

The Health and Air Quality Applied Sciences Team



<https://haqast.org/>

Tracey Holloway, Ph.D. – Team Lead

Jenny Bratburd, Ph.D. – HAQAST Outreach Coordinator

University of Wisconsin—Madison





OUTRIDER



WISCONSIN
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NASA HEALTH AND AIR QUALITY APPLIED SCIENCES TEAM

Connecting NASA Data and Tools with Health and Air Quality Stakeholders

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2026



HONOREE DETAILS

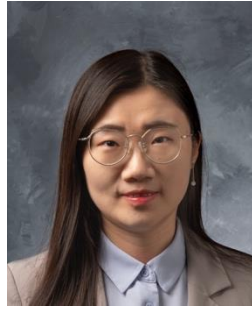
JAMES SZYKMAN SZYKMAN

Senior Research Engineer
Office of Applied Science and Environmental
Solutions

Environmental Protection Agency

Hampton, Virginia

Leveraged EPA expertise to lead a cross-agency collaboration that successfully validated NASA's TEMPO satellite, paving the way to ground-breaking methods of monitoring, tracking and addressing air pollution.



NASA Health and Air Quality Applied Sciences Team Members (HAQAST) 2025-2029

Tracey Holloway (Team Lead, UW-Madison)

Daniel Anderson (University of Maryland Baltimore County)

Xi Chen (University of Iowa)

Arlene Fiore (Massachusetts Institute of Technology)

Pawan Gupta (NASA Goddard)

Jennifer Kaiser (Georgia Tech)

Carl Malings (Morgan State University)

Jingqiu Mao (University of Alaska, Fairbanks)

Randall Martin (Washington University)

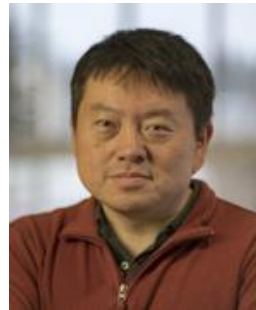
Aaron Naeger (NASA Marshall)

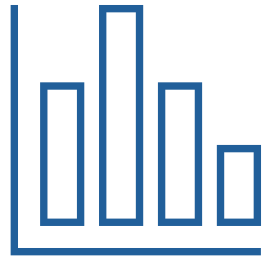
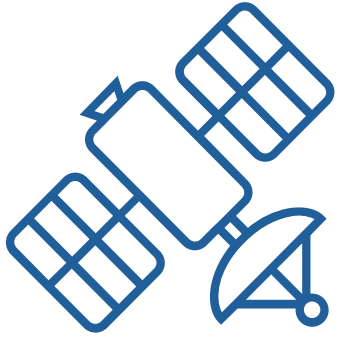
Jeffrey Pierce (Colorado State University)

Amber Soja (National Institute of Aerospace)

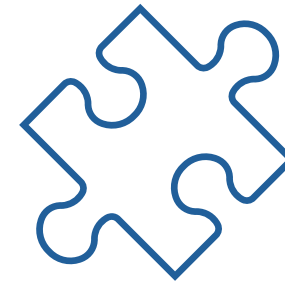
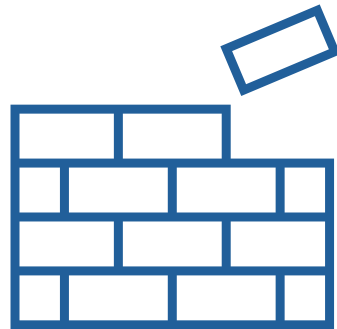
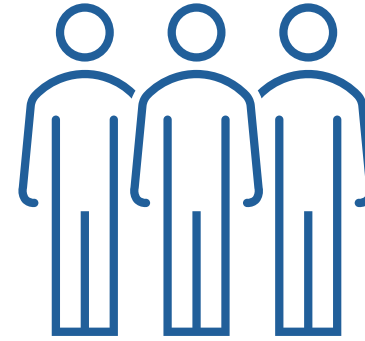
Travis Toth (NASA Langley)

Christopher Uejio (Florida State University)



