic. Dr Volz's research interests are primarily focused on how industrial & municipal contaminants, including toxic heavy metals & elements (Hg, As, Se etc), & endocrine disrupting chemicals-particularly those that are estrogenic, move through the air, water, soil & groundwater to reach people & how to block this movement. He is a specialist in the fields of human & ecological receptor exposure assessment & fate & transport of contaminants through environmental media & teaches these classes at the GSPH.

Dr. Volz was the Principal Investigator for the 2005 Three Rivers Fish Consumption Project, which has found significantly elevated MCF-7 human breast cancer cell proliferation from application of extracts of southwestern PA area channel catfish. The MCF-7 cell proliferation assay is exquisitely sensitive to estrogenic chemicals including pharmaceutical estrogens & xenoestrogens. In this study MCF-7 proliferation indexes of channel catfish extract were highest in river reaches having the highest density per mile of combined & sanitary sewer overflows. This project has also discovered significantly elevated levels of heavy metals & elements, including selenium & mercury, in fish in the Allegheny River & even Store-Bought Fish.

He was Director of the 2004 Amchitka Expedition to determine radionuclide concentrations in marine biota from underground nuclear test shots fired in the Aleutian Islands. Dr. Volz is the PI for the Allegheny River Stewardship Project (ARSP) of 2008, a Heinz Endowment, & Alle-Kiski Health Foundation funded, community based participatory environmental research & outreach program that is testing several hypotheses concerning identification of sources of pollution by sampling of fish, sediment & water in different locations of the Allegheny River.

Dr. Volz has over 30 years experience in occupational-environmental health; he received his initial training in Public & Occupational Health in the Department of Occupational Health at GSPH on a fellowship from the U.S. National Institute for Occupational Safety & Health (NIOSH). Dr. Volz holds an MPH & Doctor of Public Health degree from GSPH. After holding progressively responsible posts in private industry (National Steel Corporation), government (California OSHA Consultation Service) & non-

governmental agencies (Western Institute for Occupational & Environmental Health Sciences, Berkeley California), Dr. Volz started an environmental health consulting company in 1984. He has worked in 24 different countries on 5 continents performing radionuclide transport studies, occupational / environmental contaminant/toxin exposure pathway analysis, exposure assessments, environmental risk assessments & engineer & policymaker training. He joined the faculty of EOH-GSPH in May of 2004. Dr. Volz was elected to the Omicron Chapter, Delta Omega Honor Society, National Public Health Honor Society in 2006. He recently received the endowed, Dr. James L. Craig Award for Teaching Excellence at GSPH for year 2008-2009.

### Education

- 1975** University of Pittsburgh  
B.S. Biochemistry & Biophysics  
Pittsburgh, PA  
College of Arts & Sciences
- 1976** University of Pittsburgh  
Life Science Studies, Neurosciences  
Pittsburgh, PA  
Graduate Research Faculty of Arts & Assistant Sciences
- 1977** University of Pittsburgh  
M.S. Hyg. Industrial Hygiene  
Pittsburgh, PA  
Graduate School of Public Health  
National Institute for Occupational Safety & Health Fellowship
- 1997** University of Pittsburgh  
MPH, Master of Public Health  
Pittsburgh, PA  
Graduate School of Public Health
- 2002** University of Pittsburgh  
DrPH, Doctor of Public Health  
Pittsburgh, PA  
Graduate School of Public Health

### Appointments & Positions

- 1975-76** Life Sciences Program, Neurosciences *Teaching Assistant,*  
Faculty of Arts & Sciences *Graduate Student*

	University of Pittsburgh Pittsburgh, PA	<i>Researcher</i>
<b>1976-78</b>	Industrial Health Foundation Pittsburgh, PA	<i>Industrial Hygiene Researcher</i>
<b>1977-78</b>	National Institute for Occupational Safety & Health Graduate School of Public Health Occupational Health Sciences Department University of Pittsburgh Pittsburgh, PA	<i>Fellow</i>
<b>1978-79</b>	National Steel Corporation Pittsburgh, PA	<i>Corporate Industrial Hygienist</i>
<b>1979-80</b>	California Occupational Safety & Health Administration San Francisco, CA	<i>Consultant</i>
<b>1980-82</b>	Western Institute for Occupational/ Environmental Health Berkeley, CA -Carcinogen/Mutagen/Teratogen Demonstration Project Grantee, National Cancer Institute (NCI); EPA; US Department of Labor, Occupational Safety & Health Administration ( <i>New Directions Grantee</i> )	<i>Technical Consultant</i>
" "	W.I.O.E.S. Occupational/Environmental Cancer Resource Center - Served as technical expert on industrial hygiene, & carcinogen & toxic substance control procedures for project serving industry, unions, citizens & government. Supported by the DHHS, NIH, NCI. Work involved all facets of toxic substance control. Work also included consultations regarding atomic veterans march to ground zero in the 1950's.	
" "	Shipyards Health Education Programs (SHEP) - Responsible for giving technical assistance to shipyard unions & management on occupational/ environmental health evaluation & control for general shipbuilding, including nuclear operations. Developed a slide show on occupational health engineering control techniques for shipyards. Work sites included all in-country U.S. Navy shipbuilding & maintenance sites with significant time spent at Pearl Harbor, Authored "Radiation & Health, A Guide for Radiation	



Workers”.

