Air Quality Monitoring Program- STL

Grant Funder: Missouri Foundation for Health

Partnerships

Metropolitan Congregation United	Holder of the Program
WashU: Environmental Studies Dept.	Interns and Support
The Nature Conservancy	Research and Solution Support
Sierra Club	Research and Network Support
WashU: Turner Lab	Monitoring Support and Data (PHD Student)

Monitors

- “Community Based” Air Quality Monitoring Program
- Goals:
  - Equitably, scientifically and strategically site air quality monitors at identified congregations throughout North and South St. Louis to fill the air quality data gap throughout the region.
  - Aims to promote Environmental Justice (EJ) to achieve health equity by addressing one of the leading urban environmental challenges outlined in the Environmental Racism in St. Louis report, **air quality**!

Project Plan/Timeline

Feb-May 2022: Monthly Interfaith Task Force Meetings continue

Community training/organizing events & progress report presentations are planned.

Sept 2022: Website For Public Accessible. WUSTL put archives with Open Scholarship. Actions begin after the Air Quality Bridge Rally 2022.

August 2022-December 2023: MCU-based organizing continues around Air Permit Reform. Script used for all churches internally and externally canvassing.

Jan-March 2023: Air Quality Monitoring Ends with Washington University. Congregations to decide on permanent monitoring demands and round two of actions.

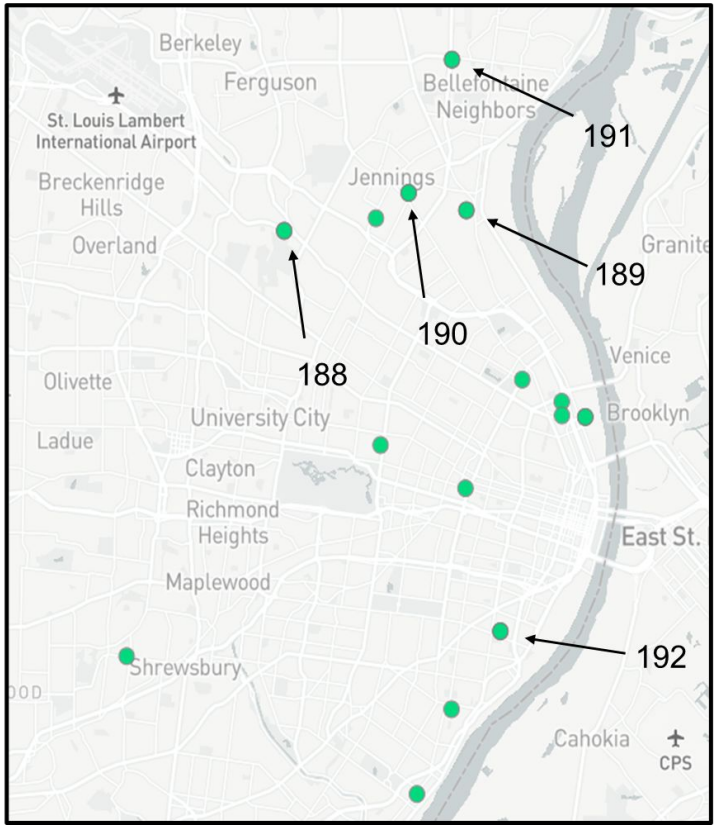
November 2023: Current funding ends.

