National Aeronautics and Space Administration

Dynamic Neutral Atmosphere-Ionosphere Coupling (DYNAMIC)

Concept Study Report (CSR) Evaluation Plan

2023 Announcement of Opportunity NNH23ZDA019O

April 8, 2025

Outline

Approval

Elisabeth L. Morse
Acquisition Manager
Science Office for Mission Assessments

Dr Cindy Daniels
Director
Science Office for Mission Assessments

Dr Esayas Shume
Program Scientist
Heliophysics Division, SMD

Heather Futrell
Program Executive
Heliophysics Division, SMD

Dr Joseph Westlake
Director
Heliophysics Division, SMD

Dr Michael New
Deputy Associate Administrator for Research, SMD

Electronically approved copy on file

Introduction

Introduction

- In 2023, NASA issued an Announcement of Opportunity (AO) for Dynamical Neutral Atmosphere-Ionosphere Coupling (DYNAMIC) investigations to be managed under the NASA Solar Terrestrial Probe (STP) Program. All investigations proposed must support NASA's Heliophysics science goals and the goals and objectives of the STP Program, must be implemented by Principal Investigator (PI)-led investigation teams, and must result in the provision of complete space investigations. During science operations, the project will conduct innovative, integrated investigations to complete focused science objectives that would represent a compelling advance on the high-level DYNAMIC science goals identified in the 2013 *Decadal Survey for Solar and Space Physics.*
- The purpose of this evaluation plan is to define the ground rules, processes, organizations, and schedules to be used in evaluating the DYNAMIC Concept Study Reports (CSRs).
- At the outcome of the Step 1 competition, three investigations were selected for concept studies, which constitute each project's Concept and Technology Development Phase (Phase A) of the Formulation process as outlined in NPR 7120.5F, NASA Spaceflight Program and Project Requirements.

$2M (FY23) and 9 months are allocated for each DYNAMIC Concept Study selected in Step 1.

Evaluation Plan Overview

- The DYNAMIC Announcement of Opportunity (AO NNH23ZDA019O), under which the missions to be evaluated were selected, was issued on May 19, 2023.
- The Science Office for Mission Assessments (SOMA) at NASA Langley Research Center (LaRC) developed this DYNAMIC CSR Evaluation Plan for the Science Mission Directorate (SMD) at NASA Headquarters.
- This DYNAMIC CSR Evaluation Plan has been cleared for public release by SMD.
- The DYNAMIC Program Scientist is responsible for validating all evaluation processes, responsibility assignments, assumptions, and ground rules.
- Three mission concepts were selected for competitive Phase A concept studies. These missions are Class D.

Selected Investigations

The three selected concepts propose how to enact the DYNAMIC mission. The DYNAMIC mission is designed to study how changes in Earth's lower atmosphere influence our planet's upper atmosphere, where space weather like auroras and satellite disruptions are manifested. This knowledge will benefit humanity by helping us understand how space weather can interfere with crucial technology like navigation systems and satellites.

The selected concept study teams are:

- **University of Colorado, Boulder, led by principal investigator Tomoko Matsuo**
  - Key partners include Johns Hopkins University Applied Physics Laboratory in Laurel, Maryland; NASA's Jet Propulsion Laboratory in Southern California; and Massachusetts Institute of Technology's Haystack Observatory in Westford, Massachusetts.
- **University of Colorado, Boulder, led by principal investigator Aimee Merkel**
  - Key partners include BAE Systems in Westminster, Colorado, and the Naval Research Laboratory in Washington.
- **Virginia Polytechnic Institute and State University, led by principal investigator Scott Bailey**
  - Key partners include Southwest Research Institute in San Antonio, Texas, Space Dynamics Laboratory in Logan, Utah, Global Atmospheric Technologies and Sciences in Newport News, Virginia, and Computational Physics, Inc. in Boulder, Colorado.

Handling of Proprietary Data and Avoiding COIs

Handling of Proprietary Data

- All CSR related materials will be considered proprietary.
- Only those individuals with a need to know will be allowed to view CSR materials.
- Each evaluator who is not a Civil Servant (CS) or Intergovernmental Personnel Act (IPA) Assignee will sign a NASA Non-Disclosure Agreement (NDA) which must be on file with the NASA Research and Education Support Services (NRESS) Contractor, or the Evaluations, Assessments, Studies, Services, and Support 3 (EASSS 3) Contractor prior to any CSRs being distributed to that evaluator.
- CS and IPA evaluators are under statutory obligations and are not required to sign an NDA.
- A record will be kept of who has been supplied with what materials.
- Evaluators will be briefed at a Kickoff web conference on how to handle the CSR material. Evaluators will be briefed that they are not allowed to discuss CSRs with anyone outside the Evaluation Panels ever, unless authorized by NASA. Evaluators will be briefed to not contact anyone outside of the Evaluation Panels to gain insight on any CSR related matter without expressly getting authorization from the DYNAMIC Program Scientist (Dr Esayas Shume). If authorized by the Program Scientist, the Deputy AA for Research should be notified.

Handling of Proprietary Data (continued)

- SMD Policy Document SPD-17 detailing Observers at Review Panels will be followed. Observers will not have access to CSR or evaluation materials.
- During the Evaluation, all proprietary information that needs to be exchanged between evaluators will be transferred securely via the Remote Evaluation System (RES) website maintained by SOMA, via the NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES), via the NASA SMD's Sharepoint system, via controlled WebEx, via NASA's Box, or via encrypted email, parcel post, fax, or regular mail. Proprietary information will not be sent via unencrypted email.
- Virtual meeting information is confidential. The meeting numbers and pass codes are posted in a file on the RES or on NASA Box. Participants will be briefed to ensure they do not provide this information to anyone or distribute this information via unencrypted email or text messages.
- When the evaluation process is complete, CSR and evaluation materials will be collected from the evaluators and deleted/destroyed. Some copies (for archival purposes) will be maintained by the Program Scientist at NASA HQ, and in the SOMA vault. Also, all CSR material from the down-selected mission will be provided to the STP Program Office at Goddard Space Flight Center (GSFC). All other CSR materials will be destroyed.
- Evaluators' electronic and paper evaluation materials will be deleted/destroyed when the evaluation process is complete. Archival copies will be maintained in the SOMA vault.

Plan to Avoid Conflicts of Interest (COIs)

- Members of Evaluation Panels are cross checked against the draft list of organizations and individuals provided by the Phase A Concept Study Teams* to ensure no individual or organizational COI exists with the planned evaluators. Evaluators are required to raise any potential COIs.
- After the Concept Study Reports (CSRs) are received, all members of the Evaluation Panels will again be cross checked against the final lists of organizations and individuals on each CSR to ensure no individual or organizational COI exists on the list of evaluators.
- In addition, all evaluators will review the final lists of conflicted organizations and individuals and be required to divulge whether they have any financial, professional, or personal potential conflicts of interest and whether they work for a profit-making company that directly competes with any profit-making proposing organization.
- Community standards for conflicts of interest will be applied to all evaluators as directed in SMD Policy Document SPD-01A, *Handling Conflicts-of-Interest for Peer Reviews*. Standards for financial conflicts of interest as specified in 18 U.S.C. § 208 will be applied to Civil Servant evaluators. The HQ Office of General Counsel will be consulted as necessary.

