U.S. National Science Foundation

NSF FARE Radar Facilities: Capabilities, Access, and Status

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(Recent) History of NSF's support of community radar facilities

Lower Atmosphere Observational Facilities (LAOF)

- Ground-based: S-POL, DOWs, CHILL
- Airborne: HCR, WCR

Lower Atmosphere Observational Facilities (LAOF)

Community Instruments and Facilities (CIF)

Lower Atmosphere Observing Facilities

- NCAR's S-band Dual Polarization Doppler Radar (S-Pol)
- NCAR's HIAPER cloud radar (HCR)
- University of Wyoming Cloud Radar (WCR)
- University of Wyoming Ka-Band Profiling Radar (KPR)

Radar	G-V	C-130	UWKA
HCR	Yes	No	No
WCR	No	Yes	Yes
KPR	Maybe	Yes	Yes

Community Instruments and Facilities

Radars

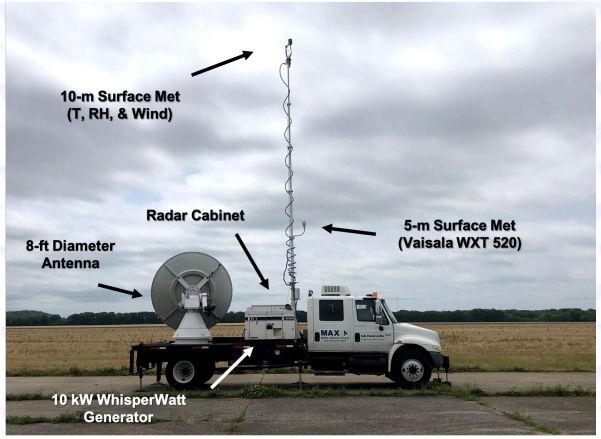
- The University of Alabama at Huntsville's Flexible Array of Radars and Mesonets (FARM)
- The University of Oklahoma Rapid X-band Polarimetric Radar (RaXPol)
- Colorado State University Sea-Going and Land Deployable Polarimetric (SEA-POL) Radar
- Mobile Alabama X-Band Radar (MAX)

Radar	Band	Mobile	Re-Deployable
FARM DOWs	X	Yes	Yes
FARM COW	C	No	Yes
OU RaXPol	X	Yes	Yes
CSU SEA-POL	C	No	No
UAH MAX	X	Yes	Yes

Community Instruments and Facilities

Remote sensing suites

- The Stony Brook Multi-function Airborne Raman Lidar (MARLi) and Airborne Doppler Lidar (ADL)
- The University of Wisconsin–Madison Space Science and Engineering Center Portable Atmospheric Research Center (SPARC)
- University of Alabama in Huntsville Mobile Atmospheric Profiling Network (MAPNet)



Community Instruments and Facilities

In Situ Observations

- The University of Colorado at Boulder's Mobile Uncrewed Systems for Atmospheric Research (MUSAS)

Laboratory Facilities

- Clemson University Single Particle Soot Photometer (SP2)
- The Pi Cloud Chamber at Michigan Tech
- University of Utah's Storm Peak Laboratory

Community Radar Access

All NSF proposals to use the LAOF or CIF resources should be submitted through the Facility and Instrumentation Request Process (FIRP) solicitation NSF 23-602

FIRP has multiple Tracks to match the complexity of the proposed campaign

- Track 1 – Education and Outreach
- Track 2 – Single Facility Request
- Track 3 – Field campaigns

NSF's primary mechanisms to develop or acquire radar systems

Mid-scale Research Infrastructure

Examples: KaRVIR, APAR

Major Research Instrumentation

Examples: DOW, SMART, RaXPol, SEA-POL, PAIR, SJSU Ka-band, UAH Ka-band

What does the future look like?

There is a major upheaval in how NSF operates

- Fewer Program Directors
- Fewer Solicitations
- Alignment with administration (OMB) priorities (see memo M-25-34 on FY27 Administration Research and Development Budget Priorities)
- Significant budget uncertainty
- NCAR?

Relevant to this meeting

- MRI and MsRI will exist
- CIF and FIRP will exist in some format