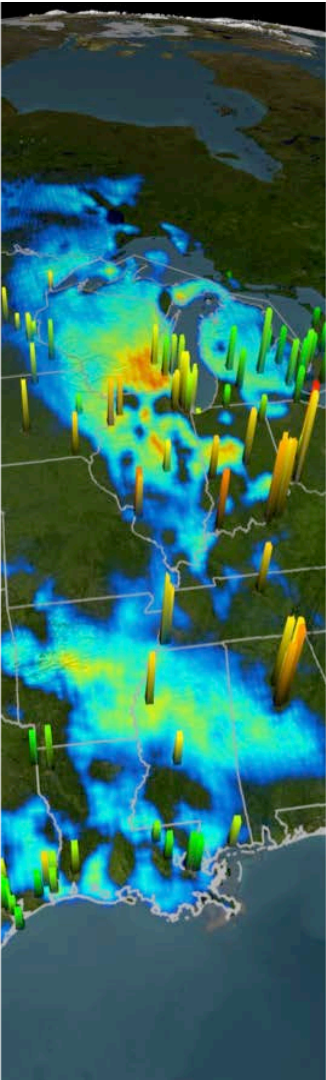




ARSET

Applied Remote Sensing Training

<http://arset.gsfc.nasa.gov>

 @NASAARSET

Applied Remote Sensing Training Program Overview and Updates

Pawan Gupta, USRA/NASA Goddard/Code 614

pawan.gupta@nasa.gov

HAQAST-2, February 27-28, 2017, Seattle

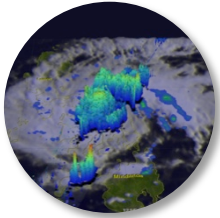
Applied Remote Sensing Training (ARSET)

Empowering the global community through remote sensing training

Provide online and on-site trainings tailored to:

- policy makers
- regulatory agencies
- applied environmental professionals

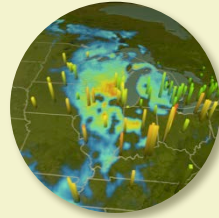
to increase the use of NASA Earth Science resources for environmental applications:



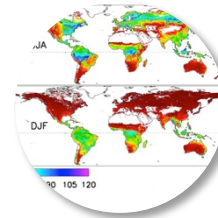
Disasters



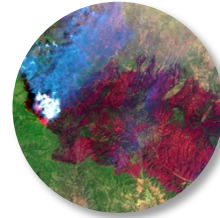
Ecoforecasting



Health &
Air Quality



Water Resources

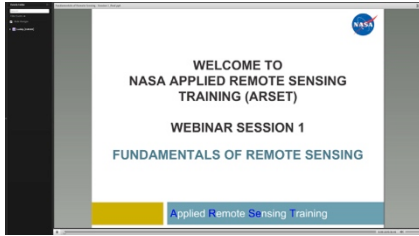


Wildfires

Applied Remote SEnsing Training (ARSET)

<http://arset.gsfc.nasa.gov>

Training for environmental professionals (government, public, and private sector) to increase use of NASA observational and model data for decision-making support.



Online Webinars

- 1 hr a week, 3-5 weeks
- Live & recorded
- Include demos on data access
- *New: advanced webinars*



In-person Workshops

- Held in a computer lab for 2 - 6 days
- Focus on data access and analysis
- Locally relevant case studies



Train the Trainers

- Courses & training manuals for those interested in doing their own remote sensing trainings

ARSET Trainings (2009-2016)