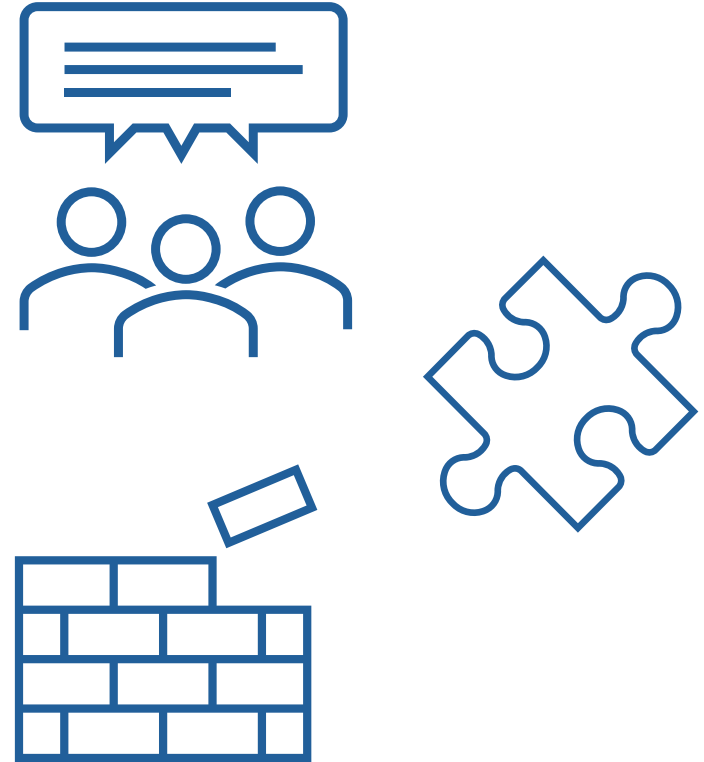


HAQAST



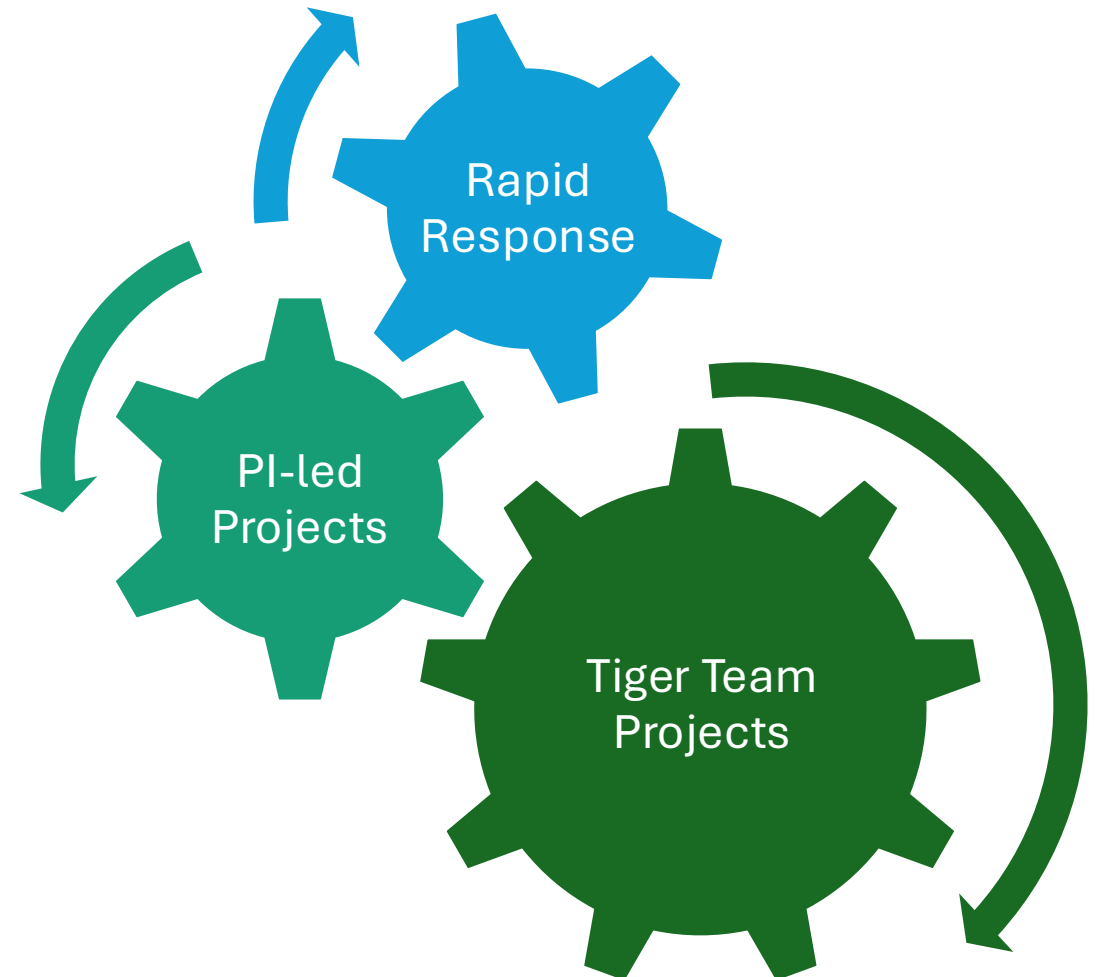
The HAQAST Approach

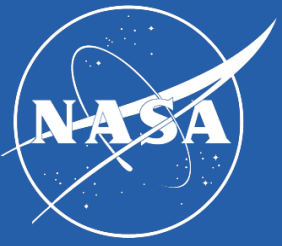
- Build stakeholder partnerships
- Listen to information needs
- Collaborate to design use-inspired research to meet needs
- Scale up successes as a team
- New applications of NASA data activate new audiences and highlight new opportunities



The Work of the Team

- **Research** moves from questions to answers
- **We create** new data products, analysis methods, toolboxes, and insights
- **Expedited "Time to Market"** as applications advance with innovation
- **Successful approaches** inform stakeholders and scientists with less than 6-month lag





