

## **Charge to EIC Detector Advisory Committee – 7<sup>th</sup> Meeting August 28 & 31, 2023**

The EIC Detector Advisory Committee (DAC) provides advice to the EIC project managed by BNL in partnership with Thomas Jefferson National Accelerator Facility (TJNAF) on the experimental equipment and on overall matters with respect to the scientific collaboration, ePIC. This includes advice on the suitability of the experimental equipment for the EIC science, on cost, schedule and technical risk of detector components and design choices, and relative importance of technical tasks, on evaluation of complementary EIC detector technologies and the sub-detector integration, detector-interaction region integration, and detector commissioning, and on the EIC-related detector R&D.

Critical Decision-One (CD-1) for the EIC was awarded on June 29, 2021, and allowed for release of Project Engineering and Design (PED) funds. This initiated the next phases of design of accelerator and detector. The 2022 EIC funding from the Inflation Reduction Act allowed the EIC project to stay on pace, with the EIC project aiming for receiving CD-3A (start of long-lead procurements) early 2024 and CD-2/CD-3 (baseline approval and start of construction) roughly one year later.

The March 2021 DAC meeting concentrated on the transition from the successful 2011-2021 EIC-related generic detector R&D program ([https://wiki.bnl.gov/conferences/index.php/EIC\\_R%25D](https://wiki.bnl.gov/conferences/index.php/EIC_R%25D)) to the Project detector R&D program, and on giving advice for opportunities and priorities for a generic EIC detector R&D program. Since that time:

- In late 2021 and early 2022, the DAC provided advice to an ad-hoc Detector Proposal Advisory Panel for the EIC detector proposal and selection process. This has now evolved in the formal ePIC detector collaboration.
- The EIC Project started the project detector R&D late Summer 2022 with FY22 awards.
- The October 2022 DAC meeting provided advice on FY23 project detector R&D priorities.
- Jefferson Lab, in association with Brookhaven National Lab and the DOE Office of Nuclear Physics, has restarted a generic detector R&D program to address the scientific requirements for measurements at the future Electron Ion Collider. This program is overseen by a dedicated advisory panel.

The 6th and 7th DAC meeting will occur in the same week, where two days will be dedicated to a comprehensive design review of the ePIC detector where you will also hear the overall progress and status of the EIC Project, and two days dedicated to the review of the ongoing EIC project detector R&D and possible continuations.

For the August 2023 DAC meeting dedicated to R&D we welcome your guidance and advice on:

- The status and progress from all ongoing projects eRD101 to eRD113. What milestones were achieved. How did our understanding improve. What is left to do?
- If applicable, the plans for remaining EIC project detector R&D for eRD102, eRD103, eRD104, eRD106, eRD107, eRD108, eRD109, eRD110, eRD111, eRD112, and eRD113. These may submit continuation proposals if and only if technical risk milestones remain. eRD101 and eRD105 are concluded as the ePIC collaboration has recently made the decision for a technology change for the backward RICH and the barrel ECal.
- The request for EIC project detector R&D for eRD114 and eRD115 that follow these two final detector technology selections for the ePIC detector.
- Further planning for the outyears of the EIC Project detector R&D as documented in the “Assessment of R&D Needs for an EIC Detector” (EIC Detector R&D) document.
- What do you see as priorities?

References:

DAC Meeting Agenda 19<sup>th</sup> – 21<sup>st</sup> 2022: <https://indico.bnl.gov/event/17159/>

FY23 detector R&D proposals: <https://wiki.bnl.gov/conferences/index.php/ProjectRandDFY23>

FY22 detector R&D: <https://wiki.bnl.gov/conferences/index.php/ProjectRandDFY22>

EIC Detector R&D plan:

<https://brookhavenlab.sharepoint.com/:b:/s/eRHIC/dac/EbW5yq6lSvhNnWEqTNC-xNEB4hiKMzYW93almUKXdJWIBw?e=t2xa88>

Generic EIC-related Detector R&D Program: [https://www.jlab.org/research/eic\\_rd\\_prgm](https://www.jlab.org/research/eic_rd_prgm)

Received proposals: [https://www.jlab.org/research/eic\\_rd\\_prgm/receivedproposals](https://www.jlab.org/research/eic_rd_prgm/receivedproposals)