8,000+
participants



140+
countries



2,600+
organizations



36 online trainings



45 in-person trainings



Disasters
7 trainings



Ecoforecasting
10 trainings



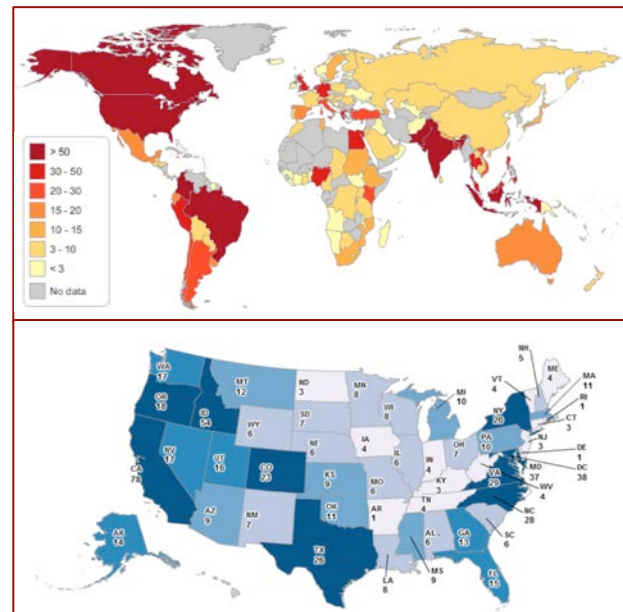
Health & Air Quality
48 trainings



Water Resources
14 trainings

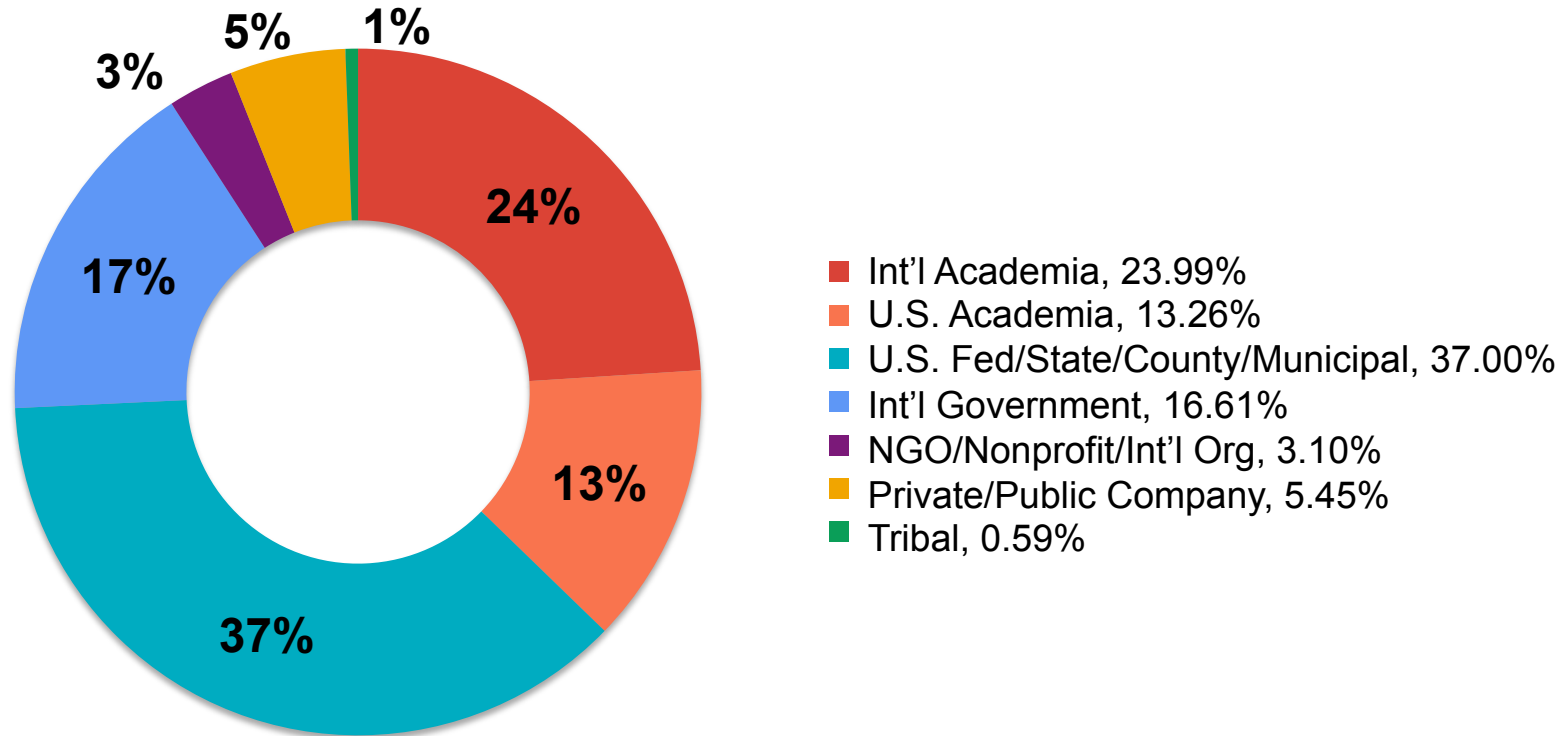


Train the Trainers
1 training



ARSET Health & Air Quality Attendees

Attendees by Sector (2009-2015)



End-User Needs Assessment & Program Evaluation

- Pre training informal survey
- **Survey 1:** completion of each training
- **Surveys 2:** 6+ months post training; measures impact and changes in NASA data use
- Interviews with key informants
- Informal feedback during webinar Q&A period
- Ad hoc interviews to collect “success stories”

ARSET Air Quality Trainings



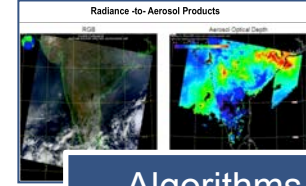
Remote Sensing



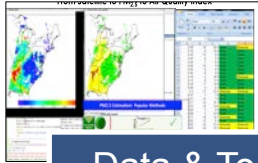
Satellites



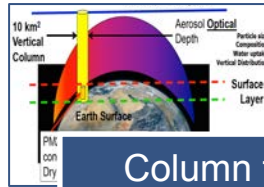
Images



Algorithms



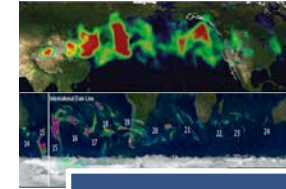
Data & Tools



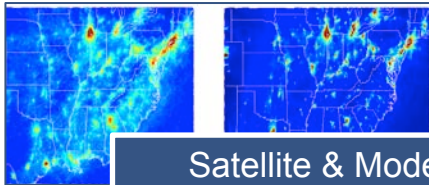
Column to Surface



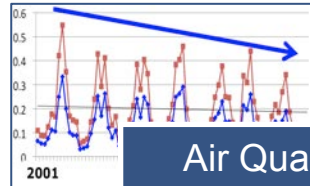
Dust and Smoke



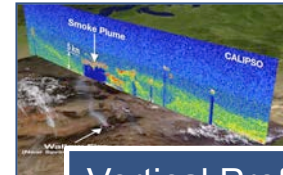
Transport



Satellite & Model Comparison



Air Quality Trends



Vertical Profiles

ARSET Hosts First Joint Air Quality & Wildfires Training



Application of Satellite Remote Sensing Data for Fire & Smoke Monitoring, Nov 14

- Preconference event for 2nd International Smoke Symposium
- Attendees learned
 - how to apply NASA Earth observations to air quality forecasting
 - smoke, fire, and PM2.5 monitoring
 - image interpretation
 - image processing

“I wasn’t aware of all of the tools available for near-real-time monitoring of fires (and smoke). The best thing I took away from this was how/where to access all of these tools, and which ones are best for specific applications. Thanks for a great course!” – Training Attendee



Attendees of the November ARSET training at the International Smoke Symposium.



ARSET Air Quality Workshop in South Korea

NASA Earth Observations, Data and Tools for Air Quality, August 28-29, 2016

- Held at Department of Atmospheric Science, Pusan National University, Busan, South Korea
- In collaboration with 17th IUAPPA World Clean Air Congress and 9th CAA Better Air Quality Conference
- 22 attendees
 - 15 organizations
 - around 10 countries across Asia