HAQAST 2025 - 2029



2025

2029

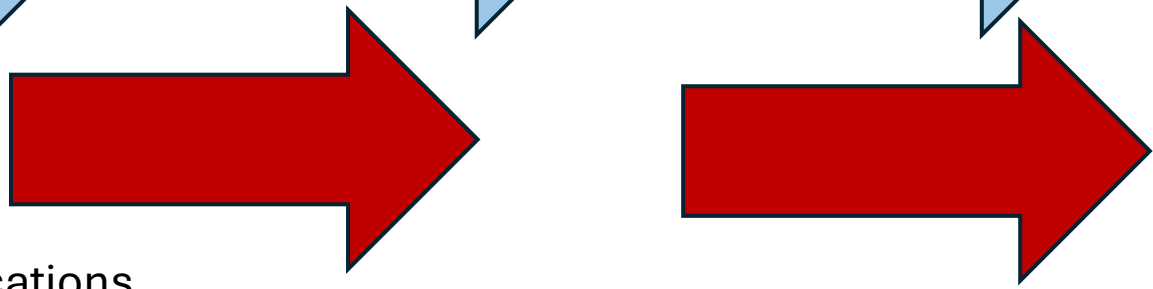
Member projects



Affinity Groups

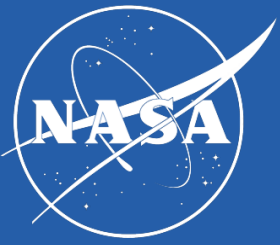


Tiger Teams



Outreach & communications

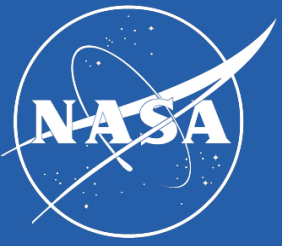




8 New Tiger Teams Selected



- Tiger Teams are:
 - short-term (12-18 month)
 - high-impact, collaborative efforts
 - where HAQAST members collaborate with stakeholder to identify and solve an immediate problem using NASA data and products.
 - Each Tiger Team draws on the expertise of multiple HAQAST PIs to find the best, multifaceted solutions to pressing health and air quality issues.
- In 2026, 13 proposals were submitted
- 7 Stakeholder reviewers 7 reviewers:
 - environmental non-profit,
 - health non-profit,
 - Consulting firms,
 - State AQ manager
 - federal agency

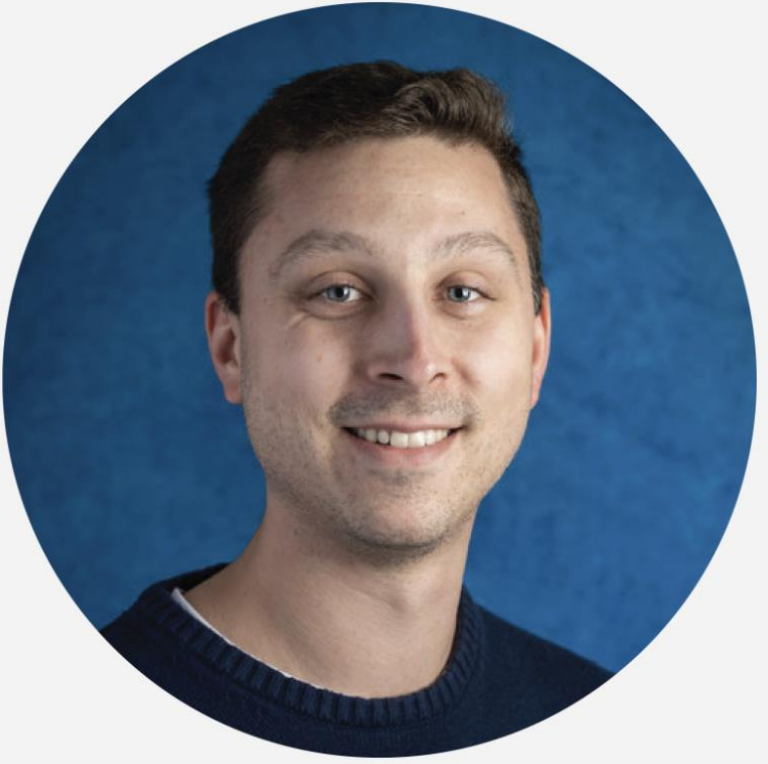


Using NASA Observations to Characterize Dust Plume Transport for Air Quality and Public Health Solutions

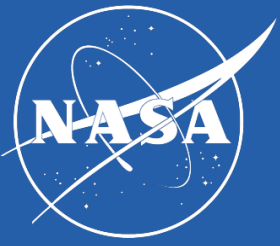


Travis Toth

NASA Langley Research Center



Leaflet from Wikipedia



Distinguishing Prescribed Fire (PF) versus Wildfire (WF) in the Contiguous US for Fire Management and Health and Air Quality Organizations

