

insights empowering action



ANNUAL REPORT 2015

FRACTRACKER ALLIANCE

FracTracker Alliance studies, maps, and communicates the risks of oil and gas development to protect our planet and support the renewable energy transformation.

Table of **Contents**

Introduction

Message from the Director 03

Programmatic

2015 Highlights	04
Feature Articles	06
Our Collaborators	80
Outreach & Events	10
Featured Publications	12
Staff Capacity	13
Future Work	14

Management

Growth Statistics	16
Meet the Staff	18
Intern Support	19
Financial Report	20
Board of Directors	21

Message from the Director

Dear Friends,

FracTracker turned five years old in 2015. In the short span of our existence, we've boldly explored the vast sea of issues associated with oil and gas development across America. We are powered by a passion to expose harms, document risks, and nurture action and enlightenment.

In our anniversary year, global evidence of and public concern about climate change intensified as the perils of fracking and extraction increased. We met these challenges with creativity and vigor, often in partnership with other organizations.

Projects like Our Energy Solutions – with Ecologic Institute US – took us across the hemispheres to join emerging fronts in the fight for clean energy.

Mapping for collaborators like Earthworks, PSE Healthy Energy, and PennEnvironment supported crucial advocacy and research efforts.

Providing tours and presentations in shale gas fields opened hearts and minds to the darker sides of fossil fuel dependency.

A new award – launched with Halt the Harm Network – allowed us to honor volunteers engaged in chronicling the effects of extraction.

Executing the Oil Train Response 2015 conference – with ForestEthics – informed and energized many to address the threat of oil transport by rail.



Brook Lenker speaking at a public program at the Argentinian Senate

Placing a staff person in Washington, DC, and adding fulltime staff to manage community field projects, broadened our relationships and increased our understanding of local impacts.

And along with other milestones, we expanded our board of directors and completed a needed fundraising strategy.

Our expedition for truth, transparency, and sustainability continues until people and the planet are better protected. Until then, the good will of all of you, and caring people everywhere, provides an ocean of solace.

Thank you for another meaningful year!

Brook Lenker
EXECUTIVE DIRECTOR

2015 Highlights

FracTracker began in 2010 as a southwestern Pennsylvania area website operating out of the University of Pittsburgh and focusing on data about extraction in the Marcellus Shale region. Since 2012, the effort has matured into its own entity, the FracTracker Alliance - a national organization with regional offices in Pennsylvania, West Virginia, New York, Ohio, Washington DC, and California. The insights we provide address all of the geographies affected by the oil and gas industry. Nine staff members plus seasonal interns work tirelessly to inform the public about energy and climate issues and to support advocacy groups with robust data, visualizations, and information. Explore highlights from 2015:

Our Energy Solutions Project

In collaboration with Ecologic Institute US, the "Our Energy Solutions" project highlighted the many impacts of extraction across the US and the promise of renewable energy. We delivered the program at two universities in Florida, two venues in North Carolina, four venues in Uruguay and Argentina (including a national fracking conference in Parana), and seven venues in the UK, Germany, Belgium, and the Netherlands (including a meeting with the European Commission). In total, we reached over 1,000 people directly, and many more through a continuing dialogue and network.

Assessing Water Use in Ohio

In Ohio, Ted Auch has been mining data to determine threats to OH's water security.

Stimulating a typical well in OH, for example, requires 7 million gallons of freshwater, ~2.6 million more than the average well cited by the US EPA: fractracker.org/threats-to-oh-water-security

Open Wastewater Pits in California

It is hard to believe, but disposing of hazardous oil and gas wastewaters in unlined, open-air pits is still a common practice in California and permitted in other states. In the fall of 2015, Kyle Ferrar helped Clean Water Action update a report on the risks that these pits pose to people and the environment. These risks include the pits' contributions to degraded air quality, hazards for terrestrial animals and birds, and threats to groundwater quality. Read more: fractracker.org/wastewater-pits-in-cali