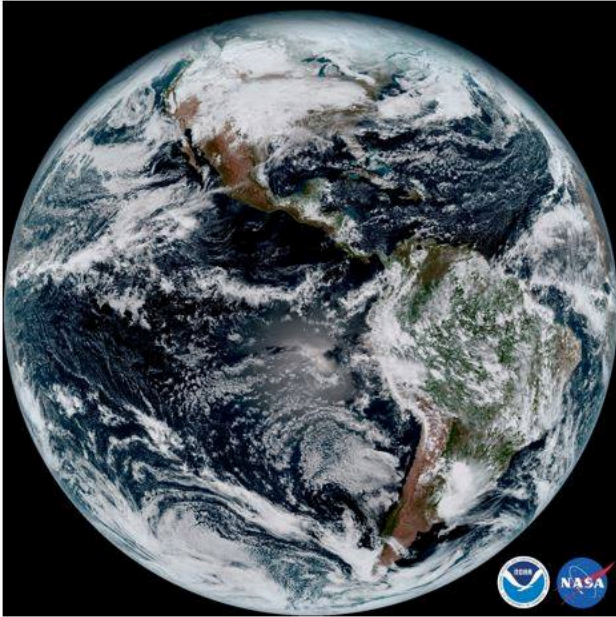
Upcoming Air Quality Trainings

- Satellite Derived Annual PM_{2.5} Data Sets in Support of United Nations Sustainable Development Goals
 - 3 weeks webinar series
 - March 15-29, 2017
- Satellite Remote Sensing of Air Quality: Data, Tools and Applications
 - IITM, Pune, India
 - May 23-26, 2017
- NASA ARSET Air Quality Remote Sensing Training
 - South Coast Air Quality Management District
 - October 3-6, 2017

