epiphyte

The DustWatch App: A Youth Citizen Scientist Project to Protect Public Health from Dust Storm Exposure

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Source: National Geographic

Source: Daily Mail

Dust Storm Impact Mitigation

- **General mitigation measures:**
    - Bring eye protection
    - Wear breathing masks
    - Go indoors in a ventilated area during dust storms

Source: Times of India

Source: AZ Central

How can we prepare for a dust storm if we don't know when it's coming?
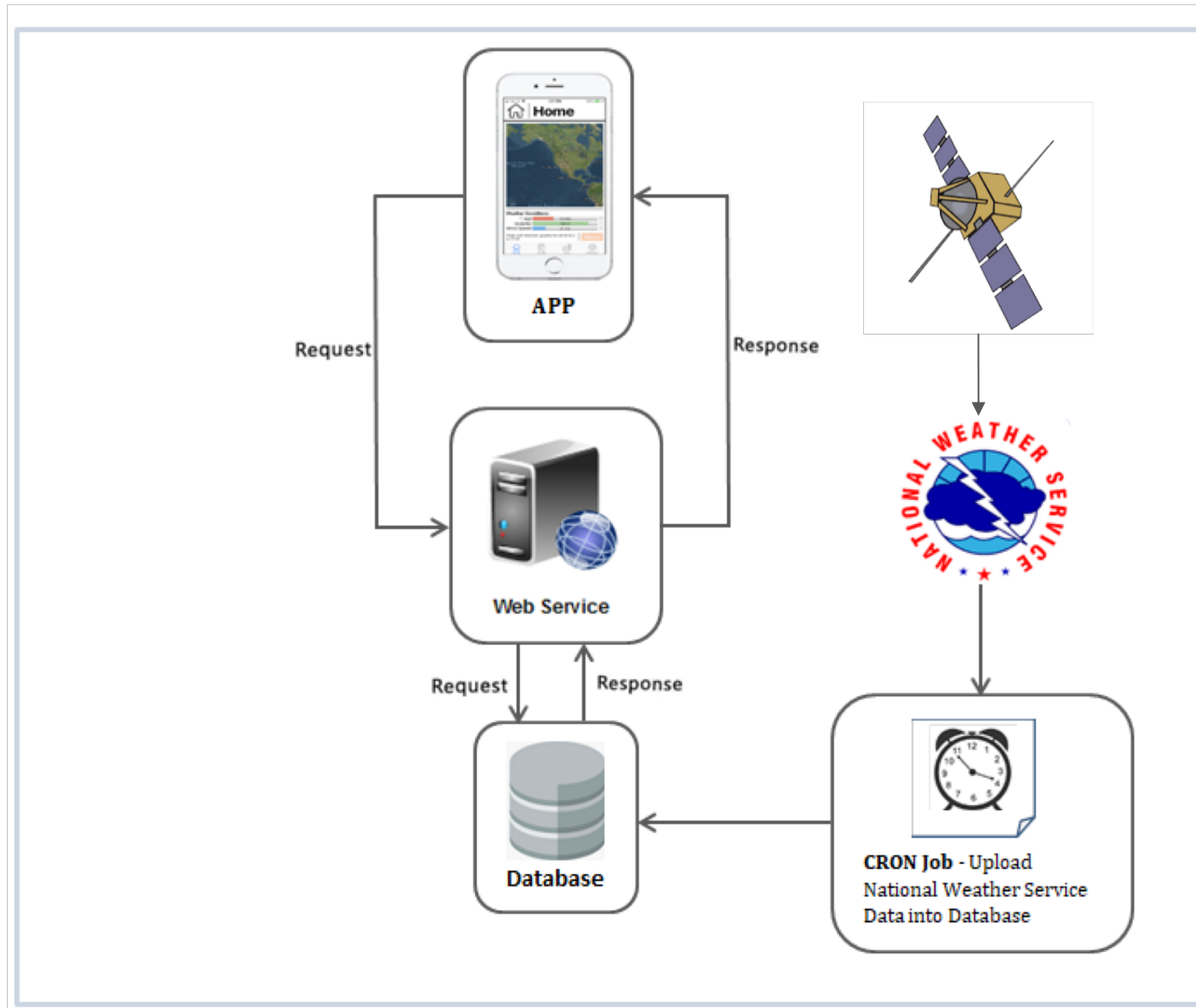
The Solution

An early warning system that would be accessible at almost all times - a smartphone app.

