*PI/co-PI/Senior Personnel Name: Jennifer Ngadiuba

***Required fields**

Note: NSF has provided 15 project/proposal and 10 in-kind contribution entries for users to populate. Please leave any unused entries blank.

Project/Proposal Section:

Current and Pending Support includes all resources made available to an individual in support of and/or related to all of his/her research efforts, regardless of whether or not they have monetary value.[1] Information must be provided about all current and pending support, including this project, for ongoing projects, and for any proposals currently under consideration from whatever source, irrespective of whether such support is provided through the proposing organization or is provided directly to the individual. This includes, for example, Federal, State, local, foreign, public or private foundations, non-profit organizations, industrial or other commercial organizations, or internal funds allocated toward specific projects. Concurrent submission of a proposal to other organizations will not prejudice its review by NSF, if disclosed.[2]

[1] If the time commitment or dollar value is not readily ascertainable, reasonable estimates should be provided.
[2] The Biological Sciences Directorate exception to this policy is delineated in PAPPG Chapter II.D.2.

Projects/Proposals

3. *Project/Proposal Title : Early Career Research Program [this proposal]

*Status of Support : ○ Current ○ Pending ◉ Submission Planned ○ Transfer of Support

Proposal/Award Number (if available):

*Source of Support: DOE

*Primary Place of Performance : Batavia, IL, USA

Project/Proposal Start Date (MM/YYYY) (if available) :

Project/Proposal End Date (MM/YYYY) (if available) :

*Total Award Amount (including Indirect Costs): $ 2,500,000

*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2022	6.00	4. 2025	6.00
2. 2023	6.00	5. 2026	6.00
3. 2024	6.00		

*Overall Objectives : Deploy ML-based anomaly detection algorithms in the CMS Level-1 trigger.

*Statement of Potential Overlap : This proposal.

Projects/Proposals

1. *Project/Proposal Title : HEP energy frontier research

*Status of Support : (•) Current ( ) Pending ( ) Submission Planned ( ) Transfer of Support

Proposal/Award Number (if available):

*Source of Support: DOE

*Primary Place of Performance : Batavia, IL, USA

Project/Proposal Start Date (MM/YYYY) (if available) :

Project/Proposal End Date (MM/YYYY) (if available) :

*Total Award Amount (including Indirect Costs): $ 14,000,000

*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2021	12.00	4.	
2. 2022	12.00	5.	
3. 2023	12.00		

*Overall Objectives : Conduct physics data analyses and other research tasks with the CMS experiment.

*Statement of Potential Overlap : Minimal overlap identified in the common general goal of deploying ML-based algorithms in the Level-1 trigger for several different tasks.

Projects/Proposals

2. *Project/Proposal Title : Real-time data reduction codesign at the extreme edge for science

*Status of Support : (•) Current ( ) Pending ( ) Submission Planned ( ) Transfer of Support

Proposal/Award Number (if available):

*Source of Support: DOE

*Primary Place of Performance : Batavia, IL, USA

Project/Proposal Start Date (MM/YYYY) (if available) :

Project/Proposal End Date (MM/YYYY) (if available) :

*Total Award Amount (including Indirect Costs): $ 2,291,000

*Person-Month(s) (or Partial Person-Months) Per Year Committed to the Project

*Year (YYYY)	*Person Months (##.##)	Year (YYYY)	Person Months (##.##)
1. 2021	1.00	4.	
2. 2022	1.00	5.	
3. 2023	1.00		

*Overall Objectives : Assist with the development of accurate and efficient AI algorithms for LHC experiments at the edge to perform intelligent ML-based data reduction and processing as close aspossible to the sensors.

*Statement of Potential Overlap : Small overlap with the common goal of developing efficient and accurate autoencoders but for very different application.