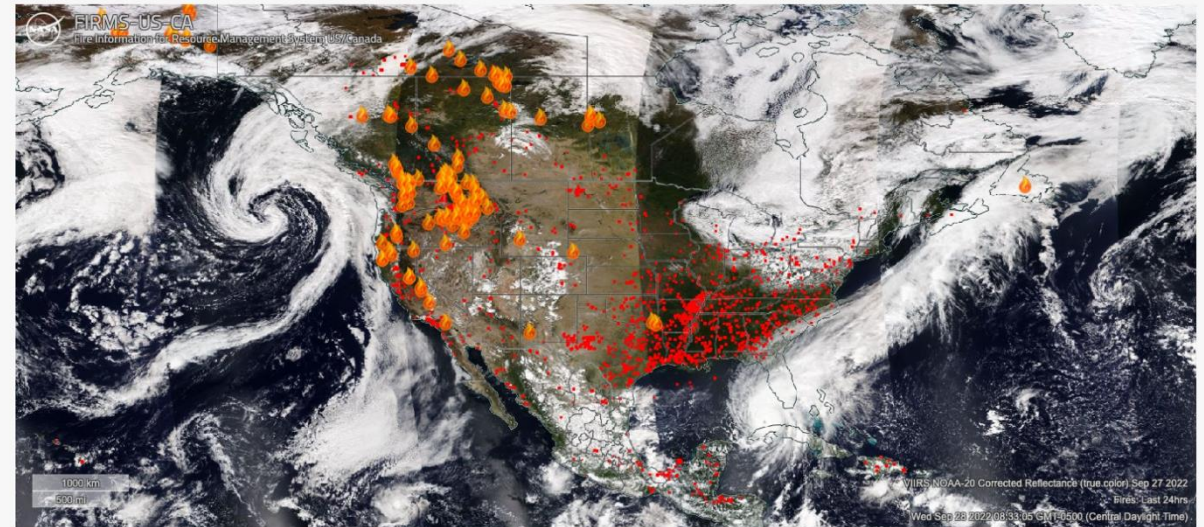


M. Talat Odman



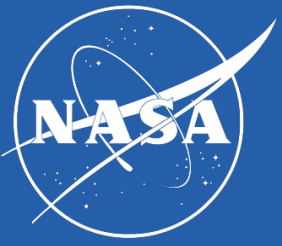
Amber Soja

NASA Langley Research Center



Active fires in the U.S and Canada on Sept. 27, 2022 as indicated by NOAA-20's Visible Infrared Imaging Radiometer Suite. SSEC is providing low latency data to NASA to support earlier wildfire detection. Credit: NASA/FIRMS US/Canada

Image from UW SSEC

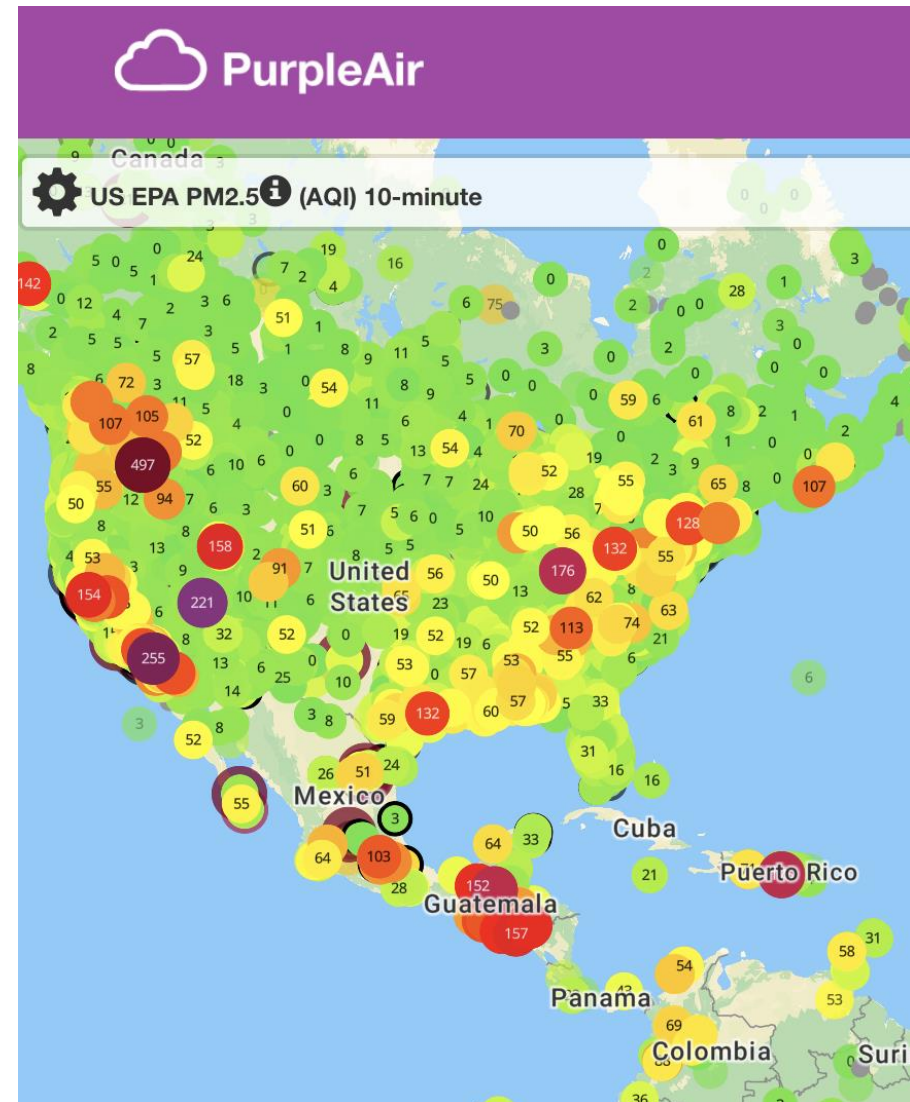


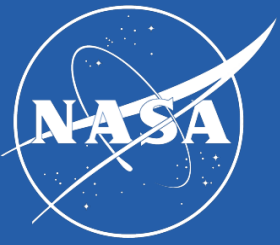
Leveraging Low-Cost Sensor Networks and Satellite-Derived Products for Air Quality Advisories



