e/EPIC Collaboration Meeting

Jefferson Lab

Jan 9th – 11th, 2023

***Silvia Dalla Torre**, Tanja Horn, Or Hen , John Lajoie, Bernd Surrow*
(e/EPIC SC)

Thank you !

The SC and Collaboration are grateful to JLab for the warm and constructive hospitality !

Along the next three days, each participant will appreciate the several forms of support received from JLab:

- **The availability of a great venue**
- **The construction of the event web-page**
- **The organization and support for the lunches and coffee breaks**
- **The JLab tour**
- **The Reception (this evening)**

Once more: thank you so much !

ABOUT THIS COLLABORATION MEETING

Highlights:

- ***FORMAT:***
  - ***Hybrid mode to ensure the largest possible participation***
  - ***Plenary sessions only***
    - *To facilitate the information dissemination and the melting of the different groups towards a coherent collaboration*

- ***AGENDA:***
  - ***A short session dedicated to Welcome and Status Reports***
  - ***Five sessions dedicated to the WG reports***
    - *typically 1 h per WG, with multiple contributions*
    - *this is the bulk of the program*
  - ***The first e/EPIC Collaboration Council (CC) meeting***
    - *Including SP, CC-chair and vice Candidate Statements/Q&A*
  - ***JLab Tour***

STRUCTURING THE COLLABORATION

Here only a hint, all the details at the CC meeting

- ***IMPORTANT REMINDER: the CC meetings are open,*** *a part for specific matter that will require some in-camera sessions*

→ attend the today first CC meeting with SP, CC chair and vice Candidate Statements / Q&A

- **Enormous work** done since the first IB (*) meeting (Jul. 18, 2022)

- **MILESTONES:**
  - **PAST**
  - Drafting and approving the ePIC Charter (approved on Dec. 14, 2022)
  - Call for nominations for SP, CC Chair and Vice- Chair (deadline on Dec. 30, 2022)
  - Forming the CC (*)
  - **PRESENT**
  - Colling for the first CC meeting (today)
  - **FUTURE**
  - Ballot opens 3 weeks after open meeting 1/30/23, Ballot closes 2/13/23
  - **Election Committee announces election results! 2/14/23**

(*) **IB (precursor of the CC):** 1 member per Institution; **CC:** 1/2/3 members per institution according to group size

STRUCTURING THE COLLABORATION

Enormous work done!

→ **Thank you to Vicky Green and Frank Sabatie**, who accepted to serve as interim IB chairs and have leaded the whole process

→ **Thank you to the Charter Committee** (Pietro Antonioli, Olga Evdokimov-co-chair, Douglas Higinbotham-co-chair, Barbara Jacak, Zein-Eddine Meziani, Rosi Reed, Ralf Seidl and Peter Steinberg) for patient, careful and wise drafting

→ **Thank you to all IB/CC members** for contributing to the Collaboration functioning