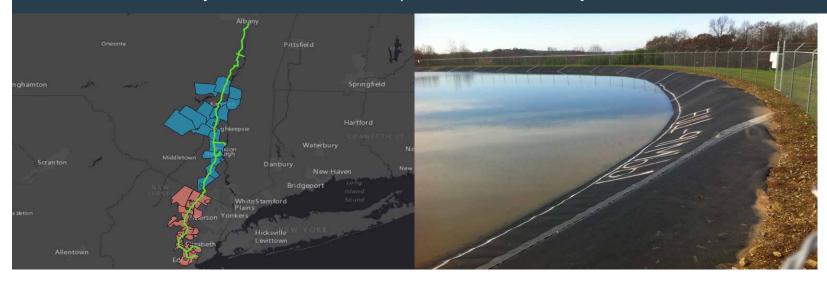
Pipeline Mapping

Across the US more and more pipelines are being proposed to transport oil and gas products to refineries and for export. We have been mapping the potential impacts and community resistance surrounding such activities. Learn more about the proposal set for New York's Hudson Valley through a map and article by Karen Edelstein: fractracker.org/controversy-over-pilgrim-pipelines

Left to Right: Brook Lenker speaking during the Our Energy Solutions project in Florida. Map of California oilfield pits in the central valley, where the majority of oil and gas extraction activity exists.



Left to Right: Map of the proposed Pilgrim Pipelines, running south from Albany, NY to refineries along the coast. Photo by Ted Auch of a wastewater impoundment in Carroll County, OH.



Featured **Articles**

Sharing data, writing articles, and creating maps remain defining parts of FracTracker's activities. This year we posted 57 new stories, with custom, topical maps created for the majority of the articles. These stories covered a wide array of oil, gas, and other energyrelated issues. The following articles were the most popular resources on our site in 2015.

~1.7 Million Wells Map

In 2014, we produced our first version of a national oil and gas map, showing over 1.1 million active wells in the US In 2015, we updated that data, with the total number of active wells up to 1,666,715. The number of wells per state ranges from 57 in MD to 291,996 in TX. There are 135 counties with a single well, while the highest count is Kern County, CA, with 77,497 active wells. Read more and view the map:

fractracker.org/1-7-million-wells

Danger Around the Bend

The increasingly common practice of transporting crude oil by rail from North Dakota to points across the nation poses a significant risk to the health, wellbeing, and safety of communities - including many in Pennsylvania. To support a report compiled by PennEnvironment, we developed a dynamic density map showing the number of people in PA that live within a half-mile of train tracks. Read more: fractracker. org/danger-around-bend

PA Shale Viewer >

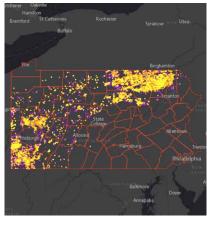
The Alliance Map

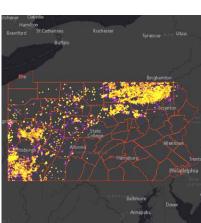
We first launched this map a few years ago, and now it is being built upon by you! The map, hosted on our website and also on Halt The Harm's, shows the location of people working on oil and gas issues in the US. International organizations have begun to add themselves to the map using the online form, as well. To date, 370 entries have been mapped, with more groups being added every week: fractracker.org/the-alliance-map

Pennsylvania Shale Viewer

Year to year, one of our most popular maps continues to be the Pennsylvania Shale Viewer. This map shows the most up to date locations of oil and gas permits, drilled wells, and violations issued by the PA Department of Environmental Protection. Also available to view on this map are crowdsourced compressor station data as of December 2014, open pits identified by SkyTruth volunteers in 2013, environmental justice areas, and watersheds.

Read more: fractracker.org/pa-shale-viewer







Green completion stack on a fracking well pad in Carroll County, Ohio. Photo by Ted Auch, 2015. These photos and more can be found in our online albums: fractracker.org/photos

Free online imagery

One of the services that visitors to our website use often is the gallery of photos (and some videos) we have compiled of oil and gas activity. These free visuals (600 and counting) are provided by staff and contributors around the globe who want to share information about drilling's sights, sounds,

and impacts. Need a picture for your upcoming newsletter about waste disposal practices in West Virginia? We have it! Want to see what a green completion looks like in Ohio? Check! (See above.) This resource, sorted by theme and location, has been used by reporters, citizens, researchers, marketing experts, and many more to help visualize

and understand the complex process that is oil and gas drilling in the US. We have even started to compile photos from other countries, such as Germany. If you would like to contribute your imagery, please email: info@ fractracker.org with the files and credits, or submit a photo through our recently updated mobile app.

