Health and Environment Linked for Information Exchange (HELIX)-Atlanta: A CDC-NASA Joint Environmental Public Health Tracking Collaborative Project

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Partners
Centers for Disease Control and Prevention
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Georgia Environmental Protection Division
Georgia Division of Public Health
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HELIX-Atlanta was developed to support current and future state and local EPHT programs to implement data linking demonstration projects which could be part of the CDC EPHT Network.

HELIX-Atlanta is a pilot linking project in Atlanta for CDC to learn about the challenges the states will encounter.

NASA/MSFC and the CDC are partners in linking environmental and health data to enhance public health surveillance.

The use of NASA technology creates value—added geospatial products from existing environmental data sources to facilitate public health linkages.

Proving the feasibility of the approach is the main objective.
Exposure Assessment

Merging NASA & EPA Data

NASA MODIS only

PM2.5 Mean Composite (Year 2003)

10.24 - 11.97
11.98 - 12.57
12.58 - 12.97
12.98 - 13.35
13.36 - 13.74
13.75 - 14.23
14.24 - 14.65
14.66 - 15.54
15.55 - 16.50
16.51 - 18.36

• Point Source Emission

EPA AQS only

Merged

Bootstrap PM2.5

\[ y = 0.924x + 1.356y \]

\[ R^2 = 0.949 \]

Observed PM2.5

65 \( \mu g/m^3 \)

0 \( \mu g/m^3 \)
Successes

- Proven the feasibility of linking environmental data (MODIS PM$_{2.5}$ estimates and AQS) with health data (asthma) and developed the necessary algorithms.
- Developed algorithms for health data surfacing that protects PHI which can be helpful for public health surveillance and decision makers.
- Journal Publications (1 Submitted JAWMA, 3 Anticipated)
- Negotiated a Business Associate Agreement with a health care provider to enable sharing of Protected Health Information.

Future Work

- Integrate New Satellite Data Sets from CALIPSO, Aura OMI, and NPOESS APS of aerosol profile and speciation information and other environmental hazards to develop even more robust models for the CDC EPHTN.