The Team

- -- the Public Lab Community!
- Don Blair (Public Lab, UMass Amherst Physics)
- Juan Camilo Cardenas, Professor, University of Los Andes, Bogotá
- Heather Craig - Research Assistant, MIT Center for Civic Media
- Adrienne Debigare (New Media Catalyst, Boston Globe)
- Catherine D'Ignazio (Assistant Professor of Civic Media and Data Visualization, Emerson College & Research Affiliate MIT Center for Civic Media)
- Ben Gamari (UMass Amherst Physics)
- Mark Green - Assistant Professor of Hydrology, Center for the Environment, Plymouth State University
- Patrick Herron - Water Quality Monitoring Director, Mystic River Watershed Association
- Mary Martin - Research Assistant Professor at the Institute for the Study of Earth, Oceans, Space, University of New Hampshire
- Charlie Schweik, Associate Professor, Center for Public Policy and Administration, UMass Amherst
- Jennifer Welbourne - Science Teacher at Amherst Middle School in Amherst, MA
Water monitoring is important to:

- Science & Environmental Journalists
- Watershed Managers & Municipal Governments
- Hydrologists
- Climate Science
- Environmental Advocacy Groups
- Farmers
- USGS
- STE(A)M Educators
- Individuals and Communities affected by CSO events, fracking, runoff, heavy metals, and other pollutants in the system
• Open Hardware
• Open Software
• Open Data
• Open Community
• Open Education

The Five Opens
www.openwaterproject.io
Water Quality is Complex
What People Want to Measure is Varied
But We Can Use Simple Measures as Indicators
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Water Electrical Conductivity Sensing to Monitor Pollution

Water conductance of electricity is related to the amount of dissolved ions, which makes electrical conductivity a front line indicator of water pollution. For example, at sites across northern New England, electrical conductivity is related to water pollutants like chloride and arsenic.
Who can measure?

Commercial products: ~$1500 for the hardware and software

Images from http://www.onsetcomp.com/
Open Hardware

~$150

Riffle

A riffle is a short, relatively shallow and coarse-bedded length of stream over which the stream flows at slower velocity but a higher turbulence than it normally does in comparison to a pool.

Wikipedia
Open Hardware

- Temperature
- Conductivity
- Depth

![Diagram of water bottle with electronics components:]
- Water bottle cap (thermistor pokes through)
- Thermistor + voltage divider
- 3 x AA batteries
- Typical water bottle
A Public Lab Initiative

The Open Water Project was begun by Public Lab, a community where you can learn how to investigate environmental concerns. Using inexpensive DIY techniques, we seek to change how people see the world in environmental, social, and political terms. Public Lab creates a collaborative network of practitioners who actively re-imagine the human relationship with the environment.
Hi! I'm a riffle :) remote, independent & friendly field logger electronics

www.openwaterproject.io

I could be a riffle a simple way to monitor your water www.openwaterproject.io

Build your own & share your data riffle www.openwaterproject.io

RIFLE: Conductivity + Adhesive updates
by Jordan | April 14, 2014 17 likes 11 comments

www.openwaterproject.io

A DIY water quality monitor by Public Lab
Open Community

Pilot Sites & Partners

- Mystic River/Mystic River Watershed Association
- Tidmarsh Farm Restoration Project, Plymouth, MA
- Merrimack River/Plymouth State, NH
- Cape Cod/Cape Cod Bay Watch, MA
Structure of the Civic Science Network

How we will support and engage people in the collection of water data
Get Involved

• Seeking media and community information partners for a journalism-education-science experiment

• Email us on the Public Lab water quality list: https://groups.google.com/forum/#!forum/plots-waterquality