- Why is this effective?
  - Rapid deployment of dust data, coupled with push notifications
  - Location specific - only relevant data is displayed
  - Smartphones are almost ubiquitous and are extremely accessible
  - Possible gateway for citizen science

Source: NASA

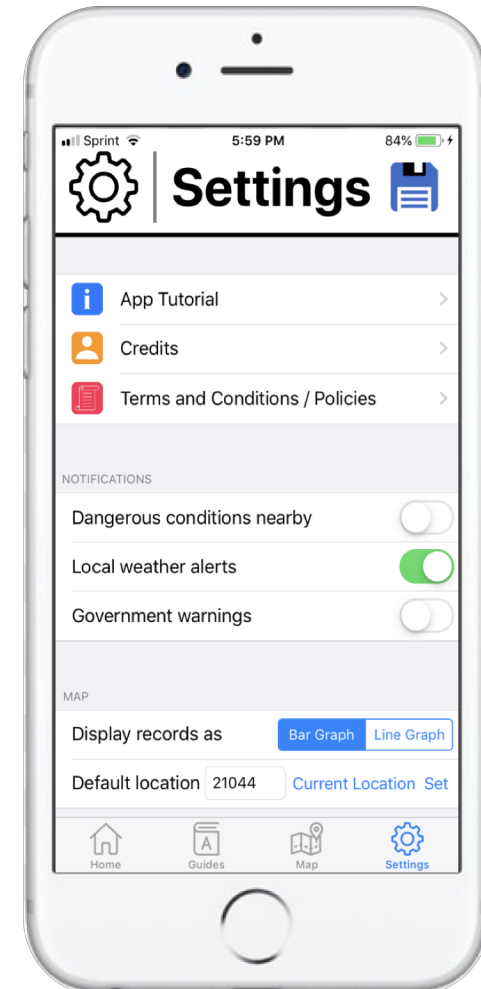# How the App Works

Basics of the App

- **Data information**

  - Visibility

  - High Wind Condition

  - Air Quality Index (AQI)

  - Dust Concentration

- **Emergency notifications**

- **Safety tips and educational materials**

- **Citizen Science Platform** (in development)

Emergency Notifications
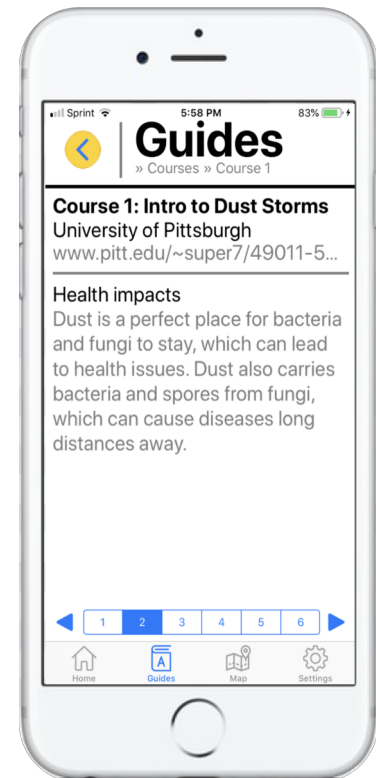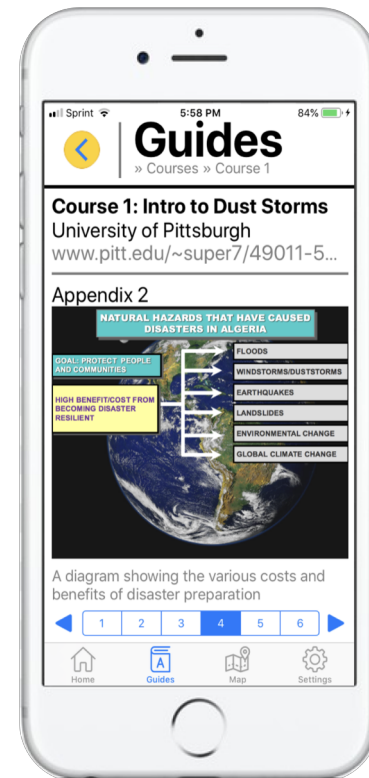
The app allows the following:

- **Real time push notifications on storm hazards nearby**
    - Alerts on all local weather predictions;
    - Dust storms more severe in conjunction to other conditions;
- **Choose graph formats**
    - Display storm data over time;
- **Set location for targeted storm data**
    - Get data automatically loaded and save when you open your phone;
    - Data saved even without WiFi;

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Safety Tips and Educational Materials

Guides provide the following:

- **Comprehensive learning materials** on dust storms and their effects;

- The significance of **weather metrics**;

- **How to protect yourself** during a dust storm.

Future Plans

- **Auto geo-targeting of data**
- **Route based dust data**
    - "Dust data from A to B";
- **Citizen science platform**
    - Observations, test validity of models
    - Report health hazards and disease info;
    - Report property and public works damage;
    - Crowdsource traffic and road condition data

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For any questions, contact dustapp2018@gmail.com