

**NASA  
Policy  
Directive****NPD 1090.1**

Effective Date: February 12, 2014

Expiration Date: February 12, 2028

**COMPLIANCE IS MANDATORY FOR NASA EMPLOYEES**[Printable Format \(PDF\)](#)**Subject: Challenges, Prize Competitions and Crowdsourcing Activities (Revalidated 6/2/23)****Responsible Office: Space Technology Mission Directorate****Change Log**

Change #	Date	Description
1	June 2, 2023	Update with 1400 compliance and updated policy statements and corrected titles.

**1. POLICY**

a. It is NASA's policy:

- (1) To encourage the use of challenges, prize competitions, and crowdsourcing activities at all levels of the Agency to further its mission. This includes the use of challenges, prize competitions, and crowdsourcing activities that leverage ideas and solutions from the public as well as challenges and crowdsourcing activities that harness ideas and solutions from the NASA civil servant and contractor workforce. Prizes, challenges, and crowdsourcing not only help to yield ideas and solutions to meet mission needs but also offer additional benefits to include increasing cost effectiveness to maximize the return of taxpayer dollars; addressing societal needs; providing hands-on learning in science, technology, engineering, and mathematics (STEM) fields; building capabilities and communities of problem solvers; and connecting diverse members of the public directly to NASA's mission.
- (2) To design and implement all public challenges, prize competitions, and crowdsourcing activities such that they:
  - (a) Advance defined, measurable, and clearly stated objectives that relate to NASA's mission.
  - (b) Encourage and facilitate participation by a broad range of external individuals and entities, including those with whom NASA has not extensively engaged in its work, by making opportunities widely known and accessible.
  - (c) Provide clear rules for participation, including any eligibility criteria, registration requirements, and other terms of participation.
  - (d) Articulate clear solution performance and/or judging criteria.
  - (e) Measure outputs and outcomes, and evaluate performance.
- (3) To conduct public challenges, prize competitions, and crowdsourcing activities in full compliance with all applicable laws and regulations.
- (4) To develop and maintain Agency-level strategy, best practices, and effective implementation guidance for challenges, prize competitions, and crowdsourcing activities; to inform NASA's civil servant and contractor workforce about these methodologies' utility to advance NASA's mission; to ensure NASA Headquarters' awareness of their use across the Agency; and to ensure that these activities are pursued in an efficient, and appropriate manner.
- (5) To ensure accurate, timely performance reporting of NASA's public challenges, prize competitions, and crowdsourcing activities to meet internal and external requirements.

**2. APPLICABILITY**

- a. This NPD applies to NASA Headquarters and NASA Centers, including Component Facilities and Technical and Service Support Centers, other contractors, grant recipients, or parties to agreements only to the extent specified or referenced in the appropriate contracts, grants, or agreements.
- b. Consistent with (a) above, this NPD applies to all challenges, prize competitions, and crowdsourcing activities funded by NASA and open to NASA civil servant, contractor, and public participation.
- c. This NPD applies to student-focused challenges insofar as the challenge is designed as a competition for students of a designated age or academic level to provide solutions to problems of interest to NASA, and placements and/or awards made are based on solutions provided. This NPD does not apply to hands-on learning activities where there is no intent on NASA's part to incorporate the participants' work into the Agency's or the general body of scientific or technical knowledge or to apply that knowledge.
- d. This NPD does not apply to grand challenges. However, where individual challenges, prize competitions, or crowdsourcing activities contribute to a grand challenge, those individual activities are covered by this policy.
- e. This policy does not apply to citizen science activities except when those activities are conducted in conjunction with a challenge, prize competition, or crowdsourcing activity.
- f. In this NPD, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall." The terms "may" or "can" denote discretionary privilege or permission, "should" denotes a good practice and is recommended, but not required, "will" denotes expected outcome, and "are" or "is" denote descriptive material.
- g. In this NPD, all document citations are assumed to be the latest version unless otherwise noted.

**3. AUTHORITY**

- a. Stevenson Wydler Act, 15 U.S.C. § 3701, et seq.
- b. Chiles Act, 31 U.S.C. § 6301, et seq.
- c. The National Aeronautics and Space Act, 51 U.S.C. § 20101, et seq.

**4. APPLICABLE DOCUMENTS AND FORMS**

None.

