Quantum Leap Challenge Institutes (QLCI)

QLCI Management Team

National Science Foundation

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NSF 19-559: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505634

Please submit questions to: QLCI@nsf.gov

QLCI Due Dates

- **Round I – QLCI**
  - ~~LOI: June 03, 2019~~
  - ~~Pre-proposal: August 01, 2019~~
  - Full proposal: **January 02, 2020**

- **Round II – QLCI**
  - LOI: August 03, 2020
  - Pre-proposal: September 01, 2020
  - Full proposal: February 01, 2021

How is QLCI different?

Quantum Leap Challenge Institutes are to:

- Foster **multi-disciplinary** approaches to specific scientific/technological challenges; **and**

- Develop new cross-disciplinary approaches for **education, training, and workforce development**; **and**

- Promote a **sustainable innovation ecosystem** where expertise from various disciplines, institutions, and industry can be leveraged as needed, to overcome scientific, technological, and workforce challenges in quantum information science and engineering.

QLCI Full Proposal

- Pre-proposal Review Feedback
  - Informational
  - Intended to improve your QLCI concept

- Submission compliance with **_both_** PAPPG **_and_** NSF 19-559
  - International collaborators
  - Leadership and management plan
  - Senior personnel roles and responsibilities
  - Milestones, evaluation mechanisms, deliverables

- Award Information NSF 19-559, Section III
  - Budget: **_up to_** $5M/year for 5 years

- Special instructions NSF 19-559, Section V.A.5
  - page limits, structure, information

Successful QLCI will demonstrate

1. Challenge Research Theme and Cross-Disciplinary Vision
2. Compelling Goals and Milestones
3. Convergent Research and Community Engagement
4. Education and Workforce Development
5. Partnerships and Infrastructure Development
6. Value-Added Synergy

Points of Emphasis: QLCI

- **Vision:** Quantifiable Goals: Where will you be in _five_ years?

- **Integration:** Synergy: Major Activities

- **Integration:** Convergence:
    - **-** Physical Sciences, Engineering, Computer Science and Engineering

- **Project:**
    - - Management. Personnel Roles and Responsibilities.
    - - Timeline: Milestones, Metrics, Deliverables.

Partnerships

Industry, National Labs, International Partners, Others

"Full Proposals to the Quantum Leap Challenge Institutes program may also be reviewed by the United States Department of Energy"

One of the purposes of the National Quantum Initiative act (NQI; H.R.6227 — 115th Congress (2017-2018)) is "improving the interagency planning and coordination of Federal research and development of quantum information science and technology." Both the NSF and the Department of Energy are directed by the NQI to "... coordinate with other Federal departments and agencies ..." In accordance with the NQI act, representatives of the Department of Energy will observe the NSF panel that reviews the QLCI full proposals to inform the Department of Energy about the QLCI activities. These representatives will not be involved in the NSF funding recommendations.

Additional Review Criteria
Challenge Institute Full Proposals

- Does the proposal present a compelling long-term vision for advancing one or more frontiers of quantum information science and engineering through cross-disciplinary collaborations in foundational science and engineering and technology development?

- Does the research team exhibit the cross-disciplinary expertise required to carry out the research vision? Has the team provided convincing evidence to support their collaborative engagement and synergy?

- Does the proposal present a convincing plan to catalyze the identification, formation and coordination of diverse, well-integrated and convergent research communities?

- How integrated and compelling is the cross-disciplinary effort in terms of research and workforce development?

- Does the proposal present innovative short-term and long-term activities to enhance education, research training, curriculum development, and mentoring?

- Does the proposal provide a convincing plan for establishing an innovation ecosystem through new partnerships with industry and other organizations, infrastructure development, and technology transfer?

- Is the Institutes strategic plan meaningful and convincing? Is the ramp-up plan well-defined and reasonable?

- Does the project management plan provide a convincing road map for the operation of the Challenge Institute in pursuit of its vision? Does the management plan identify strategies for sustainability beyond the QLCI funding?

- Do the final milestones identified for a five-year period represent potentially transformative achievements consistent with the Challenge Institutes vision? Are the year-by-year milestones and associated evaluation mechanisms meaningful for measuring progress towards the final milestones?

Frequently Asked Questions

Q: For the QLCI full proposal, may we re-submit the Letters of Commitment that we collected and submitted for the preliminary proposal, provided that there are no material changes in Investigator's responsibilities?

A: Yes, provided that the letter writers understand and approve that their letters are to be used in this way.

Q: How many teams were invited to submit full proposals?

A: This is not public information, since it concerns pending proposals.

Q: What is the target success rate of Round I QLCI full proposals?

A: An estimated 1 to 3 Challenge Institute (CI) awards will be granted in each of the two competition rounds. The funding rate depends on several factors, including numbers of proposals received, available NSF budget, and quality of submissions.

General information about NSF funding rates can be found via the NSF Budget Internet Information System at https://dellweb.bfa.nsf.gov/, specifically the report "Summary Proposal and Award Information (Funding Rate)..."

Q: If our Round I QLCI proposal is not selected for funding, can we then submit a proposal in Round II?

A: Yes. The QLCI program solicitation does not impose restrictions on personnel who participated in an unsuccessful Round I proposal.

Q: If we submit a Challenge Institute (CI) full proposal in Round I, would that process be fully completed by the time the LOI for Round II is due?

A: <u>The QLCI Management Team intends to review Round I full proposals expeditiously</u>, but is unable to guarantee final notifications by a specific date. The timeline may not accommodate a situation where PI of a declined Round-I CI proposal wants to revise and resubmit the CI proposal in Round II.

Note that the NSF Proposal & Award Policies & Procedures Guide (PAPPG) specifies:
"A declined proposal may be resubmitted, but only after it has undergone substantial revision. [...] A resubmitted proposal that has not clearly taken into account the major comments or concerns resulting from the prior NSF review may be returned without review. The Foundation will treat the revised proposal as a new proposal, subject to the standard review procedures. "

Q: Will the content of this webinar be made publicly available?

A: No, the webinar is not being recorded.

Q: What are your thoughts about the importance of an external evaluator to a QLCI-CI?

A: The form of the evaluation mechanism is not prescribed and is expected to vary between proposals.

Q: Can additional investigators, not included in a preliminary proposal, be included in an invited full proposal? Can people who were in "Not Invited" team join an "Invited" one?

A: The QLCI program solicitation does not preclude additional personnel in an invited full proposal. However, the scope of the project must not change substantially from that described in the associated preliminary proposal.

Q: Can people from national labs that do not have an academic affiliation participate?

A: Yes, they can participate as collaborators but cannot receive salary support from a QLCI grant.

Q: Can the budget of an invited full proposal be changed from that of the preliminary proposal?

A: The QLCI program solicitation specifies: "While budgets for the separate years may change between the preliminary proposal and the full proposal, the five-year budget total in the full proposal must be the same as in the preliminary proposal."

Q: Is the number of senior project personnel limited for a QLCI project? Is the number of participating organizations limited?

A: There is no limit on the number of senior project personnel or participating organizations in a QLCI proposal.

The NSF proposal Cover Sheet allows a single PI and at most 4 co-PIs. An unlimited number of Other Senior Personnel, with an unlimited number of organizational affiliations, may be included in a proposal.

Q: Should there be repetition (or recapitulation) between the Strategic Plan and other parts of the proposal? Or is the Strategic Plan meant more as an executive summary of the proposal, with the rest of the proposal providing more detail?

A: The program solicitation suggests (but does not require) that the Strategic Plan section of the (up-to-35-page) Project Description be approximately 5 pages in length, which suggests that this section be along the lines of an executive summary.

Best wishes!