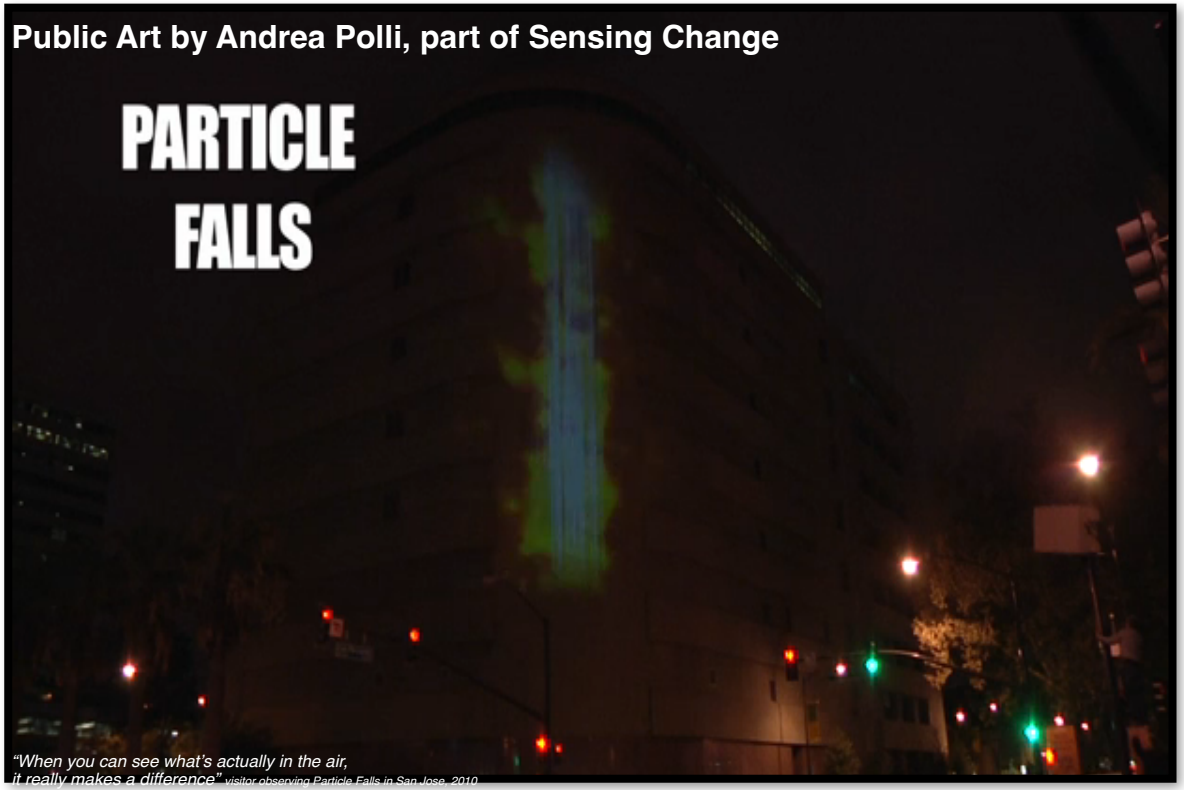
SENSING CHANGE INITIATIVE

2013 – 2014, Chemical Heritage Foundation, Philadelphia

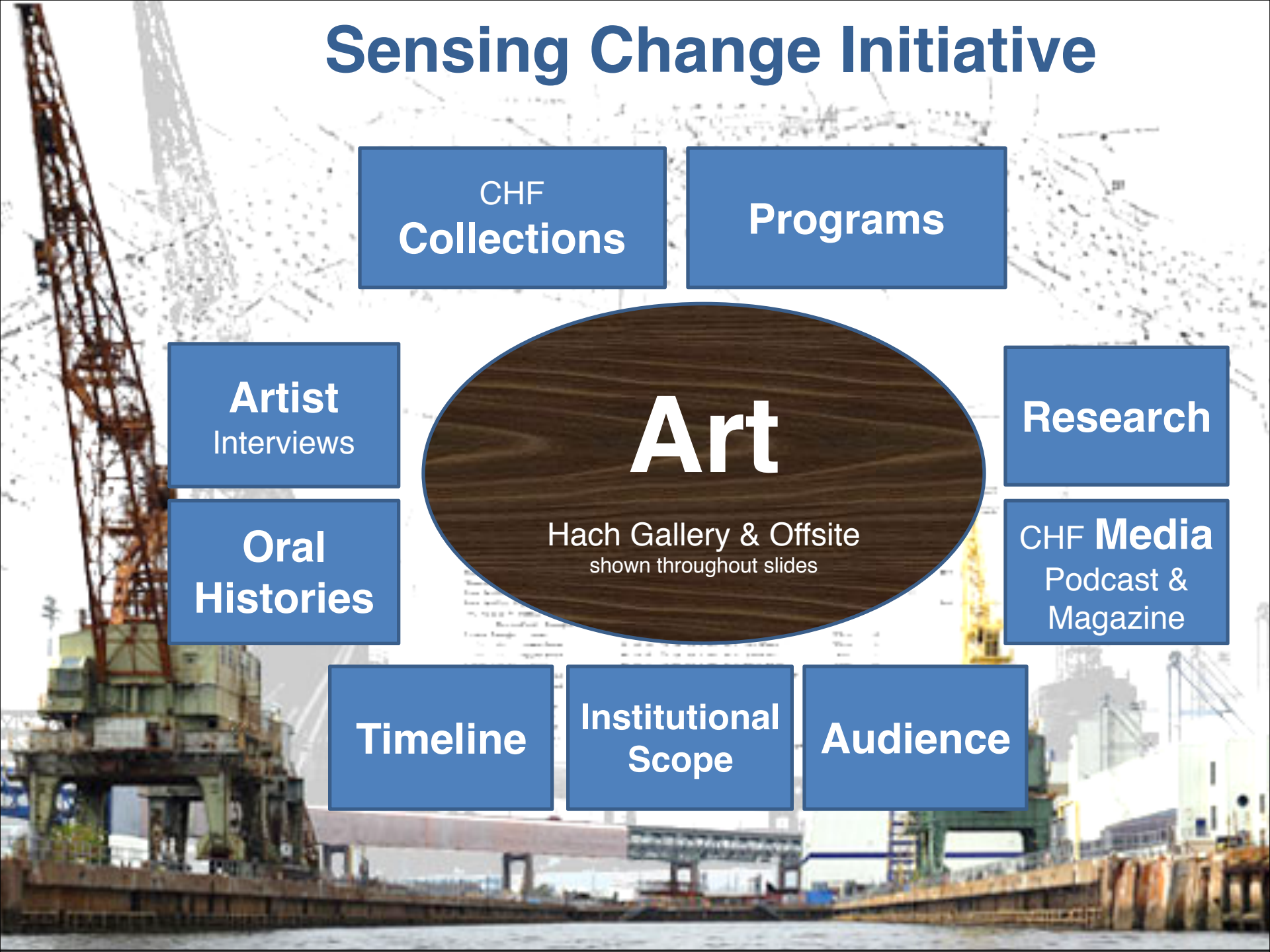
Exhibit Overview, Programs & Content



Above quote from "Particle Falls." Filmed 2010. Vimeo video, 4:43, Posted October 2010. http://vimeo.com/16336508.

Particle Falls is a large scale projection of real-time air quality data, providing an immediate response to conditions based on laser technology. Particulate pollution can be measured by laser light scattering.

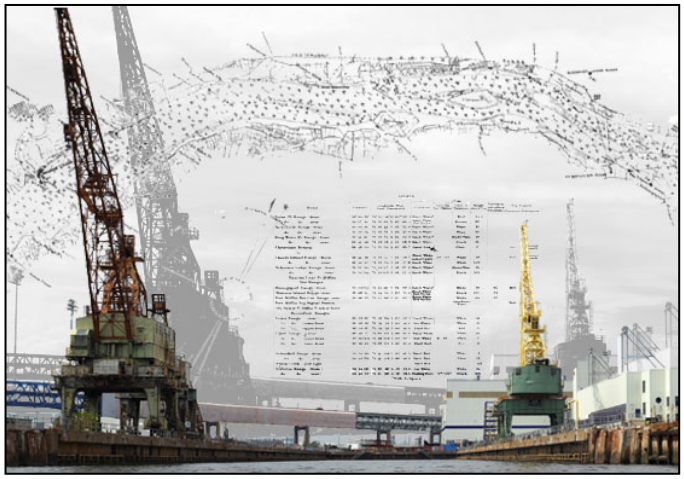
Sensing Change Initiative



Estuary

Roderick Coover

Panoramic animated videos (with ambient sounds) of industrial sites along Philadelphia rivers overlaid with maps, charts and diagrams exploring effects of rising water and its impact on our shores



historic maps and contemporary landscapes

Sensing Change Initiative Goals

- Tell a compelling narrative about local environmental change by utilizing strategies at the center of art and science communication
- Invite and encourage visitor participation through exhibits, programs/partnerships, and scholarship
- Offer innovative ways to visualize data (both real-time and recorded)
- Explore local effects of change in Philadelphia in relation to global concerns

