Applied Remote Sensing Training Program
Overview and Updates

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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:
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

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ARSET Health & Air Quality Attendees
Attendees by Sector (2009-2015)

- Int'l Academia, 23.99%
- U.S. Academia, 13.26%
- U.S. Fed/State/County/Municipal, 37.00%
- Int'l Government, 16.61%
- NGO/Nonprofit/Int'l Org, 3.10%
- Private/Public Company, 5.45%
- Tribal, 0.59%
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

• 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 PM2.5 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

ARSET plans to host dedicated trainings on Geo platforms

Source: NOAANESDIS
ARSET Website and Annual Report

http://arset.gsfc.nasa.gov

Health & Air Quality

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
- Case study approaches to demonstrate methods and tools

Upcoming Training

Air Quality

Satellite Derived Annual PM2.5 Data Sets in Support of United Nations Sustainable Development Goals
03/15/2017 to 03/29/2017

Disasters

NASA Remote Sensing for

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

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Brock Blevins, Training Coordinator (GSFC)
Elizabeth Hook, Technical Writer/Editor (GSFC)

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**Land & Wildfires**
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Amber Jean McCullum, Instructor (ARC)
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**Disasters**
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**Health & Air Quality**
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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)
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