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(starting with version May 6, 2020, by TU, MD)

# EIC-Related Generic Detector R&D Proposal Guidelines

## 1 What R&D Projects Qualify for Funding?

For proposals to qualify for funding, they need to include a well-articulated motivation for their research, both in terms of advancement of technology and improvement in physics reach. The proposed project must address what physics program at an Electron-Ion Collider (EIC) it will enable and why the technologies to be studied have a particular importance for experiments in an EIC environment.

As delineated on the program website , the focus of this EIC-related generic detector R&D program is to evaluate opportunities to achieve new, cost-effective detector capabilities that reduce risk. This program will support advanced R&D on innovative detector concepts that either the one detector in the project scope or a second detector could incorporate. The term "generic" conveys this duality.

TJNAF will share proposals with the Electron-Ion Collider project (EIC). Should EIC determine that a proposal would directly support the project, EIC may use project funds to cover the costs of the work.

In the remainder of this document, the EIC-related generic detector R&D review committee will be referred to simply as "the review committee".

## 2 Guidelines for Preparing the Proposals and Progress Reports

When compiling your proposals, the following guidelines should be followed. They are meant to increase the reviewability of the proposals and make the program more effective.

### 2.1 Front Page

The front page should contain the title of the project, date of submission, a list of **all** proponents and their institutions. The PIs should be clearly indicated as well as the contact person (typically a PI). There should be at most two contact persons, preferably one. A short abstract briefly describing the project is required. A table of contents for longer proposals is expected.

### 2.2 Proposal Section

Proposals need to include a well-articulated motivation for the research, which should include a description of the technologies currently being used, what the technical limitations are, and how the proposed research

will advance the current state-of-the-art and what physics program at an EIC it will enable (based, *e.g.*, on the Yellow Report).

Furthermore, it should describe why the current state of the art of the instrumentation is not adequate. Tables of performance requirements with a discussion of how the resulting detector specifications will produce a detector that meets the physics goals would be most helpful. Clearly state the expected results (deliverables) of the R&D project.

Proposals should be as definitive as possible. When resources are requested, proposals should state where the resources would be directed and the specific responsibilities of the personnel. When graduate students or postdocs are required, the proposal should state who would supervise them and where they would conduct their work (see also 2.6).

Every proposal is required to provide a research program with a deliberate schedule for yearly deliverables.

A single comprehensive section on funding requests and budget is mandatory. Funds can only be requested for the coming fiscal year (FY), *i.e.*, October 1 until September 30. The budget should be presented preferably at the end of the proposal and best augmented by separate tables listing the requests ordered by group and by subject. Please indicate the costs for personnel, hardware/property, and expenses including travel.

Each proposal should also consider **three budget scenarios** and articulate deliverables under each scenario:

- a realistic nominal budget (baseline budget),
- a nominal budget minus 20%, and
- a nominal budget minus 40%.

Besides the deliverables, a clear set of intermediate milestones should be presented under each budget scenario and what goals will not be accomplished under the reduced budget scenarios.

In addition, each proposal should include a "**money matrix**" itemizing the budget allocations to the individual institutions and the area of research (that is, the sub-projects if more than one topic is addressed).

Example:

| | R&D Subproject 1 | R&D Subproject 2 | R&D Subproject 3 | |
|---|---|---|---|---|
| University A | $ | $ | $ | Sum A |
| University B | $ | $ | $ | Sum B |
| University C | $ | $ | $ | Sum C |
| Nat. Lab. X | $ | $ | $ | Sum X |
| | Sum 1 | Sum 2 | Sum 3 | |

Proponents are encouraged to form research consortia with a well-defined, targeted scope of research and state what synergies exist with related projects. Possibilities for collaboration should be indicated.

At this time, all proposals are considered first time proposals and should not exceed 22 pages.

## 2.3 Cost Effectiveness

Cost effectiveness includes consideration of carbon footprints, supply chain challenges, and priority on domestic supply sources.

## 2.4 Diversity, Equity, and Inclusion

Successful EIC-related generic detector R&D projects should highlight how the work would advance diversity, equity, and inclusion initiatives of the proposing institutions

## 2.5 Progress Report Section

Progress reports are not requested at this time.

## 2.6 Postdoctoral Fellows

Limited support for postdoctoral fellows will be considered. There is tension between the desire for proponents to support postdocs with the hope of renewal, and the review committee's desire to flexibly channel each year's limited funds to the most promising new proposals.

# 3 Post-award Administration

Awarded funding will be transmitted via one or more R&D subcontracts with Jefferson Lab.

Travel funded through R&D subcontracts with JLab, even fixed price contracts, will require receipts.