

May 28, 2015

Dear Colleague,

Solicitation for Membership in Returned Sample Science (RSS) Board for the 2020 Mars Mission

Introduction, context

The National Aeronautics and Space Administration (NASA) invites individuals at U.S. institutions and elsewhere to apply for membership on the Returned Sample Science (RSS) Board for the 2020 Mars science rover mission (hereafter Mars 2020). Mars 2020 is a strategic mission to be launched in July/August of 2020 and is sponsored by NASA's Planetary Science Division, through the Mars Exploration Program, all of which are part of the Science Mission Directorate (SMD). This mission will advance the scientific priorities detailed in the National Research Council's Planetary Science Decadal Survey, entitled "Vision and Voyages for Planetary Science in the Decade 2013-2022" (the Decadal Survey is available at <http://www.nap.edu>). Mars 2020 rover development and design will be largely based upon the Mars Science Laboratory (MSL) mission architecture. The 2020 rover is intended to investigate an astrobiologically relevant ancient environment on Mars to decipher its geological processes and history, including the assessment of its past habitability and potential for preservation of biosignatures within accessible geologic materials. The rover also has an objective to collect a set of scientifically compelling samples for possible return to Earth by a potential future mission. In addition, because NASA is embarking on a long-term effort for eventual human exploration of Mars, the mission will provide an opportunity for contributed Human Exploration Mission Directorate (HEOMD) and Space Technology Mission Directorate (STMD) participation via payload elements aligned with their priorities and compatible with SMD priorities for Mars 2020. Mission details are available at:

<http://mars.nasa.gov/mars2020/mission/overview/>

Preparation of the most scientifically compelling samples for possible future analysis on Earth necessitates careful inputs and community engagement, and to this end, the Mars 2020 project will create a board of scientists drawn from the diverse array of disciplines likely to be involved in the study of returned samples. Members of the Mars 2020 RSS Board will provide the Mars 2020 Project with scientific assistance and advice through mission development (i.e., through Phase D).

Structure of the RSS Board

The Returned Sample Science (RSS) Board will consist of ~10 team members who will either be chosen via this solicitation, or be appointed as ex officio members. All will be selected for deep knowledge and interest in scientific areas relevant to the study of samples returned from Mars, including planetary protection and curation. The RSS Board will represent the interests of future

scientists who may conduct investigations on cached samples collected by Mars 2020. The number and diversity of the RSS team members selected will depend on the character of the applicant pool.

The management of the Mars 2020 mission will take place at JPL, but Board members need not be resident at JPL. However, with this solicitation we are also seeking a single board member (Board Coordinator) who will be employed at JPL to participate in the development process for the Mars 2020 mission with specific attention to RSS issues. The Coordinator will work within the Mars 2020 project to identify key issues of relevance to RSS, and will interface with the rest of the RSS Board to seek an RSS recommendation on these issues. In addition, one RSS Board member will be the Chair, to represent the scientific leadership of the Board.

Roles and responsibilities of RSS Board Members

1. Participate in the formulation of expert positions on key Mars 2020 design and implementation issues of relevance to RSS brought to his/her attention.
2. Participate in RSS Board meetings (assume for planning purposes, one/year).
3. Participate if possible in events relevant to the Mars 2020 mission, such as landing site workshops and scientific conferences that bear on returned sample science objectives and/or implementation.
4. Provide advice to the Mars 2020 Project Science office in the development of the requirements (Level 2/3/4) for the sample acquisition, encapsulation, and caching system related to science, planetary protection, or curation. These are all subsystems of central importance to RSS.
5. Provide expert input to project-external studies related to the Mars 2020 mission, if called upon, for example in the area of planetary protection or requirements for follow-on missions that may retrieve the cache prepared by Mars 2020.
6. Provide technical data/analyses related to potential future RSS investigations as needed to inform project decision-making.
7. Contribute as needed to formal project-level science planning documents.
8. If requested, help generate documentation that may be needed by future returned sample science analysts and planners.
9. Participate in mission, spacecraft, and ground system design, integration and test as needed.
10. As described above, a single Board member will hold the position of Coordinator and a single Board member will hold the position of Chair.

Responding to this Call for RSS Board Applications

Application for membership in the Mars 2020 RSS Board will be in the form of a Letter of Application, accompanied by a current CV. RSS Board members will be selected by NASA Headquarters senior officials from the pool of respondents and other qualified candidates. The selected members will have demonstrated

expertise and knowledge in areas highly relevant to scientific goals as they relate to the collection of samples that may be returned to Earth in the future.

- The Letter of Application should summarize the candidate's demonstrated expertise in a scientific discipline of relevance to the potential future investigation of returned samples.
- The CV should summarize professional assignments and responsibilities, as well as peer-reviewed publications, sufficient to establish the candidate's position of scientific leadership in the community.
- Membership in the RSS Board will be determined by NASA after formal review of the applications.
- Letters of Application are invited only from individuals; group applications will not be considered. In addition, collaborations and teams will not be considered.
- Each Letter of Application is limited to two pages, with 11-point font with 1-inch margins. Letters of Application submitted by E-mail are preferred, but may also be submitted by regular mail. Responses to this invitation should be received by the Mars Program Lead Scientist no later than July 15, 2015, at the address below. The issuance of this Call for Letters of Application does not obligate NASA to accept any of the applications. Any costs incurred by an applicant in preparing a submission in response to this Call are the responsibility of the applicant.
- Participation in the Mars 2020 Science Team RSS Board is open to all qualified and interested individuals.
- Candidates interested in the RSS Board Coordinator or Board Chair position should explicitly state such an interest in their applications.

Sincerely,



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