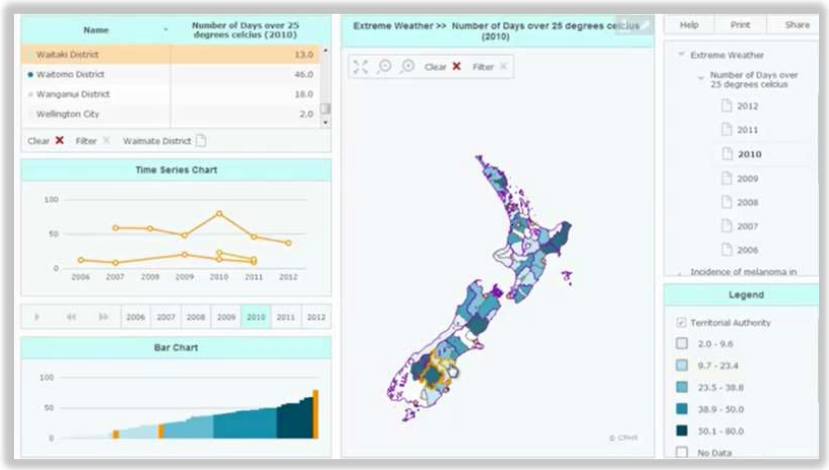
- Sala N. Senkayi, Ph.D., Senior Quality Assurance Scientist U.S. EPA - Region 7

- Subject Matter Experts —> thanks to all

Visualization tools/apps allow you to view different query results at the same time. This does not mean or suggest that the data are related, and the results should not be interpreted in this way.

Agencies teamed up to better understand their data using apps in addition to using a multidisciplinary team approach. Noting these relationships can help address poor health (and any related cost) associated with environmental exposures.

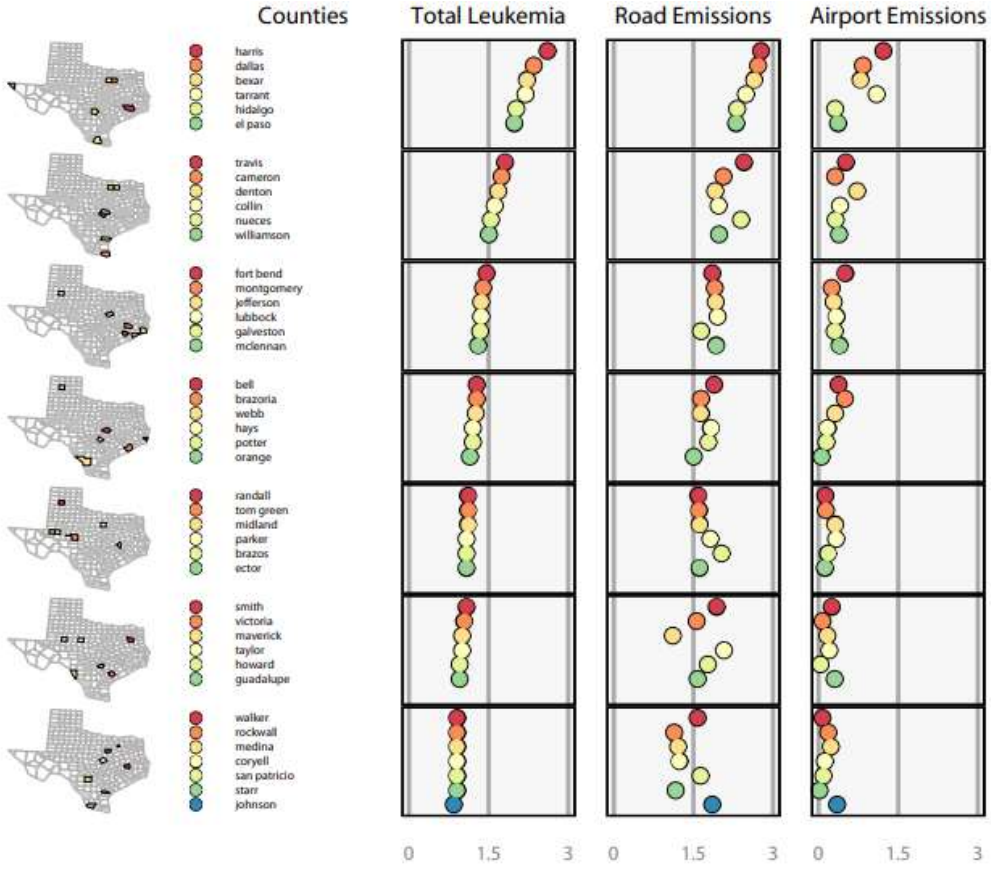
Background & App/Vis Importance



←Option # 1-One Area

→Option #2- Two Areas

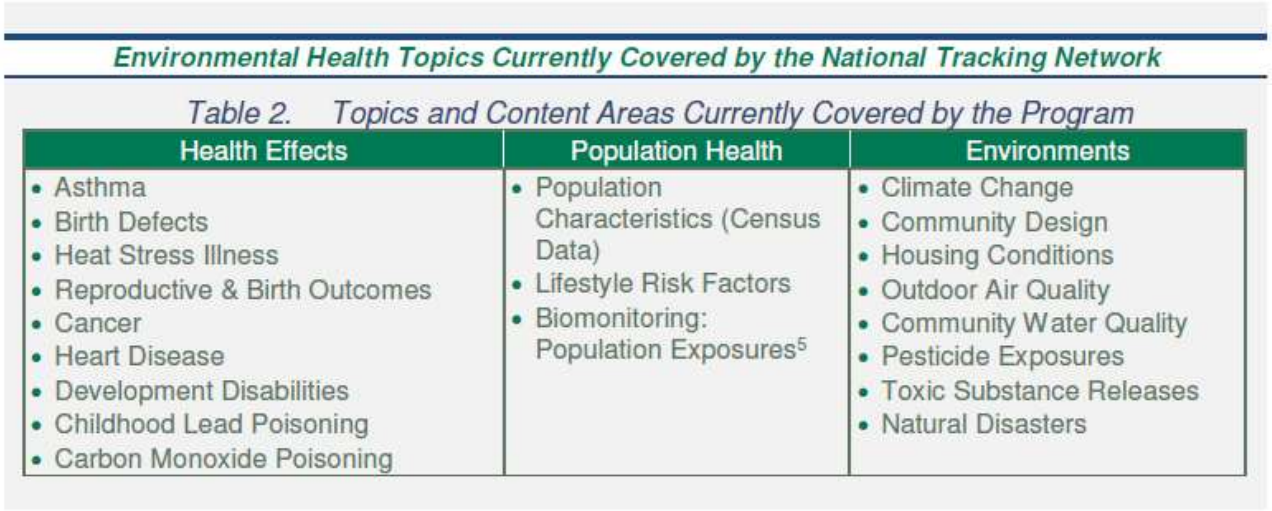
Journal of Statistical Software
January 2015, Volume 63, Issue 2. *http://www.jstatsoft.org/*



Marc H. Weber
US Environmental
Protection Agency

Michael G. McManus
US Environmental
Protection Agency

Importance of Data Quality!