Waters: Glacier, Yellowstone and Bucks

Diane Burko

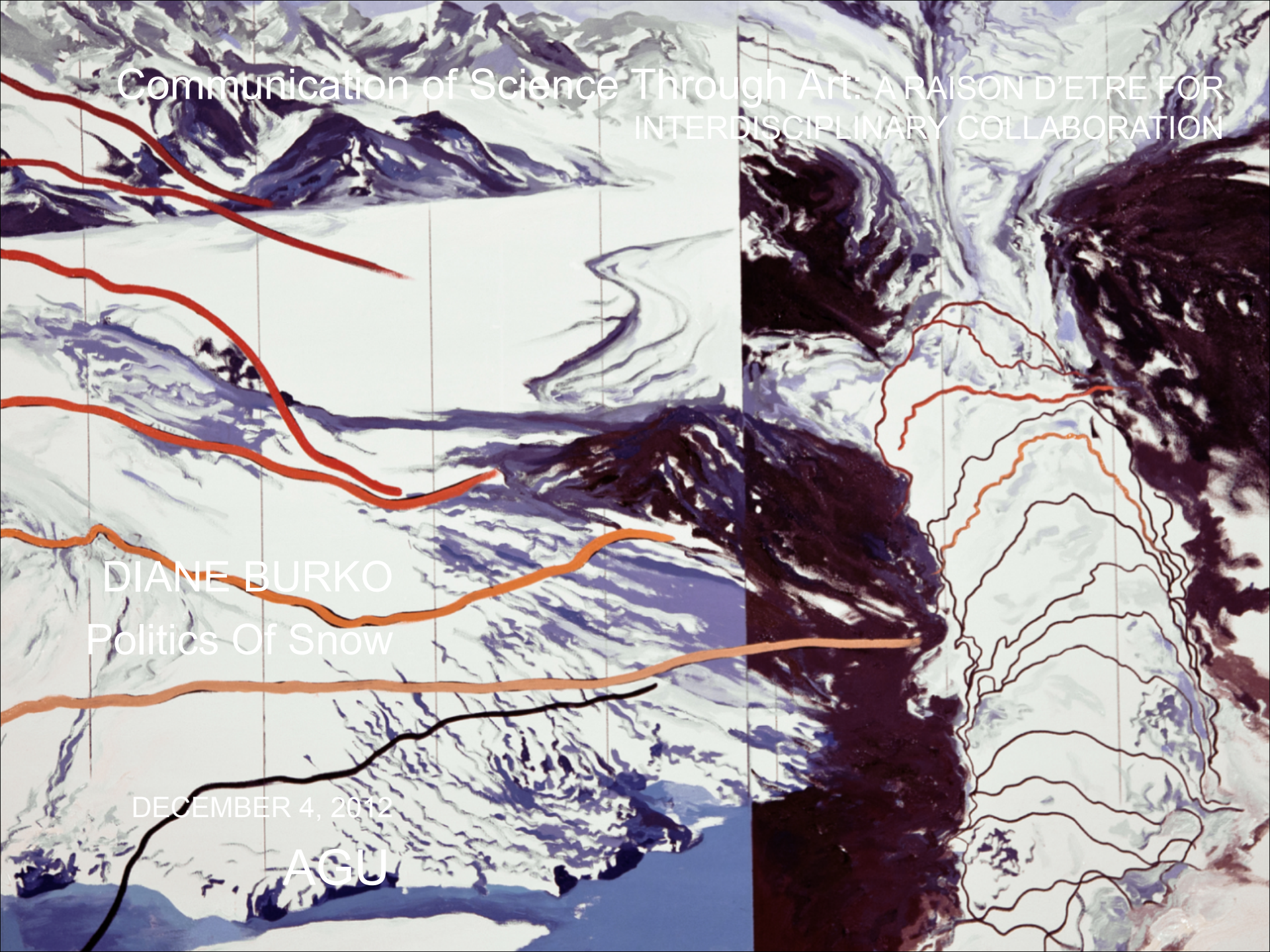
Burko makes the link between local flooding conditions in Pennsylvania and glaciers in Montana with a grid of 8 photographic prints: 4 of flooding in Bucks County and 4 prints of melting glaciers in Montana