- 1982-92** Volz Environmental Services, Inc. (Volz) *Founder, President, & CEO*  
Volz Occupational & Environmental Health Consulting & Risk Management Corporation located at the University of Pittsburgh Applied Research Center (UPARC), Pittsburgh, PA.  
- Volz Environmental provided Environmental Health, Occupational Health & Safety, Asbestos, Indoor Air Quality, Hazardous Waste Management, & Environmental Assessment/Impact & Risk consulting services to State, County, & Municipal governments - worldwide.
- " " Environmental Health & Safety *Consultant*  
Bruin Lagoon Superfund Clean-up Site Provided all occupational safety & health & environmental health services on clean-up of the EPA's 3rd most hazardous superfund site.  
- Work included general environmental monitoring for benzene, toluene, xylene, chlorinated hydrocarbons & particulate sampling as well as specialty occupational & environmental real time sampling using portable OVM & gas chromatographs. Work also included interface with U.S. Army Corps of Engineers, U.S. Coast Guard & EPA & state & county officials regarding emergency procedures for gas, vapor &/or particulate releases & explosives & fire protection. Interface with county officials included emergency drills & actual evacuation due to vapor release.
- " " The Worldwide Asbestos Survey of the Department of Defense Dependent Schools & Selected Base. *Principal*  
- Responsibilities included development & delivery of professional training courses for foreign architects & engineers (Frankfurt, Germany & Seoul, South Korea) & a general informational program for administrators & maintenance workers, surveying all DOD bases for asbestos, laboratory analysis of all bulk & air samples, preparation of omnibus abatement specifications & oversight & air monitoring of all asbestos abatement. Services were delivered simultaneously on four continents & included 24 countries; work supervised by U.S. Army Corps of Engineers, Middle East, Africa Operations Group.
- 1992-97** Volz Environmental Services, Inc. *Board of Directors, Consultant*

- 1997-2004** International Public Health & Environmental Health *Consultant*
- Structural, Implementation & Intermediate & Ultimate Outcome Evaluation of the American Cancer Society's, Teen Fresh Start Tobacco Cessation Program. *Principal Investigator*
- Work included development of research questions & questionnaire pilot testing, sampling design, data analysis, report preparation & recommendations regarding program nationalization.
- 2003-04** Community Collaboration in Public Health, A Workshop to Improve Health Promotion & Disease Prevention in Sakhalin-Sakhalin Island, The Russian Federation *Principal*
- Sponsored by the U.S. Cultural Affairs, Office of Citizen Exchanges & Magee Department of State, Bureau of Educational & Womancare International. Work included development of environmental health priority setting models, community environmental health assessments & the development of curriculum focused on implementing environmental health programs with measurable outcomes.
- 2004** Consortium for Risk Assessment with Stakeholder Participation (CRESP) Amchitka Science Plan *Project Manager*
- Initial responsibilities included all logistical preparations, including general & radiation safety & health issues for a project to determine if there is radionuclide leakage from Amchitka Island in the Aleutian Chain into the marine environment. Amchitka is the site of 3 underground nuclear tests.
- On-island work included biota sampling, water & sediment sampling, oceanography, salinity gradient measurement, island movement studies & magnetotellurics. On-going work includes development of laboratory OA/OC procedures for Actinide & Gamma Emitter Analysis, statistical analysis & final report. Work done via a grant from the Department of Energy, National Nuclear Security Agency (NNSA), Stakeholders include DOE, NNSA, the US Fish & Wildlife Service, the Aleut/Pribiloff Island Association (APIA) & the Alaska Department of Environmental Protection.
- 2004-07** Department of Environmental & Occupational Health *Visiting Assistant Professor of Public Health Practice*  
University of Pittsburgh  
Graduate School of Public Health  
Pittsburgh, PA

<b>2005-07</b>	Center for Healthy Environments & Communities University of Pittsburgh Graduate School of Public Health Pittsburgh, PA	<i>Scientific Director</i>
<b>2005-08</b>	Center for Environmental Oncology University of Pittsburgh Cancer Institute Pittsburgh, PA	<i>Co-Director, Environmental Assessment &amp; Control</i>
<b>2007- Present</b>	Department of Environmental & Occupational Health University of Pittsburgh Graduate School of Public Health Pittsburgh, PA	<i>Assistant Professor of Public Health Practice</i>
<b>2008- Present</b>	Center for Healthy Environments & Communities University of Pittsburgh Graduate School of Public Health Pittsburgh, PA	<i>Director</i>
<b>2008- Present</b>	Environmental Health Risk Assessment Department of Environmental & Occupational Health Graduate School of Public Health Pittsburgh, PA	<i>Director</i>
<b>2008- Present</b>	University of Pittsburgh School of Law	<i>Assistant Professor of Law (Secondary Appointment)</i>

**Committees / Memberships**

**Advisory Boards**

- Healthy Homes Resource, Pittsburgh, PA – Environmental Asthma Mitigation Agency, Advisor
- University of Pittsburgh, School of Law, Journal of Environmental & Public Health Law & Policy, Faculty Advisor
- Heinz School - Department of Engineering & Public Policy, Carnegie Mellon University, Capstone Project/Faculty Advisor – Measurement of Environmental Justice Issues in Allegheny County
- The Collaborative on Health & the Environment PA (CHE–Penn), Scientific Advisory Chair

- Institute of Politics, University of Pittsburgh, Environmental / Water Quality Committee, Committee Member
- “Development & Effect Water Quality & Flood Risk” Center for Public Health Preparedness, Graduate School of Public Health, Flood Symposium Planning Committee, Primary Prevention Specialist

### Committees

<b>Dates</b>	<b>Organization</b>
<b>2010</b>	Witness, University of Pittsburgh School of Law, Environmental Law Clinic, Mock trial
<b>2008</b>	Environmental Juror, The Heinz Awards
<b>2008</b>	Committee Member, Allegheny-Kiski Health Foundation, Act 48 Seminar Planning
<b>2004-06</b>	Conference Contributor, Community Campus Partnerships for Health (CCPH), Member
<b>2004-05</b>	June-September, Representative, Graduate School of Public Health (GSPH), University of Pittsburgh, American Schools of Public Health (ASPH), Environmental Section
<b>2005</b>	GSPH Representative, PA Consortium for Interdisciplinary Environmental Policy (PCIEP)
<b>2005</b>	Deans Day Committee, GSPH, University of Pittsburgh, Committee Member
<b>2005</b>	Committee Member, Disaster Network of Networks, GSPH, University of Pittsburgh, WHO Collaboration Center, Supercourse
<b>2005</b>	Planning Committee Member for the Ivan Flood Symposium, Practice, GSPH, University of Pittsburgh
<b>2005</b>	Advisory Board Water Quality Management, Allegheny County Health Department (ACHD), Environmental Capacity Building Workshop / CDC
<b>2005</b>	Conference Organizer & Participant, European Union & North American Conference on Indoor Air Quality, GSPH & Graduate School of Public & International Affairs (GSPIA), University of Pittsburgh
<b>2004</b>	Conference Planning Committee / Organizer, PA Asthma Summit / CDC / PADOH. <a href="#">PDF»</a>