Environmental Health Topics Currently Covered by the National Tracking Network

Table 2. Topics and Content Areas Currently Covered by the Program

Health Effects	Population Health	Environments
• Asthma • Birth Defects • Heat Stress Illness • Reproductive & Birth Outcomes • Cancer • Heart Disease • Development Disabilities • Childhood Lead Poisoning • Carbon Monoxide Poisoning	• Population Characteristics (Census Data) • Lifestyle Risk Factors • Biomonitoring: Population Exposures[5]	• Climate Change • Community Design • Housing Conditions • Outdoor Air Quality • Community Water Quality • Pesticide Exposures • Toxic Substance Releases • Natural Disasters

←linked to data using an API connection.

- EJSCREEN Environmental Justice Screening & Mapping Tool
- EPA National Emissions Inventory
- EPA National Air Toxic Assessment
- Toxics Release Inventory (TRI)

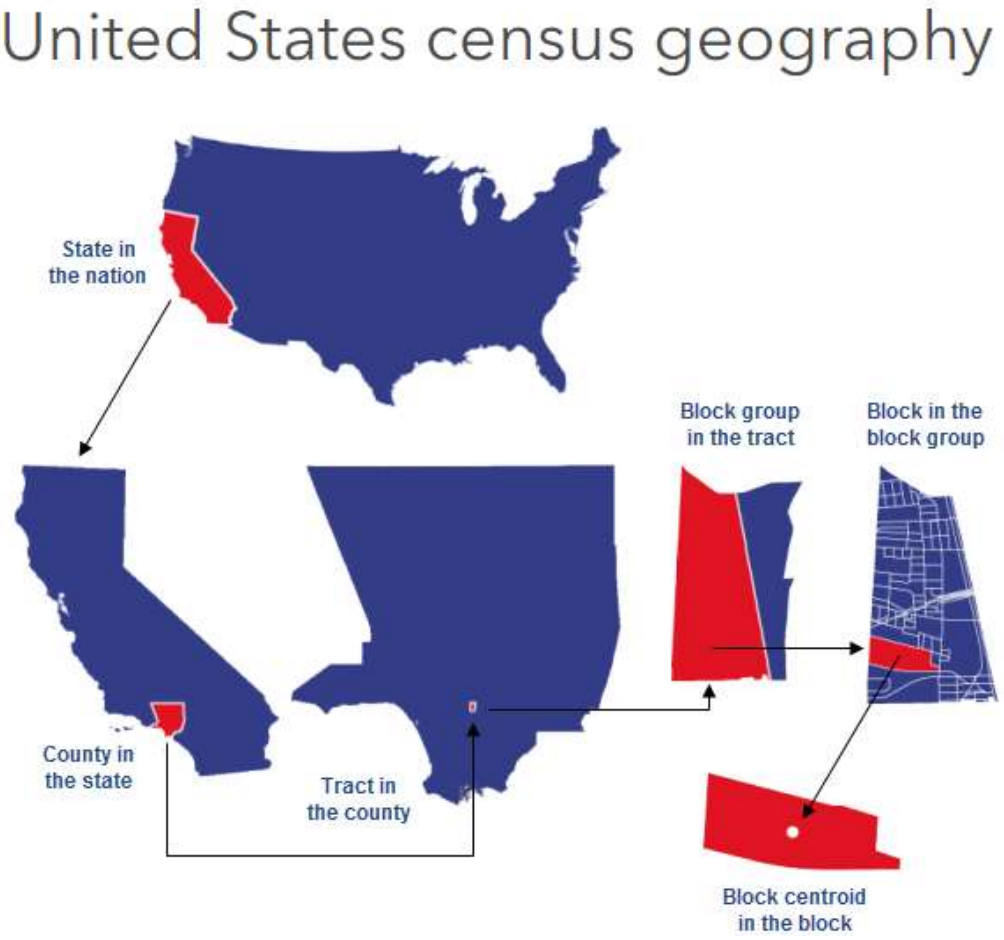
→Added

Cherokee Nation Lead and Radon

Arkansas Department of Health Blood Lead Levels

R6 Ozone Data

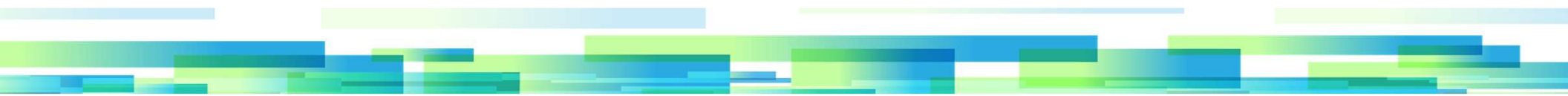
Importance of Common spatial layers (US Census)