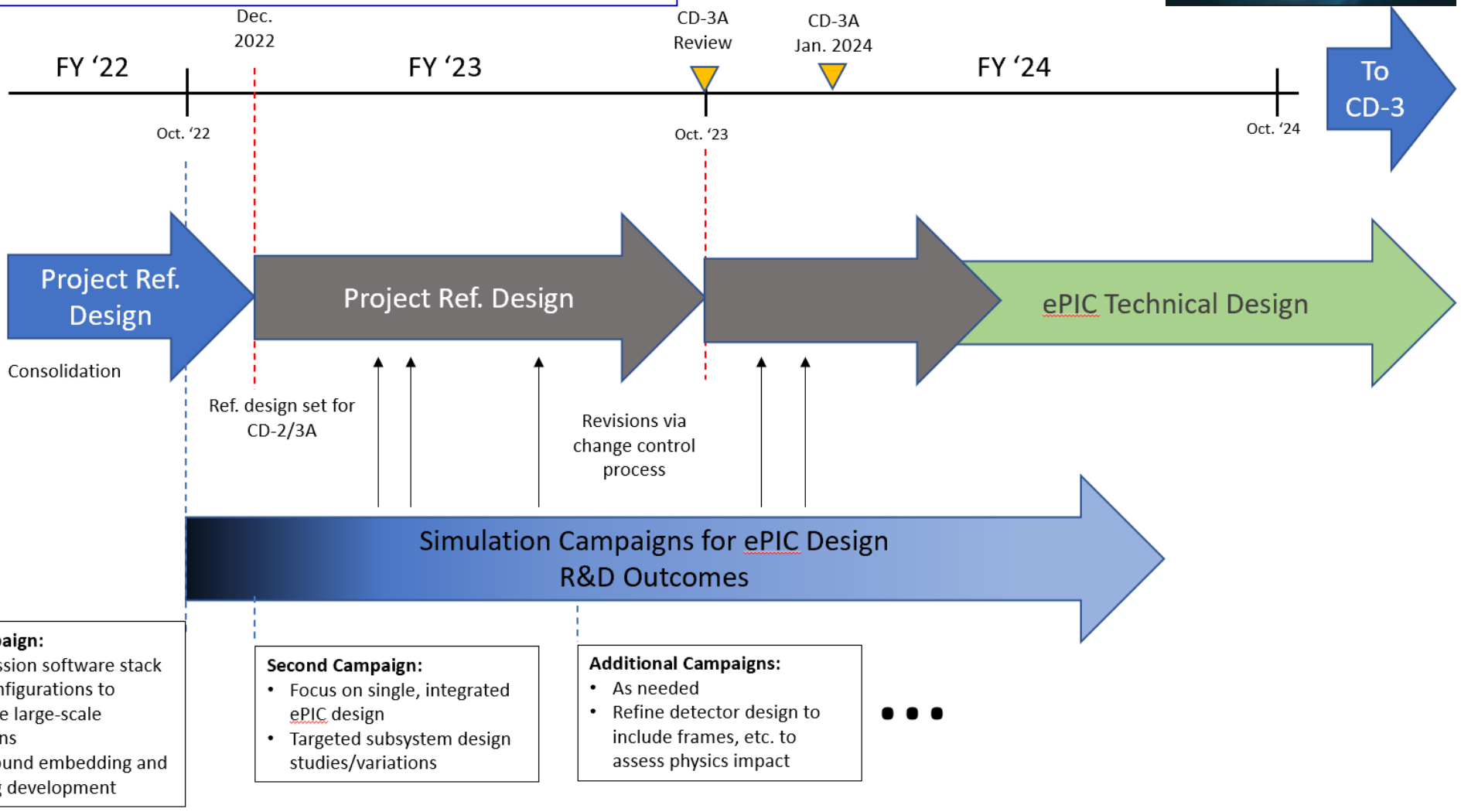
NEW REFERENCE TIMELINES

A revised schedule that allows us to better use the available time in the next 2 years (see PM's report)

- **CD-3a, Long Lead Procurement Approval = No Change.**
  - DOE review in October 2023 and DOE approval of CD-3a in January 2024
- **CD-2, Performance Baseline Approval = Revised**
  - DOE review in October 2024 and CD-2 approval in January 2025
- **CD-3, Start of Construction Approval = No Change**
  - DOE review TBD and CD-3 approval in April 2025 prior to RHIC Shutdown in June 2025