### Memberships in Professional & Scientific Societies

- **1978 - 1982:** American Public Health Association (APHA)

- **1978 - 1982:** American Industrial Hygiene Association (AIHA)
- **1988 - 1992:** National Asbestos Council Marketing Board
- **1988 - 1992:** National Asbestos Council State Board, Pennsylvania Chapter
- **2004 - Present:** Community Campus Partnerships for Health (CCPH)
- **2007 - Present:** American Public Health Association (APHA)

#### Honors

- **2006:** Omicron Chapter, Delta Omega Honor Society, National Public Health Honor Society
- **2009:** Dr. James L. Craig Award for Teaching Excellence, Awarded during 59th Graduate School of Public Health Convocation. [Learn more»](#)
- **2009:** GASP Environmental Hero. [PDF»](#)

#### Publications

##### Invited Publications - Past 5 Years

- **Volz CD & Christen C.** (2006), Why are river Recreationalists most at risk for development of waterborne infectious diseases; how can clinicians improve surveillance? Accepted for publication - Journal of Occupational & Environmental Medicine. 49(1):104-105, January 2007. [PMID: 17215719»](#)
- **Volz CD.** (2007), How do water, land management, ecological & contamination issues interact to produce tertiary public health, medical, social & economic problems? Accepted for publication- Journal of Occupational & Environmental Medicine. 2007 Mar; 49(3):349-52.

#### Manuscripts Reviewed

- Gender in Toxicology Special Issue of Environmental Research. Editor Michael Gochfeld, MD, PhD.M. [Link»](#)
- Ongoing Reviewer for Environmental Research; keywords - biomonitoring, exposure assessment & risk assessment.

#### Whitepapers

- Vyas V & Powers C, with **Volz C**, Liroy P, Gochfeld M. January 2006. The Role of Exposure Assessment in the Design of Sustainable Protective Systems for Department of Energy Legacy Waste Sites, White Paper for the Department of Energy under a grant to the Consortium for Risk Evaluation with Stakeholder Participation (CRESP).

- **Volz CD & Liu Y.** January 2006. 4th Quarter 2005 Evaluation, Healthy Homes Resources, Environmental Asthma Project. US Department of Housing & Urban Development, Healthy Homes Initiative.
- **Volz CD & Liu Y.** May 2006. 1st Quarter 2006 Evaluation, Healthy Homes Resources, Environmental Asthma Project. US Department of Housing & Urban Development, Healthy Homes Initiative.
- **Volz CD, & Liu Y.** July 2006. 2rd Quarter 2006 Evaluation, Healthy Homes Resources, Environmental Asthma Project. US Department of Housing & Urban Development, Healthy Homes Initiative.
- **Volz CD.** July 2006. Water quality problems in Southwestern Pennsylvania in Miller, T (Ed), Regional water management in Southwestern Pennsylvania: Moving toward a solution. University of Pittsburgh, Institute of Politics. ([PDF](#))
- **Volz, CD & Christen C.** 2006. Pathogen contamination & waterborne disease as a result of wet weather releases from combined & sanitary sewer overflows & stormwater runoff: The significance of continued high fecal coliform bacteria in Pittsburgh main stem rivers & tributaries as a public health problem for water recreationalists & municipal treatment facilities, for the University of Pittsburgh, Institute of Politics, Regional Water Management Task Force Board.
- **Volz CD.** September 15, 2006. Regional water management in Southwestern Pennsylvania, Our environmental public health & economic challenge for the next 20 years; Definitions, scope, & a causation framework, for Weathering the Storm/Ivan Flood Symposium - University of Pittsburgh, Graduate School of Public Health, Center for Public Health Preparedness.
- **Volz CD & Liu Y.** October 2006. 3rd Quarter 2006 Evaluation, Healthy Homes Resources, Environmental Asthma Project. US Department of Housing & Urban Development, Healthy Homes Initiative.
- **Volz CD & Liu Y.** January 2007. 4th Quarter 2006 Evaluation, Healthy Homes Resources, Environmental Asthma Project. US Department of Housing & Urban Development, Healthy Homes Initiative.
- **Volz CD & Liu Y.** May 2007. 1st Quarter 2007 Evaluation, Healthy Homes Resources, Environmental Asthma Project. US Department of Housing & Urban Development, Healthy Homes Initiative.
- **Volz CD & Liu Y.** July 2007. 2nd Quarter 2007 Evaluation, Healthy Homes Resources, Environmental Asthma Project. US Department of Housing & Urban Development, Healthy Homes Initiative.
- **Volz CD, Dabney B, Cohen P, Cude C, Dooly I, Kyprianou R, Malecki K, Richter W, Schulman A, Shaw S, Vanderslice J, Walters M, Vyas V.** September 2007. Handling Left Censored Water

Contaminant Data for Descriptive Statistics & Hypothesis Tests. Submitted to the Centers for Disease Control & Prevention's (CDC), Environmental Public Health Tracking Network (EPHT) from the Water Working Group, Non-Detect Subgroup.

- o **Volz CD & Liu Y.** October 2007. 3rd Quarter 2007 Evaluation, Healthy Homes Resources, Environmental Asthma Project. US Department of Housing & Urban Development, Healthy Homes Initiative.
- o **Volz CD.** 2007. Final Quarterly Report, Healthy Home Resources-AT HOME Environmental Asthma Evaluation Report, Healthy Home Resources for the Department of Housing & Urban Development.