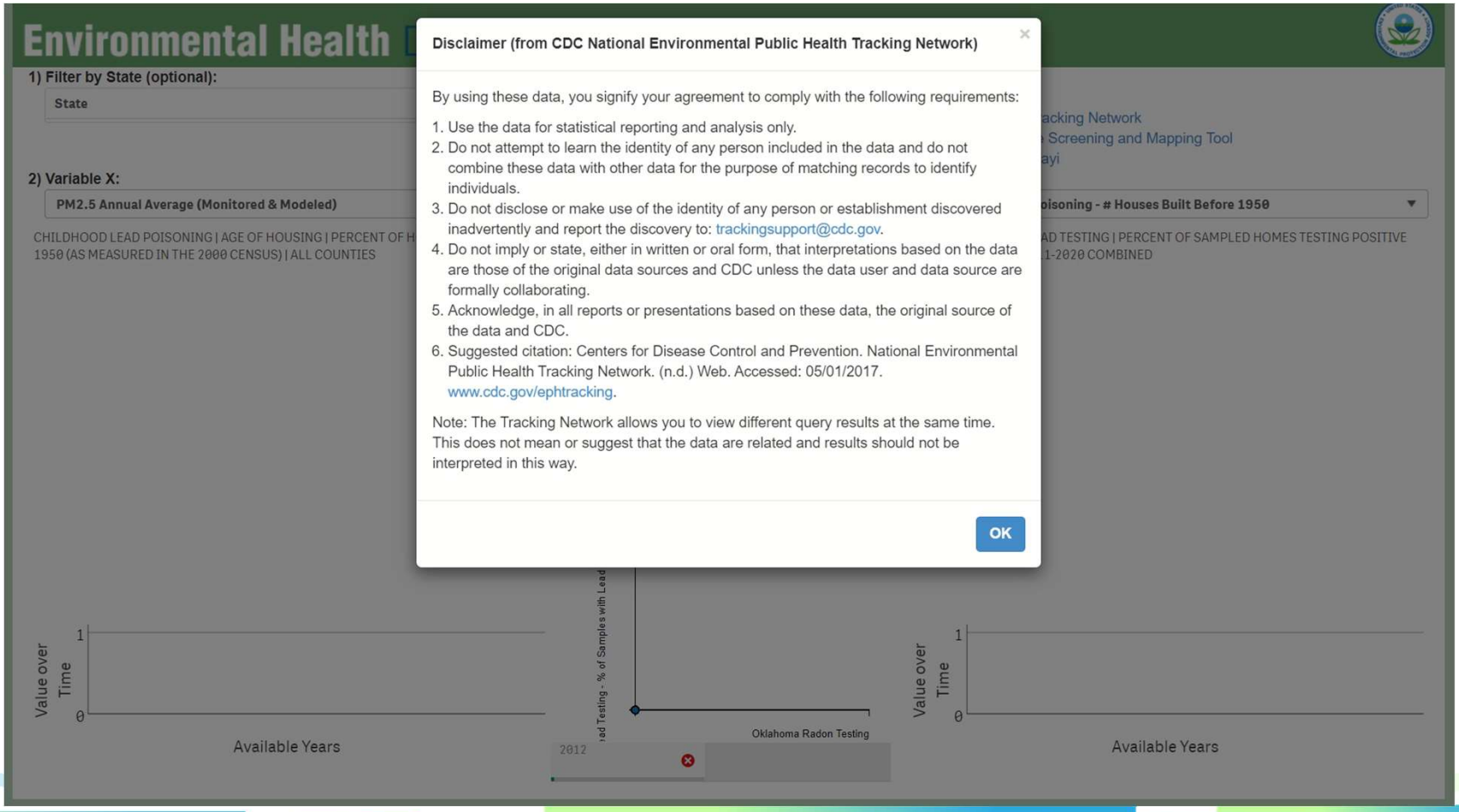
Regional Environmental Health Data Visualization App (REHD Vis App) Demo

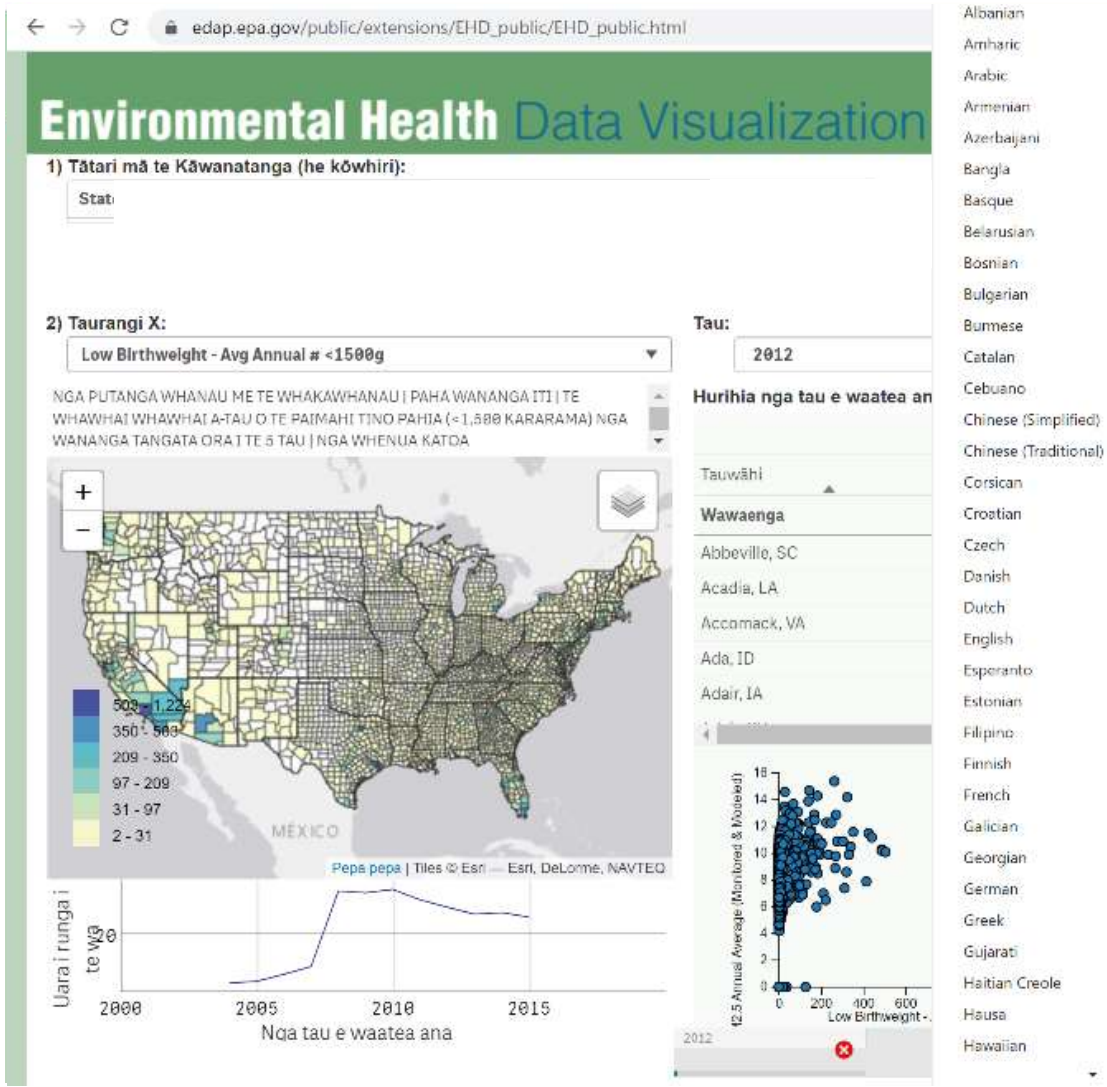
Dr. Bryan Chastain, EPA Contractor/Developer.
National Geospatial Support Team/National Analytics Support Team, contractor to the U.S. EPA with GDIT

