

**Project Closeout Report  
for the Award  
DE-SC0016010**

**W.J. Llope  
Wayne State University**

**Office of [Program Office]  
Office of Science  
U.S. Department of Energy**

**Date Approved:**

---

**Month/Year**

## **1. EXECUTIVE SUMMARY**

This grant supported a postdoctoral scientist (S. Jowzaee) and the tuition for a graduate student (B. Erko), both working under the supervision of Prof. W.J. Llope at Wayne State University. Travel to a STAR Collaboration Meeting and the Quark Matter 2017 conference was also supported. The physics research concentrated on particle-identified two-particle correlations in the Beam Energy Scan data from the STAR experiment at RHIC. S. Jowzaee gave an oral presentation on this research at the Quark Matter 2017 conference.

## **2. INTRODUCTION**

Prof. W.J. Llope submitted a three year proposal to the DOE. This proposal included the support for one postdoc, one graduate student, the summer salary of the PI, and travel. This proposal was positively reviewed. The program manager funded the first ten months of the proposal so that Llope could then be folded into the existing DOE grant for Profs. Voloshin, Pruneau, and Putschke at Wayne State University.

This support allowed Llope, Jowzaee, and Erko to advance the research direction, ultimately leading to a well-received presentation by Jowzaee at Quark Matter 2017, the most prestigious conference in our field.

## **3. ACQUISITION APPROACH**

No equipment was acquired during the term of this award.

## **4. PROJECT ORGANIZATION**

The project was lead by W.J. Llope (PI).

## **5. PROJECT BASELINE**

The project scope was the support for the postdoc, graduate student, and travel. There was no funding profile as the project was 10 months long. There were no environmental impacts, and there were no safety or health incidents.

## **6. CLOSEOUT STATUS**

The project was completed successfully and these people are now supported by the RHI group grant of Voloshin (PI), Pruneau (co-PI), Putschke (co-PI), and Llope (co-PI).

## **7. LESSONS LEARNED**

The lessons learned were all about the physics of two-particle correlations in the STAR BES data.

WAYNE STATE UNIVERSITY  
SPONSORED PROGRAM ADMINISTRATION

5057 WOODWARD AVE., SUITE 13202  
DETROIT, MI 48202

JULY 26, 2017

Principal Investigator:	Dr. William Llope	wjllope@wayne.edu
Department Contact:	Marty Kuznia	ab4744@wayne.edu
Chair:	David Cinabro	aa4409@wayne.edu
Other Department Contact:	Marty Kuznia	ab4744@wayne.edu

WSU Index Number:	301194
Grant Code:	2VJM
Type of Report:	Final
Reporting Period:	07/01/16 - 04/30/17
Agency:	Department of Energy
Report Title:	Upgraded Physics at the RHIC and LHC

**\*\*\*FINANCIAL STATUS REPORT -- INFO COPY\*\*\***

The attached Financial Status Report (FSR) does not require a PI signature.  
The FSR has been submitted to the sponsoring agency, and this copy with  
institutional signature is for your files.

If you have any questions regarding the report, please contact:

**Steven Samuels  
313-577-9120  
dz0015@wayne.edu**

## FEDERAL FINANCIAL REPORT

(Follow form instructions)

