

# Group A- Discussion

- Everybody introduced themselves (Expertise: Satellite data retrieval, Spatial statistical analyses, exposure estimation and correlating it to health data).
- Spatial and vertical resolutions from satellite data and their representation of ground level exposure. How well satellite data of the total atmospheric column represent the ground exposure. Is data assimilations or modeling the way to go?
- Models to integrate horizontal and vertical data.
- New Vertical data from CALIPSO
  - Small footprint
  - Need models to relate data
- Components of particulate matter and speciation is really what is needed to be studied against the health data currently.

# Group A- Discussion

- Could use data retrieval algorithms that produce better resolution data.
- Identifying the needs in Acute Exposure versus Chronic Exposure Studies.
- What is the best spatial and temporal resolution for health data. It depends on the health data you are dealing with.
- Monitors are available in the US but not global so in that case you need remotely sensed data.
- International air pollution epidemiology studies are getting more popular like at the international society of air quality and public health.



# Group A- Discussion

- Need to demonstrate that satellite data enhance the models significantly.
- Need to demonstrate the improved link between the environmental and health data.
- Integrate various data sets (remotely sensed data and ground) and models so that they can supplement each other.
- Identify what the air pollution epidemiology needs from the satellite data (health effect institute).
- Workgroup that would meet periodically to see the needs for remotely sensed data in public health.

# Group A- Recommendations

- Need for peer reviewed publications that show that integrating the remotely sensed data do have positive contribution to the health studies.
- Proof of concept that remotely sensed data enhance the exposure estimates compared to the AQS monitoring only case.
- Outreach to the people with the health data (PI) and ask if the remote sensing environmental data set would be of benefit to them.
- Do a simple study of linkage and correlation between environmental parameters enhanced by utilizing remotely sensed data sets and simple health data like mortality or cardiovascular mortality.

# Group A- Recommendations

- Improve data visualizations techniques.
- Support emerging efforts with high performance computing as a good tool to use for forecasting.
- Utilizing MODIS new product 2x2 km and 5x5 km in urban areas.
- Develop new algorithms for speciation information from MODIS and other data.
- Validate new algorithm for urban areas and high reflectivity areas with 1x1 km resolution. A good pilot study would be validating the new algorithm for high reflectivity urban areas with AERONET data.

# Group A- Recommendations

- Form a working group and an end-user group that integrates the air quality from NASA and EPA and public health communities and even the public at large.
- Pursue group in NASA flying airborne sensors over Detroit to retrieve aerosols along with exposure study.
- Incorporate 5 LIDAR ground stations contributing data.
- Outreach to International Society of Environmental Epi. (September) And International Society of Environmental Exposure Conferences in (October). American Association of Aerosol Research (AAAR). Health Effect Institute (HEI).
- Identify “Epi”Academia: Hopkins, Harvard, Emory, Univ. of Washington.

# Group A- Recommendations

- Use an aerosol speciation super site area and see how MODIS data enhance the exposure estimates and validate
- A state of knowledge paper of integrating air quality data from satellites and ground monitors and air quality models in the context of health assessment.
- What are the chemical and biological factors that affecting the health outcome so we understand if the low correlations between environmental factors and health outcomes low, we need to understand why. So, an idea is to go and integrate ourselves into the health community.
- Profile data from aircraft sensors like those ozone sensors on FedEx aircrafts.
- Integrating AOD, CALIPSO, and aircraft data and link it then to health data in areas like Detroit or Mass. Or any other “data rich” areas (i.e. health and environmental data sets).