### Peer Reviewed Publications - Past 5 Years

1. Powers CW, Burger J, Kosson D, Gochfeld M, Barnes D, Bliss L, Friedlander B, Jewett S, Johnson M, Stabin M, Unsworth M, **Volz C**, Vyas V, Weston J. 2005. Amchitka Independent Science Assessment: Biological & Geophysical Aspects of Potential Exposure in the Amchitka Marine Environment. CRESP, Department of Energy. [Final Report»](#)
2. Burger J, Gochfeld M, Burke S, Jeitner CW, Jewett S, Snigaroff D, Snigaroff R, Stamm T, Harper S, Hoberg M, Chenelot H, Patrick R, **Volz CD**, Weston J. 2005. Do scientists & fishermen collect the same size fish? Possible implications for exposure assessment. *Environ Res*. [PMID: 16174519](#) | [PDF](#)
3. Burger J, Gochfeld M, Kosson D, Powers CW, Friedlander B, Eichelberger J, Barnes D, Duffy LK, Jewett SC, **Volz CD**. 2005. Science, policy, & stakeholders: developing a consensus science plan for Amchitka Island, Aleutians, Alaska. *Environ Manage*. 35(5):557-68. [PMID: 15886955»](#)
4. Greenberg M, Burger J, Gochfeld M, Kosson D, Lowrie K, Mayer H, Powers C, **Volz D**, Vyas V. 2005. End State Land Uses, Sustainable Protective Systems, & Risk Management: A Challenge for Multi-Generational Stewards, *Remediation Journal* 16(1). [PDF»](#)
5. **Volz C**, Powers C, Burger J, Kosson D, Gochfeld M, Friedlander B, Barnes D, Bliss L, Jewett S, Johnson M, Stabin M, Unsworth M, Vyas V, & Horsch J. 2006. The CRESP Amchitka expedition: a model for multi- & interdisciplinary research into radionuclide contamination of the marine environment. In F. Linkov & R. LaPorte (Eds.), *Scientific networking & the global health supercourse*. NATO Security through Science Series D: Information & Communication Security-Vol. 5, Amsterdam, Netherlands: IOS Press. [Read more»](#)
6. Talshinsky R, Azwebajan R; Egypt: Adlas R, Keders U; Estonia: Bakanidze L; Georgia: Linn S; Israel: Rossodivita A; Italy, Shishani K; Jordan: Busmane M; Latvia: Grabauskas V, Jankauskas D, Mireckas R, Obrikis R, Sliupa S, Starkuviene D, Vaitkaitis D, Zukauskus G; Lithuania: Galatchi L; Romania: Puchkina N, Shubnikov E, Trufanov A; Russia: Ghannem H; Tunisia: Ozden YI, Onale AE; Turkey: Gudzenko N, Ledoshchuk B, Vynograd N; Ukraine: Dorman J, LaPorte R, Linkov F, Noji E, Powell J, Rumm P; USA: **Volz CD**. Constructing a NATO Supercourse. In F. Linkov & R.

LaPorte (Eds.), Scientific networking & the global health supercourse. NATO Security through Science Series D: Information & Communication Security. Vol. 5, Amsterdam, Netherlands: IOS Press. [Read more»](#)

7. Burger J, Mayer H, Greenburg M, Powers C, **Volz C**, & Gochfeld M. 2006. Ecological risk & conceptual site models where critical risk is offsite for ecological receptors: The case of the Department of Energy's Amchitka Island Nuclear Test Site. *J Tox Environ Health, Part A*, 69:1217–1238.
8. Burger J, Gochfeld M, Kosson D, Jewett S, Friedlander B, Chenelelot, H, **Volz CD**, & Jeitner C. 2006. Radionuclides in marine macroalgae from Amchitka & Kiska Islands in the Aleutians: establishing a baseline for future biomonitoring. *J Environ Radioact*, 91:1-2, 27-40. [PMID: 17029666»](#)
9. Burger J, Gochfeld M, Jeitner C, Stamm, T, Burke, S, Donio, M, Snigaroff D, Snigaroff R, **Volz CD**. 2006. Heavy metal levels in Pacific cod (*Gadus macrocephalus*) from the Aleutians: location, age, size & risk effects. *Health Phys*.
10. Burger J, Gochfeld M, Kosson D, Powers CW, Friedlander B, Stabin M, Favret D, Jewett S, Snigaroff D, Snigaroff R, Stamm T, Weston J, Jeitner C, **Volz C**. 2007. Radionuclides in marine fishes & birds from Amchitka & Kiska Islands in the Aleutians: Establishing a baseline. *Health Phys* 92(3):265-79. [PMID: 17293699»](#)
11. Gochfeld M, **Volz C**, Jewett S, Powers C, Friedlander B. 2006. Developing a Health & Safety Plan for Hazardous Field Work in Remote Areas, *J Occup Environ Hyg* 3(12):671-83. [PMID: 17050349»](#)
12. Burger J, Gochfeld M, Burke S, Jeitner CW, Jewett S, Snigaroff D, Stamm T, **Volz C**, Weston J. 2006. Do Scientists & Fisherman Catch the Same Size Fish: Implications for Risk Assessment, *Environ Res* 101(1):34-41. [PDF»](#)
13. Vyas V, **Volz CD**, Powers C. 2006. The Influence of Regional Geography on Exposure Pathways to Residual Contamination: A Case Study of the USDOE Pantex Facility, Submitted to Journal of Environmental Management.
14. Burger J, Mayer H, Greenburg M, Powers C, **Volz C**, Gochfeld M. 2006. Ecological risk & conceptual site models where critical risk is offsite for ecological receptors: The case of the Department of Energy's Amchitka Island nuclear test site. *J Tox Environ Health, Part A*, 69: 1-22.
15. **Volz CD**. 2007. A framework to understand the centrality of protection & restoration of ecosystem services to water management & preparedness: An all-hazards approach with implications for NATO plans & operations. In Calpinskiene M, Cummings C, Gudzenko N, Gursky E, Linkov F, Rossodivita A, Shubnikov E, Stikova E, Trufanov A, **Volz C** (Eds). Strengthening national public health preparedness & response for chemical, biological, & radiological agent threats: Springer-NATO Advanced Science Institute Series, IOS Press – Nieuwe 6B, 1013 BG Amsterdam, Netherlands. [Abstract»](#)



