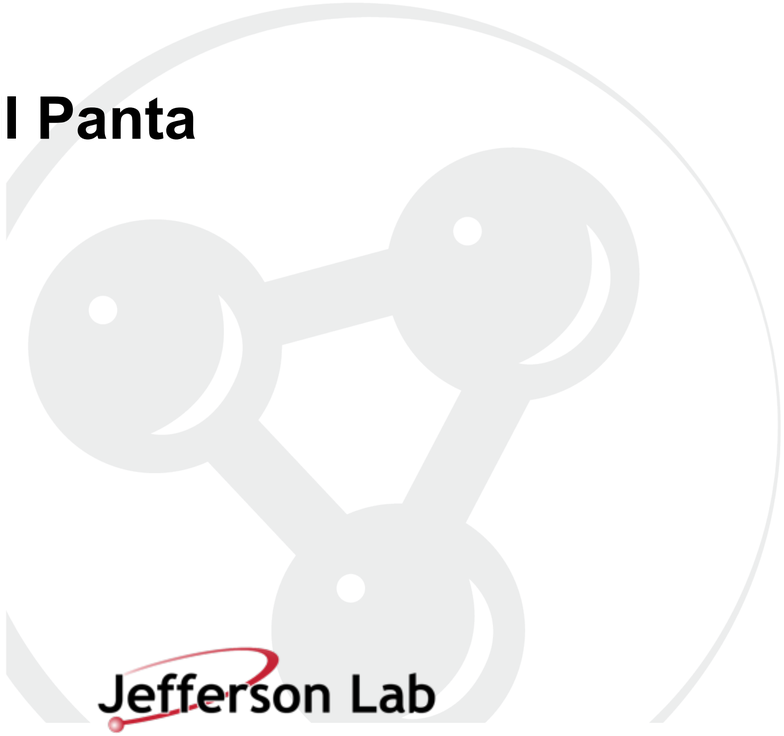
LDRD2615

Anil Panta

2026



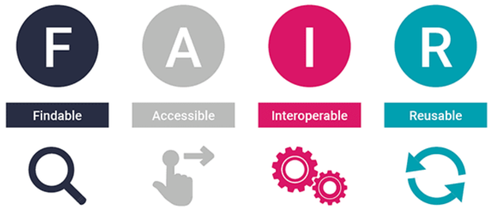
Jefferson Lab

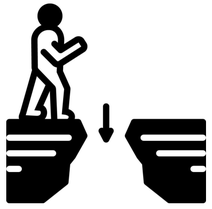
JLAB Path for AI/ML Data Readiness

Jefferson Lab

🗺️ Phase 1: Map & Assess
(Months 1–4)

- Understand GlueX (Pilot) Workflow (raw data -> Publication)
- Assess against FAIR Principles.
- Apply AI/ML data readiness metrics
  - Have to be NP/JLab specifics
  - Take inspiration from Commercial metrics.
  - Come up realistic metrics
- Identify the gaps and bottle necks





⚙️ Phase 2: Prototype Solutions
(Months 5–10)

- Access existing future proof solutions
- Build a prototype and place them in gaps and bottlenecks.
- Re-Assess again from from Phase 1
  - Newly defined metrics
  - Revise/Review the metrics

📜 Phase 3: Create the Roadmap
(Months 11–12)

- Summarize findings & solutions
- Deliverable: White paper (arXiv)
- Provide a reproducible template for AI/ML readiness
- This can act as document for JLab future investments plans

Status

Comment made after approval from committee.

Comments:
We strongly suggest converging on a realistic and specific line of action and identifying the contributors from ENP and Data Science before starting this project, and to focus on making a succinct set of guidelines in the produced paper to prevent ambiguity and increase the probability that suggestions outlined are adopted.

- Took some time to find 2 person to join the project.
- **Casey Morean from Physics Division started from January. (25%)**
- **Dmitry from EIC project joined the project from Feb. (25%)**

🗺️ Phase 1: Map & Assess
(Months 1–4)

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- Assess against FAIR Principles.
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- **Understanding GlueX workflow is near completion**
- **F and A of FAIR is assessed.**
- **Gaps Have been identified already and is being tackled (next slide)**
- Dmitry has started looking into AI readiness metrics.