1. Federal Agency and Organizational Element to Which Report is Submitted		2. Federal Grant or Other Identifying Number Assigned by Federal Agency (To report multiple grants, use FFR Attachment)				Page 1	of 1										
Department of Energy		DE-SC0016010				pages											
3. Recipient Organization (Name and complete address including Zip code)																	
WAYNE STATE UNIVERSITY 5057 WOODWARD AVENUE 13th FLOOR, ROOM #13202 DETROIT, MICHIGAN 48202		GRANT CODE: 2VJM FUND CODE: 2VJM1 ORG CODE: 12H1															
4a. DUNS Number  00-196-2224	4b. EIN  1386028429 A1	5. Recipient Account Number or Identifying Number (To report multiple grants, use FFR Attachment)  301194			6. Report Type  <input type="checkbox"/> Quarterly <input type="checkbox"/> Semi-Annual <input type="checkbox"/> Annual <input checked="" type="checkbox"/> Final	7. Basis of Accounting  <input checked="" type="checkbox"/> CASH <input type="checkbox"/> ACCRUAL											
8. Project/Grant Period From: (Month, Day, Year) 07/01/16		To: (Month, Day, Year) 04/30/17			9. Reporting Period End Date (Month, Day, Year) 04/30/17												
10. Transactions (Use lines a-c for single or multiple grant reporting)						Cumulative											
Federal Cash (To report multiple grants, also use FFR Attachment):																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>a. Cash Receipts</td> <td style="text-align: right;">\$100,000.00</td> </tr> <tr> <td>b. Cash Disbursements</td> <td style="text-align: right;">\$100,000.00</td> </tr> <tr> <td>c. Cash on Hand (line a minus b)</td> <td style="text-align: right;">\$0.00</td> </tr> </table>								a. Cash Receipts	\$100,000.00	b. Cash Disbursements	\$100,000.00	c. Cash on Hand (line a minus b)	\$0.00				
a. Cash Receipts	\$100,000.00																
b. Cash Disbursements	\$100,000.00																
c. Cash on Hand (line a minus b)	\$0.00																
(Use lines d-o for single grant reporting)																	
Federal Expenditures and Unobligated Balance:																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>d. Total Federal funds authorized</td> <td style="text-align: right;">\$100,000.00</td> </tr> <tr> <td>e. Federal share of expenditures</td> <td style="text-align: right;">\$100,000.00</td> </tr> <tr> <td>f. Federal share of unliquidated obligations</td> <td style="text-align: right;">\$0.00</td> </tr> <tr> <td>g. Total Federal share (sum of lines e and f)</td> <td style="text-align: right;">\$100,000.00</td> </tr> <tr> <td>h. Unobligated balance of Federal funds (line d minus g)</td> <td style="text-align: right;">\$0.00</td> </tr> </table>								d. Total Federal funds authorized	\$100,000.00	e. Federal share of expenditures	\$100,000.00	f. Federal share of unliquidated obligations	\$0.00	g. Total Federal share (sum of lines e and f)	\$100,000.00	h. Unobligated balance of Federal funds (line d minus g)	\$0.00
d. Total Federal funds authorized	\$100,000.00																
e. Federal share of expenditures	\$100,000.00																
f. Federal share of unliquidated obligations	\$0.00																
g. Total Federal share (sum of lines e and f)	\$100,000.00																
h. Unobligated balance of Federal funds (line d minus g)	\$0.00																
Recipient Share:																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>i. Total recipient share required</td> <td></td> </tr> <tr> <td>j. Recipient share of expenditures</td> <td></td> </tr> <tr> <td>k. Remaining recipient share to be provided (line i minus j)</td> <td></td> </tr> </table>								i. Total recipient share required		j. Recipient share of expenditures		k. Remaining recipient share to be provided (line i minus j)					
i. Total recipient share required																	
j. Recipient share of expenditures																	
k. Remaining recipient share to be provided (line i minus j)																	
Program Income:																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>l. Total Federal program income earned</td> <td></td> </tr> <tr> <td>m. Program income expended in accordance with the deduction alternative</td> <td></td> </tr> <tr> <td>n. Program income expended in accordance with the addition alternative</td> <td></td> </tr> <tr> <td>o. Unexpended program income (line l minus line m or line n)</td> <td></td> </tr> </table>								l. Total Federal program income earned		m. Program income expended in accordance with the deduction alternative		n. Program income expended in accordance with the addition alternative		o. Unexpended program income (line l minus line m or line n)			
l. Total Federal program income earned																	
m. Program income expended in accordance with the deduction alternative																	
n. Program income expended in accordance with the addition alternative																	
o. Unexpended program income (line l minus line m or line n)																	
11. Indirect Expense		a. Type predetermined	b. Rate 27.00%	c. Period From 07/01/16	Period To 04/30/17	d. Base 5,176.00	e. Amount Charged 1,397.52	f. Federal Share 1,397.52									
		predetermined	37.00%	07/01/16	04/30/17	64,216.00	23,899.85	23,899.85									
		g. Totals:			\$69,392.00	\$25,297.37	25,297.36										
12. Remarks: Attach any explanations deemed necessary or information required by Federal sponsoring agency in compliance with governing legislation:																	
13. Certification: By signing this report, I certify to the best of my knowledge and belief that the report is true, complete, and accurate, and the expenditures, disbursements and cash receipts are for the purposes and intent set forth in the award documents. I am aware that any false, fictitious, or fraudulent information may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 18, Section 1001)																	
a. Typed or Printed Name and Title of Authorized Certifying Official  Marlene Erno, Director of Sponsored Program Finance					c. Telephone (Area code, number and extension) (313) 577-3726												
					d. Email address ac8658@wayne.edu												
b. Signature of Authorized Certifying Official  					e. Date Report Submitted (Month, Day, Year) 7/27/2017												
					14. Agency use only:												