Phase A Concept Study Team will be referred to as "study team" throughout the remainder of this document

Plan to Avoid COIs (continued)

- Any potential COI issue is discussed with the DYNAMIC Program Scientist and the SMD Deputy Associate Administrator for Research and documented in the DYNAMIC Step 2 COI Mitigation Plan.
- All Civil Service evaluators will self-certify their COI status by reviewing a combined listing of individuals and organizations associated with the CSRs. The TMC evaluators must notify the TMC Panel Chair in case there is a potential conflict. The Science evaluators must notify the Science Panel Chair in case of a potential conflict.
- If any evaluators with potential organizational COI must be used, their respective organizations must submit a plan, as required by their contract or SMD waiver, and also provide a mitigation plan.
- If during the evaluation there is any actual conflict of interest noted, the conflicted member(s) will be notified to stop reviewing CSRs immediately, and the DYNAMIC Program Scientist and TMC Panel Chair will be notified. Steps will be expeditiously taken to remove any actual or potential bias imposed by the conflicted member(s). Permissions to access electronic media for the review (NASA Box, RES, NSPIRES) will be revoked until COI is resolved.

Evaluation Organization and Process

Evaluation Organization

Leadership Team

Dr Esayas Shume, Program Scientist

Heather Futrell, Program Executive

Science Mission Directorate (SMD), NASA Headquarters

Elisabeth Morse, Lead Acquisition Manager

Dr Chauncey Wu, Acquisition Manager

Science Office for Mission Assessments (SOMA), NASA Langley Research Center

Science Panel

(Forms A & D*, Form B)

Chair: Dr Esayas Shume, Program Scientist

Backup Chair: Dr John McCormack

Backup Chair: Heather Futrell

Advisor: Dr Jared Leisner

TMC Panel

(Form C)

Chair: Elisabeth Morse

Backup Chair: Dr Chauncey Wu

Student Collaboration**

(Form E)

Chair: Dr Alexandra Lockwood-Simpson

Small Business Subcontracting

(Form F)

Chair: Chris Hall

as needed

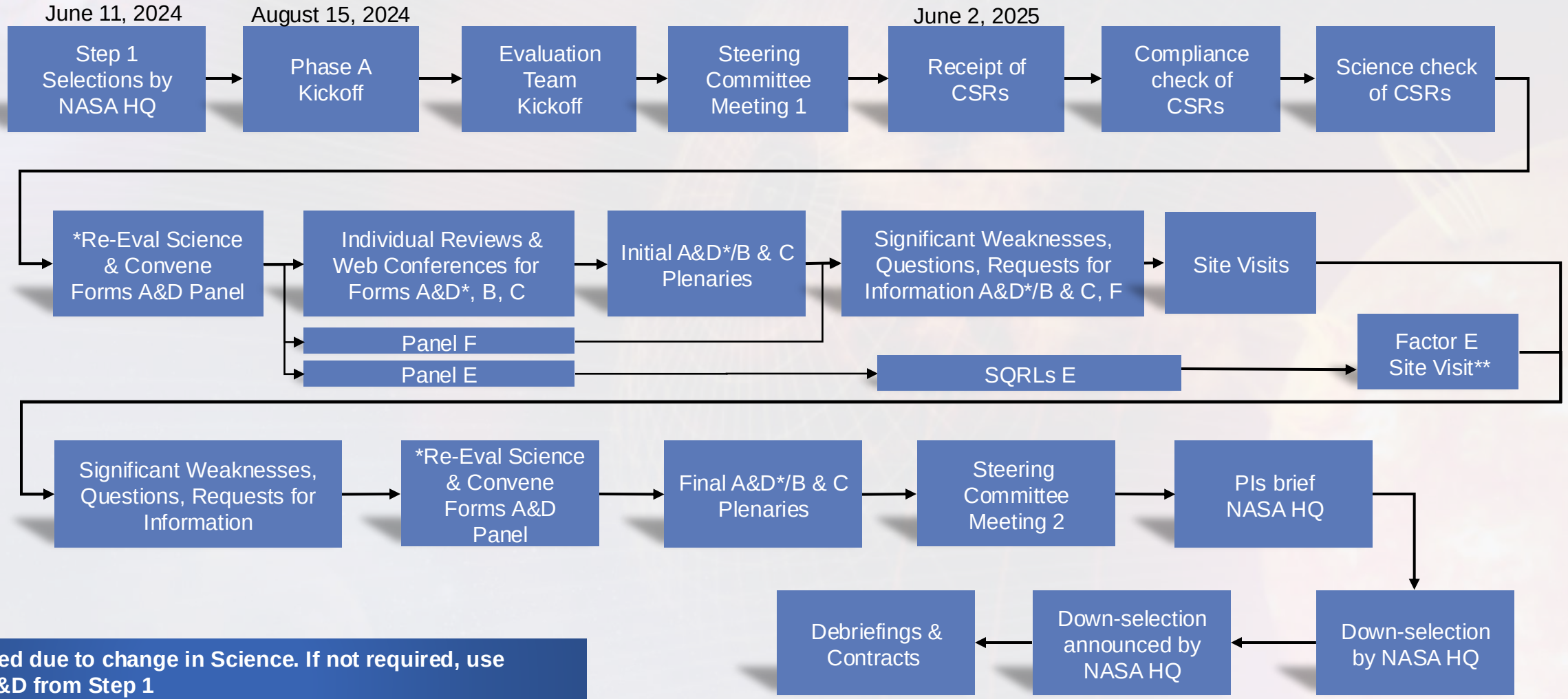
Citizen Science Plan Evaluation**

Dr Susanna Finn

as needed

***If required due to change in Science. If not required, use Forms A&D from Step 1**
****If needed depending on content of CSRs**

CSR Evaluation Flow



***If required due to change in Science. If not required, use Forms A&D from Step 1**
****For CSRs with Student Collaboration**

Evaluation Criteria

Evaluation Criteria and Additional Selection Factors

- The criteria to evaluate the CSRs are documented in the DYNAMIC *Criteria and Requirements for the Phase A Concept Study Report* at:

  https://soma.larc.nasa.gov/STP/DYNAMIC/programlibrary.html (AO References Item 6.a)

- Evaluation criteria for the Concept Study: approximate significance of each criterion is indicated by the percent weighting.
  - Criterion A: Scientific Merit of the Proposed Investigation (approximately 18%)
  - Criterion D: Programmatic Value of the Proposed Investigation (approximately 2%)

  Criteria A and D will not be reevaluated unless it is determined that the science has changed from that described in Step 1
  - Criterion B: Scientific Implementation Merit and Feasibility of the Proposed Investigation (approximately 40%)
  - Criterion C: TMC Feasibility of Mission Implementation (approximately 40%)
  - Criterion E: Student Collaboration (SC) and Criterion F: Small Business Subcontracting plans will be evaluated as separate factors and considered during the selection process.

