NASA Applied Sciences Program

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2006 NASA Strategic Plan

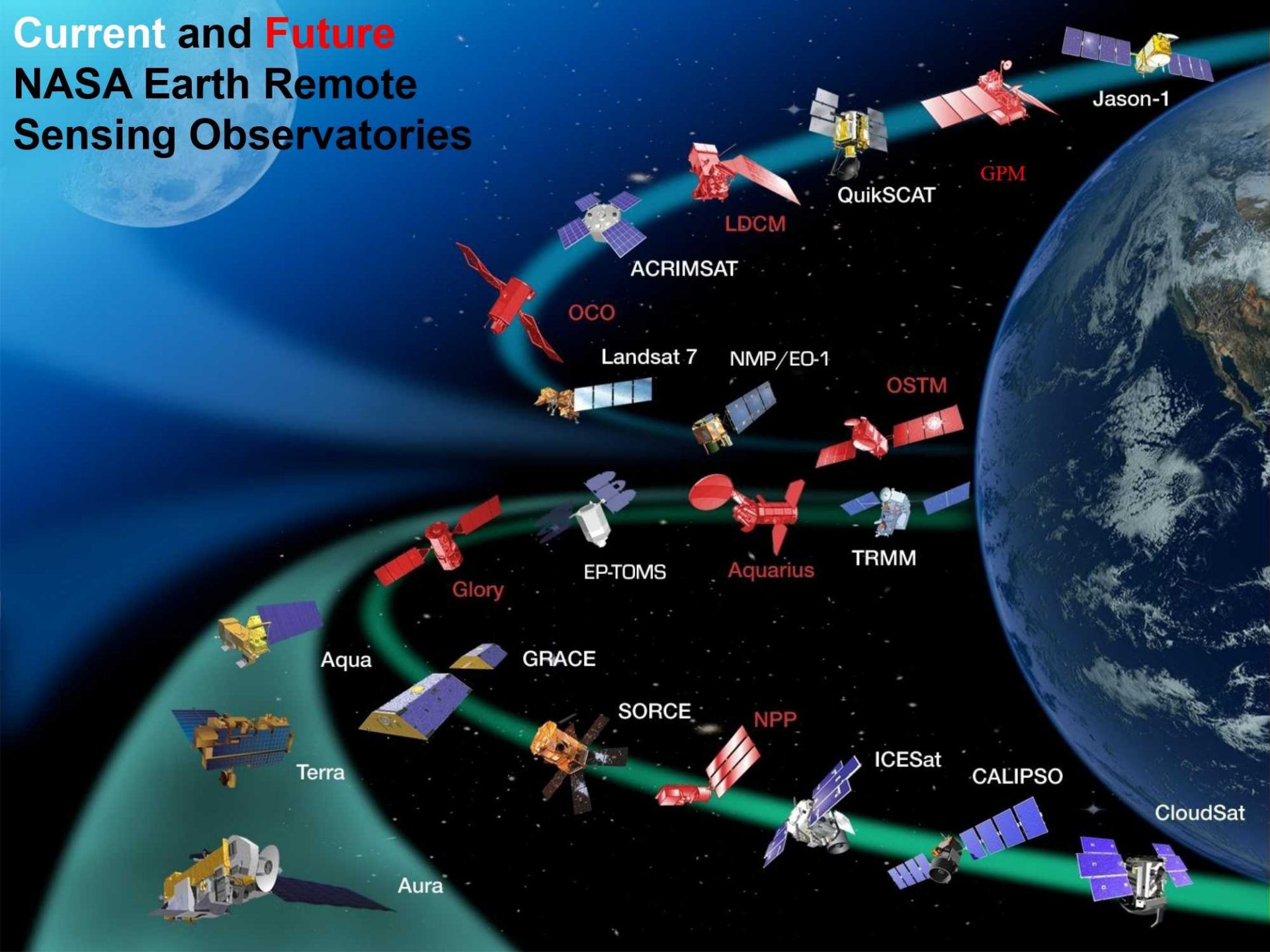
NASA Strategic Goal 3

Develop a balanced overall program of science, exploration, and aeronautics consistent with the redirection of human spaceflight program to focus on exploration.