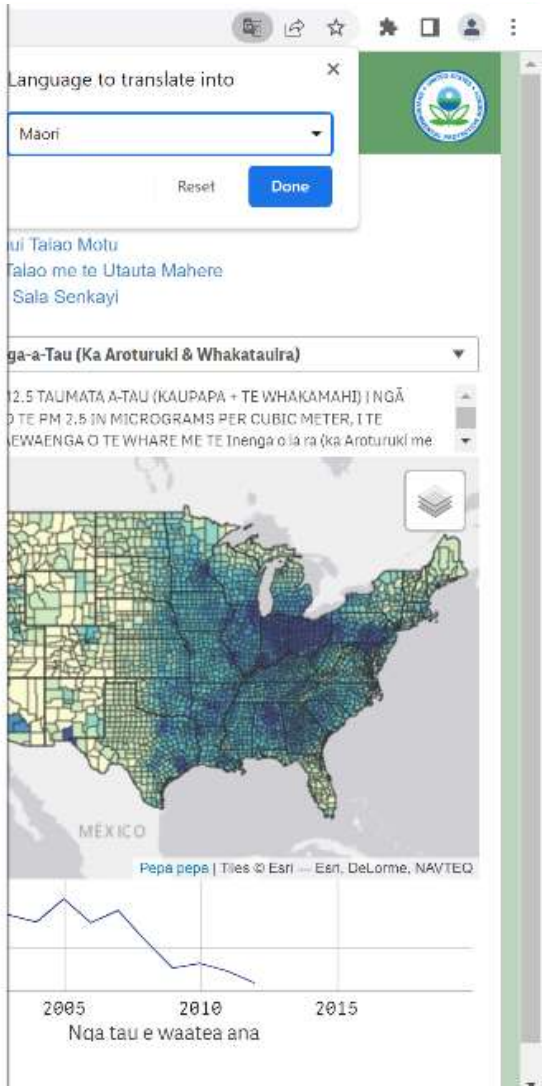
Dr. Sala N. Senkayi, U.S. EPA - Region 7
Senior Quality Assurance Scientist

