Jefferson Lab

LDRD FY26 presentation
February 6, 202

Generative Modeling for QCD Global Analysis

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Project aims

Aim 1

Develop a Normalizing Flow (NF) based Bayesian inference framework for hadron structure studies using existing libraries, without back propagation requirements

Aim 2

Perform NF + MH based PDF analysis using JAM global analysis toolkits with synchronized experimental database

Aim 3

Develop NF-based software package for Bayesian reweighting for impact studies of future JLab experiments

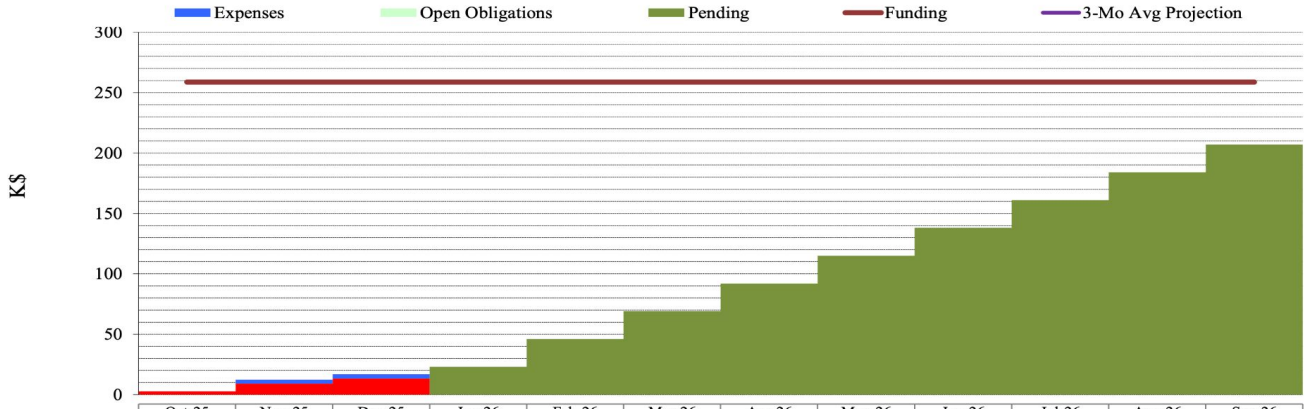
Progress against Milestones

Year 1 - Q1: Prepare a simplified DIS-like toy scenario using non-differentiable programing and generate mock data **Completed**

Year 1 - Q1: Perform a data resampling analysis on the toy scenario and collect replica parameters **Completed**

Budget spending and personnel

Gen Modeling for QCD
W. Melnitchouk (LD2616)
WBS 1.02.LD.013 (Loaded $k)



	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	3	12	17	23	46	69	92	115	138	161	184	207
Pending	0	0	0	23	46	69	92	115	138	161	184	207
Open Obligations	0	0	0	0	0	0	0	0	0	0	0	0
Expenses	0	3	3	0	0	0	0	0	0	0	0	0
Labor	3	9	13	0	0	0	0	0	0	0	0	0
Funding	259	259	259	259	259	259	259	259	259	259	259	259
3-Mo Avg Projection												

After conducting search, postdoc position has been accepted by Peter Risse.

Starting date for position will be March 2.