The imagery on our site is available for non-commercial reuse, free of charge. If you are planning to use these photos or videos, please be sure to cite the author if one is listed, as well as FracTracker Alliance. Learn more: fractracker.org/photos

Our Collaborators

Almost every project and task that we accomplish at FracTracker relies on collaborations and partnerships with researchers, citizens, and advocates. Here are a few collaborations from 2015 that stand out:

Fracking's Most Wanted

In April 2015, Natural Resources Defense Council (NRDC) released a report in conjunction with work by those of us at FracTracker Alliance. We launched this investigation to determine what information about oil and gas company violations is publicly available on the Internet, how accessible it is, and whether it provides an adequate understanding about the practices of different companies.

This report highlights the information gaps about the frequency and nature of oil and gas company violations; such data is only publicly accessible in 3 states – even though 36 states have active oil and gas development.

To take the review one step further, we analyzed the data that was available from these states – Pennsylvania, Colorado, and West Virginia. The results show that companies have been issued a series of violations, some of which are quite severe: fracker.org/frackings-most-wanted

Public Herald's #fileroom

FracTracker supported the data collection, analysis, and formatting of oil records extracted from Pennsylvania state agencies by Public Herald. Public Herald then worked with us to create an interactive, online map, static infographics, and investigative report that have been shared in the US and UK.

After a two year analysis, investigative journalists
Joshua Pribanic and Melissa Troutman of Public
Herald uncovered 9 ways that officials at the
Pennsylvania Department of Environmental
Protection (DEP) have kept drinking water
contamination across the state's shale region "off
the books" since fracking began in 2004. Public
Herald's analysis concluded that the current 260
positive water contamination determinations listed
by DEP is repetitively understated.

Explore the maps and data extracted during their investigation: <u>publicfiles.org</u>

Russell Gold, energy reporter for the Wall Street Journal and author of *The Boom* told me personally, 'This is the best environmental impact documentation that I've ever seen.' Russell has been to five continents studying energy.

- Carol Taylor Johnson, PhD - Host of shale forum featuring a FracTracker speaker

KOW Series

As part of a new FracTracker effort utilizing rich-media storytelling to communicate the impacts of oil and gas extraction, the Knowing Our Waters (KOW) project, led by Kirk Jalbert, covered the efforts of community-based water monitoring programs in the Marcellus Shale in order to highlight the important work these groups do in bringing attention to the risks that extraction industries pose to our watersheds.

Those spotlighted in this series include: ALLARM, Trout Unlimited, Izaak Walton League New York Water Sentinels, CCJ, and many more. Read the series: fractracker.org/water-monitor

Report Contributor

In collaboration with the
Lawrence Berkeley National
Laboratory, the California Council
on Science and Technology
issued a peer-reviewed scientific
assessment on how hydraulic
fracturing and acid well
stimulation could affect water,
the atmosphere, seismic activity,
wildlife and vegetation, and
human health in California. The
report also identifies knowledge
gaps and alternative practices
that could prevent or mitigate
these possible impacts.

FracTracker contributed data and expertise in the development of this report. Read the report: ccst.us/projects/hydraulic_fracturing_public/SB4.php

Technical Services

In the last year, dozens of organizations large and small from across the country have received technical services from the FracTracker team.

Recipients (partners) include Earthworks; Natural Resources Defense Council; PSE Healthy Energy; CERES; Freshwater Accountability Project; Halt The Harm Network, Southwest Pennsylvania Environmental Health Project; Center for Race, Poverty, and the Environment; Conservation Voters of PA; PennFuture; PennEnvironment; Public Herald: Audubon PA: Trout Unlimited; Save the Loyalsock Coalition; and more. Explore all FracTracker projects here: fractracker.org/projects







Outreach & Events

In 2015, FracTracker maintained its aggressive outreach agenda at conferences and forums – from local workshops to national, international, and academic conferences. Conservatively we reached 4,215 people directly through 82 in-person events. We also conducted webinars and two Twitter chats that reached ~50,000 viewers. Here are summaries of just a few of these outreach activities:



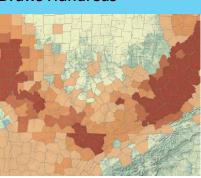
Oil Train Response Conference



First Annual Community Sentinel Award



Kentucky Presentation Draws Hundreds



Oil Train Response 2015

In November 2015, we helped host a robust and well-attended oil trains event held in Pittsburgh, Pennsylvania. The conference, supported by The Heinz Endowments and other funders, was organized in partnership with ForestEthics. Over 200 activists, community leaders, and public officials attended the one-day conference and two-day advocacy training. ForestEthics has continued the dialogue by initiating and maintaining national listservs and conference calls. Learn more: fractracker.org/oil-train-response-2015