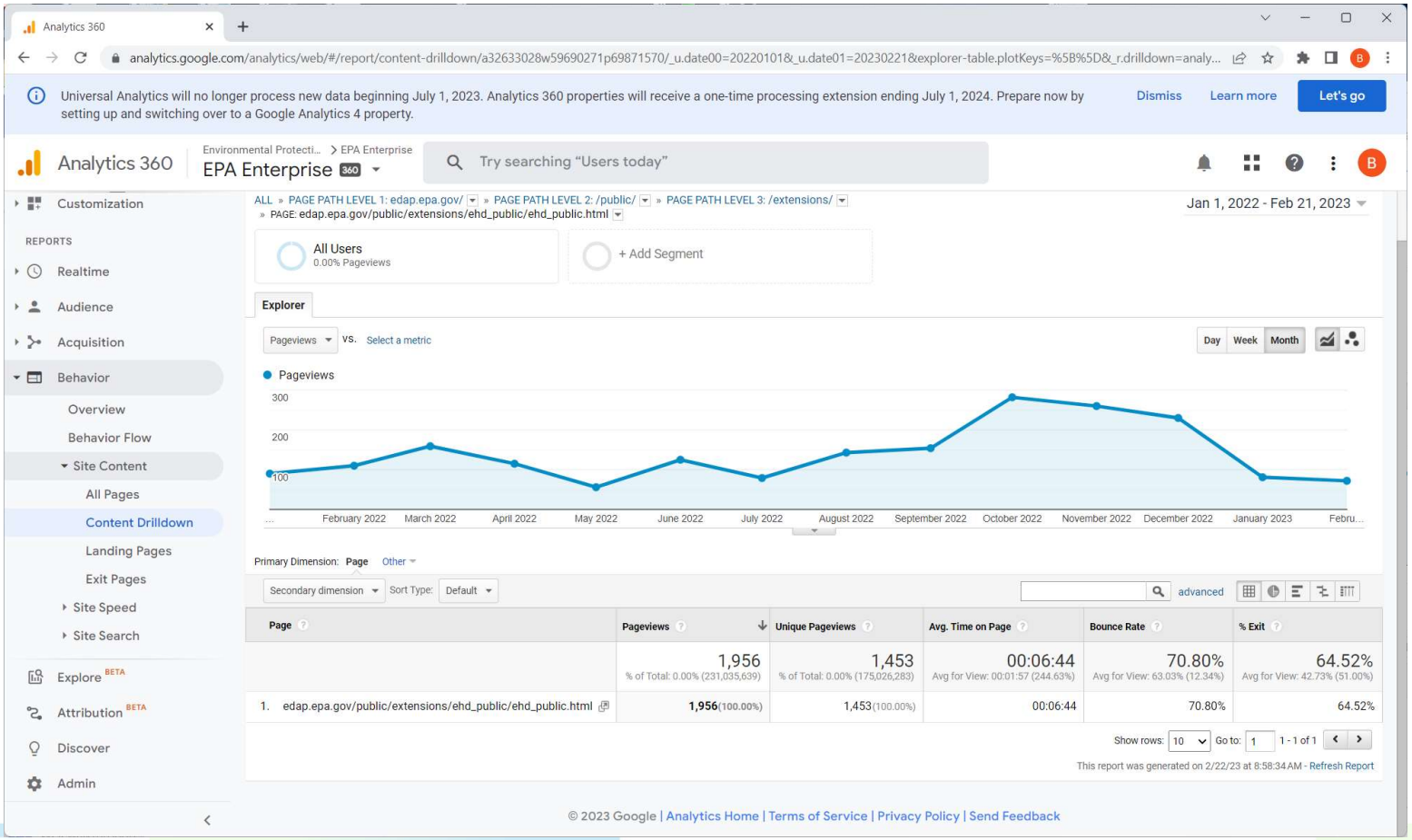


Cherokee Nation Data




edap.epa.gov/public/extensions/EHD_public/EHD_public.html
Environmental Health Data Visualization
1) Tātari mā te Kāwanatanga (he kōwhiri):
2) Taurangi X:
Low Birthweight - Avg Annual # <1500g
Tau:
2012
NGA PUTANGA WHANAU ME TE WHAKAWHANAU | PAHA WANANGA ITI | TE WHAWHAI WHAWHAI A-TAU O TE PAIMAHI TINO PAHIA (<1,500 KARARAMA) NGA WANANGA TANGATA ORA I TE 5 TAU | NGA WHENUA KATOA
Hurihia nga tau e waatea an
Tauwāhi
Wawaenga
Abbeville, SC
Acadia, LA
Accomack, VA
Ada, ID
Adair, IA
503 - 1,234
350 - 503
209 - 350
97 - 209
31 - 97
2 - 31
MÉXICO
Pepa pepa | Tiles © Esri — Esri, DeLorme, NAVTEQ
2000
2005
2010
2015
Nga tau e waatea ana
12.5 Annual Average (Monitored & Modeled)
Low Birthweight -
Albanian
Amharic
Arabic
Armenian
Azerbaijani
Bangla
Basque
Belarusian
Bosnian
Bulgarian
Burmese
Catalan
Cebuano
Chinese (Simplified)
Chinese (Traditional)
Corsican
Croatian
Czech
Danish
Dutch
English
Esperanto
Estonian
Filipino
Finnish
French
Galician
Georgian
German
Greek
Gujarati
Haitian Creole
Hausa
Hawaiian


Language to translate into
Māori
Reset
Done
MÉXICO
Pepa pepa | Tiles © Esri — Esri, DeLorme, NAVTEQ
2005
2010
2015
Nga tau e waatea ana


Analytics 360
analytics.google.com/analytics/web/#/report/content-drilldown/a32633028w59690271p69871570/_u.date00=20220101&_u.date01=20230221&explorer-table.plotKeys=%5B%5D&_r.drilldown=analy...
Universal Analytics will no longer process new data beginning July 1, 2023. Analytics 360 properties will receive a one-time processing extension ending July 1, 2024. Prepare now by setting up and switching over to a Google Analytics 4 property.
Dismiss
Learn more
Let's go
Analytics 360
Environmental Protecti... > EPA Enterprise
EPA Enterprise 360
Try searching "Users today"
Customization
REPORTS
Realtime
Audience
Acquisition
Behavior
Overview
Behavior Flow
Site Content
All Pages
Content Drilldown
Landing Pages
Exit Pages
Site Speed
Site Search
Explore BETA
Attribution BETA
Discover
Admin
ALL » PAGE PATH LEVEL 1: edap.epa.gov/ » PAGE PATH LEVEL 2: /public/ » PAGE PATH LEVEL 3: /extensions/
» PAGE: edap.epa.gov/public/extensions/ehd_public/ehd_public.html
Jan 1, 2022 - Feb 21, 2023
All Users
0.00% Pageviews
+ Add Segment
Explorer
Pageviews
vs.
Select a metric
Day
Week
Month
Pageviews
300
200
100
February 2022
March 2022
April 2022
May 2022
June 2022
July 2022
August 2022
September 2022
October 2022
November 2022
December 2022
January 2023
Primary Dimension: Page
Other
Secondary dimension
Sort Type:
Default
advanced
Page
Pageviews
Unique Pageviews
Avg. Time on Page
Bounce Rate
% Exit
1,956
% of Total: 0.00% (231,035,639)
1,453
% of Total: 0.00% (175,026,283)
00:06:44
Avg for View: 00:01:57 (244.63%)
70.80%
Avg for View: 63.03% (12.34%)
64.52%
Avg for View: 42.73% (51.00%)
1. edap.epa.gov/public/extensions/ehd_public/ehd_public.html
1,956 (100.00%)
1,453 (100.00%)
00:06:44
70.80%
64.52%
Show rows: 10
Go to: 1
1 - 1 of 1
This report was generated on 2/22/23 at 8:58:34 AM - Refresh Report
© 2023 Google | Analytics Home | Terms of Service | Privacy Policy | Send Feedback

qlikviz.epa.gov/sense/app/548ec18e-611a-4ce1-a9a9-3d83d05cb306/sheet/AhreC/state/analysis?qlikTicket=9hAWPGLhJYDCF.yY

Apps | Suggested Sites | searches | Region 6 Outlook... | EPA Region 6 Intran... | EPA Workplace | Imported From IE | Sign In/Out | Qlik Sense Mashup

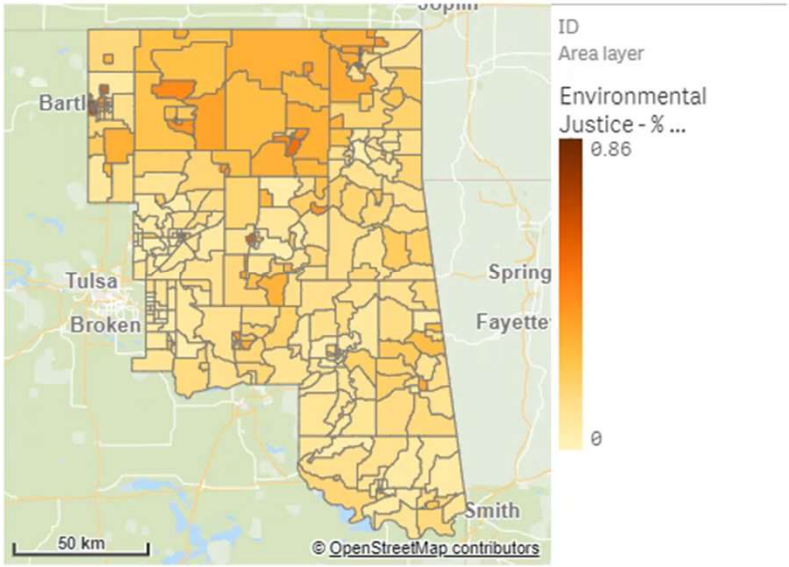
Environmental Health Data Tool - Lead Data by Block Gr... | Analysis | Story | Duplicate | Environmental Health Data T...