Standard Form 425

Steven Samuels

OMB Approval Number: 0348-0061

313-577-9120

Expiration Date: 10/31/2011

dz0015@wayne.edu

### Paperwork Burden Statement

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB Control Number. The valid OMB control number for this information collection is 0348-0061. Public reporting burden for this collection of information is estimated to average 1.5 hours per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0060), Washington, DC 20503.

## RECONCILIATION SHEET

FIXED PRICE  
INTERIM  
FINAL

X 07/01/16 - 04/30/17

AGENCY: Department of Energy  
GRANT CODE: 2VJM  
PI: Dr. William Llope  
ORG CODE: 12H1

INDEX: 301194  
FUND CODE: 2VJM1  
PERIOD: 07/01/16 - 04/30/17  
I/C RATE: 27.00%  
COST SHARE INDEX: 0

	DIRECT COSTS	INDIRECT COSTS	TOTAL
AWARD	\$ 74,325.00	\$ 25,675.00	\$ 100,000.00
CARRY FORWARD	-	-	-
INTEREST INCOME	-	-	-
<b>REVENUE TOTAL</b>	<b><u>74,325.00</u></b>	<b><u>25,675.00</u></b>	<b><u>100,000.00</u></b>
EXPENSES	74,702.64	25,297.36	100,000.00
OBLIGATIONS	-	-	-
<b>EXPENSE TOTAL</b>	<b><u>74,702.64</u></b>	<b><u>25,297.36</u></b>	<b><u>100,000.00</u></b>
ADJUSTMENT			
<b>BAL/DEF PER FSR \$</b>	<b><u>(377.64)</u></b>	<b><u>377.64</u></b>	<b><u>\$ -</u></b>