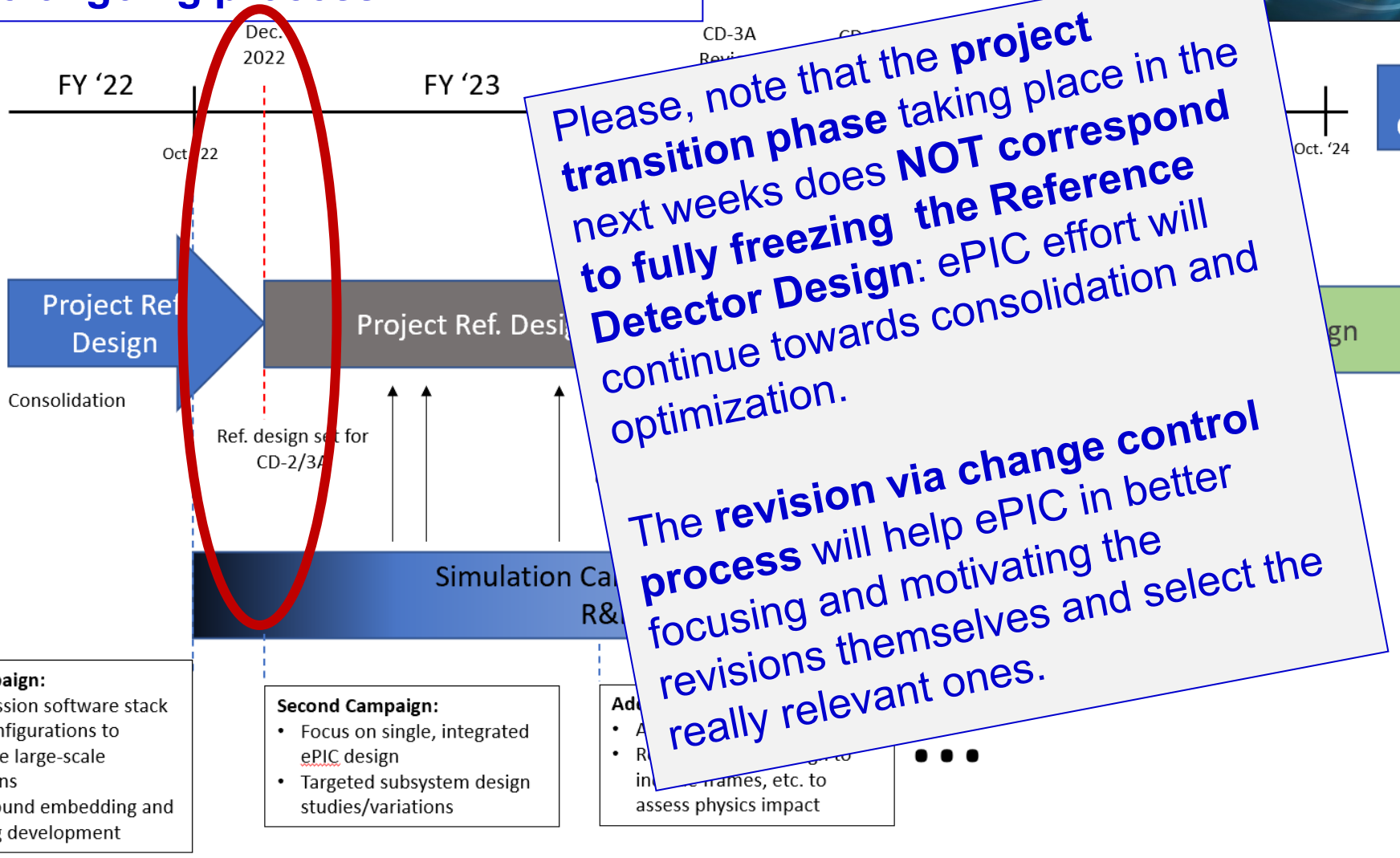
DETECTOR CONSOLIDATION & OPTIMIZATION

The reference graphical presentation of the ongoing process



DETECTOR CONSOLIDATION & OPTIMIZATION

The reference graphical presentation of the ongoing process



Please, note that the **project transition phase** taking place in the next weeks does **NOT correspond to fully freezing the Reference Detector Design**: ePIC effort will continue towards consolidation and optimization.

The **revision via change control process** will help ePIC in better focusing and motivating the revisions themselves and select the really relevant ones.

DETECTOR CONSOLIDATION & OPTIMIZATION

The reference graphical presentation of the ongoing process

Dec. 2022

FY '22

Oct. '22

To CD-3

Technical Change Control Process - Detector

This is a five-step process:

1) The detector collaboration initiates a possible change in baseline scope
2) The collaboration technical board or equivalent ensures the change is consistent with (and required for) the NAS science requirements and initiates the change request
3) The detector TCCB collects wide input, discusses, and gives advise
4) The Project Technical Director gives approval
5) The EIC Management Team needs to approve the formal baseline change control

From PM's slides, 12/13, 2022

First Ca
- Comm
- Two co compar variation
- Backgrou tracking development

Additional Campaigns:
- As needed
- Refine detector design to include frames, etc. to assess physics impact

• • •

DETECTOR CONSOLIDATION & OPTIMIZATION

ePIC activity towards Detector Consolidation & Optimization:

- **Already done**
  - Define the technologies of the calorimetry in the forward endcap
  - Assume as reference a backward RICH with LAPPD sensors, which can provide also ToF information
  - Waive the backward AC-LGAD layer in the backward endcap
- **Next steps**
  - Barrel EMCal Review
    - Charge to the proponents discussed with the community on Dec. 5th , 2022
    - GD/I assisted by external experts
    - 2-day review with remote attendance: Mar. 13th-14th , 2023
  - Backwards RICH review
    - Charge to the proponents discussed with the community on Dec. 12th , 2022
    - GD/I assisted by external experts
    - 2-day review with remote attendance: Mar. 20th- 21th , 2023

DETECTOR CONSOLIDATION & OPTIMIZATION

ePIC activity towards Detector Consolidation & Optimization, cont. :