NASA Sub-Goal 3A:

Study Earth from space to advance scientific understanding and meet societal needs.

NASA's partnership efforts in global modeling and data assimilation over the next decade will shorten the distance from observations to answers for important, leading-edge science questions. NASA's Applied Sciences program will continue the Agency's efforts in benchmarking the assimilation of NASA research results into policy and management decision-support tools that are vital for the Nation's environment, economy, safety, and security. NASA also is working with NOAA and inter-agency forums to transition mature research capabilities to operational systems, primarily the polar and geostationary operational environmental satellites, and to utilize fully those assets for research purposes.


Current and Future
NASA Earth Remote
Sensing Observatories
Jason-1
GPM
QuikSCAT
LDCM
ACRIMSAT
OCO
Landsat 7
NMP/EO-1
OSTM
Glory
EP-TOMS
Aquarius
TRMM
Aqua
GRACE
SORCE
NPP
Terra
ICESat
CALIPSO
CloudSat
Aura

Applied Sciences Program

Eight Program Elements

Agricultural Efficiency

Air Quality

Climate

Disaster Management

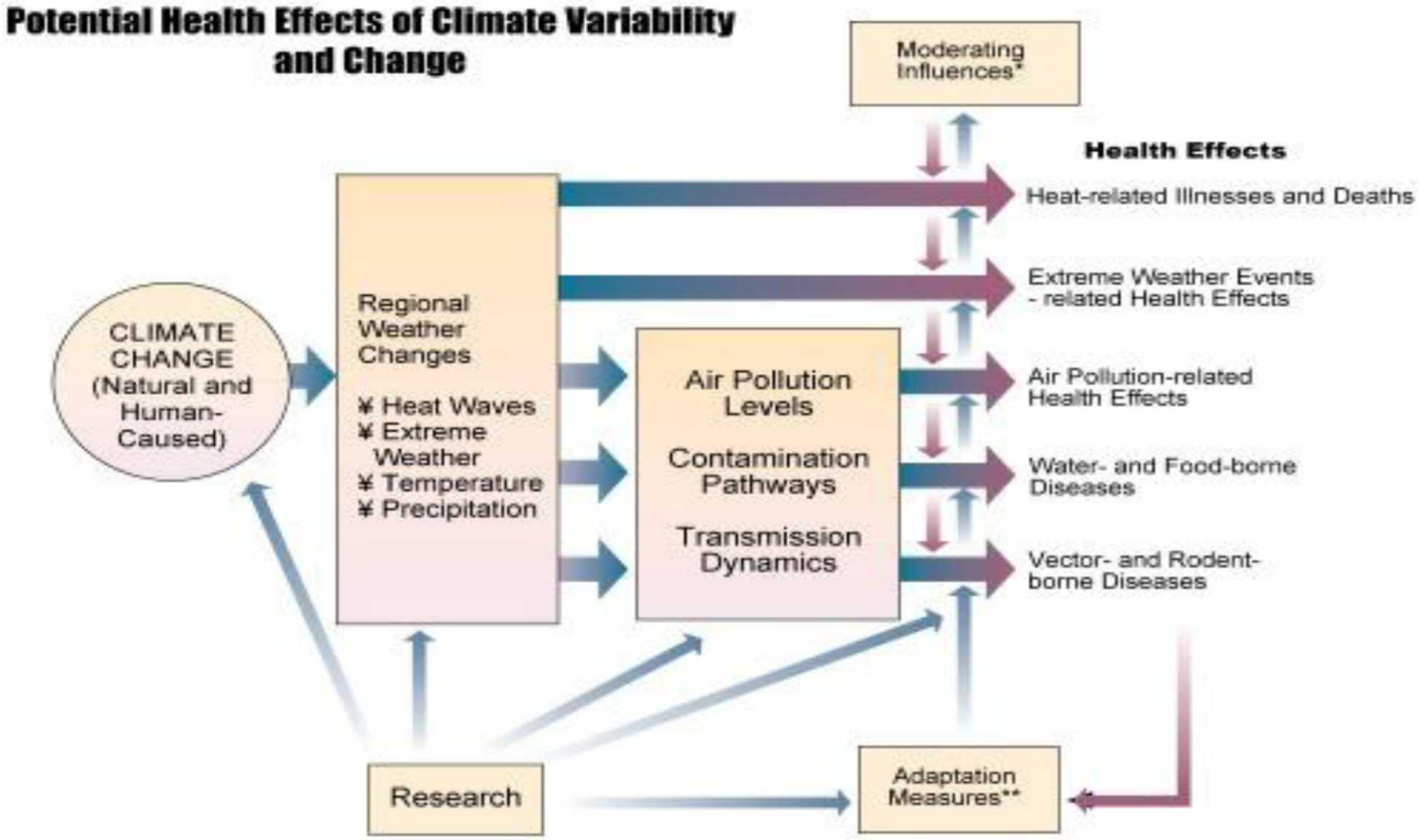
Ecological Forecasting

Public Health

Water Resources

Weather

Why Public Health?



Focus Areas of Public Health

The Public Health application area focuses on Earth science applications to public health and safety, particularly regarding ***infectious disease***, ***emergency preparedness and response***, and ***environmental health*** issues. The application explores issues of toxic and pathogenic exposure, as well as natural and man-made hazards and their effects, for risk characterization/mitigation and improvements to health and safety.

Applied Sciences Program

Public Health

The Public Health application area focuses on Earth science applications to public health and safety, particularly regarding infectious disease, emergency preparedness and response, and environmental health issues. The application explores issues of toxic and pathogenic exposure, as well as natural and man-made hazards and their effects, for risk characterization/mitigation and improvements to health and safety.