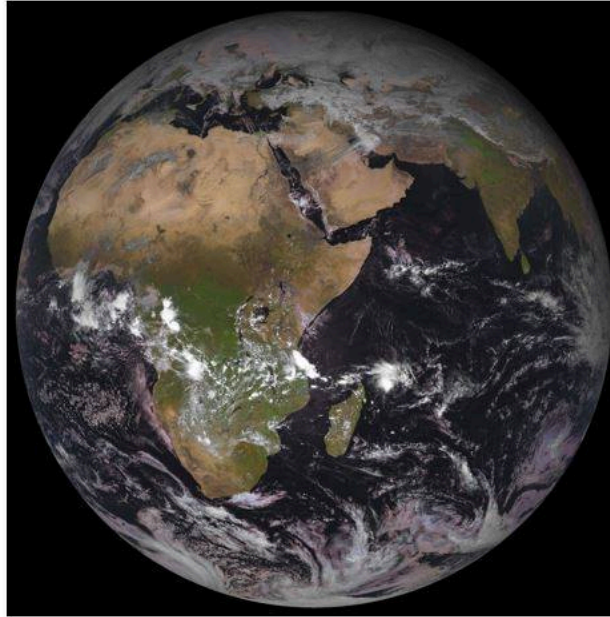


Breaking the Temporal Barrier

The Beginning of the new Era in Satellite Remote Sensing of Air Quality



GOES-16



METEOSAT-8



HIMAWARI-9

ARSET plans to host dedicated trainings on Geo platforms

Source: NOAA NESDIS

ARSET Website and Annual Report

<http://arset.gsfc.nasa.gov>

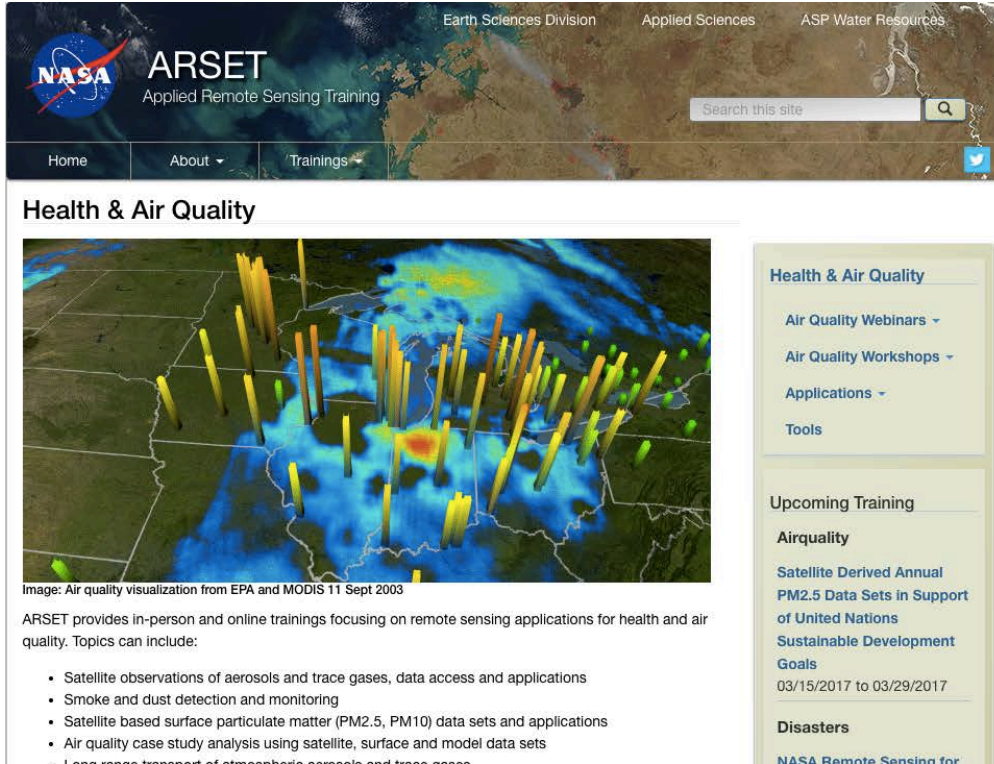


Image: Air quality visualization from EPA and MODIS 11 Sept 2003

ARSET provides in-person and online trainings focusing on remote sensing applications for health and air quality. Topics can include:

- Satellite observations of aerosols and trace gases, data access and applications
- Smoke and dust detection and monitoring
- Satellite based surface particulate matter (PM2.5, PM10) data sets and applications
- Air quality case study analysis using satellite, surface and model data sets



Download the report at
<http://go.nasa.gov/2l8kxRE>

ARSET – HAQAST Collaboration

- Past ARSET-AQAST collaboration
 - Guest speakers, collaborative trainings, end-user guide publication etc.
- Possible ways to collaborate with HAQAST team
 - ARSET can share training best practices with HAQAST PIs interested in conducting their own trainings
 - ARSET can help inform end-users about HAQAST applications-ready data and/or tools through existing training activities.
- All ARSET training materials (presentations, exercises, and online training recordings) are available online and freely available for use by HAQAST.

ARSET Team

- GSFC: 8, ARC: 3, JPL: 3, MSFC: 2; Consultant:1

Ana Prados, Program Manager (GSFC)

Brock Blevins, Training Coordinator (GSFC)

Elizabeth Hook, Technical Writer/Editor (GSFC)

David Barbato, Spanish Translator (GSFC)

Annelise Carleton-Hug, Program Evaluator/
Consultant

Marines Martins, Project Support (GSFC)

Bryan Duncan (GSFC)

Land & Wildfires

Cynthia Schmidt, Land & Wildfire Lead (ARC)

Amber Jean McCullum, Instructor (ARC)

Sherry Palacios, Instructor (ARC)

Disasters

Amita Mehta, Disasters Lead (GSFC)

Health & Air Quality

Pawan Gupta, Air Quality Lead (GSFC)

Sue Estes, Health Lead (MSFC)

Maury Estes, Heath (MSFC)

Water Resources

Tim Stough, Water Resources Lead (JPL)

Tom Painter, Instructor (JPL)

Erika Podest, Instructor (JPL)

A satellite map of the Pacific Northwest coast of North America, showing the coastline of British Columbia and Washington state. The map features a mix of land and water, with various shades of blue and green indicating different water depths and vegetation. A semi-transparent grey rectangle is overlaid on the map, containing the text "Additional Slides" and a horizontal line.

Additional Slides

Outreach Strategy

- Email
- Listserv (1,300)
- Existing websites, portals and groups from boundary organizations (FedCenter, eoPortal, GWP, US Water Partnership, etc)
- Targeted outreach strategy for collaborative trainings
- Outreach Database with 2,700+ entries sortable by country, region, thematic interest and sector
- Twitter