16. Tomljanovic C & **Volz CD**. 2007. Modeling Munitions & Explosives of Concern (MEC) CBRN Hazards: Novel Tools & Approaches for Strengthening the Conceptual Site Model for Public Health Preparedness. In Calpinskiene M, Cummings C, Gudzenko N, Gursky E, Linkov F, Rossodivita A, Shubnikov E, Stikova E, Trufanov A, **Volz CD** (Eds). Strengthening national public health preparedness & response for chemical, biological, & radiological agent threats. Springer-NATO Advanced Science Institute Series, IOS Press – Nieuwe 6B, 1013 BG Amsterdam, Netherlands. [GoogleBooks»](#)
17. **Volz CD**. 2007. Water Management in Southwestern Pennsylvania Based on a Social-Economic-Ecological Model for the University of Pittsburgh, Institute of Politics, Regional Water Management Task Force Board.
18. Burger J, Gochfeld M, Shukla T, Jeitner C, Burke S, Donio M, Shukla S, Stamm T, Snigaroff D, Snigaroff R, **Volz CD**. 2007. Heavy metals in Pacific Cod (*Gadus macrocephalus*) from the Aleutians: Location, age, size, & risk. *J Tox Environ Health, Part A*, 70: 1–15. [PMID: 17966061»](#)
19. Walters M & **Volz CD**. 2007. Municipal wastewater concentrations of pharmaceutical & xenoestrogens: wildlife & human health implications. Proceedings of the 3rd National Conference on Environmental Science & Technology, Battelle Publications, Columbus, Ohio.
20. **Volz CD**, Houghton F, Sussman N, Lenzner D, Davis D, Donovan M, Hefnawy T, Eagon P. 2007. Channel catfish estrogenicity & sewer overflows: Implications for Xenoestrogen exposure. Proceedings of the 3rd National Conference on Environmental Science & Technology, Battelle Publications, Columbus, Ohio. [PDF»](#)
21. Burger J, Gochfeld M, Jeitner C, Snigaroff D, Snigaroff R, Stamm T, **Volz CD**. 2008. Assessment of metals in down feathers of female common eiders & their eggs from the Aleutians: arsenic, cadmium, chromium, lead, manganese, mercury, & selenium. *Environ Monit Assess.* 143(1-3):247-56. [PDF»](#)
22. Eds. Miller T, Gorley T, Barron B. Author: **Volz CD**. 2008. Southwestern Pennsylvania's Water Quality Problems & How to Address Them Regionally, Institute of Politics, University of Pittsburgh. [PDF»](#)
23. Xu X, Sharma R, Talbott E, Zborowski J, Rager K, Arena V, **Volz C**. PM10 Air Pollution Exposure during Pregnancy & Term Low Birth Weight in Allegheny County, PA 1994-2000. *J Environ Health*, In Press.
24. Burger J, Gochfeld M, Jeitner C, Burke S, **Volz CD**, Snigaroff R, Snigaroff D, Shukla T, Shukla S. 2009. Mercury & other metals in eggs & feathers of glaucous-winged gulls (*Larus glaucescens*) in the Aleutians. *Environ Monit Assess.* 152(1-4):179-94. [PMID: 18626778»](#)
25. Tomljanovic C, **Volz D**, Quinn S, Trufanov A, Rossodivita A. 2010. Cooperation Between Civilian & Military Organizations During an Emergency: A Case Study Evaluation of the 2008 Reentry of an Uncontrolled U.S. Government Satellite Contaminated with Hydrazine. Published In: *Pandemics*

& Bioterrorism Transdisciplinary Information Sharing for Decision-Making against Biological Threats Volume 62 NATO Science for Peace & Security Series - E: Human & Societal Dynamics. Edited by: A. Trufanov, A. Rossodivita & M. Guidotti. ISBN: 978-1-60750-086-5. [PDF»](#)

**Presentations (Since 2007)**

- 4/22/10 **Volz CD**. Potential Public Health Impacts of Marcellus Shale Gas Extraction Activities & Underground Gas Storage Facilities. Westminster College, New Wilmington, PA.
- 4/19/10 **Volz CD**. "Effects of Marcellus Shale Gas Extraction." Slippery Rock University, Slippery Rock, PA.
- 4/14/10 **Volz CD** & Christen C. Marcellus Shale Conference. Grove City College, Sticht Lecture Hall in the Hall of Arts & Letters. This conference addressed concerns regarding the environmental impacts of Marcellus Shale natural gas drilling.
- 4/13/10 **Volz CD**. Global Health Film Series & Discussion: FLOW - For Love Of Water, A115 Crabtree Hall, University of Pittsburgh, Graduate School of Public Health, Sponsored by the Global Health Student Association & Center for Global Health. [Learn more»](#)
- 4/3/10 Gulla R w/**Volz CD**. "Living Near Natural Gas Facilities?" Public meeting. Pleasant Union Church Building, Clearville, PA. Sponsored by Concerned Clearville Citizens.
- 3/26/10 **Volz CD**. "The Marcellus Shale Gas Field Development: Environmental & Behavioral & Community Health Impacts." GSPH Dean's Junior Faculty Seminar. University of Pittsburgh Graduate School of Public Health, Pittsburgh, PA. [Presentation \(PDF\)](#) | [MSGE Info](#)
- 3/18/10 **Volz CD**. Marcellus Shale Natural Gas Stewardship Summit. Hosted by the Center for Natural Resources Development & Protection. Philadelphia, PA
- 3/9/10 Christen C & **Volz CD**. Marcellus Shale: Volunteer Monitoring Meeting for Service Providers. Hosted by Penn State University. University Park, PA. [Read more»](#)
- 11/11/09 Wright-Walters M, **Volz CD**, Talbott EO, Davis DL. A revised Aquatic Hazard Assessment of Bisphenol A: Evidence that current risk models may not be sufficiently protective. 2009 APHA Conference, Philadelphia, PA. [Abstract# 203316](#)
- 11/11/09 Ferrar K, **Volz C**, Lawson C, Michanowicz D, Christen C, Longo C, Sharma RK, Talbott E, Collins E, Marcucci LG. Coal combustion waste placement in PA; An environmental justice issue with implications for contamination of surface & ground waters & human & ecological exposure via inhalation & ingestion. 2009 APHA Conference, Philadelphia, PA. [Abstract 202076](#)