Dr. Bruce Molnia and Diane Burko,
Locks Gallery, March 2010

Bruce F. Molnia, Ph.D. has studied Alaska's glaciers for more than 30 years. Molnia has authored several books and more than 100 articles, maps, and abstracts about Alaska's rivers of ice. Bruce Molnia holds the positions of chief, International Environmental Studies, and chief, International Polar Programs, with the U.S. Geological Survey.

Interactions between artists and scientists are highlighted in our artist interviews

Communication of Science Through Art: A RAISON D'ETRE FOR INTERDISCIPLINARY COLLABORATION



DIANE BURKO

Politics Of Snow

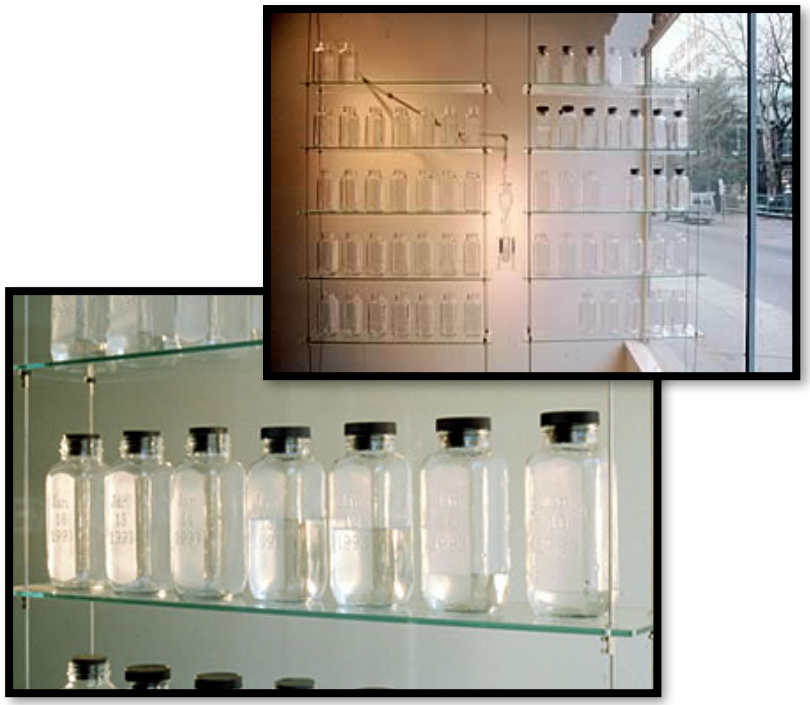
DECEMBER 4, 2012

AGU

Calendar of Rain

Stacy Levy

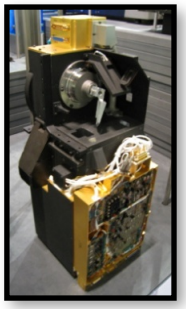
Each day of the show is represented by a bottle sandblasted with that days date. The current day's bottle is placed under a flask outside. If it rained or snowed that day, the precipitation is funneled into the bottle. After 24 hours, the bottle is capped and placed back into the calendar, a series of five glass shelves representing each month. By the end of the show, the piece has created a bar graph of rainfall for each week.



Online Content

- Explore 4 signature objects from CHF's collections in depth, feature other objects to personalize related collections items
- Provide short video clips from the oral histories to create 'conversation' with the art and artist interviews
- Provide short video clips from interviews with each artist
- Invite audiences to engage with these materials via a participatory element

Potential signature objects



1. **Horiba Mexa 200**
2. **Total Ozone Mapping Spectrometer (NASA)**
3. **Electron Capture Detector**
4. **Portable Testing Kit**

Atmospheric Science Oral Histories

- Conducted with scientists who focus on air quality, monitoring, the relationship between science and policy, science and public understanding, and a range of instrumentation from large aerosol mass spectrometers to pieces of equipment which fly around in the stratosphere.