Jingqiu Mao

University of Alaska, Fairbanks



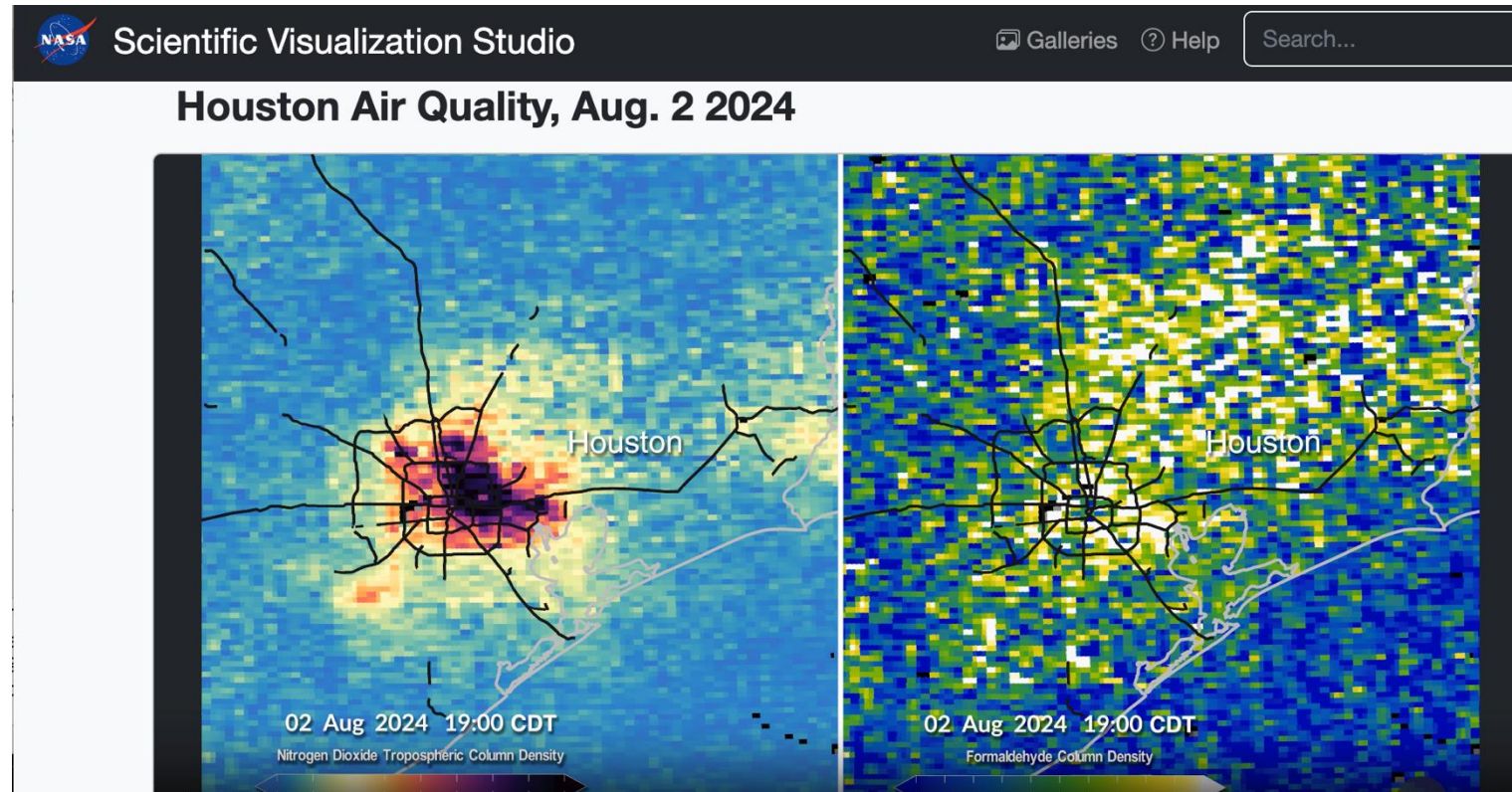


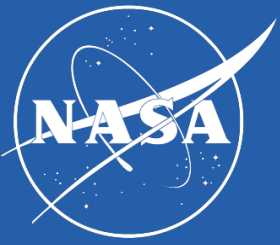
Establishing Best Practices for TEMPO HCHO Observations in Regulatory Applications: Demonstrations in Chicago, St. Louis, and New York