- Additional Selection Factors that may be considered by the Selection Official
  - In the down-selection process, the Selection Official may consider a wide range of programmatic factors in deciding whether to down-select any CSRs, including, but not limited to, planning and policy considerations, available funding, career development opportunities, programmatic merit and risk of any proposed partnerships, the size and nature of contributions, the distribution of work across NASA Centers and JPL, and maintaining a programmatic and scientific balance across SMD. While SMD develops and evaluates its program strategy in close consultation with the scientific community through a wide variety of groups, SMD programs are evolving activities that ultimately depend upon the most current Administration policies and budgets, as well as program objectives and priorities that can change based on, among other things, new discoveries from ongoing investigations.

Evaluation Criterion A

Scientific Merit of the Proposed Investigation

This criterion assesses the extent to which the proposed investigation would represent advances on NASA's strategic scientific objectives. It assumes the provision of the investigation's anticipated data sets and the ability of the investigation team to complete the investigation research plan.

The DYNAMIC Program Scientist will determine whether any issues that may have emerged in the course of the concept study have effected significant changes to the science objectives or other aspects of the proposed Baseline and Threshold Science Investigation (see Requirement CS-20 in Part II of the DYNAMIC *Criteria and Requirements for the Phase A Concept Study*) in such a manner as to have impacted the basis for the evaluation of the *Scientific Merit of the Proposed Investigation* as determined by the peer review panel for the Step 1 proposal. If there are no significant changes to the proposed investigation that undermine the basis of this rating, the peer review panel rating for scientific merit of the Step 1 proposal will be the rating for scientific merit of the CSR. If there are significant changes, the DYNAMIC Program Scientist will convene a peer review panel to reevaluate the *Scientific Merit of the Proposed Investigation* in light of these changes. The factors for re-evaluating this criterion will be the same as those used for the Step 1 proposal review (Section 7.2.2 of the AO).

Evaluation Criterion D

Programmatic Value of the Proposed Investigation

This criterion assesses the extent to which the proposed project would represent advances on NASA's strategic objectives beyond its proposed goals and objectives, as discussed by the proposal.

The DYNAMIC Program Scientist will determine whether any issues that may have emerged in the course of the concept study have resulted in significant changes to the science objectives or other aspects of the proposed Baseline and Threshold Science Investigations (see Requirement CS-20 in Part II of the DYNAMIC *Criteria and Requirements for the Phase A Concept Study*) in such a manner as to have impacted the basis for the evaluation of the *Programmatic Value of the Proposed Investigation* as determined by the peer review panel for the Step 1 proposal. If there are no significant changes to the proposed investigation that undermine the basis of this rating, the peer review panel rating for programmatic value of the Step 1 proposal will be the rating for programmatic value of the CSR. If there are significant changes, the DYNAMIC Program Scientist will convene a peer review panel to reevaluate the *Programmatic Value of the Proposed Investigation* in light of these changes. The factors for re-evaluating this criterion will be the same as those used for the Step 1 proposal review (Section 7.2.5 of the AO).

Evaluation Criterion B

Scientific Implementation Merit and Feasibility of the Proposed Investigation. This criterion assesses the investigation's ability to produce the anticipated data sets, complete the investigation research plan, and adequately publish the data sets and research results. It assumes the successful technical development of the instrument complement, spacecraft and ground systems, and observatory(ies), the implementation of the mission design, and the soundness of the investigation research plan; it only assesses the scientific capability of the proposed development and implementation to enable completion of the investigation research plan.

All of the factors defined in Section 7.2.3 of the AO also apply to the evaluation of the CSR unless amended in the C&R. *New factors and details added to Step-1 AO factor definitions for the evaluation of the CSR are highlighted using blue italicized text on this and the next four slides.*

- Factor B-1. Merit of the proposed mission design and measurement techniques for providing the anticipated data sets.
- Factor B-2. Merit of the proposed instruments for providing the anticipated observations.
- Factor B-3. Merit of the data analysis, data publication, and data and software management plans.
- Factor B-4. Merit of the investigation design for science resiliency.
- Factor B-5. Merit of science team management and structure.
- Factor B-6. Not Applicable to this solicitation in Step 2.
- *Factor B-7 Maturity of the proposed Level 1 and Level 2 requirements.*
- *Factor B-8 Scientific Implementation Merit and Feasibility of any Science Enhancement Options (SEOs), if proposed.*

Evaluation Criterion B Factors

- **Factor B-1. Merit of the proposed mission design and measurement techniques for providing the anticipated data sets.** This factor includes the ability for the anticipated measurements to lead to the anticipated data sets*, including details on data collection strategy and plans*; the ability for the proposed mission architecture and mission design to support the acquisition of the anticipated measurements; and the degree to which the measurement techniques can use the anticipated instrument observations to provide the anticipated scientific measurements. The mission architecture and mission design include the number and arrangement of spacecraft, the spacecraft trajectories and orbits during science operations, and observation targets.
- **Factor B-2. Merit of the proposed instruments for providing the anticipated observations.** This factor includes the demonstration of the proposed instruments' ability, or clear path to demonstrate the necessary ability, to provide the anticipated observations; the adequacy of the plan to calibrate, cross-calibrate, and inter-calibrate the instruments to provide the anticipated measurements; the likelihood of success for the selected instruments to provide the anticipated observations within the mission design and operating environment; and the ability of the development and operation team(s)—both institutions and individuals—to successfully implement the calibration and observation plans. The instruments' operation within the mission design includes accommodation on the spacecraft and orientation during planned observations.

Evaluation Criterion B Factors (continued)

- **Factor B-3. Merit of the data analysis, data publication, and data and software management plans.** This factor includes the merit of plans for data analysis of the anticipated measurements to produce the anticipated data sets; to publish investigation scientific results in the professional literature; and to publicly archive and preserve data and analysis of value to the science community. Considerations in this factor include assessment of planning and budget adequacy and evidence of plans for well-documented, high-level data products and software usable to the entire science community; the adherence of data and software plans to follow open science principles and requirements; assessment of adequate resources for physical interpretation of data; reporting scientific results in the professional literature (*e.g.*, refereed journals); and assessment of the proposed plan for the timely release of the data to the public domain for enlarging its science impact
- **Factor B-4. Merit of the investigation design for science resiliency.** This factor includes both developmental and operational resiliency for providing the anticipated data sets. Developmental resiliency includes the preservation of the investigation's ability to complete some or all of the science objectives with descopes in the mission implementation. Operational resiliency includes the investigation’s inclusion of multiple observation-target options that would enable completion of the science objectives and/or multiple opportunities to acquire measurements of a given observation target; and ability to acquire and calibrate the anticipated measurements in light of adverse circumstances, during mission degradation, and while recovering from anomalies in flight.