Programmatic Themes

1. Environmental Health (including Oceans and Human Health) (9)
2. Infectious Disease (6)
3. Emergency Preparedness/Response (1)
4. Public Health Tracking/Information Networks (crosscuts)
5. Climate (crosscuts)

Goals

- Collaboration with other agencies to define the impact of climate change on public health
- Integration of NASA research into Public Health Information/Tracking Networks with the ability to track weather, climate, and environmental factors to improve disease outbreak and environmental health risk predictions to increase the public's warning time
- NASA research utilized to enhance our nation's emergency response and preparedness (e.g., DOD-GEIS, Coast Guard)
- Issue joint solicitations with other agencies
- Focus on upcoming missions (Decadal Survey)
- Through community, stay abreast and ahead of emerging diseases/issues (past – pandemic flu)

Federal Partners: CDC, EPA, DOD, USGS, USAID

NASA Public Health& Safety Research

- The Health and Environment Linked for Information Exchange (HELIX)-Atlanta.
- Regards – Reasons for Geographic and Racial Differences in Stroke Research
- Predicting and simulating pollen emission and downwind concentrations
- PHAiRS: Public Health Applications in Remote Sensing
- Mississippi Research Consortium Projects
- Malaria Modeling and Surveillance System/Global Situational Awareness Tool
- Avian Influenza Risk Prediction in Southeast Asia and Early Warning of Pandemic Influenza
- Using NASA Data and Models to Improve Heat Watch Warning Systems for Decision Support
- Influence of Land-Use and Precipitation on Regional Hydrology and Public Health

Environmental Factors and Population Dynamics as Determinants of Meningococcal Meningitis Epidemics in the Sahel: An Investigation of NASA and NOAA Products