Community Sentinel Award for Environmental Stewardship

We deeply appreciate the foundations and individuals who support us and enable our work, including the many patrons who attended our first-ever film night and fundraiser in September 2015. At that event, we honored three environmental heroes with our first annual community sentinel awards for their stewardship: Dory Hippauf, Therese Vick, and Craig Stevens. Learn more: fractracker.org/sentinel-award

Outreach in Kentucky

FracTracker's Bill Hughes gave a stirring presentation to a new audience in Berea, Kentucky this year as news of potential fracking arose there. Over 300 people (maximum capacity for the venue) came out to learn about the impacts of oil and gas drilling from a resident's perspective.

Shale Gas Field Tours

Bill Hughes also regularly hosts shale gas field tours so that people may witness community-level oil and gas impacts first hand. In the time Bill has worked for FracTracker he has guided dozens of tours, reaching hundreds of students, researchers, activists, and politicians.

Featured **Publications**

In addition to our direct outreach and events, FracTracker's online analyses and maps were featured in 22 academic and peer-reviewed publications in 2015. This amount represents the most we have been cited per year since our launch in 2010.

- Benson ME, Wilson AB. Frac Sand Sources in the United States. USGS
- Brisson M. Three empirical essays in labor economics. Economics Dissertations
- Christopherson S. Risks Beyond the Well Pad: The Economic Footprint of Shale Gas Development in the US, Book chapter
- Evensen DT, Clarke CE, Steadman RC. A New York or Pennsylvania state of mind: social representations in newspaper coverage of gas development in the Marcellus Shale. JESS
- Finkel M. The Human & Environmental Impact of Fracking: How Fracturing Shale for Gas Affects Us & Our World, Book
- Hall JC, Shultz C. The Political Economy of Local Fracking Bans, Working paper, WVU
- Gardoni P, Murphy C, Rowell A. Risk Analysis of Natural Hazards: Interdisciplinary Challenges & Integrated Solutions, Risk, Govern. & Society
- Jalbert K. Promising Data for Public Empowerment: The Making of Data Culture & Water Monitoring Infrastructures in the Marcellus Shale Gas Rush. Dissertation
- Kinchy A, Parks S, Jalbert K. Fractured knowledge: Mapping the gaps in public & private water monitoring efforts in areas affected by shale gas development
- · Klein N. This Changes Everything, Book
- Leap SJ. Roots Versus Wells: Grassroots Activism

- Against Fracking in New York & California, Thesis
- Lang C, Boslett A, Guilfoos T. Valuation of Expectations: A Hedonic Study of Shale Gas Development & New York's Moratorium
- Malone S, et al. Data inconsistencies from states with unconventional oil & gas activity. Journal of Environmental Science and Health, Part A
- Mathews A. Modeling Atmospheric Emissions & Calculating Mortality Rates Associated with High Volume Hydraulic Fracturing Transportation, Thesis, RIT
- Mondock A. Shale I stay or shale I go? PA's "Marcellus Shale-Size" of a debacle over fracking severance taxation. Ave Maria Law Review
- Resnikoff M, Network DR. Review of PA DEP TENORM Study Report. By Radioactive Waste Management Associates
- Richards EG. Finding Fault: Induced Earthquake Liability & Regulation. Columbia Journal of Environmental Law
- Risk Analysis of Natural Hazards.
 Interdisciplinary Challenges & Integrated
 Solutions. Eds. Gardoni, Murphy, & Rowell
- Ryan C, et al. Subsurface Impacts of Hydraulic Fracturing: Contamination, Seismic Sensitivity, & Groundwater Use & Demand Management

View all here: fractracker.org/about-us/kudos

Staff Capacity

FracTracker celebrates several changes made to our staff capacity in 2015.