Evaluation Criterion B Factors (continued)

- **Factor B-5. Merit of science team management and structure.** This factor will be evaluated by assessing the experience, expertise, and organizational structure of the science team in context of the mission design, instruments, and planned investigation. The scientific expertise, project management ability, and demonstrated team leadership ability of the PI and science team leadership will be evaluated in terms of their assigned responsibilities. The organizational structure will be evaluated both in terms of management of the investigation science team and execution of the science investigation. The role of each Co-Investigator will be evaluated for necessary contributions to the proposed investigation; the inclusion of Co-Is who do not have a well-defined and appropriate role may be cause for downgrading during evaluation.
- **Factor B-6.** Not applicable to this solicitation in Step 2.

Comments about the managerial experience of the PI, and whether appropriate mentoring and support tools are in place, will be made to the Selecting Official but these comments shall not impact the investigation's Scientific Implementation Merit rating.

Evaluation Criterion B Factors (continued)

- ***Factor B-7. Maturity of proposed Level 1 and Level 2 requirements.*** *This factor includes assessment of whether the Level 1 requirements are sufficient and mature enough to guide the achievement of the objectives of the Baseline Science Investigation and the Threshold Science Investigation, and whether the Level 2 requirements are a sufficient decomposition of the Level 1 requirements. The Levels 1 and 2 requirements will be evaluated for whether they are stated in unambiguous, objective, quantifiable, and verifiable terms that do not conflict. Level 1 requirements will be evaluated on whether they are scientific determinations/results traceable to the science objectives and are sufficient to represent completion of the science objectives. Level 2 requirements will be evaluated for the adequacy, sufficiency, and completeness, including their utility for evaluating the capability of the mission profile, instruments, other mission systems, and other project-developed and non-project supporting capabilities to enable completion of the Level 1 requirements. The stability of the Level 1 and Level 2 requirements will be assessed including whether the requirements are ready, upon initiation of Phase B, to be placed under configuration control with little or no expected modifications for the lifecycle of the mission.*
- ***Factor B-8. Scientific Implementation Merit and Feasibility of any Science Enhancement Options (SEOs), if proposed.*** *This factor includes assessing the potential and appropriateness of the selected activities to enlarge the science impact of the mission and the costing of the selected activities. Although evaluated by the same panel as the balance of Scientific Implementation Merit and Feasibility factors, this factor will not be considered in the overall criterion rating. The panel will provide comments to NASA on their findings for this factor.*

Evaluation Criterion C

TMC Feasibility of the Proposed Mission Implementation. This criterion assesses the investigation's ability to develop and implement the proposed mission within its cost and schedule. The assessment includes the technical development of the instrument complement, spacecraft and ground systems, and observatory(ies); the implementation of the mission design; and the project management structure.

All of the factors defined in Section 7.2.4 of the AO apply to the evaluation of the CSR. All of these factors are interpreted as including an assessment as to whether technical, management, and cost feasibility are at least at a Phase A level of maturity. *New factors and details added to Step-1 AO factor definitions are highlighted using blue italicized text on this and the next five slides.*

The risk management aspects of the Step-1 AO Factor C-4, Adequacy and robustness of the management approach and schedule, including the capability of the management team, have been removed from Factor C-4 and included in a new evaluation Factor C-6.

- Factor C-1. Adequacy and robustness of the instrument implementation plan.
- Factor C-2. Adequacy and robustness of the mission design and plan for mission operations.
- Factor C-3. Adequacy and robustness of the flight systems.
- Factor C-4. Adequacy and robustness of the management approach and schedule, including the capability of the management team.
- Factor C-5. Adequacy and robustness of the cost plan, including cost feasibility and cost risk.
- *Factor C-6* Adequacy of the risk management plan.
- *Factor C-7 Ground systems.*
- *Factor C-8 Approach and feasibility for completing Phase B.*

Evaluation Criterion C Factors (continued)

- **Factor C-1. Adequacy and robustness of the instrument implementation plan.** The maturity and technical readiness of the instrument complement will be assessed, as will the ability of the instruments to meet investigation requirements. This factor includes an assessment of the instrument design, accommodation, interface, heritage, and technology readiness. This factor includes an assessment of the instrument hardware and software designs, heritage, and margins. This factor includes an assessment of the processes, products, and activities required to accomplish development and integration of the instrument complement, including where applicable the approach to multiple builds. This factor also includes adequacy of the plans for instrument systems engineering and for dealing with environmental concerns. This factor includes an assessment of plans for the development and use of new instrument technology and plans for advanced engineering developments*, and the adequacy of backup plans* to mature systems within the proposed cost and schedule when systems having a TRL less than 6 are proposed.
- **Factor C-2. Adequacy and robustness of the mission design and plan for mission operations.** This factor includes an assessment of the overall mission design and mission architecture, the spacecraft design and design margins (including margins for launch mass, delta-v, and propellant), the concept for mission operations (including communication*, ground systems, operational scenarios and timelines for each mission phase, operations team roles and responsibilities, navigation/tracking analysis* and, if applicable, constellation management), and the plans for launch services. This factor includes mission resiliency—the flexibility to recover from problems during both development and operations—including the technical resource reserves and margins, system and subsystem redundancy, and reductions and other changes that can be implemented without impact to the Baseline Science Investigation.

Evaluation Criterion C Factors (continued)

- **Factor C-3. Adequacy and robustness of the flight systems.** This factor includes an assessment of the flight hardware and software designs, heritage, and margins. This factor includes an assessment of the plans, *processes,* products, and activities required to accomplish maturation, development, integration, and verification of all elements of the flight system, including the approach to multiple builds if applicable. This factor includes an assessment of the adequacy of all elements of flight system resiliency, including flight software/hardware fault management, system and subsystem redundancy, and hardware reliability. *This factor includes an assessment of the adequacy of the plans for spacecraft systems engineering, qualification, verification, mission assurance, and launch operations.* This factor includes the plans for the development and use of new technology, plans for advanced engineering developments, and the adequacy of *backup* plans to ensure success of the investigation when systems having a TRL less than 6 are proposed. The maturity and technical readiness of the spacecraft, subsystems*, and operations systems* will be assessed. *The adequacy of the plan to mature systems within the proposed cost and schedule, the robustness of those plans, including recognition of risks and mitigation plans for retiring those risks, and the likelihood of success in developing any new technologies will be assessed.*

Evaluation Criterion C Factors (continued)

- **Factor C-4. Adequacy and robustness of the management approach and schedule, including the capability of the management team.** This factor includes: the adequacy of the proposed organizational structure *and WBS; project-level systems engineering; the management approach including the roles of the named Key Management Team (KMT) members (PI, PM, PSE, and other identified individuals), the implementing organization, and known partners; the commitment, qualifications, and appropriate general management experience of the PI, PM, PSE, and other named KMT members; the specific spaceflight experience of the PM, PSE, and the other named KMT that report to them; the commitment, experience and relevant performance of* the implementing organization and known partners against the needs of the investigation; the prior working relationships of the implementing organization and known partners; the commitments of partners and contributors; and the scope of work covering all elements of the project, including contributions. *Also evaluated under this factor is the approach to managing any commercial suppliers that will use their own safety and mission assurance (S&MA) practices.* If multiple builds are proposed, this factor includes the ability to build, test, and integrate the required number of flight units with repeatable quality and performance standards on the required schedule, the system design's impact on the repeat manufacturability, the proposer's management of any subcontracted manufacturer, and the ability to capture and apply lessons learned for the effective production of subsequent units. The management of the risk of contributed critical goods and services will be assessed, including the plans for any international participation, the commitment of partners and contributors, as documented in Letters of Commitment, and the technical adequacy of contingency plans, where they exist, for coping with the failure of a proposed cooperative arrangement or contribution. This factor also includes assessment of elements such as the relationship of the work to the project schedule, the project element interdependencies including the resiliency of the production and test schedule to problems appearing in multiple-unit builds if applicable, the associated schedule margins, and an assessment of the likelihood of meeting the proposed delivery readiness date. Also evaluated under this factor are the proposed project and schedule management tools to be used on the project.