- The Fall 2022 simulation campaign
  - A major effort with Comp/Softw and Sim/QA WGs leading the effort

- Supporting applications related to the ePIC detector
  - SC policy: support all applications genuinely related to the ePIC detector
  - A couple of smaller applications (individual grants, SBIR)
  - A single NFS – MSRI application:
    - EEEMCAL-NSF:
      backward end-cap ECal
    - Requested support: ~ 19 M $

collaborating institutions

Catholic University of America
Abilene Christian University
The University of Kentucky
James Madison University
Lehigh University
Ohio University
Florida International University
Massachusetts Institute of Technology
College of William & Mary

DETECTOR CONSOLIDATION & OPTIMIZATION

Main actions towards Detector Consolidation & Optimization by the Project Management:

- The reference detector magnet is a new solenoid with the same aperture and size of the BaBar magnet
  - Safety operation at 1.7 T
  - Potentiality to operate up to 2 T
  - Modification welcome by the Collaboration
- Enormous progress in mechanical integration studies
  - Complementarity to the effort by the collaboration
  - Relevant help towards a realistic design

DETECTOR CONSOLIDATION & OPTIMIZATION

Main actions towards Detector Consolidation & Optimization by the Project Management, cont. :

- **Recent and next coming reviews:**

- already completed
  - IR Integration and Ancillary detectors (6.10.11)
  - Electronics/Computing Subsystem Status Review (6.10.08 & 6.10.09)
  - Magnet Incremental Design and Safety Review (6.10.07) – 60% Design
  - Calorimetry Review (6.10.05 & 6.10.06)
- in planning stage
  - Polarimetry Review (6.10.14) – **One-day review, January 12 or 13**
  - Incremental Integration/Installation Review – **waiting for sPHENIX (de-)installation schedule**
  - Particle Identification Review (6.10.04) – **Looking at options in February or after the ePIC review in March?**
- To do beyond
  - Tracking Review (6.10.03) **– Need to converge on backgrounds, see discussion later**
  - Infrastructure Review (6.10.10)
  - Magnet Incremental Design and Safety Review (6.10.07) – **90% Design ~September 2023**

From PM's slides, 12/13, 2022

DETECTOR CONSOLIDATION & OPTIMIZATION

Main actions towards Detector Consolidation & Optimization by the Project Management, cont. :

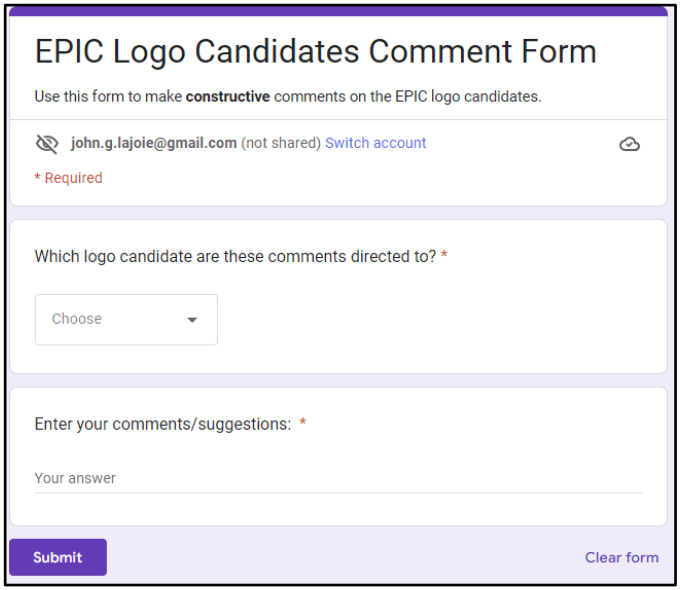
- The R&D for EIC
  - Process fully focused on ePIC detector
  - Process for FY 2023 concluded (ref. PM's report)