New Position Added

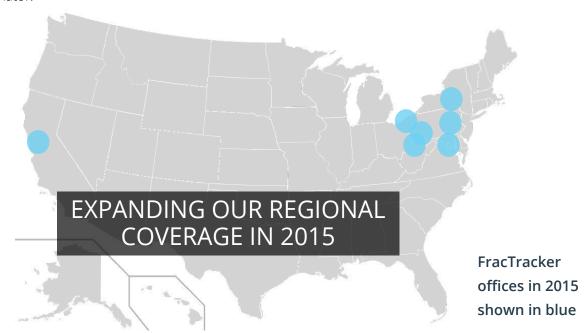
We created a new position titled Manager of Community-Based Research and Engagement and hired Kirk Jalbert, PhD, MFA to fill this role beginning in August 2015. The position, with Kirk's leadership, is leading us to new partnerships for the organization, insightful projects, creative redesigns for the mobile app, powerful media-rich stories and more. Kirk is based in Pittsburgh with Matt Kelso.

DC Presence for FracTracker

Sam Malone Rubright is expanding her network of contacts to the East Coast where she is now living, capitalizing on the many NGOs headquartered in DC. Her title changed to Manager of Communications and Partnerships to accommodate her shifting role and the addition of Kirk Jalbert to the FracTracker team.

Shifting Regional Focus

Additionally, our program staff situated in New York, Ohio, and California are expanding their roles to more broadly cover the regions in which they operate. As such, Karen Edelstein is now our Eastern Program Coordinator, Ted Auch our Great Lakes Program Coordinator, and Kyle Ferrar our Western Program Coordinator.



Annual Report 2015 Annual Report 2015 Annual Report 2015

Future Work

2016 promises to be an exciting and impactful year for FracTracker Alliance. Here are just some of the projects we have in the queue:

Along with several project partners, we are working on a project called "Breathe At Your Own Risk" which will visualize air monitoring data collected in Wyoming near dense oil and gas drilling, as well as provide more information about the people whose lives have been impacted by these operations.

In Pennsylvania, we are examining patterns of oil and gas leasing in specific communities to provide the public with fair warning about drilling activity that may be coming their way (info right). We will also cover the issue of environmental justice in PA.

We are currently working with Earthworks to create an online, embeddable map that shows FLIR imagery of well-pad and compressor station emissions collected in various regions of the United States. The map will be used for Earthwork's advocacy and likely that of the groups it convenes through gatherings like Stop the Frack Attack.

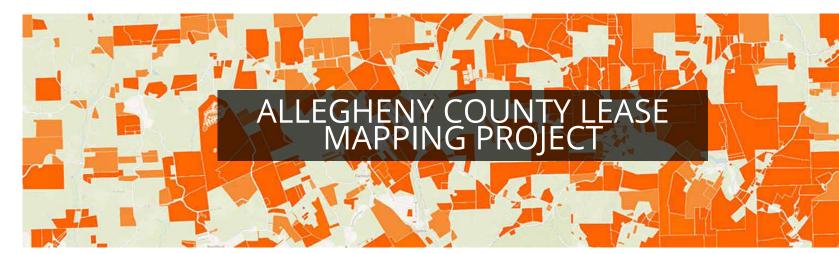
In California, we are mapping the Richmond refinery corridor and exploring the environmental health risks posed to nearby residents.

In 2016, with new and existing foundation support, we will be able to help residents track and analyze oil and gas activity in Colorado and other western states, an area that FracTracker previously has not had the resources to regularly cover.

And finally, in 2014 we launched our first mobile app designed to let users share their experiences and photos around oil and gas activity with others. To date, 502 user reports have been submitted from across the nation. In 2016, we will take the feedback we receive and make the user interface lighter and quicker, using intuitive icons to replace lengthy drop-down lists. As part of this process, we also want to determine if app stakeholders find sensory-based classification of the impact reports useful. Such classifications may include the ability to report odor and noise complaints, for example. The upgraded versions for iPhone and Android platforms should be available in the summer of 2016.

Screenshot from the current version of our mobile app, showing the density of oil and gas wells by county (shades of blue) with the 502 user reports overlaid on top (red dots). The updated version of this app will be released in the summer of 2016.





Regardless of one's perspective on oil and gas development, we believe it is important for communities to be able to make informed decisions about where oil and gas wells are sited. Municipalities may wish to identify areas where drilling would be particularly burdensome for their residents and limit development through zoning ordinances. Others may wish to enter into dialogue with drilling companies before expensive permitting processes commence.

Proactive planning can be difficult to execute with existing tools, however. In Pennsylvania, the PA DEP does publish locations of permitted and drilled wells, but these do not always predict future development. Meanwhile, information that could be used for planning may be largely inaccessible to those without the resources to do exhaustive legal research. One missing dataset that would be useful is a comprehensive list of land parcels leased or contracted to oil and gas companies for future development.