The capability of the management team will be evaluated as a whole, as opposed to assessing the capabilities of each of the Key Team Members independently

Evaluation Criterion C Factors (continued)

- **Factor C-5. Adequacy and robustness of the cost plan, including cost feasibility and cost risk.** This factor includes elements such as cost, cost risk, cost realism, and cost completeness including assessment of the basis of estimate, the adequacy of the approach used to develop the estimated cost (including how multiple unit builds are costed), *the methods and rationale used to develop the estimated cost,* the discussion of cost risks, the adequacy and allocation of cost reserves by phase, and the scope of work (covering all elements of the mission, including contributions). The adequacy of the cost reserves and understanding of the cost risks will be assessed. This factor also includes an assessment of the proposed cost relative to estimates generated by the evaluation team using parametric models and analogies. *Also evaluated under this factor are the proposed cost management tools to be used on the project.*
- **Factor C-6. Adequacy of the risk management plan.** The adequacy of the proposed risk management approach will be assessed, including any risk mitigation plans for new technologies; any long-lead items; and the adequacy and availability of any required manufacturing, test, or other facilities. *The approach to any proposed descoping of mission capabilities will be assessed.* The management of the risk of contributed critical goods and services will be assessed, including the plans for any international participation, the commitment of partners and contributors, as documented in Letters of Commitment, and the technical adequacy of contingency plans, where they exist, for coping with the failure of a proposed cooperative arrangement or contribution*; when no mitigation is possible, this should be explicitly acknowledged. The stability and reliability of proposed partners, and the appropriateness of any proposed contribution, is not assessed as a management risk but will be assessed by SMD as a programmatic risk element of the investigation.*

Evaluation Criterion C Factors (continued)

- ***Factor C-7. Ground systems.*** *This factor includes an assessment, including heritage and planned new development, of the proposed operations facilities, hardware, and software (i.e., those for mission operations and science operations), and a telecommunications analysis, ground network capability and utilization plan, and navigation plans.*
- ***Factor C-6. Approach and feasibility for completing Phase B.*** *This factor includes the completeness of Phase B plans and the adequacy of the Phase B approach. This assessment will include evaluation of the activities/products, the organizations responsible for those activities/products, and the schedule to accomplish the activities/products*

Any impact to the primary mission due to the inclusion of SC(s) and/or SEO(s) will also be included in the factors above. Details of the SC and SEO evaluations are given in Section E.7 and Section K.

The panel evaluating the TMC Feasibility of the Proposed Mission Implementation may also provide comments to NASA on topics relating to programmatic considerations, for example regarding the size and nature of contributions, the fraction of PIMMC expended prior to KDP C, the flexibility to launch configuration, the extent to which the proposed investigation provides career development opportunities to train the next generation of engineering and management leaders. While these comments will not be considered in the evaluation, they may be considered during down-selection.

Evaluation Criteria E and F

The following are new evaluation factors that are not described in the AO and therefore were not evaluated for Step-1 proposals. These factors will be evaluated for CSRs.

- **E. Merit of the Student Collaboration, if proposed**. This factor will include an assessment of whether the scope of the SC follows the guidelines in Section 5.5.2 of the AO. The criteria to be used to evaluate the SC component and a discussion of those criteria are described in SPD-31 available in the Program Library.
    - NASA is providing an SC incentive of 1% of the PIMMC. If the SC cost to NASA is less than the SC incentive, then the proposed SC cost to NASA will be outside of the PIMMC. If the total SC cost exceeds the SC incentive, then the balance of the NASA cost of the SC must be funded within the PIMMC. If the SC costs NASA less than the SC incentive, the project will not receive the balance of the funds up to the full incentive amount. SC resources, as an addition to a mission's implementation, are not available to solve project cost overrun issues. Contributions to the SC are permitted.
- **F. Merit of the Small Business Subcontracting Plans**. This factor will be evaluated on the participation goals and quality and level of work performed by small business concerns overall, as well as that performed by the various categories of small business concerns listed in FAR 52.219-9.

Citizen Science Evaluation

The AO in Section 5.1.6 describes how Citizen Science (CS) can be included as part of the baseline science investigation, as part of a Student Collaboration (SC), and/or as part of an SEO.

- For CS proposed as part of the Baseline Science Investigation, the same standards apply as for the Baseline Science Investigation; evaluation of the CS is part of evaluation of Factors A and Factors B-1 through B-8.
- For CS proposed as part of a SEO, the same standards apply as for SEOs and evaluation of the CS is part Factor B-9.
- For CS proposed as part of a SC, the same standards apply as for SCs. Evaluation of the CS is part of Factor E in that case.
- A Citizen Science activity aimed solely at public communications and outreach does not need to be described in the CSR; communications and outreach will be developed in Phase B as part of the Communications Plan (see AO Section 4.1.3).

The review of the merit of the Citizen Science Plan Appendix will be led by individuals with practical and/or research experience in CS topics and the application of CS principles to teams.

Evaluation Products and Ratings

CSR Evaluation Panel Products

Forms A&D (if necessary) and Form B for all CSRs

- Grades: Excellent, Very Good, Good, Fair, or Poor
- Polling is held for the 5 categories above.
- The reported grade reflects the median.
  - A median score that falls between two grades will be reported as the combination of those two grades (e.g., 10 Good votes and 10 Fair votes = Good/Fair grade)

Form C for all CSRs

- Risk rating range: Low Risk, Low/Medium Risk, Medium Risk, Medium/High Risk, or High Risk
- Polling is held for the 5 categories.
- The reported Risk Rating grade reflects the median.
- A median score that falls between two risk ratings will be “rounded” to the higher risk rating.

CSR Evaluation Panel Products (continued)

Form E, Student Collaboration

- Separable from the baseline mission?
  - Yes: evaluated by Criterion E panel
    - Grades: Meritorious or Not Meritorious
  - No: impact on baseline mission will be evaluated by Criterion B and C panels

- **Meritorious**: The student collaboration proposed has achievable education goals and objectives and an implementation/oversight/management approach that will provide students with a rich hands-on education experience.
- **Not Meritorious**: The student collaboration proposed has not articulated achievable education goals and objectives and/or the implementation/oversight/management approach limits the likelihood of success for student's opportunities for hands-on experience.