COUNTY_NAME 11 of 323 | STATE_NAME Oklahoma | Selections | Insights

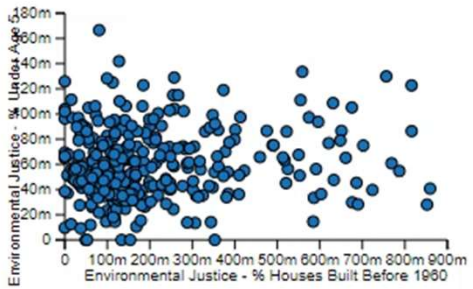
Environmental Health Data Tool

Environmental Justice - % Houses Built Before 1960

ENVIRONMENTAL JUSTICE | ENVIRONMENTAL INDICATORS | PERCENT OF HOMES BUILT BEFORE 1960 | ALL BLOCK GROUPS

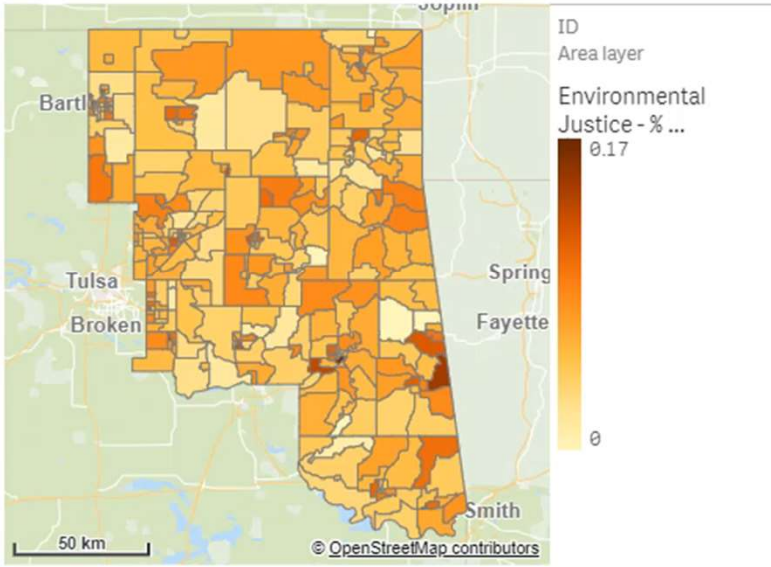


Location	Var. X	Var. Y
401470013005	0.13	0.06
401470013004	0.28	0.07
401470013003	0.08	0.09
401470013002	0.21	0.08
401470013001	0.31	0.01
401470012002	0.13	0.03
401470012001	0.15	0.04
401470011005	0.06	0.03
401470011004	0.40	0.09



Environmental Justice - % Under Age 5

ENVIRONMENTAL JUSTICE | DEMOGRAPHIC INDICATORS | PERCENT POPULATION UNDER AGE 5 | ALL BLOCK GROUPS



Sources: EPA Environmental and Health Topics, CDC National Environmental Public Health Tracking Network, EJSCREEN: Environmental Justice Screening and Mapping Tool, EPA National Emissions Inventory, EPA National Air Toxics Assessment

Export Table

Open the Next Sheet within a New Tab to 1) select State(s) and/or Counties or 2) to view an Aggregated Time Series ->

Benefits of Apps

- Used to identify **Gaps**
- Get us all on the same page (Agencywide **Consistency**)
- **Prioritize areas of interest** (Region/State/Agencywide)
- Bolstering **Tribal & EJ Community Resilience** (assist with noting communities that are marginalized, underserved, and overburdened by pollution) irrespective of your location
- Noting these relationships can **help address poor health** (and any related cost) associated with environmental exposures.
- Includes Maps/Trendlines/Chart/Data table (1980-2020)
- **Downloadable Data** via all 3 apps
- Thanks to Cherokee Nation (Shaun West et al.)

Accolades

CDC/Radon	MIT University	Drexel University
New Zeland (Massey Univ)	Malaysia University	ITEC
R6, R2, R7, RSL	OECA/ORD & NATA	QA, OEJ, OITA, GIS, Lead (Pb)
Embassy Science Fellowship	New Mexico, Cherokee Nation, Arkansas,	President Award

EPA Team Members as of 2023!

Charles Lee,
Headquarters

Eric S. Hall,
Principal Investigator (PI)