Status

⚙️ Phase 2: Prototype Solutions
(Months 5–10)

- Access existing future proof solutions
- Build a prototype and place them in gaps and bottlenecks.
- Re-Assess again from from Phase 1
  - Newly defined metrics
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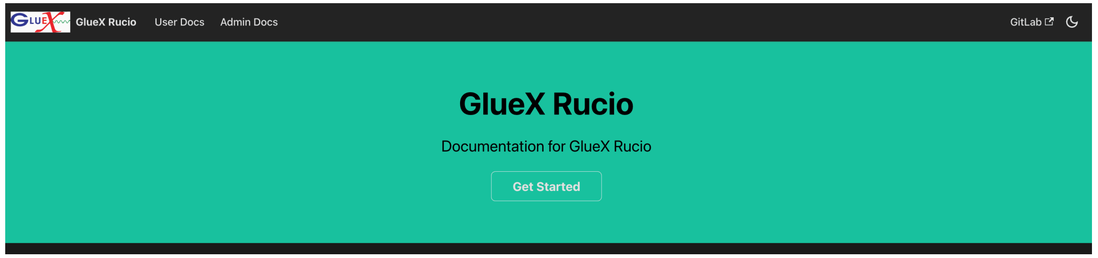
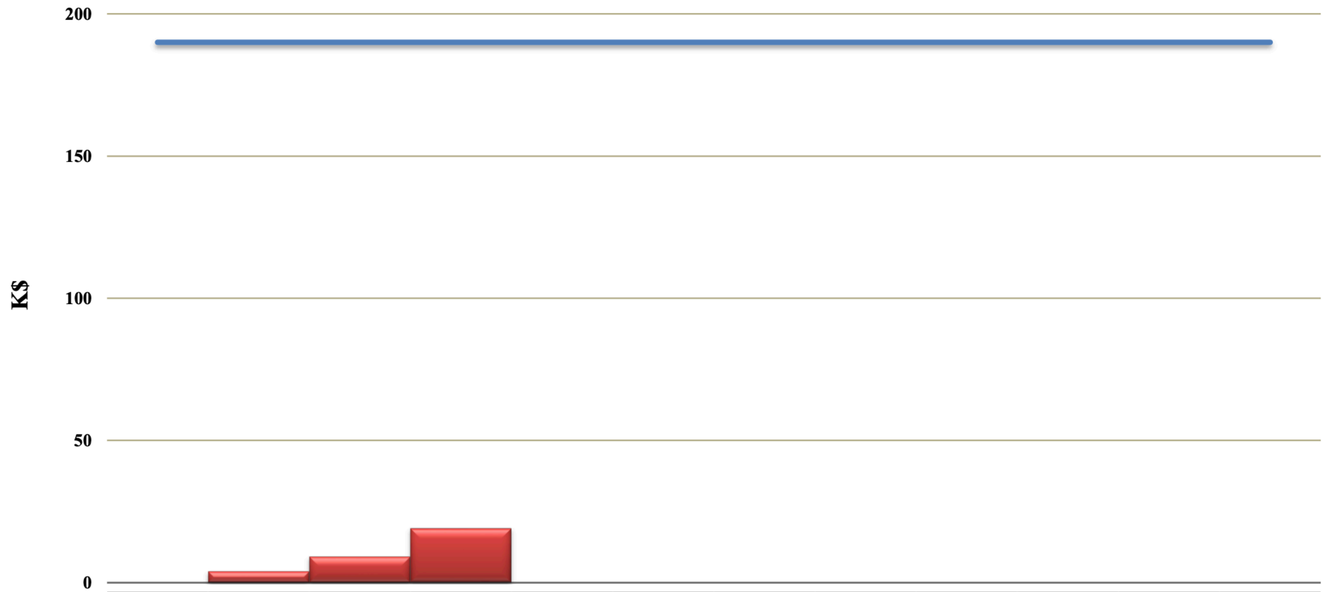
- **Gaps from F and A of FAIR is already being tackled.**
- **In synergy with other project to make data Findable and Accessible.**
- **Being deployed in Production already and being tested as we speak.**



https://pages.jlab.org/physdiv/jlab-rucio/jlab-rucio-doc/

Spending

- **Since 2 persons just joined, the spending will ramp up.**



	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Sep-26
YTD Spending	0	4	9	19	0	0	0	0	0	0	0	0
Pending	0	0	0	0	0	0	0	0	0	0		
Open Obligations	0	0	0	0	0	0	0	0	0	0	0	0
Expenses	0	0	0	0	0	0	0	0	0	0	0	0
Labor	0	4	9	19	0	0	0	0	0	0	0	0
Funding	190	190	190	190	190	190	190	190	190	190	190	190
3-Mo Avg Projection												