CSR Evaluation Panel Products (continued)

Form F, Small Business Subcontracting Plan

- Grades: Acceptable or Needs Work

- **Acceptable**: The subcontracting plan adequately addresses all required elements of a subcontracting plan, and the proposed subcontracting percentage goals and the quality level of the work to be performed by small business concerns is sufficient.
- **Needs Work**: The subcontracting plan does not address all required elements of a subcontracting plan, or the proposed subcontracting percentage goals and quality of work to be performed by small businesses is not sufficient, and further participation must be negotiated if this mission is selected.

Definition of Criterion A/D* Findings

- **Major Strength:** A facet of the implementation response that is judged to be of superior merit and can substantially contribute to the ability of the investigation to meet its scientific objectives.
- **Minor Strength:** An aspect of the proposal that is judged to contribute to the ability of the investigation to meet its scientific objectives.
- **Major Weakness:** A deficiency or set of deficiencies taken together that are judged to substantially weaken the investigation's ability to meet its scientific objectives.
- **Minor Weakness:** A deficiency or set of deficiencies taken together that are judged to weaken the investigation's ability to meet its scientific objectives.

If required due to change in Science. If not required, use Forms A/D from Step 1.

Definition of Criterion B Findings

- **Major Strength:** A facet of the response that is judged to be well above expectations and substantially contributes Science Implementation Merit and Feasibility of the Proposed Investigation.
- **Minor Strength:** A strength that contributes to the Science Implementation Merit and Feasibility of the Proposed Investigation.
- **Major Weakness:** A deficiency or set of deficiencies taken together that are judged to substantially detract from the Science Implementation Merit and Feasibility of the Proposed Investigation.
- **Minor Weakness:** A weakness that detracts from the Science Implementation Merit and Feasibility of the Proposed Investigation.

Unlike in Step 1, minor findings can influence ratings. Significant minor findings are those minor findings that do influence ratings and will be marked as such in the Form B. The term "Significant Weakness" includes both Major Weaknesses and Significant Minor Weaknesses.

Forms A/D*, B Grade Definitions

Excellent: A comprehensive, thorough, and compelling CSR of exceptional merit that fully responds to the objectives of the AO as documented by numerous and/or significant strengths and having no major weaknesses.

Very Good: A fully competent CSR of very high merit that fully responds to the objectives of the AO, whose strengths fully outbalance any weaknesses.

Good: A competent CSR that represents a credible response to the AO, having neither significant strengths nor weaknesses and/or whose strengths and weaknesses essentially balance.

Fair: A CSR that provides a nominal response to the AO, but whose weaknesses outweigh any perceived strengths.

Poor: A seriously flawed CSR having one or more major weaknesses (*e.g.*, an inadequate or flawed plan of research or lack of focus on the objectives of the AO).

Evaluators are polled on the grades defined above; a half-grade between these defined above may result in case of even number of votes.

If required due to change in Science. If not required, use Forms A/D from Step 1.

Science Impact Statements

- For DYNAMIC, Science Impact Statements follow Major Weaknesses on Forms A/D* and B
- Science Impact Statements can take one of the following forms:
  - Factor A-1: *This finding represents a [programmatic, minor, major, near-certain] risk to the quantified science return against [#] (of [#max]) investigation goals.*
  - Factor A-2 to -3: *This finding represents a [programmatic, minor, major, near-certain] risk to the quantified science return against [some, much, all] of [#] (of [#max]) investigation objectives.*
  - Factor A-4: *This finding represents a [programmatic, minor, major, near-certain] risk to the promised science return of [some, much, all] of the threshold science investigation.*
  - Factor D-1 to -2: *This finding represents a [programmatic, minor, major, near-certain] risk to the programmatic value resulting from some of this potential progress.*
  - Factor B-1 to -5 and B-7: *This finding represents a [programmatic, minor, major, near-certain] risk to the implementation enabling [some, much, all] of [#] (of [#max]) investigation objectives.*
  - Factor B-8 [SEO]: No impact statements.

**If required due to change in Science. If not required, use Forms A/D from Step 1.*

Criterion C Panel Evaluation Principles

- CSR Feasibility and Risk Assessment in Step 2:
  - The criterion C Panel's task is to assess the feasibility of implementing the mission based on all the material provided by the study team.
  - *The study team is not given the benefit of the doubt in the down-select*.
- All CSRs will be reviewed to identical standards.
  - All CSRs shall receive same evaluation treatment in all areas.
- The Criterion C Panel is made up of evaluators who are subject matter experts in the areas of the CSRs that they evaluate.
- The Criterion C Panel develops findings for each CSR that are based on individual comments and reflect the general agreement of the entire panel.
  - Comments that are *as expected* are not included as findings.
  - Comments that are *above expectations* result in strengths.
  - Comments that are *below expectations* result in weaknesses.

TMC Evaluation Products: Findings

- **Major Strength:** A facet of the implementation response that is judged to be well above expectations and can substantially contribute to the ability of the project to meet its technical requirements on schedule and within cost.
- **Minor Strength:** A strength that is worthy of note and can be brought to the attention of the study team during debriefings.
- **Major Weakness:** A deficiency or set of deficiencies taken together that are judged to substantially weaken the project's ability to meet its technical objectives on schedule and within cost.
- **Minor Weakness:** A weakness that is sufficiently worrisome to note and can be brought to the attention of the study team during debriefings.

Unlike in Step 1, minor findings can influence ratings. Significant minor findings are those minor findings that do influence ratings and will be marked as such in the Form C. The term "Significant Weakness" includes both Major Weaknesses and Significant Minor Weaknesses.

Risk Rating Grade Definitions - Form C

The following definitions are indicators of risk. Evaluators must consider these definitions and input available for their consideration (*e.g.*, cost model applicability, uncertainty of the cost models error bars and schedule analyses, uncertainty of the cost threats, mitigating factors such as major strengths, *etc.*) together with their judgement in determining the appropriate risk for a particular mission.

Rating	Definition
Low Risk	Resources for technical, management, schedule, and cost are at or above the appropriate levels, with at least one resource significantly above, even after taking into account any problems that have been identified in the Phase A evaluation. No risks with unquantified cost threats* have been identified.
Low/Medium Risk	No problems have been identified in the Phase A evaluation that reduce the technical, management, schedule, and cost resources below the appropriate levels. Any identified risks with unquantified cost threats* have a low probability of occurrence.
Medium Risk	Problems have been identified in the Phase A evaluation that reduce one of the resources slightly below the appropriate levels for: technical, management, schedule, or cost. Sound management and effective application of engineering resources will be required to solve the problems. Any identified risks with unquantified cost threats* have a probability of occurrence that is not high.
Medium/High Risk	Problems have been identified in the Phase A evaluation that reduce one or more of the resources below the appropriate levels for: technical, management, schedule, and/or cost. The problems identified may not be solvable within the resources proposed, even with the use of sound management and effective application of engineering resources.
High Risk	Problems have been identified in the Phase A evaluation that reduce one or more of the resources significantly below the appropriate levels for: technical, management, schedule, and/or cost. The problems identified are deemed unsolvable within the resources proposed.