NEXT MAJOR EVENTS

- January 31 – February 2 DOE-OPA Review
- April 3-4 – first RRB meeting
- July 24-31 (Warsaw): Next ePIC meeting in presence (hybrid format) and EICUG meeting
- October 2023: CD-3A review (long lead procurement)

e/EPIC LOGO

ePIC Logo Competition

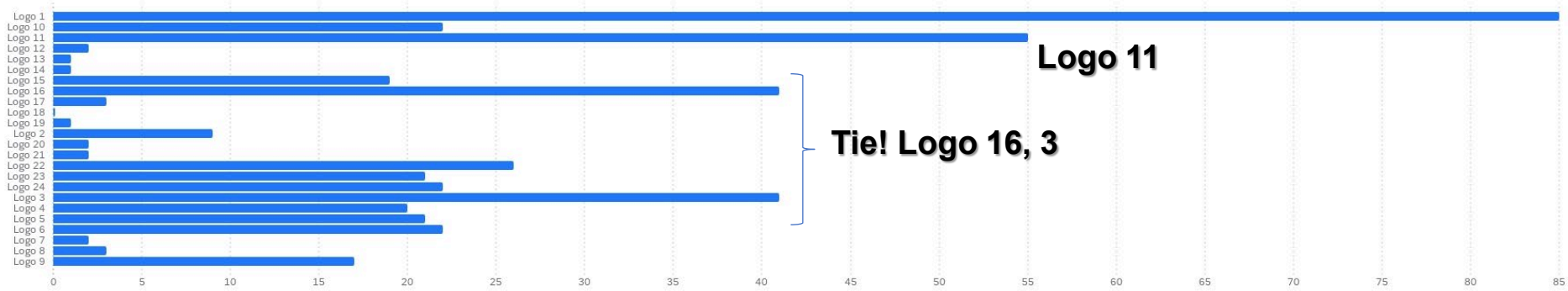


- Logo Submission opened on 8/3/22
  - Lots of interest, emails, questions…
  - Closed on 9/1
  - **22 submissions!** A testament to the creativity of our collaboration!
- Collected comments from the collaboration through Sept 16th
  - Comments distributed to artists; revised submissions accepted through Sept. 23rd
- Voting (by Qualtrics) Sept. 26 – Oct. 6th
  - Vote for up to three, top three advance
  - Many logs posted variations – voting for a concept to be evolved
- Logo candidates posted in wiki: https://wiki.bnl.gov/EPIC/index.php?title=Logos