- OHs conducted and scheduled:
  - Mario Molina, UC San Diego, Chemistry, and Mario Molina Center, Mexico City (1995 Nobel Prize)
  - Deb Niemeier, UC Davis, Civil Engineering
  - Murray Johnston, University of Delaware Chemistry Dept, interest in aerosol and particulates in urban settings
  - Ron Cohen, UC Berkeley Chemistry Dept, interest in measuring and monitoring CO2 levels
  - Kenneth Davis, Penn State, Professor of Meteorology
  - Peter DeCarlo, Drexel University, Civil, Architectural, and Environmental Engineering

Wind Map

Fernanda Viégas and Martin Wattenberg

This map shows the delicate tracery of wind flowing over the US. Surface wind data comes from the National Digital Forecast Database. These are near-term forecasts, revised once per hour.

Extreme weather, storms, and wind patterns are a few of the directions we can take through interpretation. The work is dynamic and captivating to watch.

The Sensing Change Initiative
in ***Chemical Heritage*** Magazine

Spring 2013:
Spread on Stacy Levy's *Calendar of Rain*

Summer 2013:
Spread on Roderick Coover's *Estuary*

Exhibit Preview

History in the Making: Evolution of tools for monitoring climate change

Fall 2013:
Vaughn Bell and adopt-a-plant programs
Spread on Diane Burko

Spring 2014:
Spread on Particle Falls

History in the Making:
Effect of climate change on public health

in the **Podcast**

- Might tie directly to exhibit or be a conceptual expansion
- Option to work with journalists to examine how climate affects Philadelphia
- Interviews with local partners for stories of mitigation / adaptation
- Perhaps tie-in to local stories / partners as well as look at other regions
- Relation of the microcosm to macrocosm, local to global

Public Programs

- 3-4 First Fridays

- 2 signature events
  - Science café type event for a Particle Falls opening in Fall 2013
  - HighWaterLine event, as part of the 2014 Philadelphia Science Festival

- Public conversations (such as between an artist and scientist)

- Museum education tours

- Neighborhood-based programs
  - Based on adopt-a-plant, these touring programs explore plants & air quality in presentations /activities.

Research

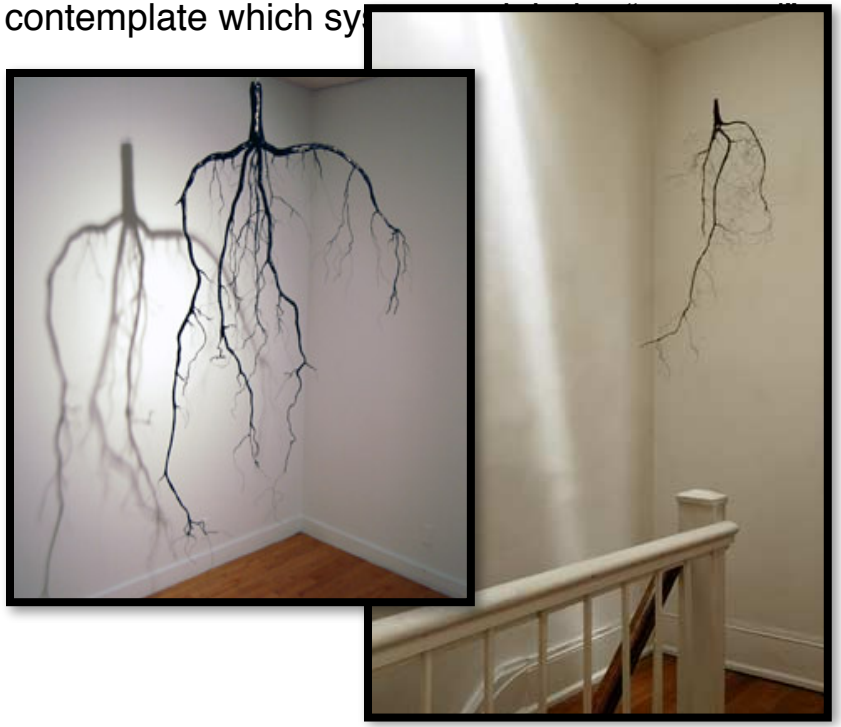
- Convene a group of scholars to explore the exhibition as an "experiment" to understand the dynamics between art, science, and public communication
- Coordinate research activities with outreach programming to develop a system of evaluation and assessment of the various tools
- Communicate results of research activities in academic and non-academic forums [extent of effort depending upon level of funding]

Uprooted

Katie Holten

3 sculptures made of ink on wire & papier mâché.

