Community. Science.

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Hudson River Watershed Alliance Water Quality Symposium
Why me?

- Biological Oceanographer
- Environmental Microbiologist
- Secret past......

My philosophy:
water science + water communities = better science and better communities
Punchlines

- Put people first, ALL people -- and the fish and clean swimming beaches must follow!
- We need to shift our perspectives from "is it safe to swim?" and "are we protecting the fish?" to "do we all have equal access to clean water?"
- We need to move our citizen science into true community science (functional, defensible, active).
- Community science is our early warning system. We are ALL frontline communities when it comes to water.
Protecting Water Resources

Community of Users
(public, private)

Environmental Scientists

Decisionmakers
(Municipal, State, Federal)

- Based on a momentous discussion about road salt in Hudson River Tributaries in 2017 with Robyn Smyth (Bard College) and Kate Meierdiercks (Siena College).
- We have limited capacity to make meaningful change with current avenues of communication.
Protecting Water Resources

- Need a shared forum -- citizen science?
Protecting Water Resources

- Organized communities are better equipped to advocate for shared resource management
- Organized communities can collectively shift culture, addressing sources of inequity
Protecting Water Resources

- Science informed by community interest and fueled by community participation will help to shift cultural norms
- Communities ask the best scientific questions, bring creativity to the process
Supported by better science that is widely understood by (and performed by) the community, decisionmakers can be better informed and more agile in addressing water threats.
Protecting Water Resources

No longer just "citizen science," however -- it is science that is generated by and used by a full community of stakeholders.

Challenge: how do we ensure that this is how our monitoring data are fully used?
Some Examples

SKWC: SAW KILL WATERSHED COMMUNITY
Protecting the Saw Kill watershed and its ecological, recreational, and historic resources through hands-on science, education, and advocacy.

Bard Water Lab

Bard Water Lab

THuRST

The Hudson River Subwatershed & Tributary (THuRST) Research Network is a partnership of Colleges, Universities, and research institutions working in their respective, local watersheds, but using common methodologies, to answer a set of unifying research questions with answers of both scientific and community significance.
Saw Kill Watershed Community

Are watersheds a new way to think about neighborhoods?

--Bob Wills, Dutchess County
Community Questions:

1. Is nutrient loading an issue on the waterway?
2. Are leaky septic tanks contaminating the waterway and aquifer?
3. How do we better manage floodwaters during extreme weather events?
4. Are road salts a problem for our waterway and/or drinking water?
5. **Is our drinking water protected sufficiently?**
Community Science

- Long history of community/science on the Saw Kill (as early as 1976) and connection with Bard College resources
Community Science: baseline

- Students and community members digitized and analyzed these data (1976-1982) to begin to answer the road salts question.
Community Science: monitoring
The Bard Water Lab is a student-run, community-centered laboratory devoted to bringing water science to water communities.
Protecting Water Resources

- We are realizing the difference between citizen science and community science......but we need to take the next step -- reconceptualizing the utility of monitoring, centralizing people and drinking water. Because there is no other option.
We are the front line.
We are the front line. Let's do this.

Possible Next Steps:

- Reconceptualizing and reanalyzing existing data.
- Consolidating and sharing resources.
- Diversifying funding streams: community members and local governments, private foundations.
- Affiliating all monitoring efforts with nearest academic institutions.
- Building community science capacity instead of writing QAPPs and paying ELAP labs.
- Clarify with regulatory agencies (local, state, federal) that your community (taxpayer) science is an early warning system and that you expect prompt response when necessary. Do this BEFORE a crisis.