Chelsea Berg,
Office of Research & Development

Dr. CarolAnn Gross-Davis,
Region 3

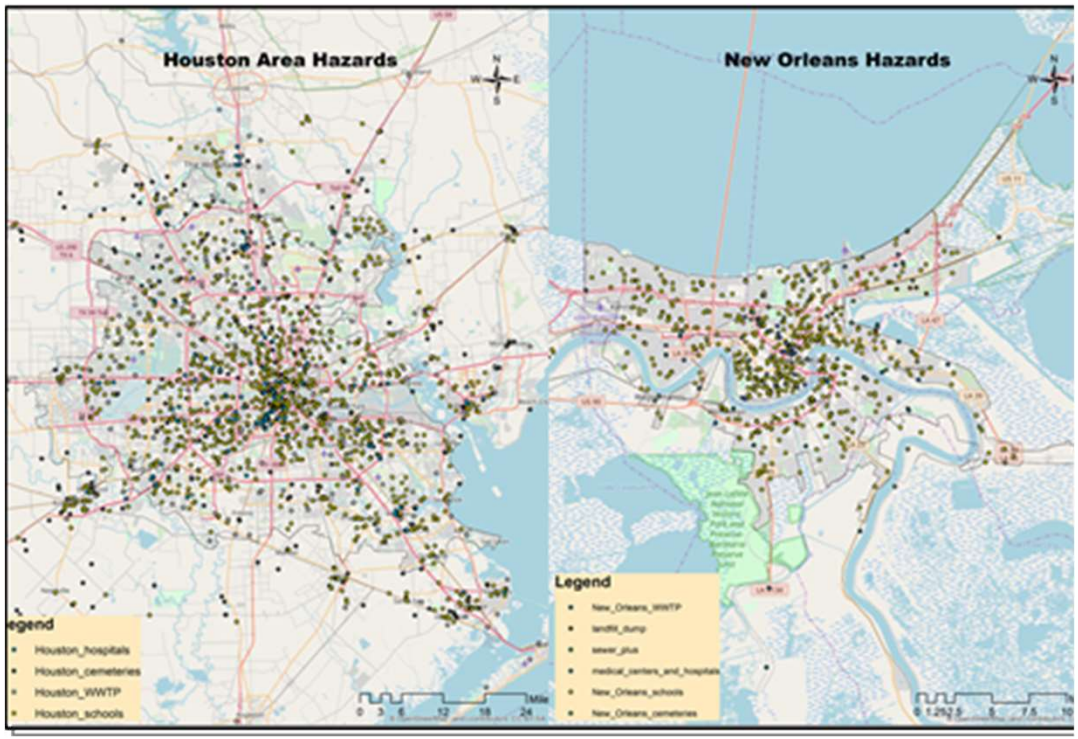
Dr. Sala N. Senkayi,
Region 7

Dr. Eliodora Chamberlain,
Region 7

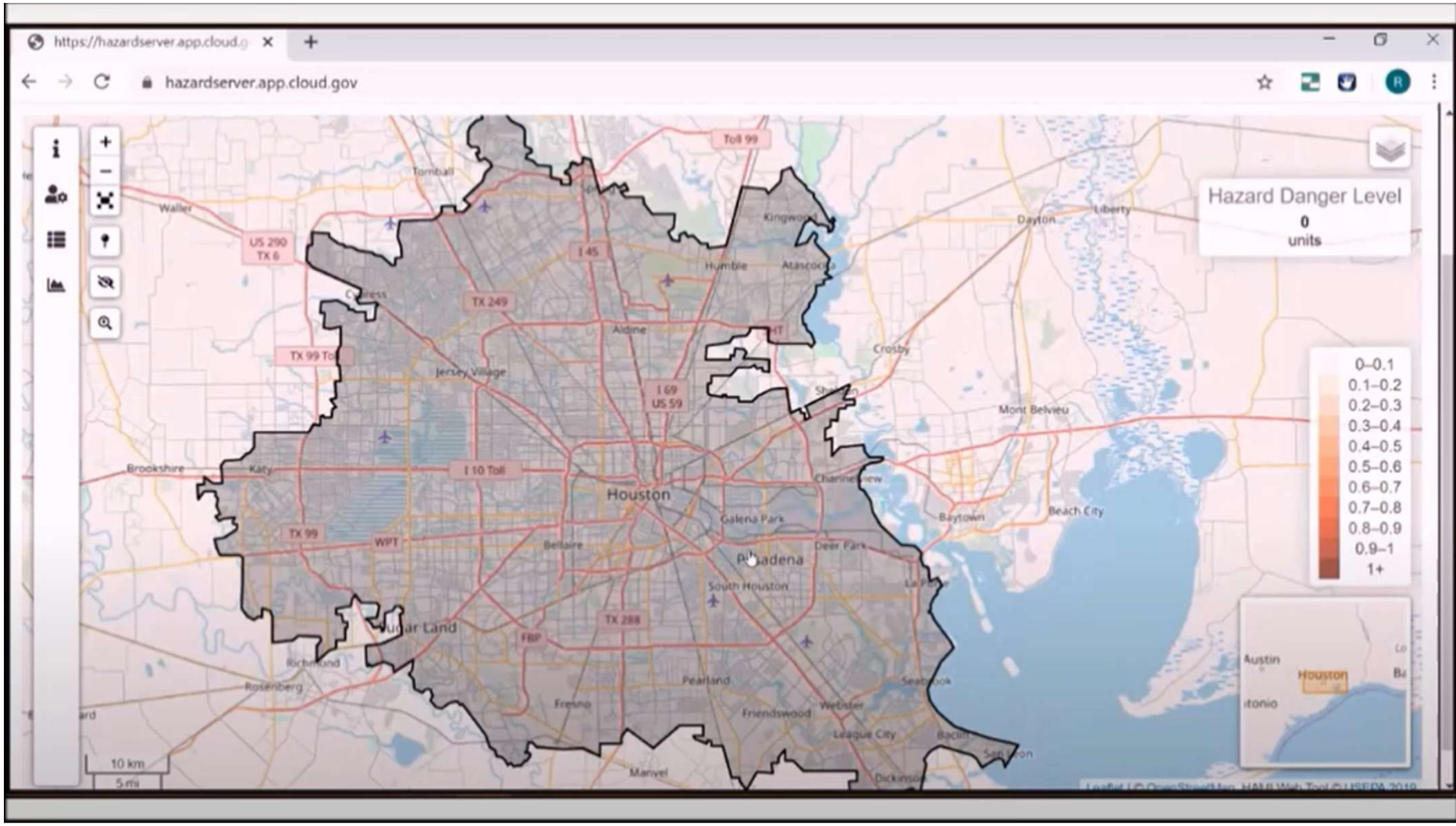
Bacterial Zones of Concern/Hotspots
Office of Research & Development Webpage Tool

- John Eastman, EPA/ORD
  Developed App
- Kurt Wolfe, EPA/ORD
  Wolfe.Kurt@epa.gov
- Dr. Rajbir Parmar, EPA/ORD
  Parmar.Rajbir@epa.gov
- Dr. Mike Cyterski, EPA/ORD
  cyterski.mike@epa.gov
- Dr. Sala Senkayi, EPA/Region
  Senkayi.Sala@epa.gov

