Community Air Monitoring and Air Quality in Communities Disadvantaged by Health Disparities

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Mission: Mobilize data to improve public health

What we do:
• Data compilation & management
• Data access & visualization
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www.trackingcalifornia.org
Higher PM$_{2.5}$ exposure in an area is correlated with a higher fraction of people of color. In the census tracts with the highest level of on-road vehicle pollution, more than half of the population identifies as Latino while less than a quarter identifies as white. In contrast, the population of Latino and white Californians statewide is nearly equal.

Note: The following US Census Bureau-defined racial groups were used in the analysis: White; Black or African American; American Indian or Alaska Native; Asian; Native Hawaiian or Other Pacific Islander; Hispanic; Latino; and Some Other Race. In the chart above, Latino includes census respondents who select Hispanic, Latino, or both; Other Race includes census respondents who select Some Other Race as their only race.

Sources: US Census Bureau 2018; EPA 2014.
AB 617 Community Air Grant Partners & Project Goals

- Install particulate matter and pilot methane monitors
- Convene Community Steering Committees (CSCs) to inform monitor siting and other decisions
- Integrate data into existing IVAN web/app
- Increase community engagement with air quality and local emissions reduction planning
- Youth leadership development
Community air monitoring data in Richmond CA shows that PM levels decreased near freeways and railroads during the lockdown ...

Monitoring data also shows that ground-level ozone has increased near industrial land uses at this time.

Source: Lukanov and Smith, PSE Blog, 4/24/20,
Sheltering in place may also be exacerbating existing disparities in air pollution exposures

- Increased online shopping may be redirecting more diesel truck traffic into disadvantaged communities

- Low-income and people of color are also more likely to live with unhealthy housing conditions that can compromise indoor air quality

- Increased construction activity in SF’s Bayview-Hunters Point and other densely populated neighborhoods also compromises local air quality

Figure 80. Location of disadvantaged communities (DACs), truck networks, heavy truck volumes

Source: Institute of Transportation Studies 2020, https://escholarship.org/uc/item/1pv6t7q9
Long-term exposure to air pollution may be compounding vulnerability to COVID-19 in impacted communities

- Long-term exposure to particulate matter is associated with reduced lung function in children and chronic respiratory conditions like severe asthma

- Imperial County (bottom right) has the highest rates of childhood hospitalizations for asthma AND the highest rates of COVID-19 hospitalizations in California

Map Source: Philip Reese, Sacramento Bee, June 3 2020
Statewide COVID-19 Numbers & Rates by Race/Ethnicity

Cases per 100k

Race/Ethnicity
- AAN
- Asian
- Multi
- NHB
- White

Filter the graphs by a COVID-19 data point

Cases per 100k

Countywide COVID-19 Numbers & Rates by Race/Ethnicity

Alameda
Cases per 100k: 768.1

- AAN: 302.6
- Asian: 237.9
- Multi: 197.1
- NHB: 141.2
- White: 106.0

Contra Costa
Cases per 100k: 369.3

- AAN: 179.8
- Asian: 115.6
- Multi: 91.8

Imperial
Cases per 100k: 1,909.0

- AAN: 605.9

Kern
Cases per 100k: 325.3

- AAN: 613.9

Deaths per 100k

Race/Ethnicity
- AAN
- Asian
- Multi
- NHB
- White

Filter the graphs by a COVID-19 data point

Deaths per 100k

Source: [http://healthpolicy.ucla.edu/health-profiles/Pages/COVID-19Dashboard.aspx](http://healthpolicy.ucla.edu/health-profiles/Pages/COVID-19Dashboard.aspx)
Potential Future Directions to Address Health Disparities

• Improve air monitoring in disproportionately impacted communities

• Engage impacted communities in local emissions reduction planning

• Make disaggregated race and ethnicity data for COVID-19 testing, cases and deaths publicly available

• Prioritize impacted communities in COVID-19 response efforts

• Account for air pollution exposures in local land use & transportation planning