DIRECT EXPENSES AS OF REPORT DATED: 07/25/17 \$ 86,053.51

#### ADDITIONAL EXPENSES:

#### OBLIGATIONS:

**\*\*\* FEDERALLY FUNDED \*\*\***

## OBLIGATIONS TO CONTINUATION INDEX ####

## 2.2 SPA CONTACT:

Steven Samuels

313-577-9120

dz0015@wayne.edu

07/27/17

**GRANT / CONTRACT REPORTING - BUDGET ANALYSIS SHEET**

**INDEX:** 301194  
**AGENCY:** Department of Energy  
**GRANT DATE:** 07/01/16 - 04/30/17

**GRANT CODE:** 2VJM  
**FUND CODE:** 2VJM1  
**ORG CODE:** 12H1

<b>BUDGET CATEGORY</b>	<b>APPROVED AGENCY BUDGET</b> A	<b>SPA BUDGET REVISIONS</b> B	<b>*</b> AUTH	<b>ADJUSTED BUDGET</b> C (A+B)	<b>EXPENSES AND OBLIGATIONS ON FINAL REPORT</b>		<b>BUDGET VARIANCE</b> E (C-D)	<b>** AUTH</b>
					<b>ON FINAL REPORT</b>	<b>BUDGET VARIANCE</b>		
					<b>D</b>	<b>E (C-D)</b>		
SALARY & WAGES	\$ 49,433.00	\$ -		\$ 49,433.00	\$ 50,837.96	\$ (1,027.32)	\$ (377.64)	
FRINGE BENEFITS	14,783.00	-		14,783.00	15,034.32	\$ (250.78)	\$ (0.54)	
EQUIPMENT	-	-		-	-	-	-	
TUITION	4,933.00	-		4,933.00	4,932.46	0.54		
STIPENDS	-	-		-	-	-	-	
SUPPLIES	-	-		-	-	-	-	
SUB-CONTRACTS	-	-		-	-	-	-	
PRINTING-DUPLICATION	-	-		-	-	-	-	
OTHER	-	-		-	-	-	-	
TRAVEL-DOMESTIC	5,176.00	-		5,176.00	15,248.77	\$ (10,072.77)	-	
TRAVEL-FOREIGN	-	-		-	-	-	-	
TOTAL DIRECT COST	\$ 74,325.00	\$ -		\$ 74,325.00	\$ 74,702.64	\$ (377.64)		

**\* AUTHORIZATION TO REVISE BUDGETS:**

A. APPROVED TRANSFERS ARE WITHIN AGENCY LIMITS.  
B. APPROVED TRANSFERS ARE NOT WITHIN AGENCY LIMITS.  
C. AGENCY APPROVAL (WRITTEN / VERBAL) RECEIVED TO REVISE ORIGINAL BUDGET.  
D. AGENCY REGULATIONS DO NOT RESTRICT TRANSFERS BETWEEN CATEGORIES.

E. \_\_\_\_\_

**\*\* AUTHORIZATION TO ALLOW BUDGET VARIANCES:**

F. EXPENDITURES APPROVED BY SPA WITHIN AGENCY LIMITS - NO BUDGET TRANSFER IN BANNER.  
G. AGENCY REGULATIONS DO NOT RESTRICT VARIANCES IN BUDGET.  
H. AGENCY APPROVAL (WRITTEN / VERBAL) RECEIVED FOR BUDGET/EXPENDITURE VARIANCE.  
I. WITHIN AGENCY LIMIT OF \$ \_\_\_\_\_ IN \_\_\_\_\_ CATEGORY.  
J. WITHIN AGENCY LIMIT OF \_\_\_\_\_ % IN \_\_\_\_\_ CATEGORY.  
K. \_\_\_\_\_  
L. NEGATIVE BUDGET VARIANCES NOT ALLOWED BY AGENCY - TRANSFER AMOUNT

## PATENT CERTIFICATION

W.J. Llope

Interim Certification

Contractor

301194

Final Certification

DOE Prime and/or Subcontract Nos.

Contractor hereby certifies that:

1. All procedures for identifying and disclosing subject inventions as required by the patent clause of the contract have been followed throughout the reporting period.

2. There were no subcontracts or purchase orders involving research, development, and demonstration except as follows: [State none when applicable.]

none

3. No inventions or discoveries were made or conceived in the course of or under this contract other than the following

(Certification includes  , does not include  all subordinates):  
[State none when applicable.]

none

<u>TITLE</u>	<u>INVENTOR</u>	<u>DATE REPORTED</u>	<u>DOE "S" NO.*</u>
N/A			

4. The completion date of this contract is as follows: 4/30/2017

5. The following period is covered by this certification:

<u>7</u> Month	<u>1</u> Day	<u>2016</u> Year	to	<u>4</u> Month	<u>30</u> Day	<u>2017</u> Year
-------------------	-----------------	---------------------	----	-------------------	------------------	---------------------

Contractor

W.J. Llope

Signature



Wayne State University  
666 W. Hancock, rm 347  
Detroit, MI, 48201

Address

8/5/2017

Date of Certification