***A risk with an unquantified cost threat** is a major weakness whose cost to fix cannot be quantified but can be large. The impact of an unquantified cost threat is significant because it could lead to not achieving the baseline mission with the resources available.*

Cost Evaluation

- All information from the entire evaluation process will be considered in the final cost assessment.
- An independent cost verification of the proposed cost for Phases B-D will be performed using three independent cost models.
- An independent cost verification of the proposed cost for Phase E will be performed using at least two cost models.
- The evaluation will assess the cost risk, cost realism, and cost completeness, including the basis of estimate, the adequacy of the approach, the methods and rationale used to develop the estimated cost, the discussion of cost risks, the allocation of cost reserves by phase, and the team's understanding of the scope of work.
- The likelihood and cost impact of significant weaknesses and cost analysis findings will be assessed.
- Cost threat impacts to the proposed unencumbered reserves will be assessed (see Cost Threat Matrix slide 46).
- The adequacy of the remaining unencumbered reserves will be assessed.
- Draft Forms C and Cost Evaluation Summaries (CESs) will be completed on all CSRs prior to the Initial Form C Plenary.
- During the Form C Plenaries, the entire panel will participate in cost deliberations.
- All significant Cost Findings will be included on the Form C and considered in the TMC Risk Rating.

Cost Evaluation

A comparison of the cost of analogous missions* will be accessed if:

1. The TMC Base ICE does not validate the proposed cost for a given WBS level or for the total of modeled WBS levels.
2. The WBS level is one for which the TMC Base ICE error bars are unusually wide, regardless of validation results.
3. There is direct system-level heritage for a WBS level, and that heritage corresponds to an actual data point that is outside of the TMC ICE Error Range as shown in the pre-evaluation cost study results.

**Analogous missions will be chosen based on contents of the CSR and the experiences of the TMC evaluators.*

Cost Threat Matrix

- The *likelihood* and *cost impact*, if any, of each weakness is stated as "This finding represents a cost threat assessed to have an Unlikely/Possible/Likely/Very Likely/Almost Certain likelihood of a Minimal/Limited/ Moderate/Significant/Very Significant cost impact being realized during development and/or operations, which results in a reduction from the proposed unencumbered reserves."
- The *likelihood* is the probability range that the *cost impact* will materialize.
- The *cost impact* is the current best estimate of the range of costs to mitigate the threat.
- The cost threat matrix defines the adjectives that describe the *likelihood* and *cost impact*.
- The minimum cost threat threshold is $1M for Phases B/C/D *and $250K for Phase E*.

				Cost Impact (CI) % of PI-Managed Mission Cost to complete Phases B/C/D or *% of Phase E* not including unencumbered cost reserves or contributions				
	Likelihood of Occurrence	**Weakness**	**Very Minimal** $1M < CI ≤ 2.5% *$0.25M < CI < 2.5%*	**Minimal** 2.5% < CI ≤ 5% *2.5% < CI ≤ 5%*	**Limited** 5% < CI ≤ 10% *5% < CI ≤ 10%*	**Moderate** 10% < CI ≤ 15% *10% < CI ≤ 15%*	**Significant** 15% < CI ≤ 20% *15% < CI ≤ 20%*	**Very Significant** CI > 20% *CI > 20%*
Likelihood (L, %)	Almost Certain (L > 80%)							
	Very Likely (60% < L ≤ 80%)							
	Likely (40% < L ≤ 60%)							
	Possible (20% < L ≤ 40%)							
	Unlikely (L ≤ 20%)							

Note: For each CSR, the percentages in the above table will be converted to dollars by the cost estimator.

Evaluation Procedures

Criteria A&D*, B & C Panel Evaluation Processes

- Evaluation panel members review assigned CSRs and perform an individual review before discussing findings with other members of the panel.
- Evaluation and polling on Forms A&D* and B will be restricted to Forms A&D* and B Evaluators.
- Only Evaluators who have participated in the Forms A&D*/B Initial Plenary, the Site Visits, and the Forms A&D*/B Final Plenary may participate in polling on Forms A&D*/B.
  - Participation is defined as in-person or virtually
  - Specialist Evaluators** are not polled
  - Note that some Form C evaluators may also be designated as Form B evaluators by the DYNAMIC Program Scientist.
- Only Evaluators who have participated in the Form C Initial Plenary, the Site Visits, and the Form C Final Plenary may participate in polling on Form C.
  - Participation is defined as in-person or virtually
  - Specialist Evaluators** are not polled
  - Note that some Form B evaluators may also be designated as Form C evaluators by the DYNAMIC Program Scientist.

* *If required due to change in Science.*

** *Specialist Evaluators (to provide special technical expertise to Criterion B/C/E Panels) may be used, based on the specific technology and science that is proposed.*

Criteria B & C Panel Evaluation Processes (continued)

Consistency Review for Form C findings and Form B findings will be conducted to ensure similar findings are treated the same across different CSRs (*e.g.*, major vs minor for similarly worded findings) and to resolve any conflicts between strengths and weaknesses within an individual form.

- Form C consistency
  - A Form C Consistency Group will review all Form Cs and questions at the Initial Plenary, and all Form Cs at the Final Plenary.
    - Form C Evaluators will review all CSRs. Specialist Evaluators may review a subset of CSRs.
- Form B consistency
  - Form B Consistency Evaluator(s) will review all Form Bs and questions at the Initial Plenary, and all Form Bs at the Final Plenary.
- Form B and Form C consistency
  - At least one Form B Evaluator for each CSR will participate in the Form C discussions for each mission at the plenary meetings.
  - Some Form C instrument experts will participate in Form B discussions.
  - Consistency of findings between Forms B and C will be reviewed and adjudicated at the Initial and Final Plenaries.

Initial Plenary

The Initial Plenary is used to identify significant issues related to Criteria A & D (if needed), Criterion B and Criterion C based on the initial evaluation of the CSR. Initial Forms Bs and Cs are reviewed.

- The goals of the Initial Plenary are:

    1. Identify the Major Weakness, Minor Weaknesses, Major Strengths and Minor Strengths of each CSR.

    2. If necessary, develop questions and/or requests for information in addition to the Significant Weaknesses to give each study team an opportunity to clarify any misunderstanding.

- The main topic areas are the implementation issues in Criterion B and Criterion C.

- No polling on grades occurs at the Initial Plenary (Criterion B and Criterion C).

- The Significant Weaknesses, Questions, and Requests for Information Lists (SQRLs) for Factors A/D*, Factor B and Factor C, will each be sent to each Study Team at least 7 days prior to its Site Visit.

- Criteria E (Student Collaboration) and F (Small Business Subcontracting) will be reviewed as required by Criterion-specific panels. Questions for Criteria E and F are prepared and provided to the DYNAMIC Program Scientist by the time of the Initial Plenary.