Jennifer Kaiser

Georgia Institute of Technology





Analysis of TEMPO Ozone Profile Data for Monitoring Ozone Exceedances



Aaron Naeger

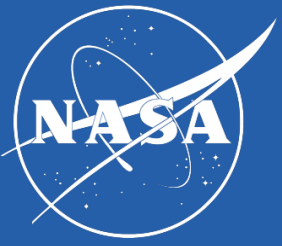
NASA Marshall Space Flight Center



**TROPOSPHERIC EMISSIONS:
MONITORING OF POLLUTION (TEMPO)
PROJECT**

**Ozone Profile Level 2 and 3 Data products:
User Guide**

January 6, 2026

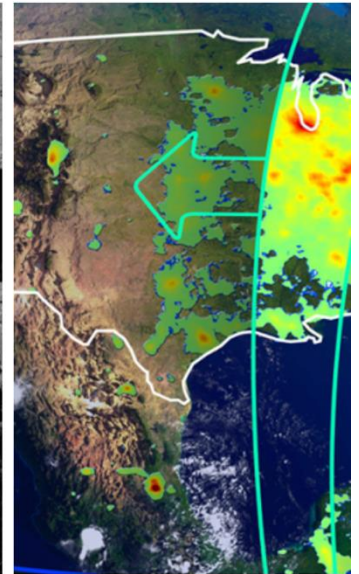
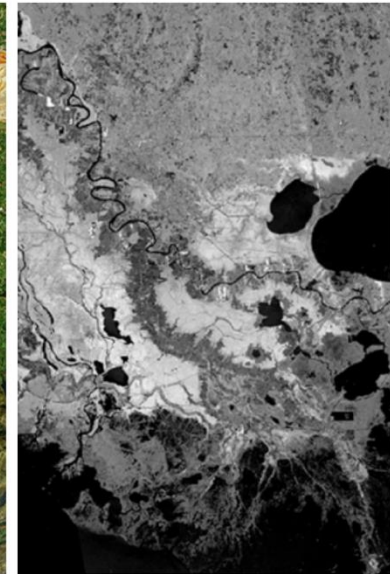


Curating a Remote Sensing Training Atlas for Health and Air Quality



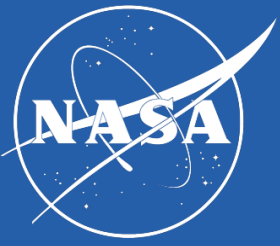
Pawan Gupta

NASA Goddard Space Flight Center



ARSET

Applied Remote Sensing Training Program



HAQAST Support for AIR4US Implementation



Carl Malings

Morgan State University



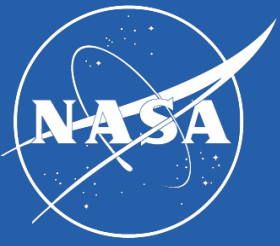
AIR4US

AIR4US - Air-quality Information Resource for the United States

AIR4US will be a portal used to aggregate air quality data as a part of NASA's Earth Action, which builds on ESD's existing AQ portfolio (EA: HAQAST, R&A: TCP, ESTO: AIST, ESDS: VEDA) working with EPA and NOAA to create an impactful information system for decision makers (CARB, TCEQ, etc) and expand capacity development (CDC, NIH, OpenAQ, Google, WHO, etc.)