- 11/10/09 **Volz CD**, Michanowicz D, Murray M, Christen C, Sharma RK, Talbott E, Good S, Ferrar K. Community participatory driven research; Comparisons of water quality variables & concentrations of toxic elements downstream from Allegheny River gravel mining operations during periods of activity & inactivity. 2009 APHA Conference, Philadelphia, PA. [Abstract# 200296](#) | [Presentation \(PDF\)](#)
- 11/9/09 Christen C, **Volz CD**, Caruso P, DeMarco PM. Community-based participatory environmental health research to improve water quality on a major water source in Southwestern PA. 2009 APHA Conference, Philadelphia, PA. [Abstract #197439](#) | [Presentation \(PDF\)](#)
- 11/9/09 Mamrose-Hunt SM, **Volz CD**, Sussman N, Sharma RK. An evaluation of the Pittsburgh Healthy Home Resources Environmental Asthma Intervention; Assessing primary caretaker changes of knowledge, attitudes & beliefs concerning their ability to care for their child. 2009 APHA Conference, Philadelphia, PA. [Abstract# 204200](#) | [Presentation \(PDF\)](#)
- 10/28/09 **Volz C**. "An exploratory study of mercury release data with biomarkers of neuro-developmental disorders in children from Southwestern PA." 2009 National Environmental Public Health Conference Sheraton Atlanta Hotel, Atlanta, GA. [Abstract](#)
- 10/6/09 **Volz CD**. "Endocrine Disruptors Problems & Solutions." 24th International Activated Carbon Conference, Holiday Inn, Pittsburgh, PA
- 9/25/09 **Volz CD**. "Wildlife Effects from Exposure to Xenoestrogens: State of the Science." Third Annual Rachel Carson Legacy Conference - When Chemicals Disrupt: Managing Our Risks, Bidwell Training Center, Pittsburgh, PA ([PDF](#))
- 4/30/09 **Volz CD**. Testimonial. U.S. House of Representatives Subcommittee on Water Resources & Environment. "Coal Combustion Waste & Water Quality." ([PDF](#))
- 3/20/09 **Volz CD**. "Health Hazards of Coal Extraction, Burning & Waste Disposal." Environment & Health Conference, Sponsored by the Elk Regional Health Center, Saint Mary's, PA
- 3/16/09 **Volz CD** & Christen C. Report of Outcomes of the [Allegheny River Stewardship Project](#). Allegheny Township Community Group, Leechburg, PA
- 3/11/09 **Volz CD**, Symposium on Ecological & Human Health Effects from Coal Combustion Wastes, Kent State University, East Liverpool Campus, East Liverpool, OH
- 3/2/09 **Volz CD**. Testimony in Support of Mussel Endangerment in the Allegheny River, Outcomes of Allegheny River Stewardship Project - River Mining Research on Ecotoxicity, Pennsylvania

Fish & Boat Commission, Kittanning, PA

- 2/5/09 **Volz CD**, Christen C, Michanowicz D, Malone S. Report of Outcomes of the Allegheny River Stewardship Project, Ford City, PA
- 2/26/09 **Volz CD**. Guest Lecture, "Pharmaceuticals & Xenoestrogens in Water," Chatham University, Core Biology Group, Pittsburgh, PA
- 2/24/09 Sharma R, Parmanto B, Lee PC, **Volz Jr CD**. "Spatio-Temporal Visualization of Environmental & Health Indicators," Presentation at the "Tracks2009: The Future of Environmental Public Health Conference, February 2009, Washington DC. ([PPT](#))
- 1/21/09 **Volz CD**, & Christen C. Community-Based Participatory Environmental Research: Lessons from the Allegheny River Stewardship Project, Seminar Series, Behavioral & Community Health Sciences dept., GSPH, University of Pittsburgh, Pittsburgh, PA
- 12/12/08 **Volz CD** & Christen C. "Environment & Health: A Systems Approach," Sponsored by the University of Pittsburgh's Department of Education, Posvar Hall, University of Pittsburgh, Pittsburgh, PA
- 11/14/08 **Volz CD** & Christen C. "The Allegheny River Stewardship Project: Building Science on Community Participation," Pennsylvania Association of Environmental Professionals (PAEP), Phipps Conservatory, Pittsburgh, PA
- 11/14/08 **Volz CD**. "Health Hazards Associated with the Coal Combustion Cycle," Sponsored by the Center for Coal Field Justice, Washington, PA
- 11/12/08 **Volz CD**. "Water Quality Issues in Southwestern PA," University of Pittsburgh Environmental Club, David Lawrence Hall, Pittsburgh, PA
- 10/18/08 **Volz CD**. "The Relationship Between Channel Catfish Estrogenicity Index & the Density of Combined & Sanitary Sewer Overflows: Significantly Elevated Mercury & Selenium Concentrations in Channel Catfish Fillet from Kittanning, PA versus the Pittsburgh Pool," Sponsored by the American Society of Chemists, Pittsburgh, PA
- 10/15/08 **Volz CD** & Christen, C. Outcomes of the Allegheny River Stewardship Project, Western PA Water Roundtable, Pittsburgh, PA
- 10/15/08 **Volz CD**. "Levels of Estrogen Contaminants in Surface Water: Implications for Aquatic Ecosystem Health & Human Consumption," International Seafood Seminar, Sponsored by the PA Food Scientists & the Department of Agriculture, Pittsburgh, PA