Significant Weaknesses, Questions, and Requests for Information List (SQRL)

- Site Visit SQRLs:
  - All SQRLs developed at the Initial Plenary for Factors A/D*, B, C and F will be sent to each study team prior to its Site Visit.
  - Significant weaknesses are preliminary and may change based on Site Visit information and further discussion by Evaluation Panels.
  - Questions may also be sent to the study team or verbalized during the Site Visit.
  - Questions must be of significance to a Forms A/D*, B, C and F rating.
- The DYNAMIC Program Scientist will approve all SQRLs developed at the Initial Plenary.
- Three types of responses are planned for SQRLs. These types may be combined for a given Significant Weakness (SW), Question (Q), or Request For Information (RFI):
  - Written response prior to Site Visit: SQRs provided to the study team that must be addressed in writing prior to the Site Visit. The nature of some SQRs require data that must be reviewed prior to the Site Visit.
  - Oral presentation at Site Visit: SQRs that must be addressed the day of the Site Visit by way of presentation.
  - Some SQRs may be identified as requiring both Written response and Oral presentation at Site Visit.
- Evaluation Team members will ask questions during the Site Visit to ensure they understand the response to a SQR, or to clarify any significant issues.

** If required due to change in Science*

Site Visits

- Site Visits with Oral Briefings will be used to clarify implementation details and commitments. The study team may address significant weaknesses identified in the CSR and provide updates on the CSR developed after submission of the CSR.
- Site Visits for the DYNAMIC down-select will be held in-person with a remote participation option.
- Briefings at each Site Visit will be limited to 7 presentation hours, and up to 1 additional hour for an optional tour/demonstration. Additional time will include two 15-min breaks plus one 1.5-hour lunch break.
- All Site Visit presentations/briefings should be in a plenary session with all Evaluation Team members attending – no splinter sessions – unless authorized by the DYNAMIC Program Scientist.
- Written SQRLs for Form C will be submitted to the PI at least 7 days before the Site Visit. All teams will have the same lead time, excluding federal holidays, with responses due within at least 5 days.
- Written SQRLs for Forms A/D*, B and F will be submitted to the PI at least 7 days before the Site Visit. All teams will have the same lead time, excluding federal holidays, with responses due within at least 5 days.
- During the Site Visit, NASA may provide additional SQRLs. The team has the option to answer these during the site visit or to include them with the additional SQRLs sent to the team mid-day the day after the Site Visit concludes.
- As part of the Site Visit process, NASA may send additional SQRLs to the study teams mid-day the day after the Site Visit concludes, with responses due within 5 days. Additional SQRLs may be sent once during the time period of Sep 8-17, with responses due within 48 hours (exact dates for this set will be communicated to each study team). A final set of SQRLs may also be sent during the time period of Sep 22 - Oct 2, with responses due within 24 hours.
- All information provided by the study team is relevant to the evaluation. Information contained in the CSR, information presented during the Site Visit, and information provided in response to SQRLs will all be treated as updates to the CSR and will be considered during the evaluation.

Factor E Site

If a Student Collaboration is proposed:

- SQRLs relating to Factor E will be sent to each study team mid-day the day after the Site Visit concludes.
- A virtual meeting with Oral Briefings (“Site Visit Augmentation”) will be held during the week following each Site Visit to present the proposed Student Collaboration.
  - The study team may address significant weaknesses identified in the Student Collaboration and provide updates on the SC developed after submission of the CSR.
  - Oral briefings at the Site Visit Augmentation will be limited to one hour, including at least 15 min reserved for a question-and-answer session.

Final Plenary Products

- At the Final Plenary, the evaluation panels finalize all evaluation Forms based on the information in the CSRs, as well as updates and clarifications to the CSRs (*i.e.,* information presented during the Site Visit, and information provided in response to the SQRLs).
- For each Form, both Major and Minor Strengths and Weakness are considered in the Grade.

Form B

- Polling is held twice on the Form B grade. The final polling is recorded. For the final polling, the individual grades are recorded, and the median grade is calculated and recorded as the final polling. A median score that falls between two grades will be reported as the combination of those two grades (*e.g.*, 10 Good votes and 10 Fair votes = Good/Fair grade).
- If there is a divergence of opinion, there may be additional rounds of discussion and polling.
- SWs, Qs, and/or RFIs generated during the Final Plenary may result in additional rounds during or after the Final Plenary.

Final Plenary Products

Form C

- Form C is reviewed three times. Polling is held twice on the Form C risk rating. The final polling is recorded and reported. For the final polling, the individual grades are recorded, the median calculated and the final grade recorded which reflects the Form C risk rating of the median of the polling. A median score that falls between two risk ratings will be “rounded” to the higher risk rating.
- If there is a divergence of opinion, there may be additional rounds of discussion and polling.
- SWs, Qs, and/or RFIs generated during the Final Plenary may result in additional rounds during or after the Final Plenary.

Form E, Student Collaboration

- Representatives from the SC Panel will evaluate the Merit of proposed Student Collaborations.

Form F, Small Business Subcontracting

- Representatives from the Small Business Subcontracting Panel will evaluate this criterion.

Observers

Observers and Transition Briefing

- Civil Servants (CSs), Intergovernmental Personnel Act Assignees (IPAs), and Contractors with downstream implementation responsibilities may be invited to attend panel meetings and Site Visits as Observers.
- All invited observers must be approved by the Program Scientist and the Deputy Associate Administrator for Research.
  - Observers must comply with SMD Policy Document SPD-17, *Statement of Policy on Observers at Panel Reviews of Proposals*. This policy will be provided to all approved observers.
- Approved Observers include

Name	Affiliation
Sridhar Manthripragada	STP/LWS Program Manager
Alex Fletcher	NASA HPD Program Scientist

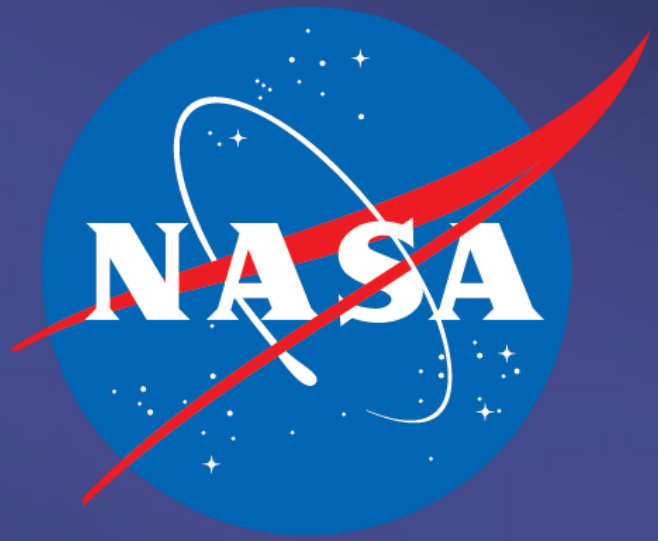
The above listed STP Program Office individuals are invited due to their positions in organizations which will oversee implementation of the down-selected mission(s). Their participation as Observers will provide early knowledge of any potential implementation challenges for the down-selected mission(s).

- After down-selection is announced, Transition Briefings will be provided by a subset of the Evaluation Team to CSs, IPAs, and Contractors in the Program Office and at NASA HQ who have implementation responsibilities.

Change Log

Change Log

Revision #	Date	Changes
Rev-	April 8, 2025	Baseline


NASA