Holten's sculpture depicts black root structures that appear to have been pulled from the ground, suggesting some disruption of a healthy natural system. Holten's work draws our attention to what is essential, yet often unseen and underground. She asks us to observe and contemplate which sy



Existing and Potential Audiences

Existing audiences at CHF interested in Sensing Change

- The larger CHF audience base, affiliates, and partners
- Historians / historians of science
- Science professionals and enthusiasts
- Scholars with an interest in oral history and the collections
- Individuals attending events / conferences
- Students & professors in environmental / urban studies
- Walk-in visitors (including individuals and families)
- Policy groups and non-profits
- Advocacy and citizen-action groups
- Those interested in the communication of science
- Artists
- Press

Potential audiences specific to Sensing Change

- Environmentally-oriented artists
- Groups interested in the visualization of scientific data
- Environmental action-oriented citizens
- Sensing Change partners and their constituents
- City government and related orgs (PWD, SEPTA, city planning)
- Civic organizations and groups (gardeners, bike coalition, Sierra club, Friends of the Wissahickon, etc)
- Those attending related events (Urban Sustainability Forum, Penn Future, etc)
- Environmental scientists / regulation professionals (EPA, etc)
- Scientists / individuals with an interest in atmospheric science

Village Green

Vaughn Bell

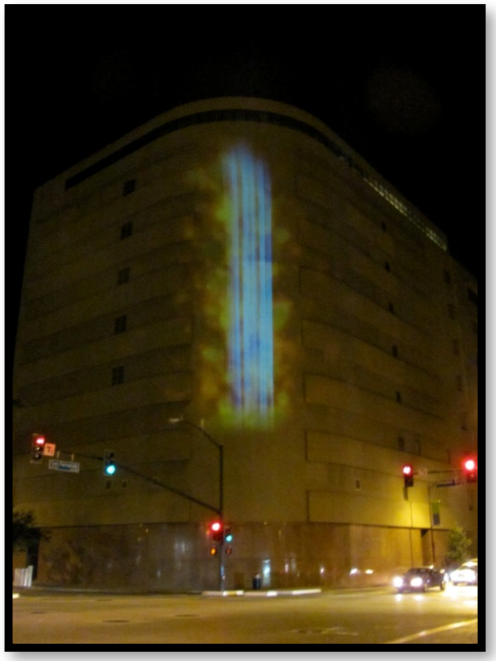
These biospheres consist of plants native to the location of the exhibit, and by inviting people to stick their heads inside, Bell is giving them the chance to closely observe a local environment and have a sensory, fun experience. Their inclusion opens doors to discuss plant biodiversity, local growing, and impacts on reducing emissions.

*Plants grown by The Schuylkill Center for Environmental Education

Particle Falls

Andrea Polli

Particle Falls *is a 60-foot video projection of real-time air quality data. The projection, which dramatically visualizes the largely unseen matter existing in polluted air, helps to create a correlation between our urban environment and public health.*



Partnerships increase the impact of the project.

Partners provide additional content, expertise, new audiences, increased capacity, and publicity.

Particle Falls connections and partnerships

The Delaware Valley Green Building Council | The Franklin Institute | Air Management Services | The Clean Air Council The Mayor's Office of Sustainability | PhillyRising / Office of Managing Director | The Mayor's Office of Arts, Culture, & the Creative Economy | AthenianRazak, LLC | SEPTA | Office of Cultural Affairs, San Jose | The Association for Public Art

HighWaterLine

Eve Mosher

In 2007, *"**HighWaterLine** was a public artwork on the New York city waterfront that created an immediate visual and local understanding of the affects of climate change. I marked the 10-feet above sea level line by drawing a blue chalk line and installing illuminated beacons in parks. The line marks the extent of increased flooding brought on by stronger and more frequent storms as a result of climate change."*

CHF is planning a Philadelphia ***HighWaterLine*** with Mosher for the 2014 Science Festival

“After a year of kayaking, shooting photos from kayak and land [off the Delaware River], I discovered parallel studies of the sea rise impact on estuaries occurring where I grew up in southeastern England. ***The village where I grew up is likely to disappear.*** *So it’s a provocative double story – the impact of sea level change as well as part of my memory being washed away by the passing of time.”*

Roderick Coover, in conversation with
Jen Dionisio December, 2012