**National Science Foundation**

**Directorate for Geosciences**

**Division of Atmospheric and Geospace Sciences**

**Review of the Geospace Section Portfolio**

**Charge to the Review Committee**

**January 31, 2015**

**Context**

This review is motivated in part by priorities highlighted for the Geospace scientific community in the National Research Council's (NRC) Decadal Survey: *Solar and Space Physics – A Science for a Technological Society* (hereafter called the *Survey*) and by the current challenging outlook for the U.S. Federal budget.

The review is designed to examine the balance across the entire portfolio of activities supported by NSF’s Geospace Section (GS) within the Division of Atmospheric and Geospace Sciences (AGS). The primary goal of this review, and of any resulting adjustments of the GS portfolio, is to ensure that investments in the GS science disciplines and respective facilities are properly aligned, both now and in the future, with the needs and priorities of the Geospace scientific community, in part as articulated in the Survey.

The following boundary conditions will be adopted for the review:

* All of the GS-funded activities should be considered together with the *Survey* recommendations: Core Programs of Aeronomy, Magnetospheric Physics, and Solar Terrestrial Research, focused programs CEDAR, GEM, and SHINE, elements of the new Space Weather Research & Instrumentation Program (Cubesats, space weather modeling, and other multi-user, space weather-related activities), components of the Geospace Facilities Program, such as the Incoherent Scatter Radar, Lidar Consortium, SuperDARN HF radars, and those activities specifically designed to enhance educational opportunities, diversity, and international participation.
* The review should be forward-looking focusing on the potential of all funded facilities, programs, and activities for delivering the desired science outcomes and capabilities (while taking into account respective past performances) and considering the value of funded activities in terms of both intellectual merit and broader impacts.
* The review should assume budget scenarios (to be provided by GS) to encompass the period from 2016 through 2025, and consider the costs of (i) continuing the existing observing capabilities and science-funded programs, as well as of (ii) new facilities and programs, including those recommended in the *Survey* and others the Review Committee may wish to introduce.
* The Committee’s deliberations should take into consideration the national and international Geospace Sciences landscape and the consequences of its recommendations for domestic and international partnerships.

**The Charge**

The Committee is asked to construct its recommendations around two themes:

1. Recommend the *critical capabilities* needed over the period from 2016 to 2025 that would enable progress on the science program articulated in Chapter 1 of the *Survey*. These recommendations should encompass not only observational capabilities, but also theoretical, computational, and laboratory capabilities, as well as capabilities in research support, workforce, and education.
2. Recommend the *balance of investments* in the new and in existing facilities, grants programs, and other activities that would optimally implement the *Survey* recommendations and achieve the goals of the Geospace Section as articulated in the *AGS Draft Goals and Objectives Document* (including NRC/BASC Review, 2014) and the GEO/Advisory Committee Document "*Dynamic Earth: GEO Imperatives & Frontiers 2015-2020*" (NSF, 2014). These recommendations may include closure or divestment of some facilities, as well as termination of programs and other activities, and/or new investments enabled as a result. The overall portfolio must fit within the budgetary constraints provided to the Committee.

It is important that the Portfolio Review Committee considers not only what new activities need to be introduced or accomplished, but also what activities and capabilities will be potentially lost in enabling these new activities and discontinuing current activities.

The elements of the recommended portfolio should be prioritized in sufficient detail to enable GS to make subsequent appropriate adjustments in response to variations in Federal and non-Federal funding.

The Committee should consider the effects of its recommendations on the future landscape of the U.S. Geospace community. The recommended portfolio and any changes should be viable and lead to a vigorous and sustainable future. In particular, the Committee is asked to examine how the recommended portfolio supports and develops a workforce with the requisite abilities and diversity to exploit the recommended research and education investments.

The Committee will be a sub-committee of the Directorate for Geosciences Advisory Committee (AC/GEO). The Committee is asked to provide its recommendations by September 2015 for presentation to the AC/GEO, so NSF can consider them in formulating the FY 2017 Budget Request.