**5. RESPONSIBILITY**

- a. The Chief Technologist shall:

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- (1) Provide leadership, coordination, and Agency-level strategy for challenges, prize competitions, and crowdsourcing, including the development, maintenance, and promulgation of policy direction, implementation guidance, and reporting requirements.
  - (2) Engage with NASA's civil servant and contractor workforce and leadership to identify and pursue challenges, prize competitions, and crowdsourcing activities to advance NASA's mission and facilitate maximum use of the results.
  - (3) Coordinate, design, implement, evaluate, and report NASA prize competitions conducted under the authority of Prize Authority, 51 U.S.C. § 20144 consistent with this policy.
  - (4) Reserve the ability to review requested prize funds in the Agency's annual budget request as appropriate to ensure consistency with statutory and other external requirements.
  - (5) Report externally on NASA challenges, prize competitions, and crowdsourcing activities as required by Congress, the Office of Management and Budget, and other external bodies. In coordination with the Chief Scientist, report on crowdsourcing and citizen science activities in support of the biennial report to Congress described in the American Innovation and Competitiveness Act, Pub.L. 114-329.
  - (6) Work with the Chief Scientist to leverage and promote challenges, prize competitions, and crowdsourcing activities along with citizen science activities.
  - (7) Cultivate a community of participants engaged in NASA-funded challenges, prize competitions, and crowdsourcing participants.
- b. The Mission Directorate Associate Administrators, the Officials-in-Charge of Headquarters Offices, and the Directors of NASA Centers shall:
- (1) Coordination, design, implement, evaluate, and report of respective challenges, prize competitions, and crowdsourcing activities.
  - (2) Notify the Associate Administrator for the Space Technology Mission Directorate of all challenges, prize competitions, and crowdsourcing, activities they fund as early as possible in the formulation phase, and no later than one month prior to anticipated public launch, so that these activities may be appropriately promoted to the public.
  - (3) Create policies and guidance to provide more specificity to and enhance the implementation of this NPD should a need arise.
- c. The NASA General Counsel shall review all Headquarters-led challenges, prize competitions, and crowdsourcing activities to ensure compliance with applicable statutes, regulations, and policies.
- d. The Center Chief Counsel shall review all Center-led challenges, prize competitions, and crowdsourcing activities to ensure compliance with applicable statutes, regulations, and policies.
- e. The Assistant Administrator for Communications and the Assistant Administrator for STEM Engagement shall collaborate with the Associate Administrator for the Space Technology Mission Directorate, the Mission Directorate Associate Administrators, the Officials-in-Charge of Headquarters Offices, and the Directors of NASA Centers in promoting NASA challenges, prize competitions, and crowdsourcing activities to the public and in explaining how these activities advance objectives that relate to NASA's mission.

## 6. DELEGATION OF AUTHORITY

None.

## 7. MEASUREMENT/VERIFICATION

Compliance will be measured through the reporting activities as described in this policy.

## 8. CANCELLATION

None.

REVALIDATED 6/2/2023, ORIGINAL SIGNED BY:

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**/s/ Charles F. Bolden, Jr.**  
**Administrator**

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## ATTACHMENT A: DEFINITIONS:

Challenges are competition-based activities that use a focused problem-statement approach and crowdsourcing, rather than specifically identified individuals or groups, to obtain solutions and/or stimulate innovation. While the term may include prize competitions and is often used in the names of specific prize competitions (e.g., NASA's Space Robotics Challenge), challenges also encompass competitions that do not provide monetary awards for winning solutions and/or that are conducted (1) as a mode of acquisition of solutions under procurement authorities or (2) under other transactions authority.

Citizen science is a form of open collaboration in which individuals or organizations participate voluntarily in the scientific process in various ways, including enabling the formulation of research questions, creating and refining project design, conducting scientific experiments, collecting and analyzing data, interpreting the results of data, developing technologies and applications, making discoveries, and solving problems. This definition and NASA's authority to conduct such projects derives from the Crowdsourcing and Citizen Science Act, (15 U.S.C. § 3724).

Crowdsourcing is a method to obtain needed services, ideas, or content by soliciting voluntary contributions from a group of individuals or organizations, especially from an online community. This definition and NASA's authority to conduct such activities derives from the 15 U.S.C. § 3724.

Grand Challenges are ambitious, but achievable, goals that harness science, technology, and innovation to solve important national or global problems and that have the potential to capture the public's imagination. A grand challenge may but does not necessarily involve activities described herein.

Prize competitions are activities that competitively award prizes to stimulate innovation in a manner that has the potential to advance an organization's mission. NASA's authority to conduct such activities derives from the Stevenson-Wydler, Act 15 U.S.C. § 3719, et seq. and the National Aeronautics and Space Act, 51 U.S.C. § 20101)

## ATTACHMENT B: REFERENCES

- B.1 Federal Acquisition Regulations, 48 CFR ch. 1.
- B.2 Bayh Dole Act, 35 U.S.C. § 200-212.
- B.3 Guidance on the Use of Challenges and Prizes to Promote Open Government, OMB Memorandum M 10-11.
- B.4 The White House, A Strategy for American Innovation, February 2011.
- B.5 NASA Grant and Cooperative Agreements Handbook, 14 CFR pt. 1260.
- B.6 Cooperative Agreements with Commercial Firms, 14 CFR pt. 1274.
- B.7 NPD 1050.1, Authority to enter into Space Act Agreements.

B.8 NPD 1090.2, Citizen Science.

B.9 NAI 1050-1C, Space Act Agreements Guide.

B.10 NPD 1000.3, The NASA Organization.

B.11. Paperwork Reduction Act.

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