ACTIVITIES

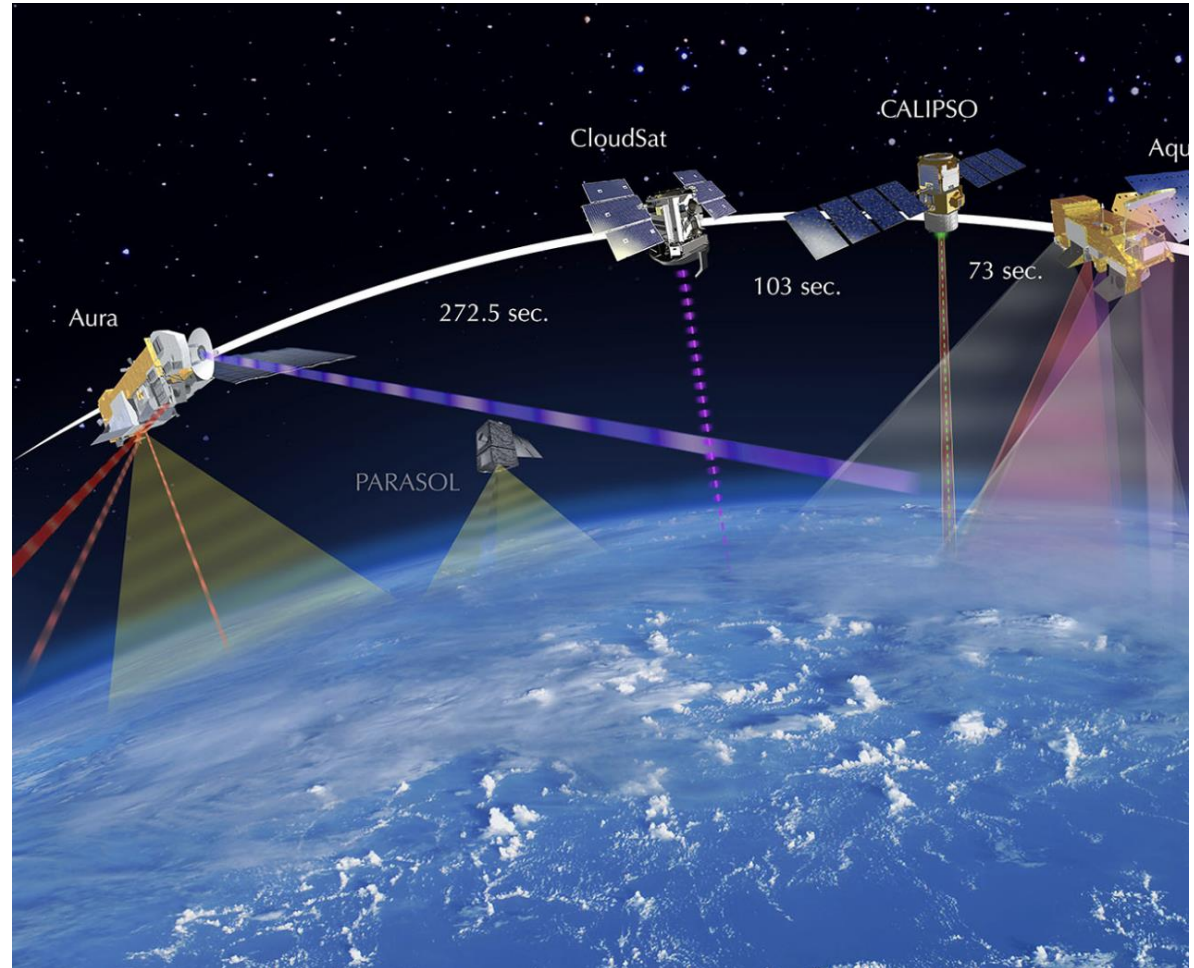


Ensuring Continuity Across Satellite Transitions: Quantifying Uncertainty in Long-Term Air Quality and Fire Records



Amber Soja

NASA Langley Research Center





Tapan Acharya
Caterpillar Inc



Amanda Fritz
Connecticut DEEP



Zac Adelman
Lake Michigan Air
Directors Consortium



Temilayo Adeyeye
New York State
Department of Health



Doug Boyer
Texas Commission
Environmental
Air Quality



Eric Choi
Mission Control

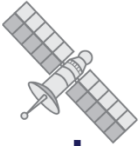


Kelly Crawford
Bay Area Air
District
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C
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Barron Henderson
US EPA

HAQAST
Ambassadors



Tabassum Insaf
New York State
Department of Health



Alex Karambelas
NESCAUM



Byeong-Uk Kim
Georgia Environmental
Protection Division



Maeve MacMurdo
Cleveland Clinic



Libby Mohr
Environmental
Defense Fund



Amirhosein Mousavi
Google, University of
Southern California



Ebrahim Eslami
Houston-Galveston
Area Council



Pat Reddy
Independent &
Univ. of Wisconsin



Leticia Nogueira
American Cancer
Society



Pallavi Pant
Health Effects Institute



Allison Patton
Health Effects Institute



Nathan Pavlovic
Sonoma Technology



Mary Tran
University of Chicago
EPIC Air Quality Fund



Mary Uhl
WESTAR

Wednesday, May 13

(Pyle Center and Online via Zoom)

8:30–9:00 Breakfast & Networking (Lee Lounge)

9:00–9:45 Session 1: Overview of NASA

HAQAST (Room 209)

209

9:45–10:15 Coffee & Networking (Lee Lounge)

10:15–11:30 Session 2A and 2B

Session 2A: Tracking air pollution under smoke and dust with satellite data (Room 209)

Moderator: *Amber Soja* (NASA Langley, HAQAST Member)

- *Xi Chen* (Univ. Iowa, HAQAST Member)
- *Leif Paulson* (Wyoming DEQ)
- *Amanda Fritz* (Connecticut DEEP)
- *Travis Toth* (NASA Langley, HAQAST Member)

209



HAQAST
Madison



Meeting of the NASA Health and Air Quality Applied Sciences Team

May 13th and 14th, 2026

Pyle Center - Madison, WI / Online via Zoom

Session 2B: Evaluating emissions and anthropogenic activities (Room 226)

226

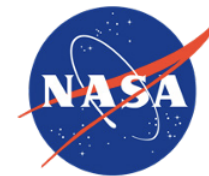
Moderator: *Aaron Naeger* (NASA, HAQAST Member)

- *Tracey Holloway* (UW Madison, HAQAST Member)
- *Angie Dickens* (LADCO)
- *Jennifer Kaiser* (Georgia Tech, HAQAST Member)
- *Sarah Benish* (National Atmospheric Deposition Program)

11:30–1:15 Lunch (on your own)



HAQAST
Madison



Meeting of the NASA Health and Air Quality Applied Sciences Team

May 13th and 14th, 2026

Pyle Center - Madison, WI / Online via Zoom

1:15-2:30 Session 3A and 3B

Session 3A: Managing urban heat and health responses (Room 209)

209

Moderator: *Jeff Pierce* (Colorado State University, HAQAST Member)

- *Chris Uejio* (Florida State Univ., HAQAST Member)
- *Yun Hang* (University of Texas Health Science Center at Houston)
- *Megan Christenson and Kate Beardmore* (Wisconsin DHS)
- *Robert Phocas* (Southeast Sustainability Directors Network)

Session 3B: Improving access, analysis, and awareness of satellite data for air quality and health (Room 226)

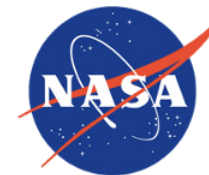
Moderator: *Carl Malings* (Morgan State Univ., HAQAST Member)