First Round Voting Results

177 individuals cast votes

Logo 1



Logo 11

Tie! Logo 16, 3

Logo 1

Logo 11

Logo 16

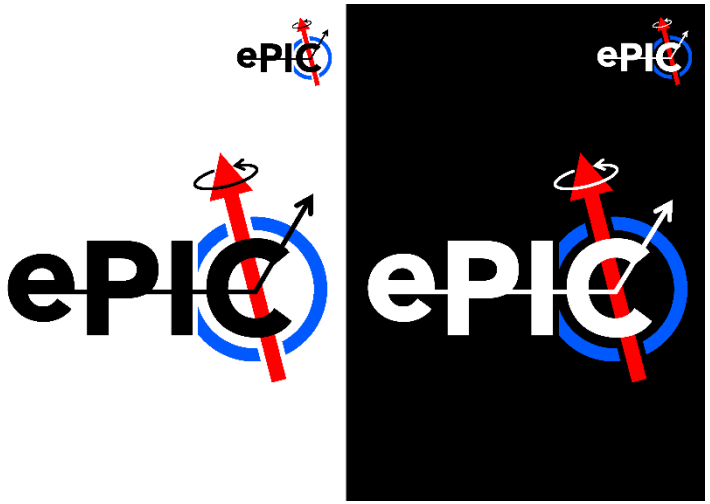
Logo 3

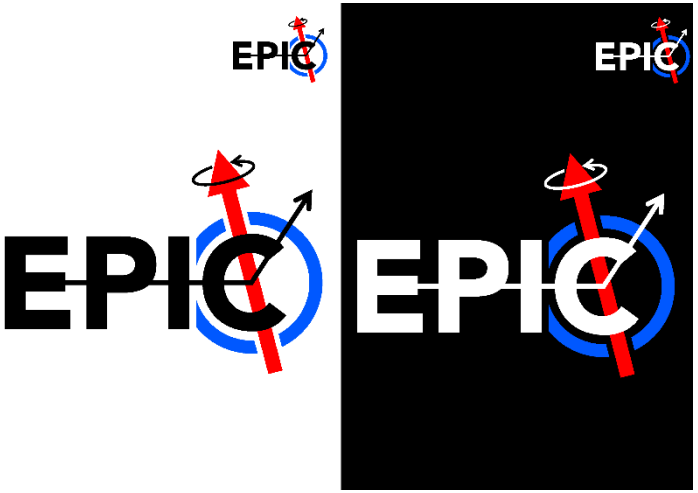
Electron Proton-Ion Collider Experiment

Logo Voting Phase II

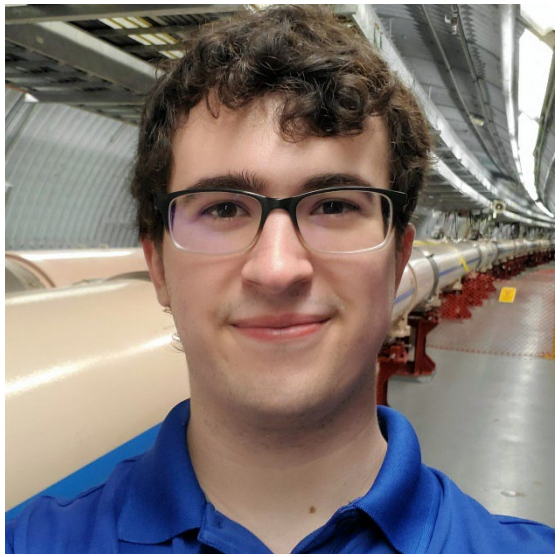
- Top four logo candidate authors given feedback from JLab graphic designers
  - Refine logo for most professional look
  - Supported by JLab/BNL – Thanks Rolf and Elke!
- Final vote opened 12/1/2022, closed 1/8/2023
  - Required a standard presentation from each logo
    - Dark and light background
    - Large and thumbnail
    - Large “E” vs. small “e”
  - Final versions in wiki:
    - https://wiki.bnl.gov/EPIC/index.php?title=Logos
  - Voting is by ranked-choice
    - Ballot required users to order logos by preference, top to bottom

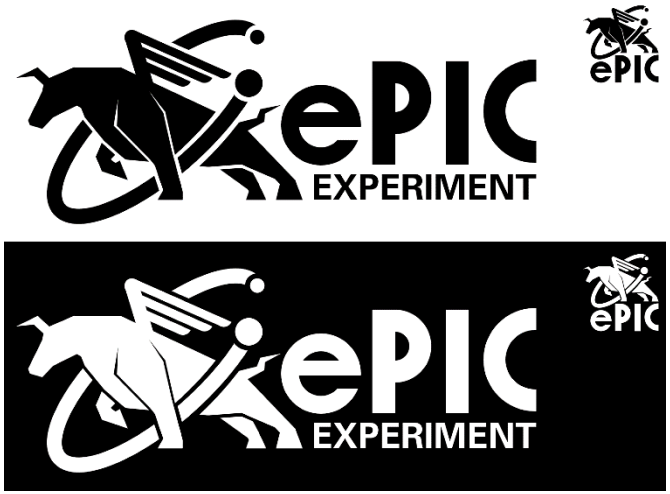
Logo #1: Peter Jones (Birmingham)





Logo #11: Sean Preins (UC Riverside)





Logo #16: Tanner Mengel (UT Knoxville)

Logo #3: Petr Stepanov (JLab)

ePIC

ePIC

Electron Proton and Ion Collider Experiment

ePIC

ePIC

Electron Proton and Ion Collider Experiment

EPIC

EPIC

Electron Proton and Ion Collider Experiment

EPIC

EPIC

Electron Proton and Ion Collider Experiment

Final Vote: Round 1

298 votes received/537 contacts = 55%

Small “e” Logos: 58%
Large “E” Logos: 42%

Combined results of first-round voting show a preference for small “e”.

Eliminated

Logo	Percentage of Votes
	37%
	18%
	15%
	10%
	9%
	3%
	5%
	2%

Final Vote: Round 2

Logo	Percentage of Votes
	38%
	19%
	16%
	10%
	9%
	3%
	5%

Eliminated →

Final Vote: Round 3

Logo	Percentage of Votes
	39%
	20%
	16%
	10%
	9%
	6%

Eliminated →

Final Vote: Round 4

Logo	Percentage of Votes
	40%
	20%
	17%
	13%
	9%

Eliminated →

Final Vote: Round 5

Logo	Percentage of Votes
	44%
	22%
	19%
	14%

Eliminated →

Final Vote: Round 6

Logo	Percentage of Votes
ePIC	50.0%
EPIC Electron Proton and Ion Collider Experiment	27.2%
ePIC EXPERIMENT	22.8%

Eliminated →

Final Vote: Round 7

Logo	Percentage of Votes
ePIC	60.1%
EPIC Electron Proton and Ion Collider Experiment	39.9%

At Long Last … We are: