

Date: March 5, 2021

EIC Detector R&D Summary Page

Project ID: eRD17

Project Name: BeAGLE: A Tool to Refine Detector Requirements for
eA Collisions

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Accomplishments to Date:

The main goal of eRD17 has been achieved. We established BeAGLE as a tool to refine detector and IR designs for e+A collisions at the EIC. At this point the tool is available and widely used.

The availability of BeAGLE during the last few years was essential. A few examples of some specific accomplishments include:

- Establishing the need for off-momentum charged particle detectors for forward proton detection in e+A collisions.
- Helping to clarify the detailed acceptance needs for the off-momentum detector and the B0 spectrometer.
- Highlighting the difficulty in vetoing incoherent diffractive events, which is still under study.
- Confirming the power of the ZDC in geometry tagging for e+A events.
- Establishing our acceptance for complete reconstruction, including all spectators, for e+D and e+³He collisions.
- Establishing our ability to measure events with short-range correlations (SRCs).

In the current reporting period, our main goal was to contribute significantly to the Yellow Report, which was also successful.

Future:

The EIC R&D project eRD17 should be complete at the end of FY2021 so the following sections are not applicable:

- * assessment of technological readiness
- * assessment of work remaining for a TDR
- * ballpark cost estimate and timeline