



NATIONAL SCIENCE FOUNDATION
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NSF 16-127

Dear Colleague Letter: Re-competition of Operations and Management of the NSF-supported AMISR Facilities located at Poker Flat, AK and Resolute Bay, Canada

August 30, 2016

Dear Colleague:

The Division of Atmospheric and Space Sciences (AGS) in the Directorate for Geosciences (GEO) at the National Science Foundation (NSF) currently supports two Advanced Modular Incoherent Scatter Radar (AMISR) facilities -- the *Poker Flat Incoherent Scatter Radar Facility (PFISR)* and the *Resolute Incoherent Scatter Radar-North Facility (RISR-N)*. These two observatories provide range resolved measurements of ionospheric plasma parameters (electron density, ion and electron temperatures, bulk plasma convection velocities, and the ion-neutral collision frequency), and educational capabilities to a wide range of AGS-supported communities. The PFISR facility is coordinated with ongoing operations of the University of Alaska rocket range at Poker Flat as well as other optical and radio science instruments located in central Alaska. The RISR-N facility is part of a collaborative effort with the University of Calgary that operates a similar AMISR radar located at Resolute Bay called the Resolute Incoherent Scatter Radar-C. These two radars face in opposite directions (with an orientation slightly to the east, ~25 degrees az, of the geographic meridian) and provide extended coverage of the central polar cap ionospheric dynamics.

The NSF is planning a competition for the support of the management and operations of either one or the other AMISR facility following the expiration of the current AMISR Cooperative Agreement that supports both AMISR observatories. The planned competition will be held via an open, merit-based, external peer-review process consistent with the NSF Grant Proposal Guide and the NSB Resolution on Competition and Re-competition of NSF Awards ([NSB-08-12](#)). AGS is currently preparing the program solicitation for this competition, which is expected to lead to two cooperative agreements following the completion of the current AMISR cooperative agreement, which is expected to end on 30 November 2017.

This letter provides general information regarding the upcoming competition and invites interested members of the community to contact the designated NSF representative indicated below to provide information those community members believe is important for the planned competition.

Program Description

Both PFISR and RISR-N are AMISR facilities that operate with the objective of acquiring range-resolved measurements of ionospheric plasma parameters to serve national goals in basic research and education in the geospace sciences. The facilities also contribute important observations pertaining to national space weather goals. The current capabilities for each of the two AMISR observatories at Poker Flat, AK, and at Resolute Bay, Canada may serve as a preliminary guide for the possible range of facility

capabilities for which proposals may be sought via the planned competition.

The two AMISR radar observatories (PFISR and RISR-N) currently provide for full power operations in selected campaign periods, and for PFISR, which has access to the local power grid, extended operations at low power. These observatories provide:

- Continuous monitoring of range-resolved ionospheric plasma parameters (electron densities, ionospheric ion and electron temperatures, and bulk plasma convection drifts); these data are of great value in space weather and aeronomy research.
- Possible user-specified selections of observing orientations, observing strategies, and dwell times as opposed to the adoption of standard AMISR observing strategies.
- Software systems for analyzing, archiving, managing, and distributing large volumes of diverse geophysical data; and
- Education and outreach materials and capabilities for a wide range of audiences.

NSF also seeks to explore the possibility that a solicitation might be used as an opportunity to consider relocation of the PFISR facility to some other location of strong geospace interest that would provide greater scientific return to the community. One option that is being considered is the relocation of PFISR from Poker Flat to Gakona, AK for the purpose of collaborative research involving the University of Alaska High Frequency Active Auroral Research Program (HAARP) heating facility. This relocation option would also include the study of sub-auroral phenomena at the Gakona location.

Both PFISR and RISR-N are currently managed by SRI International (www.sri.com) under a single cooperative agreement with NSF that began 1 October 2006 and is anticipated to end 30 November 2017. SRI will provide electronic access to all technical documents and software codes necessary for AMISR operations; such access would be limited to proposing organizations.

Opportunity to Provide Comments

With this DCL NSF invites comments on possible AMISR facility management plan(s) and possible future capabilities, including potential relocation scenarios. Comments should be submitted as a PDF document not to exceed 2 pages in length, sent as an attachment to an email to the Primary Contact person listed below.

Please submit comments by 1 October, 2016. NSF does not intend to respond directly to any specific written submission. NSF will also consider community input from workshop reports and other relevant documents in the planning for the future management and operation of the AMISR facilities. This notice does not constitute a solicitation; therefore, no award of any kind will result from this notice.

Anticipated Competition Schedule

Although the competition is still in the planning stage, NSF intends to follow this general schedule: 1 October, 2016, is the deadline for submission of comments to this DCL; Release of the program solicitation in the final quarter of calendar year 2016; Deadlines for letters of intent and, subsequently, full proposals in the first quarter of calendar year 2017.

Requests for Information

All inquiries regarding this Dear Colleague Letter and the anticipated competition should be directed in email to the Primary Contact listed below.

Primary Contact

John Meriwether
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Sincerely,
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