- ArboNET/Plague Surveillance System
- Predicting Zoonotic Hemorrhagic Fever Events in Sub-Saharan Africa using NASA Earth Science Data for DoD - Global Emerging Infections Surveillance and Response System
- Famine Early Warning System (FEWS)
- Malaria Early Warning System (MEWS)
- Integration of Remote Sensing into Encephalitis Virus Intervention Decision Support Systems
- Impact of NASA Satellite Data and Models on U.S. Coast Guard's Decision Support Tool for Search and Rescue in the Northeastern Pacific Ocean
- Monitoring and Forecasting Cyanobacterial Blooms for Public Health Protection and Response
- Application of NASA Data to Develop an Influenza Forecasting System
- Towards Predictive/Operational Assessment of Beach Closures Using Remotely Sensed Data

NASA's Public Health Partners

.gov/ph

.gov/rs

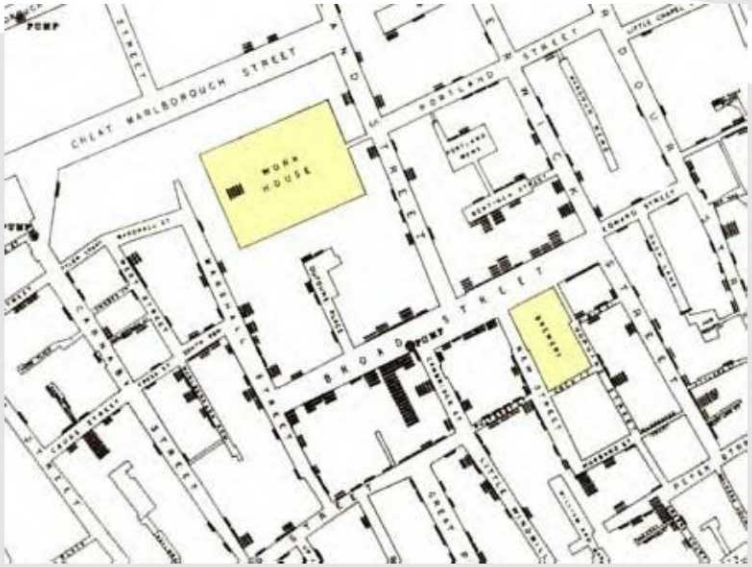
.org

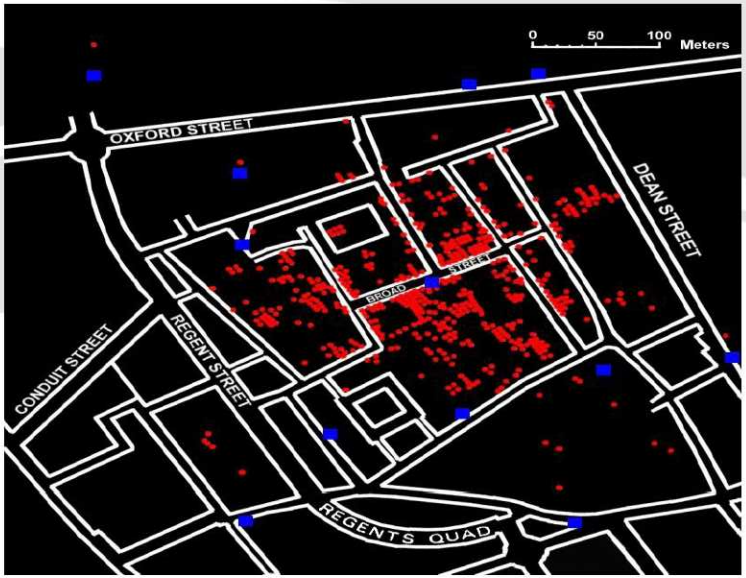
.edu

.int

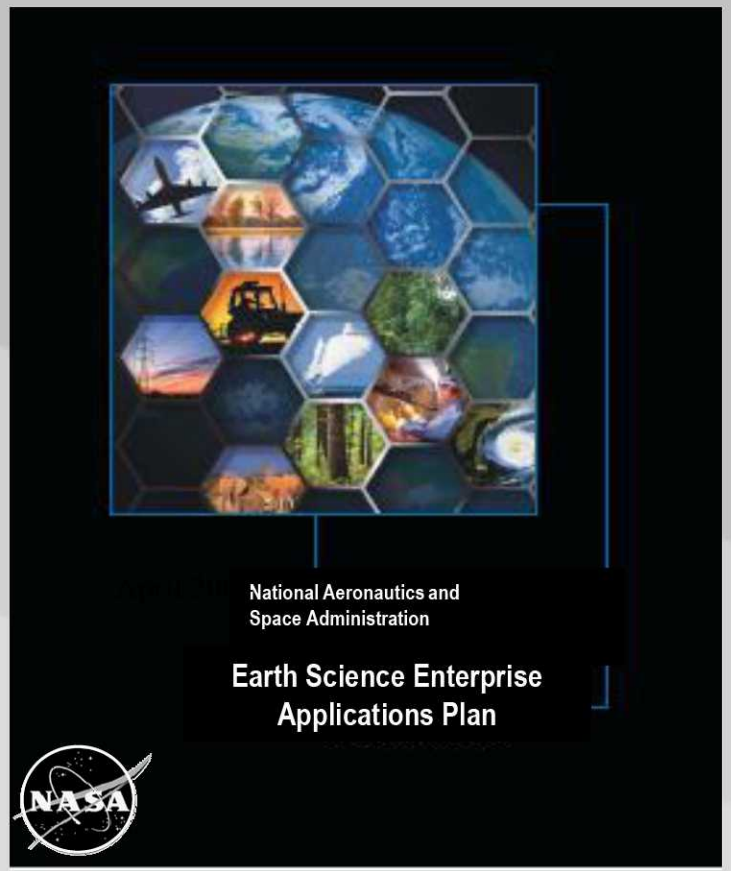
.mil

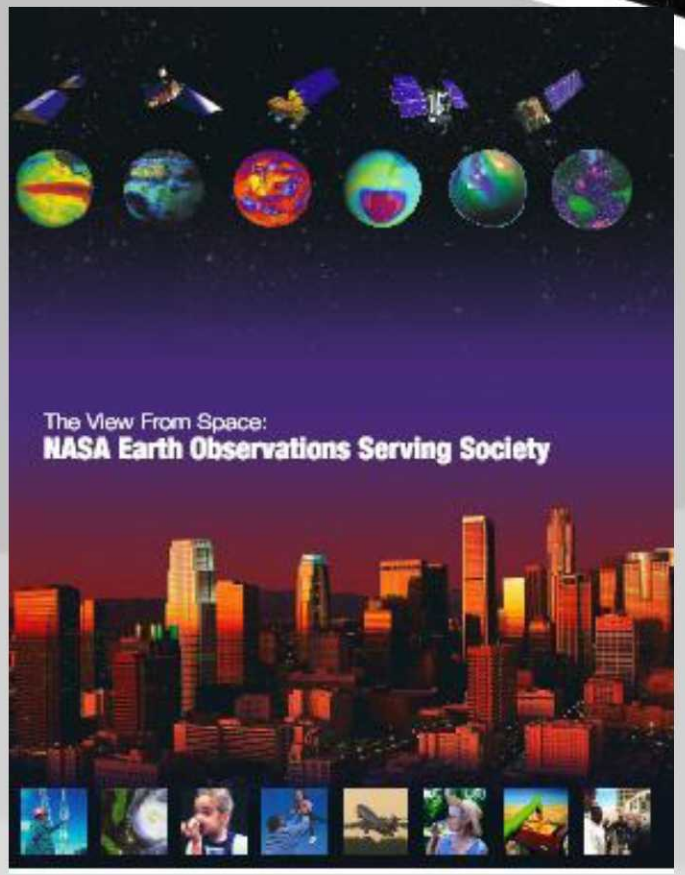
Epidemiology in the 21st Century





Applied Sciences Program





http://nasascience.nasa.gov/earth-science/applied-sciences

http://aiwg.gsfc.nasa.gov/