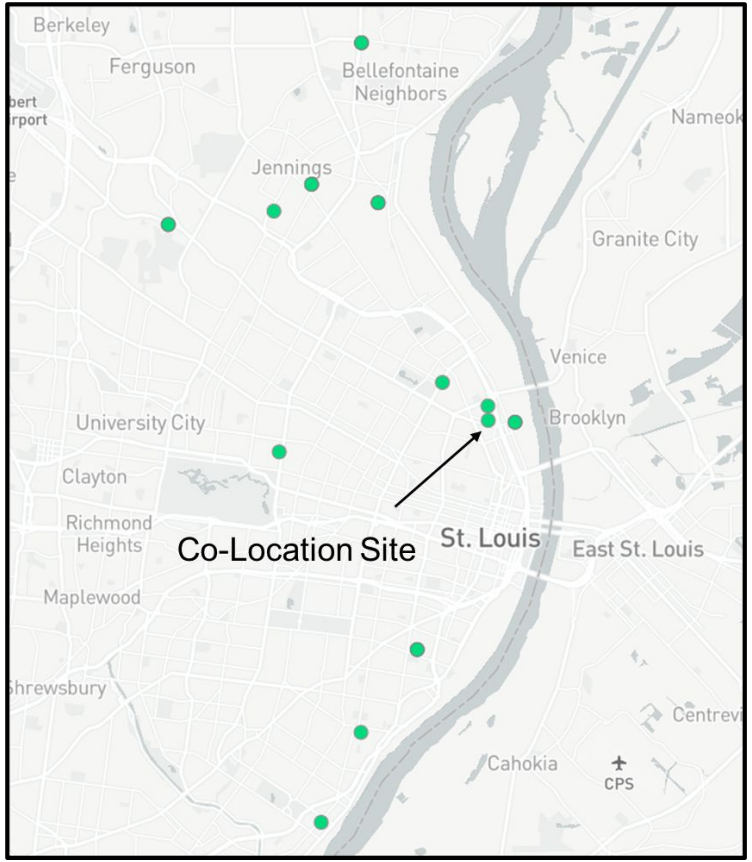
Narrative Summary

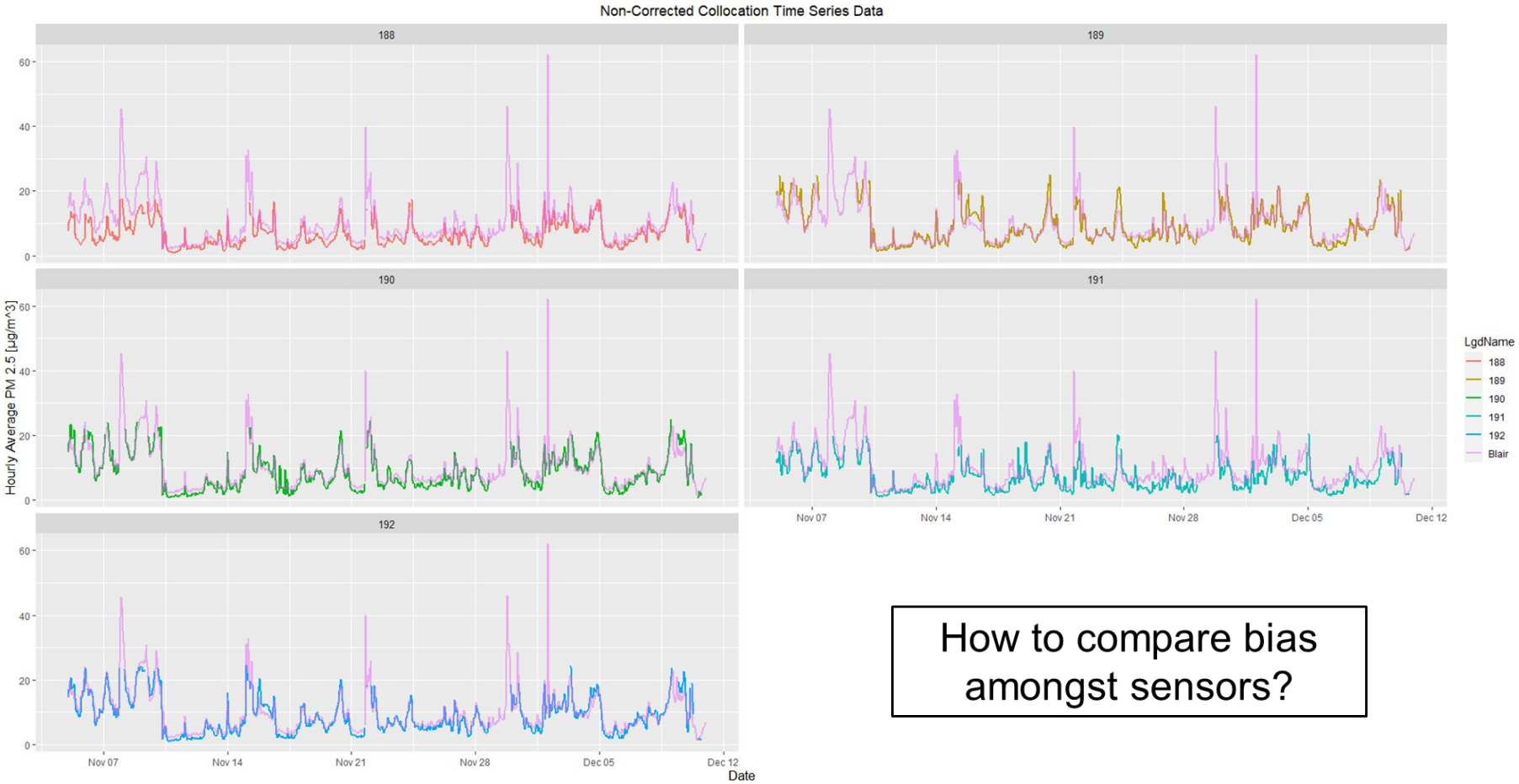
- **Approach:**
  - Introduce air monitoring equipment opportunities for external air quality assessment
  - Connect education and leadership trainings to the empowerment goals
  - Clarify uncertainty of data results and solutions ideas
  - Connect the Environmental Racism report with need for the work
- **Coming Soon:**
  - https://airwatchstl.mcustlouis.org