In 2016, FracTracker hopes to begin to fill that significant gap with our Lease Mapping Project in collaboration with West Arete. Preliminary findings from Allegheny County, PA are shown below:

117 / 130

MUNICIPALITIES

WITH LEASES

22,643
TOTAL OIL & GAS
RECORDS

44 / 46
SCHOOL DISTRICTS
WITH LEASES

Annual Report 2015 Annual Report 2015 Annual Report 2015

Growth **Statistics**

FracTracker.org

Two years ago we set a goal of receiving 200,000 unique website users by the end of 2015.

As of December 31, 2015, we have cumulatively seen 543,991 sessions and 366,225 unique users visit FracTracker.org. In 2015 alone, despite the decrease in drilling activity in the United States, we had 156,738 sessions and 114,656 users visit our site.

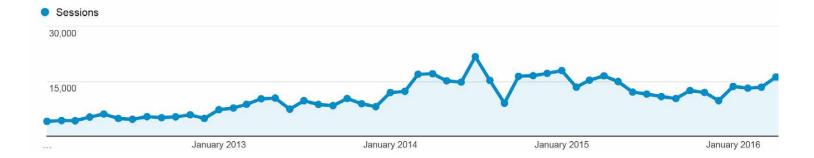
The majority of visitors in 2015 came from the US (87%), slightly less than domestic visitors in 2014 (90%). Russian visitors, for example, jumped from 300 in 2014 to 1,800 in 2015. This small international shift likely reflects the decrease in drilling activity in the US and growing international awareness of the issue.

Within the US, the majority of our visitors originate from Pennsylvania (16%) where FracTracker had its start, followed by Texas (11%, up from 9%), California (9%), New York (7% despite the fracking ban), and Ohio (7%).

543,911 cumulative sessions

87%
UNITED STATES

16%
PENNSYLVANIA



Social Media Reach

We now regularly use a system called Hootsuite to create efficiencies in our social media postings. Thanks in part to this tool, FracTracker has made great strides in social media outreach over the past year. We have 1,710 followers on Facebook, with an average monthly impression rate of 15,000 people.

Twitter, too, has been a fruitful venture, where we have 2,189 followers - expanding at a pace greater than our Facebook growth. While impressions (or reach) on Twitter varies greatly, it can range from 10,000 to 25,000 people. We have begun to explore the feasibility of Twitter chats and live tweeting at events, both of which have resulted in significant increases in impressions, retweets, and new followers.





In the News

FracTracker Alliance is increasingly being cited by other researchers, advocates, and the media. In 2015, we were mentioned in over 100 news articles, including Newsweek, NPR, and international outlets (shown left). Additionally, these articles were syndicated by many other media outlets.

Read more about where FracTracker appears in the news by visiting our website:

fractracker.org/about-us/in-the-news

Meet the **Staff**



Ted Auch, PhD

Great Lakes Program Coordinator Cleveland, OH

Kyle Ferrar, MPH

Western Program Coordinator Oakland, CA

Kirk Jalbert, PhD, MFA

Manager of Community-Based Research & Engagement, Pittsburgh, PA

Gwen Lehman

Manager of Operations Camp Hill, PA

Samantha Rubright, MPH, CPH

Manager of Communications & Partnerships Washington, DC

Karen Edelstein, MPS

Eastern Program Coordinator Ithaca, NY

Bill Hughes

West Virginia Community Liaison Wetzel County, WV

Matt Kelso

Manager of Data & Technology Pittsburgh, PA

Brook Lenker

Executive Director Camp Hill, PA

Learn more about the staff:

fractracker.org/about-us/staffbios

Intern Support

Without our amazing interns we would not have accomplished as much as we have to date. This special thank you goes out to all of our hard-working 2015 interns:.

2015 Interns	Academic Institution	FracTracker Position	Office
Juliana Henao	Duquesne University, M.S. in Biology and Environmental Science, 2015	Spring Communications Intern	Pittsburgh, PA
Christine Kangas	Kaplan University, M.S. in Environmental Policy, anticipated 2016	Summer GIS Intern	Cleveland, OH
Elliott Kurtz	University of Michigan, M.S. in Natural Resources and Environment: Environmental Informatics, anticipated 2017	Spring GIS Intern	Cleveland, OH
Yu Liao	Carnegie Mellon University, M.S. in Civil and Environmental Engineering, 2015	Spring GIS Intern	Pittsburgh, PA
Colin Loustalot	University of California, Santa Barbara, B.S. in Geography, anticipated 2016	Fall GIS Intern (Partial)	Oakland, CA
Nicolette Slagle	Michigan Tech, M.S. in Environmental Engineering Science, anticipated 2017	GIS Intern (2014-15)	Remote
Emily Watson	Washington & Jefferson College, B.A. in Environmental Studies and Spanish, anticipated 2016	Summer Communications Intern	Pittsburgh, PA
Lucas Wilgers	University of Redlands, B.S. in Environmental Studies, 2015	Spring GIS Intern	Oakland, CA

Internships with FracTracker offer students invaluable resume-building work experience and networking opportunities. Not only do interns work closely with members of our team, but they also have the opportunity to learn about and contribute to many aspects of our work. Learn more about our paid and unpaid internship opportunities: fractracker.org/about-us/internships

Financial Report

2015 FracTracker Alliance Funds

ASSETS

Cash Accounts	\$593,052.02
Office Equipment & Software (net of dep)	\$1,408.62
Total Assets	\$594,460.64

LIABILITIES & NET ASSETS

Accounts Payable & Accrued Liab.	\$43,652.95
Deferred Revenue	
Other Liabilities	
Total Liabilities	\$43,652.95

NET ASSETS \$550,807.70

TOTAL LIABILITIES & NET ASSETS

\$594,460.65

\$594,460

Funding Sources

FracTracker is honored to have received financial support from the following sources:

- 11th Hour Project
- Colcom Foundation
- Foundation for Pennsylvania Watersheds
- George Gund Foundation
- New Venture Fund
- Park Foundation
- Patagonia, Inc.
- Rockefeller Family Fund
- Save the Hills Alliance
- · The Heinz Endowments
- V. Kann Rasmussen Foundation
- Donations
- Fee-for-Service Mapping for NGOs



Board of **Directors**

The insight and contributions from our board members are invaluable. Thank you for all of your hard work guiding FracTracker's vision for the future.

R. John Dawes, President

Executive Director, Foundation for Pennsylvania Watersheds, Alexandria, PA As Executive Director of the FPW since 1994, Dawes has supervised small grants to over 150 environmental & watershed associations hroughout Pennsylvania.

Mike Kane, Treasurer

President & Executive Director, Community
Foundation for the Alleghenies, Johnstown, PA
Kane is responsible for the oversight of all
operations at CFA, including managing a
portfolio of loans & investments in excess of
\$8 million.

Brian Segee, JD, Member

Staff Attorney, Environmental Defense Cente Ventura, CA

Segee has lobbied on conservation policy & legislative matters before the US Congress, & coordinates EDC's monitoring & advocacy efforts in the California legislature.

Rebecca Vollmer, PhD, Member

Senior Analyst & Business Development
Director, Washington, DC
Vollmer's diverse background includes roles
in information technology, fundraising, higher
education, writing, & conservation - both
domestically & abroad.

Benjamin M. Stout III, PhD, Secretary

Professor of Biology, Wheeling Jesuit University, Wheeling, WV A practicing stream ecologist with 30 years of experience, Stout's current fieldwork focuses on impacts from valley fills, longwall mining subsidence, & Marcellus Shale extraction.

Sara Wylie, PhD, Member

Sr. Research Scientist, Northeastern University, Boston, MA

Wylie is well-known for her work in the development & application of tools for community-based science. Wylie completed ber PhD in 2011 at MIT

Ken Paulman, MA, Member

Internet Media Specialist, Fresh Energy St. Paul, MN

Paulman is the founding editor of Midwest Energy News, a non-profit news service published by Fresh Energy covering the heartland's clean-energy economy transition.

Phil Pritchard, Member

Retired Environmental Professional Asheville, NC

Pritchard's work experience includes service in the US Navy Supply Corps, promotion & undersing for educational television, various eaching positions, & many others.

Thank you to all who take the time to learn about these issues and exercise your concern. If you find our work beneficial in informing the energy dialogue, please consider donating to the FracTracker Alliance: fractracker.org/about-us/donate



Above Photo: Frac sand mining in Michigan by Ted Auch

Cover Photo: Gas pipeline construction in Maryland by Sierra Shamer

FracTracker Alliance 2015 Annual Report

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