- *Randall Martin* (Washington University in St. Louis, HAQAST Member)
- *Jenny Bratburd* (UW Madison, HAQAST co-I)
- *Sarah Kroening* (Children's Health Alliance of Wisconsin)
- *Kevin Crowe* (Washington Post)

226



HAQAST
Madison



Meeting of the NASA Health and Air Quality Applied Sciences Team

May 13th and 14th, 2026

Pyle Center - Madison, WI / Online via Zoom

2:30–3:00 Networking Break (Lee Lounge)

3:00–4:15 Session 4A and 4B *209*

Session 4A: Integrating low-cost sensors and satellite data in air quality decision-making

(Room 209)

Moderator: *Pawan Gupta* (NASA Goddard, HAQAST Member)

- *Jeff Pierce* (Colorado State Univ., HAQAST Member)
- *Jingqiu Mao* (Univ. of Alaska, HAQAST Member)
- *Vishal Joseph* (Univ. of Chicago)
- *Leticia Nogueira* (American Cancer Society)

Session 4B: Data for impact, what scientists can learn from journalists and communications officers (Room 226)

Moderator: *Randall Martin* (Washington University in St. Louis, HAQAST Member)

- *Rachel Ramirez* (Freelance journalist)
- *Rebecca Theim* (The Pew Charitable Trusts)
- *Joan Meiners* (Arizona Republic)
- *Virginia Gewin* (Freelance journalist)

226

4:30–6:30 Poster Session (Lee Lounge)

Lee Lounge

Thursday, May 14

(Pyle Center and Online via Zoom)

7:30–9:00 Breakfast & Networking (Lee Lounge)

9:00–10:15 Panel 5A, 5B, and 5C/Outrider Session I

Session 5A: Using satellite data for operational air quality decisions (Room 327)

Moderator: *Jingqiu Mao* (Univ. of Alaska, HAQAST Member)

- *Carl Malings* (Morgan State Univ., HAQAST Member)
- *Samuel Kay* (District of Columbia, Department of Energy & Environment)
- *Minh Nghiem* (OpenAQ)
- *Nico Schulte* (South Coast AQMD)

327

Session 5B: Meeting the challenge of satellite data continuity (Room 305)

Moderator: *Travis Toth* (NASA Langley, HAQAST Member)

- *Amber Soja* (NASA Langley, HAQAST Member)
- *Kazuyuki Miyazaki* (NASA JPL)
- *Dan Goldberg* (George Washington Univ.)
- *Bob Carp* (UW-Madison)

305

Session 5C: Outrider Session I (Vandeberg Auditorium/121)

121

9:00 Welcome and Introductions

- *David Vitse* (Outrider Foundation)

9:15 Science and Media Resources for Journalists

- *Hazem Mahmoud* (NASA)

9:35 Covering the Uncovered: NASA Stories Journalists Need to Know About in 2026

- *Jon Martin* (UW Madison)
- *Steve Ackerman* (UW Madison)
- *Arlene Fiore* (MIT, HAQAST Member)
- *Chris Uejio* (Florida State Univ., HAQAST Member)
- *Randall Martin* (Washington Univ. in St. Louis, HAQAST Member)

10:15–10:45 Networking Break (Lee Lounge)

10:45–12:00 Panel 6A, 6B, and 6C/Outrider Session II

Session 6A: How are machine learning and AI changing the work of satellite-data in decision-making on air quality and environmental health? (Room 327) **327**

Moderator: *Xi Chen* (Univ. Iowa, HAQAST Member)

- *Bryan Duncan* (NASA Goddard, HAQAST Co-I)
- *Elise Penn* (ZeusAI)
- *Dhruvit Patel* (Silurian AI)
- *Pawan Gupta* (NASA Goddard, HAQAST Member)

Session 6B: Characterizing ozone production regimes with satellite data (Room 305) **305**

Moderator: *Jennifer Kaiser* (Georgia Tech, HAQAST Member)

- *Arlene Fiore* (MIT, HAQAST Member)
- *Aaron Naeger* (NASA, HAQAST Member)
- *Xiangyu Jiang* (Georgia EPD)
- *Kelly Crawford* (Bay Area Air Quality Management District)

121

Session 6C: Outrider Session II (Vandeberg Auditorium/121)

10:45 Legacies Revisited: Updates on Historic Environmental Successes

Moderator: *Tracey Holloway* (UW-Madison, HAQAST Member)

- *Michael Hawthorne* (Chicago Tribune)
- *Sarah Benish* (National Atmospheric Deposition Program)
- *Brad Pierce* (UW-Madison)

11:40 Data Reporting to Better Serve Audiences

Moderator: *Caitlin Looby* (Milwaukee Journal-Sentinel)

- *Rebecca Leber* (Reporter and climate researcher)
- *Sylvia Troost* (Pew Charitable Trusts)
- *Kevin Crowe* (The Washington Post)

12:00 - End of HAQAST Meeting

Thank **you** for being part of



HAQAST

We appreciate NASA's ongoing
support for work



NASA HEALTH AND AIR QUALITY APPLIED SCIENCES TEAM

Connecting NASA Data and Tools with Health and Air Quality Stakeholders

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