MODULAIR-PM Current Network

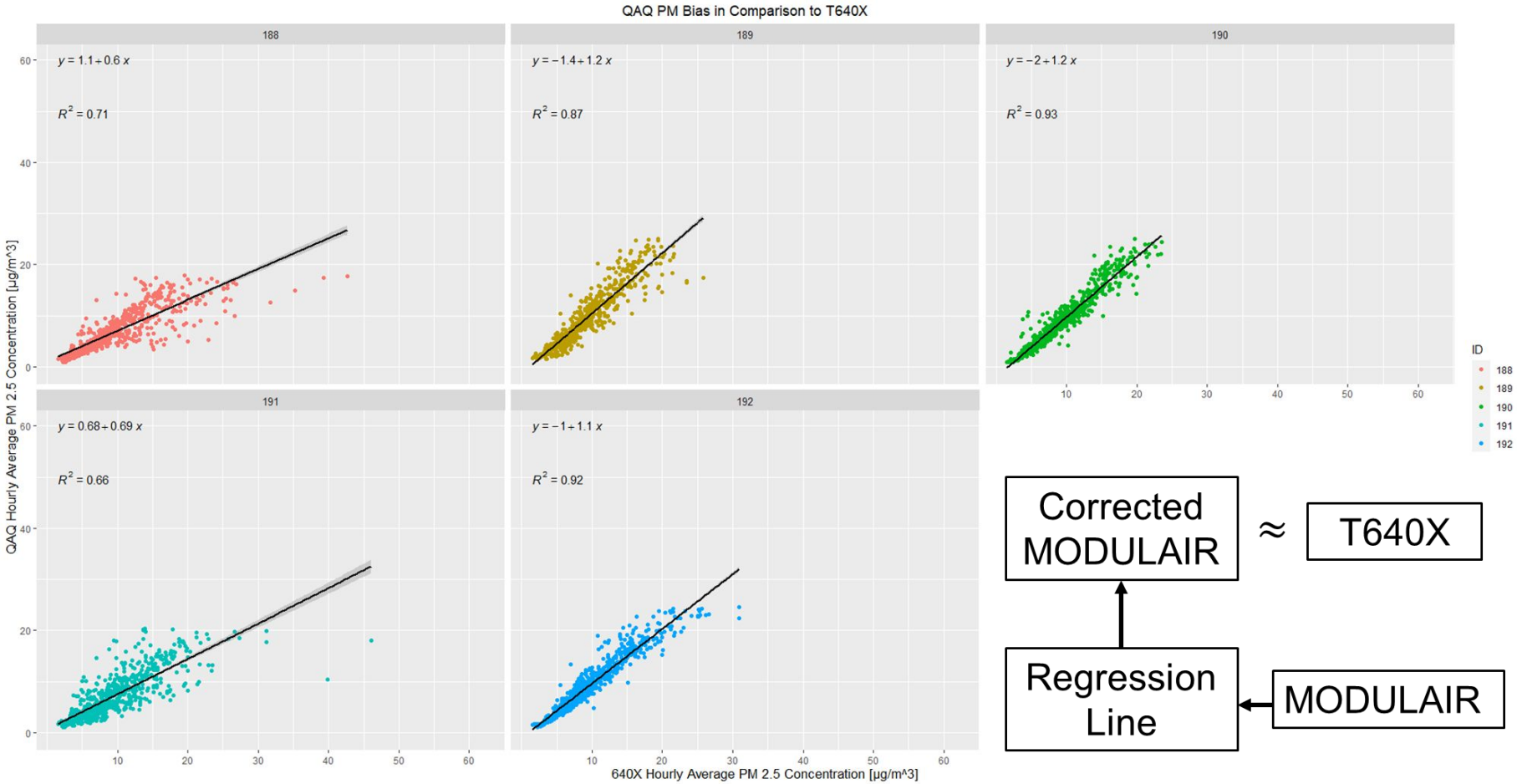
- Sensor Network Capacity
  - Currently Installed: 14
  - Final Goal: 15




Berkeley
Ferguson
Bellefontaine Neighbors
Jennings
Granite City
Venice
Brooklyn
University City
Clayton
Richmond Heights
Co-Location Site
St. Louis
East St. Louis
Maplewood
Cahokia
CPS



How to compare bias amongst sensors?


QAQ PM Bias in Comparison to T640X
188
189
190
191
192
y = 1.1 + 0.6 x
R² = 0.71
y = −1.4 + 1.2 x
R² = 0.87
y = −2 + 1.2 x
R² = 0.93
y = 0.68 + 0.69 x
R² = 0.66
y = −1 + 1.1 x
R² = 0.92
QAQ Hourly Average PM 2.5 Concentration [µg/m^3]
640X Hourly Average PM 2.5 Concentration [µg/m^3]
ID
Corrected MODULAIR
≈
T640X
Regression Line
MODULAIR

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