- 10/12/08 Xu X, Sharma R, Talbott E, Zborowski J, Rager J, Arena V, **Volz C**. PM<sub>10</sub> Air Pollution Exposure During Pregnancy & Term Low Birth Weight in Allegheny County, PA 1994-2000," 2008 Annual Conference of the International Society for Environmental Epidemiology, October 12-16, 2008, Pasadena, CA. [Abstract](#)
- 9/25/08 **Volz CD**. Women's Health & the Environment: New Science, New Solutions, New Science Panelist, "Science that Bridges the False Divide Between Ecological & Human Health" Ecological & Human Health Risks from Coal Combustion Products, Sponsored by Teresa Heinz, The Heinz Endowments & Magee-Women's Hospital of UPMC, David L. Lawrence Convention Center, Pittsburgh PA. [Presentation \(PDF\)](#) | [Lecture \(PDF\)](#)
- 9/5/08 Christen C, Caruso P, DeMarco P, Morrison J, Mutetwa B, Niederberger P, **Volz CD**. The Application of Community-Based Participatory Environmental Research (CBPR) on the Study of the Quality of a Major Regional Water Source. ([PDF](#))
- 9/4/08 University of Pittsburgh Academic Center for Excellence in Environmental Public Health Tracking, Advisory Board Meeting, CDC Environmental Public Health Tracking Network, **Volz CD**, Report on Biomonitoring of Fishes to Identify Sources of Pollution, GSPH, Pittsburgh, PA
- 6/4/08 **Volz CD**. "Water Shed Contamination by Metals & Organic Chemicals," Ramada Inn, Atherton Street in State College, PA. This event is part of the Conservation District Management Summit being hosted by The Pennsylvania Department of Environmental Protection (PADEP)
- 5/8/08 **Volz CD**. Pittsburgh Association of Occupational Physicians (PAOP). "Pharmaceutical Estrogens in Surface Water," Amici's Restaurant, Pittsburgh, PA
- 4/7/08 **Volz CD**. "The Allegheny River Stewardship Project & Pharmaceutical Estrogens & Xenoestrogens in Water; A Citizen Science Program," University of Pittsburgh, Bradford PA Campus; Sponsored by the McKean County Conservation District & Pennsylvania State University, College of Agriculture, Cooperative Extension, McKean County
- 3/29/08 **Volz CD**. "Contaminants Emitted from Electrical Generating Facilities in Southwestern PA," Group Against Smog & Pollution (GASP), Rodef Shalom Temple, Pittsburgh, PA
- 3/3/08 **Volz CD**. "Contamination in the Allegheny River Valley-What Individuals Can Do to Help," Café Scientifique, Penn Brewery, Pittsburgh, PA
- 2/29/08 **Volz CD**. 1st Annual Volunteer Internship & Career Day, Employer Panel Participant, GSPH, University of Pittsburgh
- 2/7/08 **Volz CD**. "The Tale of Two Area Fish & What they Tell Us About Water Quality," Environmental

& Occupational Health Departmental Presentation, GSPH-EOH

- 2/7/08 **Volz CD.** "The Allegheny River Stewardship Project; How Community & Non-Profit Organizations Can Help," Water Quality Roundtable, Millvale, PA
- 1/24/08 **Volz CD.** "Estrogenicity Levels in Three Rivers Fish are Correlated with High Densities of Sewer Overflows," PADEP, Emerging Contaminants Forum, Harrisburg, PA
- 1/17/08 **Volz CD.** "Mercury Concentrations in River & Store-Bought Freshwater Fish of the Same Species," Pennsylvania Fish & Boat Commission, Mount Pleasant, PA
- 1/15/08 Lenzner D, Stone R, Wilson J, **Volz CD.** Novel statistical methodologies to determine if channel catfish estrogenicity is higher in areas with dense concentrations of sewer overflows. University of Pittsburgh Cancer Institute, Center for Environmental Oncology (CEO-UPCI) Scientific Research Group Meeting, Hillman Cancer Center
- 1/15/08 **Volz CD.** The Allegheny River Stewardship Project Community Meeting, Crooked Creek Environmental Center, Ford City PA
- 11/7/07 Houghton F, **Volz CD,** Liu Y, Price C, Elm M, Davis D, Donovan M, Eagon P. Oral Presentation 5041.0: "Use of a human breast cancer cell proliferation assay as an exposure assessment tool for total bioaccumulated xenoestrogens in Channel Catfish (*Ictalurus punctatus*) caught in various locations on the Allegheny, Monongahela & Ohio Rivers near Pittsburgh PA: Implications for consumption of river-caught fish 2007," 2007 American Public Health Association (APHA) Annual Meeting, Washington, DC. [Full text](#)
- 11/7/07 **Volz CD,** Sussman N, Davis D, Donovan M, Liu Y, Brady S, Gainey K, Zborowski J. Oral Presentation 5041.0: "Mercury, Arsenic & Selenium in White Bass fillet caught in the Allegheny & Monongahela Rivers near Pittsburgh PA; Comparisons with store-bought fish from Canadian Lake Erie," 2007 APHA Annual Meeting, Washington, DC. [Full text](#)
- 11/7/07 **Volz CD,** Liu Y, Sussman N, Brady S, Caruso P, Green T, Arnowitt M, Peterson J, Christen C, Donovan M, Davis DL, Eagon P, McMahon K, Sharma R. Oral Presentation, 5041.0: "Mercury, Arsenic & Selenium in Channel Catfish from the Allegheny, Monongahela & Ohio Rivers near Pittsburgh PA: Implications for metallotoxin source identification & fish consumption by local anglers," 2007 APHA Annual Meeting, Washington, DC. [Full text](#) | [Presentation \(PDF\)](#)
- 11/7/07 Christen C, **Volz CD,** Caruso P, Arnowitt M, Brady S, Liu Y, Davis DL, & Talbott EO. Accepted 5041.0: "Results of semi-subsistence & recreational angler focus groups: Reports of combined sewer overflows, chemical releases & associated water-related illnesses in the Three Rivers area of Pittsburgh," 2007 APHA Annual Meeting, Washington, DC. [Full text](#)

- 11/7/07 **Volz CD**. Accepted-Session Moderator, Contaminants in Freshwater Fish: Toxicity, Sources & Risk Communication, 5041.0: "Chemical contaminants in freshwater fish present potential health risks for subsistence fishers & recreational anglers," 2007 APHA Annual Meeting, Washington, DC. [Full text](#)
- 10/30/07 **Volz CD**. Community Awareness Presentation of the Allegheny River Stewardship Project, Alle-Kiski Health Foundation, Heinz Endowments & Highmark Foundation, Pittsburgh Mills Mall, Frazier Township, PA
- 10/24/07 **Volz CD**. The Allegheny River Stewardship Project, Three Rivers Water Roundtable, Pennsylvania Environmental Council, Pittsburgh, PA
- 10/11/07 **Volz CD**, Houghton F, Sussman N, Lenzner D, Davis D, Donovan M, El-Hefnawy T, Eagon P. Science 2007, University of Pittsburgh, "Estrogenicity of channel catfish tissue is associated with high densities of sewer overflows in Pittsburgh PA; Implications for human population exposure to xenoestrogens from drinking water in the Greater Pittsburgh Metropolitan Area," Alumni Hall, Pittsburgh, PA. [Full text \(Doc\)](#)
- 10/11/07 Liu Y, **Volz CD**, Sussman N, Sharma R. Science 2007, University of Pittsburgh, "Mercury, arsenic & selenium in Channel Catfish (*Ictalurus punctatus*): Implications for pollution source identification & food safety," Alumni Hall, Pittsburgh, PA
- 10/5/07 **Volz CD**. Komen Foundation (Race for the Cure) & Heinz Endowments. "Local & national water
- 9/19/07 **Volz CD**. The Winchester Thurston School Honors Program, Combined Sewer Overflows in Pittsburgh, PA & Associated Water Quality Threats, The Winchester Thurston School, Pittsburgh, PA
- 9/17/07 **Volz CD**. Lunch & Learn Series: Continuing Medical Education Program- Environmental Links to Cancer, CEO-UPCI, "Using Area Fish to Aid in Pollution Source Identification & Assess Human Exposure to Xenoestrogens, Mercury & Arsenic," Herberman Auditorium, Hillman Cancer Center, Pittsburgh PA
- 9/14/07 Walters M, & **Volz CD**. Third National Conference on Environmental Science & Technology, "Pharmaceutical estrogens & Xenoestrogens in wastewater treatment plant effluent:

Implications for both human & wildlife effects," North Carolina A&T, Greensboro, NC

- 9/13/07 **Volz CD**, Houghton F, Sussman N, Lenzner D, Davis D, Donovan M, El-Hefnawy T, Eagon P. Third National Conference on Environmental Science & Technology, "Catfish estrogenicity & its association with sewer overflows: Implications for human exposure," North Carolina A&T, Greensboro, NC
- 8/23/07 **Volz CD**. Environmental Public Health Tracking Network, Water Committee Task Force. "Methods to assess left censored or non-detect data," Centers for Disease Control & Prevention (CDC), Washington DC, EPA Headquarters
- 8/8/07 **Volz CD**. Environmental Public Health Tracking Network, University of Pittsburgh Academic Center for Excellence (UPACE), Advisory Group Meeting. "Biomonitoring fishes for exposure assessment & source location purposes: Examples for mercury, arsenic, selenium & estrogenicity," GSPH, Pittsburgh, PA
- 6/30/07 **Volz CD**, Singleton K, Rucekova A. "CESRA & the Wolf Creek Water Group, Use of a Community Based Participatory Research Program in the Grove City Area to understand patterns of disease & cancer mortality," Grove City, PA
- 6/15/07 **Volz CD**, Houghton F, Sussman N, Lenzner D, El-Hefnawy T, Davis D, Donovan M, Eagon P. UPCI Scientific Retreat, Estrogenicity of Channel Catfish fillet & dense concentrations of combined & sanitary sewer overflows. University of Pittsburgh, Greensburg, PA
- 6/12/07 **Volz CD**, Houghton F, Sussman N, Lenzner D, El-Hefnawy T, Davis D, Donovan M, Eagon P. CEO-UPCI, Research Meeting, "Novel ways to assess estrogenicity in fish & the use of GIS methods to determine proximity to pollution sources," Hillman Cancer Center, Pittsburgh, PA
- 6/9/07 **Volz CD**, Houghton F, Sussman N, Lenzner D, El-Hefnawy T, Davis D, Donovan M, Eagon P. REACH: A New EU Approach to Chemical Safety: Lessons for the United States, "The case of pharmaceutical estrogens & xenoestrogens in combined & sanitary sewer overflow waste streams & wastewater treatment effluent," Sponsored by the University of Pittsburgh European Studies Center & The University of Pittsburgh GSPH
- 4/18/07 **Volz CD**, Houghton F, Sussman N, Lenzner D, Liu Y, Davis D, Donovan M, Eagon P. Pittsburgh Environmental Health Summit, "Biomonitoring fishes for estrogenicity, & mercury levels in the Allegheny, Ohio & Monongahela Rivers," Sponsored by EPHT & GSPH, Holiday Inn, Campus, Pittsburgh, PA
- 4/17/07 Houghton F, Liu Y, Price CJ, Elm MS, Donovan M, Davis D, **Volz CD**, Eagon P. "Estrogenicity of tissue extracts from white bass & channel catfish caught along the Three Rivers of Pittsburgh,



- PA," American Association for Cancer Research (AACR), Los Angeles, California. [Full text](#)
- 3/16/07 Liu Y, **Volz CD**, Sussman N. Deans Day Student Presentations, First Prize Winner, Dean's Day-GSPH, Pittsburgh, PA
- 3/14/07 **Volz CD**. Results of the Pittsburgh Fish Consumption Study of 2005, Water Quality Roundtable, Sponsored by the Heinz Endowments & the Pennsylvania Environmental Council, Pittsburgh, PA
- 10/7/06 **Volz CD**. Global Problems, Global Solutions, LaRoche College & the GSPH, Environment Presenter, "Water Management: The Most Important Public Health Challenge of the 21st Century"
- 9/15/06 **Volz CD**. "The Relationship of Land & Water Management to Flood Risk & Contaminant Deposition for Weathering the Storm: Lessons from the Floods," Wyndham Garden Hotel, Pittsburgh, PA
- 6/1/06 **Volz CD**. Skopje, Macedonia. NATO Advanced Science Institute. "Conceptual Models to Assist in Radionuclide, & Toxic & Carcinogenic Chemical & Metal Exposure Assessment," also Course Co-Director

### Testimonials

- 4/30/09 **Volz CD**. "Coal Combustion Waste Storage & Water Quality," Testimony before the U.S. House of Representatives Subcommittee on Water Resources & Environment. ([PDF](#))
- 2008 **Volz CD**. "Testimony in Support of Adding the Salamander Mussel, the Rabbitsfoot Mussel & the Snuffbox Mussel to the List of Endangered Species & Adding the Sheepnose Mussel & the Rayed Bean Mussel to the List of Threatened Species," Testimony regarding the PA Fish & Boat Commission Mussel Proposal: PAFBC proposes to amend 58 Pa. Code Chapter 75. [Proposal \(PDF\)](#) | [Testimony \(PDF\)](#)
- 6/6/06 **Volz CD**. "Pennsylvania Scientists, Health Care Professionals Joint Call for State Regulations on Toxic Mercury Pollution," Testimony for Penn Future in support of state-specific mercury pollution rule proposed by the Pennsylvania Department of Environmental Protection (PA DEP).
- 3/8/06 Domike S & **Volz CD**. "Particulate Pollution & Environmentally Induced Asthma," EPA testimony.