Measuring air quality in Argentina using citizen science
7 million deaths from exposure to air pollution every year

91% of the world’s population live in places that exceed WHO guideline limits

Sources: World Health Organization and AQICN.org
80% of AQ deaths are due to Particulate Matter

University of Chicago, Air Quality Life Index Report, 2018
The modular sensor
Implementation in Buenos Aires

- Workshops at 2 universities training 80+ students
- Distribution to 20 volunteers depending on the region and frequency they cycle
- Continuous data collection for 7 weeks
Results
Comparison with reference station

Follows the same trend
PM2.5 measurements independent from cycling speed

- Also tells us that the median baseline of all readings is ~6 ug/m³
- Mean PM2.5 over entire period calculated in each tile
- Baseline removed
- Highlights areas of potential concern
Sensor usage during the 7 weeks data collection period
- Areas that were sampled the most
Main conclusions from Buenos Aires pilot

- Buenos Aires has a low overall pollution exposure ~6 ug/m³
- There are areas that exceed the relative baseline by a significant margin (50+)
- We can provide a baseline at any time resolution – provided there are enough users
- Enabled people to be aware of their exposure through our platform
- Mapped a major city with less than 20 volunteers in a month!
Mendoza implementation and results

- 10 open-seneca sensors
- Volunteering students from UTN university
Policy Perspectives

- Last air quality legislation in Argentina dates from 1970s!
- Yet, we are not quite there with low-cost sensing. Data is not yet fully trusted despite evidence presented. We might be performing a second and longer corroboration study.
- Showcasing one or two more major cities may provide enough traction and policy interest to promote new legislation that uses low-cost sensing.
- Political circumstances did not help the project: new elected government means a new start for us!
- Despite these factors some sectors of the government are quite interested on expanding the project and evaluating further perspectives.
- What could the ultimate goal be? New legislation? Support to standardized EPA measuring stations? Citizen engagement or education?
Thank you very much for your kind attention!!

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