From:	Huang, Jin
To:	Capasso, Frances
Cc:	Ren, Yihui; Morrison, David
Subject:	intent to submit a proposal: FY2023 LDRD Call for Type A
Date:	Friday, May 27, 2022 11:13:52 AM
Attachments:	image001.png

Dear Fran

Thanks for organizing the process. I am writing to send the intent to submit a proposal as below. Please let me know if there is an question or suggestion.

Title:
AI/ML Directed and Facility Integrated Informational Distillation and Feature Extraction for High Throughput Streaming DAQ for EIC Detector 2

Abstract:
A generic feature of EIC streaming data is a sparse physics signal embedded in a noisy background. One contribution to that background comes from a confounding particle flux created as consequence of the high luminosity EIC beams. Another source is the device noise inherent in the sensor and read-out technologies that may be employed in a second EIC detector, such as the SiPMs of a dRICH. Although the data volume associated with true physics signals at the EIC is tractable, the total volume of data, including that due to these backgrounds is unwieldy to store, retrieve and process. We propose to investigate the effectiveness of AI/ML techniques on novel computing accelerator hardware, such as Intelligence Processing Unit and photonic processors, that is integrated into the online DAQ computing to distinguish true physics from backgrounds and to extract feature from raw data, allowing a significant reduction of the data flowing from an EIC Detector 2 streaming DAQ. The design of the algorithm aimed be robust in preserving physics signal as required by the systematic uncertainty control for the EIC and provide an Human-AI interface (HAI) to spot problems early during the experiment operation.

PI:
Jin Huang (PO)

Other BNL organizations
CSI (50% budget and token share)

Cheers

Jin

Jin HUANG

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From: Capasso, Frances <capasso@bnl.gov>
Sent: Monday, May 16, 2022 7:16 AM
To: Physics Personnel <PhysicsPersonnel@bnl.gov>; CAD Personnel List <allcad@bnl.gov>
Subject: FY2023 LDRD Call for Type A Proposals

To the Members of the Nuclear and Particle Physics Directorate,

Attached is the BNL FY2023 LDRD Call for Type A Proposals with four (4) attachments. In keeping with the guidance, this process will be coordinated through the Office of the NPP ALD to develop, pre-review, and provide feedback before preparation of a full proposal. Prior to the final submittal to the Director's Office by the COB on June 24, 2022, a schedule is provided below with a few items to note so we can have a successful submittal. We expect proposals to be aligned with one or more of eight priority areas outlined in the LDRD Type A call and encourage PI's to contact appropriate POC's to coordinate. This year the NPP quota is submission of four proposals with some proposals potentially split with other organizations. PI's are encouraged to consider cross directorate LDRD Type A proposals where an expanded range of expertise can be utilized to improve proposal strength and potential. Also attached is a template for the NPP proposal pre-review presentation. Please take the time to read attached items and familiarize yourself with the requirements of this LDRD Type A proposal call. As we have done in previous proposal calls, Fran Capasso will provide the coordination of an Indico site that she will share with the group once established and set the timeframes for the presentations.

A few things to note:
This is a call for Type A proposals only.
Please take note of the selection criteria provided in the call to calibrate your work to the scope, duration, size, and funding limits. Type A proposals have a duration limit of 36 Months and a dollar limit of $500K per year. Any amount larger than this should be discussed with your Department Chair and the NPP ALD.

The PIQ form has been revised, make sure you use the one provided. Pay particular attention to sections 8, 9 and 10. PI's are requested to obtain signatures on the PIQ from the BOM and the Department Chair BEFORE they upload the proposal onto Indico. All proposals should be vetted within your department prior to pre-review.

Proposals that involve cross - directorate work should be identified, and a decision made as to which directorate will submit the proposal.

Schedule:
May 16, 2022: Details emailed to the Directorate for the NPP LDRD Type A proposals with LDRD Call guidance, and PowerPoint template for the initial proposal pre-review, along with all attachments necessary for the process.
May 27, 2022: An email should be sent to Fran Capasso of intent to submit a proposal. Please be sure to include a title, abstract, list of PI's and other BNL organizations involved, if any.
June 1, 2022: A Zoom virtual meeting to pre-review the proposals. A PowerPoint template is attached and should be used.
June 6, 2022: Feedback will be sent to PI's about proceeding or not toward development of full proposals.
June 17, 2022: PI's should upload close to final proposals on Indico for the NPP management to review and provide feedback to PI's.
June 23, 2022: PI's are requested to obtain signatures on the PIQ from the BOM and the Dept Chair

BEFORE they upload the final proposal on Indico by noon on June 23rd.

June 24, 2022: Fran Capasso submits for NPP Directorate to the Director's Office.

Thank you,
Fran

Fran Capasso
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