2018 Team

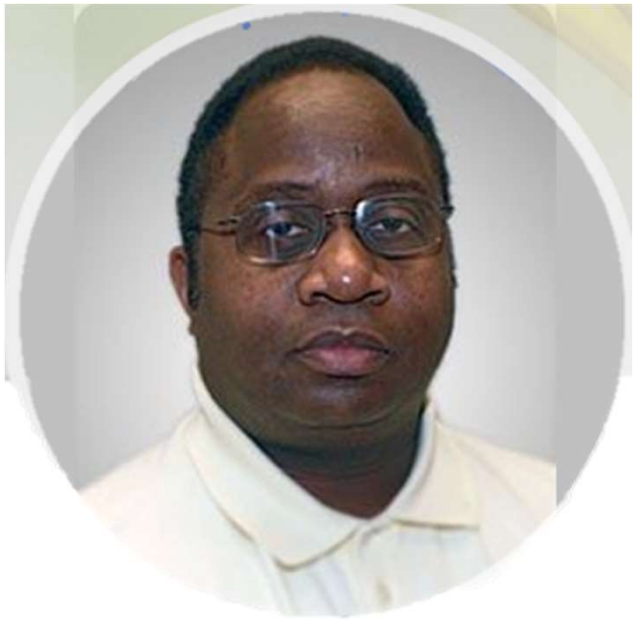


Source
Assessment
Mapping
Interface
Version 0.5.0



Zones of Concern – Hotspot Examples

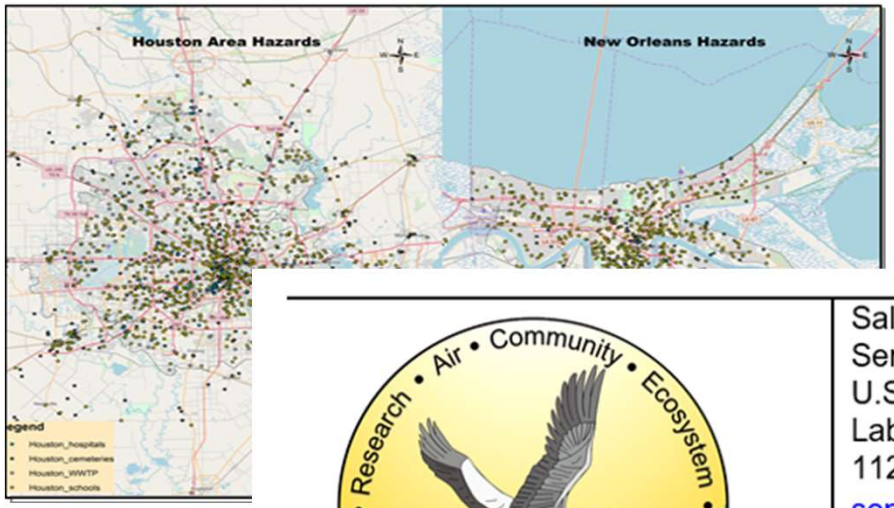
Dr. Marirosa Molina,
Research Microbiologist

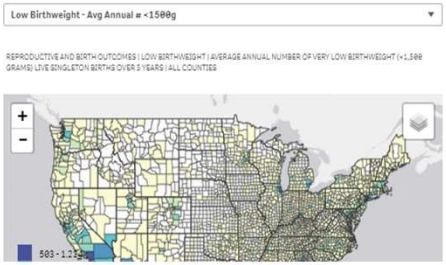


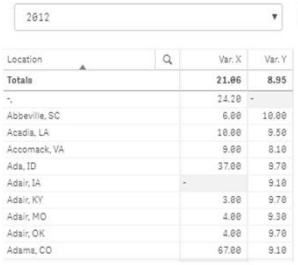
Eric S. Hall,
Principal Investigator (PI)

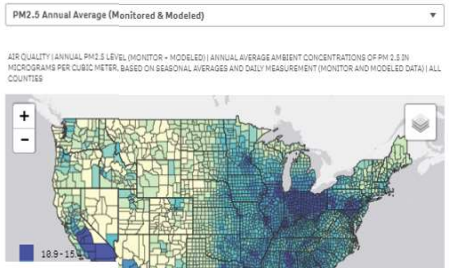
Dr. Sala N. Senkayi,
Region 7

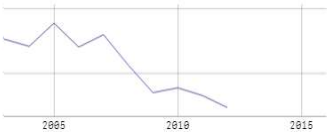
2023 EPA Team Members!

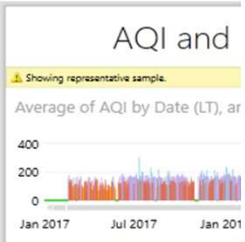










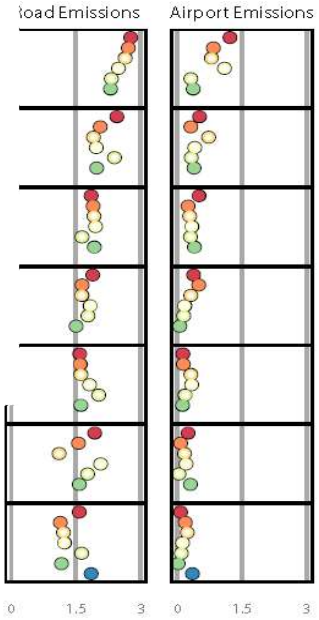


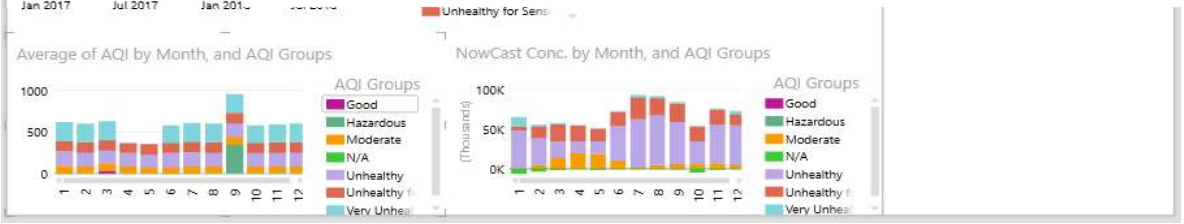
EPA Region 7 Science Program

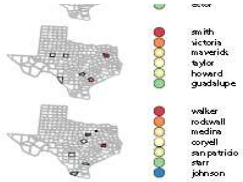
Sala N. Senkayi, Ph.D.
Senior Quality Assurance Scientist
U.S. EPA - Region 7
Laboratory Services and Applied Science Division (LAS)
11201 Renner Blvd, Lenexa, KS 66219
senkayi.sala@epa.gov

Click here to learn more about our *Quality Assurance Program*!

Seven Strong – Strength through Science
#R7StrengthThroughScience







Environmental Health Data Visualization

https://edap.epa.gov/public/extensions/EHD_public/EHD_public.html

SCAN ME

Source Assessment Mapping Interface

Version 0.5.0

https://hazardserver.app.cloud.gov/