



Models, In situ, and Remote sensing of Aerosols (MIRA)

<https://science.larc.nasa.gov/mira-wg/>

Charter

June 10, 2022



There is a natural partitioning of scientific interest amongst three specialties of aerosol research: modeling, in situ measurements, and remote sensing. The community sees enhanced measurement capabilities when these groups interact, and this strengthens the overall scientific impact on climate and air quality. The Models, In situ, and Remote sensing of Aerosols (MIRA) working group connects members of the different aerosol communities through collaborative projects.

What is MIRA? MIRA is forum that fosters international collaborations amongst the aerosol specialties. MIRA is also a collection of interdisciplinary projects with clear goals that are pursued by small working groups. MIRA emphasizes areas of study where the aerosol specialties overlap, and MIRA projects are generally characterized by requests for additional scientific data (both observational and modeled).

Why? The purpose of MIRA is to contextualize both observations and model results through the encouragement of holistic projects and collaborations.

How does MIRA differ from other activities?

MIRA focuses on interdisciplinarity *to improve measurements and their utility*, so MIRA complements the activities of other groups. For example, ensemble model runs of AeroCom could be used in a MIRA project with greater robustness than a similar effort that uses single-model analyses.

Other interdisciplinary aerosol groups have different primary foci. For instance, AeroCom mainly focuses on improving global aerosol models, AeroSat focuses on strengthening collaboration amongst satellite aerosol retrieval groups, and ICAP focuses on aerosol forecasting. We hope that many MIRA projects engage these groups.

What are MIRA's immediate science goals?

- ★ **Encourage projects** that facilitate links between modeling and measurements of particulate pollution.
- ★ **Encourage projects** that use interdisciplinary knowledge to develop and improve aerosol remote sensing techniques.
- ★ **Encourage a community database** of aerosol optical tables that easily allows new contributions and updates.

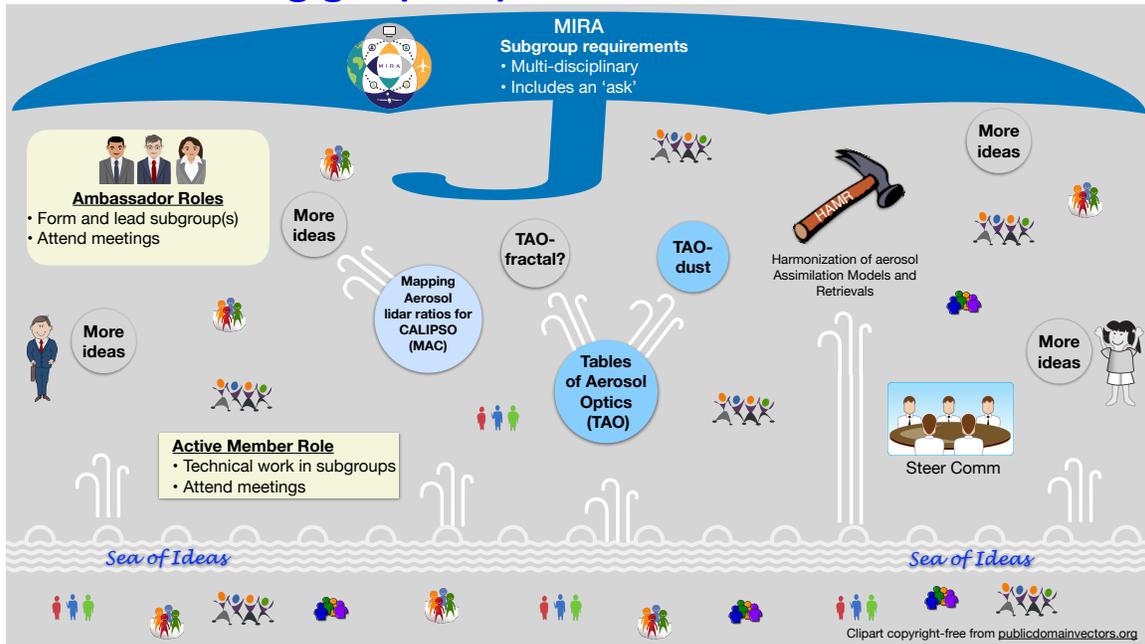
Near-term activities

- ★ Fostering communication by building webpages and community databases.
- ★ Bi-annual side meetings at IGAC.
- ★ Work towards becoming a recognized IGAC working group.
- ★ Additional in-person and virtual meetings as appropriate.

Organizational Structure

- ★ MIRA is composed of sub-groups of scientists led by MIRA Ambassadors who are focused on clear projects. Presently, there are three sub-groups, as shown in the graphic below:
- ★ MIRA Steering Committee members promote MIRA by organizing communications (meetings, webpages, community databases, social media, etc.), originating and participating in projects, and promoting MIRA at meetings and through networks.
- ★ Ambassadors originate and participate in MIRA projects, promote MIRA at meetings and through networks.

The MIRA working group is open to all interested aerosol scientists.



Note that we are soliciting ambassadors for additional projects, so this figure will evolve.

MIRA Steering Committee

Greg Schuster (Chair)	NASA Langley Research Center, USA	gregory.l.schuster@nasa.gov
Chip Trepte	NASA Langley Research Center, USA	charles.r.trepte@nasa.gov
Obie Cambaliza	Ateneo de Manila University <i>and</i> Manila Observatory, Philippines	mcambaliza@observatory.ph
Mian Chin	NASA Goddard Space Flight Center, USA	mian.chin@nasa.gov
Oleg Dubovik	CNRS / University of Lille, France	oleg.dubovik@univ-lille.fr
Sang-Woo Kim	Seoul National University, Korea	sangwookim@snu.ac.kr

About our Logo. Our logo was created by Amiee Amin of the LaRC Science Directorate Communications Team. It is a Venn diagram with four overlapping circles. Three of the circles represent the MIRA aerosol science specialties – modeling, in situ, and remote sensing. The fourth circle is our common topic of study, the planet Earth. MIRA is at the intersection of the circles. The human silhouettes represent the working connections that bring the different aerosol specialties together.